

ACUPUNCTURE TREATMENT & ANAESTHESIA

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لِكُلِّ دَاءٍ دَوَاءٌ

For every ailment, there is a cure.

أَطْلُبُوا الْعِلْمَ وَلَوْ كَانَ بِالصِّينِ ط

Seek knowledge, even if you have to go to China

DEDICATION

To the grateful memory of My Father (died on 24 June 1975) for his steadfast and pristine principles.

The grateful memory of My Mother (died on 11 June, 1979) for inducting her children into the limitless world of knowledge and learning.

My Teachers,
whose own intellect made me what I am.

My Wife,
for her all-encompassing devotion to the family.

My Friends,
for their intangible but invaluable assistance.

My Children,
for making everything worthwhile.

My Patients,
for providing me with experience.

My Students,
for their motivating and searching questions that can only lead forwards.

FOREWORD TO THE 5TH EDITION

I am pleased to say that Brig. M. Salim has published fifth edition of his famous and very useful book. He has introduced many new chapters and has reviewed the previous ones. It is difficult to imagine how one person involved in so many activities could also be so productive in the field of writing books. He has published numerous articles in many journals and has presented many lectures as visiting professor or invited speaker. He is a leader in almost every position he has taken. He has always accepted responsibility, no matter how weighty, as if it were a pleasure and, indeed, to a person of his capabilities, it probably is a great pleasure. He has innate leadership qualities and the bonds of friendship he has established with all of his colleagues are strong. Because of these qualities he has been able to produce such a wonderful book which I am sure will be liked by all specialists in this branch of medicine.



June '99

Lt. General Mahmud-ul-Hasan (R)
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PREFACE TO THE 5TH EDITION

I have great pleasure in presenting to readers the fifth edition of this book on acupuncture technique and its use in anaesthesia. This fresh edition has been prompted by the extraordinary popularity and sales of the book, both of which have been beyond my expectations.

When I first published the book in 1974, my purpose was to compile the details of acupuncture as a reference aid for medical students and practitioners alike. My own experience of the use of acupuncture had provided me with substantial and compelling empirical evidence of its utility and efficacy. It was my desire to share this experience with my colleagues in the medical field, regardless of their areas of specialisation. Hence I wrote the book, and was pleasantly surprised to see it run into four editions.

During all these years, success has been its own reward. My humble effort has been praised and extensively used as a text book in many medical colleges in Pakistan and as a reference aid and supplement to the knowledge of medical practitioners. So much so that it has been translated into Persian, Russian and Spanish for use and prescription in countries where these languages are spoken. This growing demand is one of the reasons why I was obliged to publish the fifth edition.

The basic framework of the book remains unaltered since, in this ancient Chinese method of treatment, no new knowledge has been added. In its existing form acupuncture is already in a state of distilled refinement achieved over the centuries by the genius of savants who continue to be the last word on the subject. Nevertheless, the corpus of information about its use has grown to enormous proportions, for the simple reason that acupuncture as a means of healing has found millions of new adherents in the recent past and their number is going up every day. My own experience about its usefulness has also grown in the years since the book was first published, and I have tried to add it to the various sections.

The book provides a detailed study of the various methods of treatment by means of acupuncture. It is divided into-eight sections. The first section deals with the origin and theoretical framework of this fascinating system of medicine, including a brief history of its development as a philosophy and its practical application, and how it came to be introduced in Pakistan.

The second section gives details of the materials needed in acupuncture and the techniques to be followed in their use. It also covers the various means of locating acupuncture points in the human body, and the procedure for insertion of the needles at these points, as well as directions for stimulating them.

The third section is concerned with the concept of “channels”. It also describes, analyses and discusses the “meridians”, the extra points” and the numerous other “un-numbered extra points”.

The fourth section deals basically with the theories related with acupuncture: the Yin and the Yang, the theory of “The Five Elements”, the theories of Zang Fu and Jing Luo, and the Chinese theory of the pulse. All of them are explained in detail.

The fifth section is devoted to discussing the techniques of acupuncture, and particularises the methods for ear, scalp, wrist, ankle and nose acupuncture and the related mechanical processes. Special section of acupressure & T.E.N.S has been added. Up to this section the book only explores the theoretical foundations of acupuncture.

The sixth section and onwards (seven & eight) may be considered the more important parts of the book in the sense of their relevance to the actual practice of acupuncture. They provide an in- depth study of the selection of acupuncture points along with the principles of therapy involved. Detailed analysis helps the practitioner to understand the systematic methods of treatment through a systematic approach. Each system in the body and every organ is examined in detail, along with and in relation to other parts of the body.

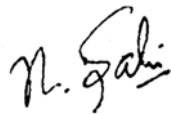
All the major diseases and ailments are studied thoroughly and the necessary and effective acupuncture treatment is suggested. In the Chinese view, a healthy appearance is given great importance, so

much that it is identified as beauty. This essential element has not been ignored by me and there are valuable hints for relieving tension and stress, for rejuvenation and weight reduction, and for attaining the fresh and healthy looks that revitalise the body and uplift the mind and the soul.

The last chapter of the book is on Pain Management. It deals at length with the mechanism and psychological aspects of pain in different circumstances and arising from different ailments and what can be the role of acupuncture for relieving the various types. My own specialisation, i.e. anaesthesia, is also discussed. The reason is that while the use of acupuncture in Pakistan has expanded mainly in the domain of medical treatment and pain management, its application in the field of anaesthesia holds great promise. I am hopeful that with this up-dated fresh edition the cost effective method of acupuncture for anaesthesia will also acquire popularity.

I would like to thank my friend Dr. Tanveer A. Malik for his kindness and encouragement. It was he who persuaded me to bring out a fifth edition of my book, and took upon himself the onerous task of revising and compiling it afresh, as well as undertaking the drudgery of proof-reading. Without his selfless assistance it would have been extremely difficult for me to publish this edition.

Rawalpindi
June, 1999



M. Salim

FOREWORD TO THE 4TH EDITION

Doctor Col Muhammad Salim is one of the most highly qualified anaesthetists of Pakistan. Besides having many qualifications from the Western World he has not spared the Eastern Countries to gather wealth of knowledge. He got special training in Acupuncture in China. The fourth edition of his book on the subject shows his enthusiasm to popularise this art in our Country.

Col Salim has a remarkable command of the subject and has tried his best to improve on the previous editions.

Besides being an author of many books Salim is an excellent doctor. A pioneer of Acupuncture in this country, he has contributed numerous original articles on the subject. An avid reader he always keeps abreast of medical advances. He strives for perfection with painstaking care and perseverance in his professional work. He is a fine and thorough clinician. He is untiring in his attention to any new advance in medicine. These qualities have enabled him to produce such an excellent book: "Acupuncture Treatment & Anaesthesia" for the benefit of anaesthetists and other clinicians.

The book is of good quality. The hierarchy of individual topics is well organised. This is a very timely work on one of the more rapidly growing fields of popular science. The ideas advanced by the author are highly instructive. The text is readable. I have no doubt that this book \ will prove very useful and therefore its reading is highly recommended.



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G.H.Q. Rawalpindi.
Dec. 1986

PREFACE TO THE 4TH EDITION

In 1974, when the first edition of my book was published, so unfamiliar was the Chinese system of Acupuncture treatment outside China, that many amongst professionals and patients, looked upon the novelty of the system, with a good deal of inner skepticism regarding its efficacy. Subsequently, in my own clinical experience of the use of the Chinese system of Acupuncture treatment and the results I obtained therefrom, fortified my faith on the need to scientifically study, teach and apply the art of Acupuncture.

The international medical scene has witnessed a phenomenal change in the approach to acupuncture science, from one of disbelief in its efficacy to one of international acceptance. Today, most countries of the world can claim to have their own acupuncture doctors, specialising in the art of its application. The mother country of the treatment, China, meanwhile carried on with its painstaking research on the subject and made great progress. Unable till after 1974 to visit China in pursuit of my acupuncture studies, I carried on its application in advance studies in acupuncture treatment, where I had the added good fortune to be tutored by specialists in the field. I recall with gratitude the debt of knowledge I owe to those teachers.

In Pakistan, I utilized this science initially as treatment on hundreds of patients for a variety of complaints ranging from pain syndromes to polio and from psychiatric disorders to spastic paralysis. Then I also carried out over a hundred surgical operations under acupuncture anaesthesia. The success I obtained in both fields became the compelling motive to endeavour on the third edition of the earlier book, in which, as a summation of my own studies and clinical experience on the subject, I tried to relate, as best as I could, the vast body of the yet unresolved theoretical intricacies of the science to practical points, such as I had experience of. The fresh additions were chapters on Acupuncture anaesthesia, giving its theory, rules and techniques.

As I undertake to cross the next frontier of my writing endeavours, the word acupuncture and what it stands for is now familiar to large sections of the world's population. However, as happens with too much familiarisation that lacks the basic requisite of soundness of approach, some spurious and, therefore, short-lived treatment. Thus, when instead of being effective it is not in the hands of quacks, it tends to tarnish the significant advances that have been internationally made in this field, for the treatment of pre and post-operative pain. The subject of "Pain" itself is fast evolving into a discipline on its own merit, and before long it will be a specialised study for certain. I am compelled once again to submit to the inspiration derived from these efforts, and through my own experience now of two decades of the clinical use of this treatment, to revise afresh my earlier work. In 1979, I established my own pain clinic

where alongwith training younger associates, I am able to pursue my own case studies of pain and their allied treatment through acupuncture. I have compiled these with annotations in the hope that I will be able to publish them some day as basic research on the subject. In the present edition, while keeping intact the earlier introduction on the subject format, I have endeavoured to incorporate, to the extent possible, as much from the international experience as I could possibly obtain. I wrote to various specialists the world over, requesting them for their contributions. The response I received was beyond all expectations and, if I may add, beyond my own merit. I incorporated as much as I could, both in terms of relevance to the theme in hand and to the timely availability of the contributions. Since I received a number of these, when the book was in the final font of the press I was unable to fully use them all. Thus, while I have had the privilege of being able to mention world authorities on the related subjects in my acknowledgements, I have in some cases, for the reasons outlined above, not been able to fully use the entire texts for their valuable contributions. However, this valuable research material, enriched with the specific experience of their authors, has already inspired me with another book project, where each author would get his due in a thematic compilation - a project which I intend to undertaken shortly.

I present this fourth edition with the modest observation that like our wise ancestors of the past, who went to no school but that of life itself to acquire it as a skill, spent their energies in the daily pursuit of this single skill, so as to perfect it. Thus in our modern day sense, they were none other than “specialists”, who in the process of perfecting their skill imbibed deep knowledge of anatomy, physiology and medicine. They maintained treatises to update their findings, such that generations have passed and yet these remain authoritative source material till today. Thus, they provided successive generations with a yardstick to weed out the spurious and advance the new discoveries. In pursuance of this research spirit of our wise ancestors, I would humbly recommend that a sound knowledge of anatomy, physiology and medicine, alongwith the anatomy of the nervous system should form part of any curriculum to teach acupuncture treatment, in all its diagnostic applications. At present, the wide application of acupuncture as anaesthesia suggests to my mind that it lies for the time being in the domain of the anaesthetists, where it can be effectively utilised by them, since they watch their patients even when they are asleep.

I acknowledge, with grateful thanks, the contributions I received from experts the world over, all motivated by their common objective to alleviate pain from the human condition. These are listed under the contributions. For the shortcomings contained in the presentation of the subject matter, wherever these may be found, I am solely and entirely responsible. Thus from the sources of “Pain”, I have the pleasure to present its acupuncture treatment as a subject of study.

FOREWORD TO THE 3RD EDITION

For a country like ours where ignorance even amongst the medical profession towards Acupuncture and Moxibustion is profound; it is an adventure of great courage and dedication for a highly qualified doctor such as the author of this Book to have entertained the idea of writing a book on Acupuncture in order to assist medical men to learn and practice these techniques. This is real pioneering task for which I am grateful to the author who developed a special interest in this subject over a dozen years ago and has by now acquired considerable experience and skill in this branch of medicine. The first edition of this Book was published in 1974 which has been considerably and completely revised and re-written in the light of vast experience and reinforced through several educative visits to China which is the Mecca of this technique.

2. Acupuncture has been practiced in China for many centuries and occupies a place of honour in China's Traditional System of Medicine. The Chinese themselves have never claimed it to be the panacea for all ills but only a fool will deny its effectiveness when practised by trained and experienced hands for suitable cases. As this technique does not entail use of any drug what ever, this method has the distinction of being most economical. Same acupuncture needles can be used repeatedly after sterilization. This method in the held of anaesthesia not only saves money on expensive anaesthetic drugs but also saves the patient from adverse side- effects from which no such drug can be completely absolved.

3. As for the mode of its action there are several hypotheses as to how stimuli from over a thousand odd acupuncture points spread all over the human body travel along various meridians of which 12 pairs and two singles are well established. The fact, that all the ifs and buts about mode of action have not been scientifically explained so far, cannot and should not deter the practitioners from using this

technique in the best interest of patients remembering that even in the case of aspirin which is the most commonly used and abused drug, all the queries in this behalf have not been explained so far.

4. Notwithstanding, the fact that the technique of acupuncture has its roots and origins in the Orient; is economical; and is better suited to the temperament of Orientals; it is interesting to observe that it has caught the fancy and captured the interest of many developed countries today with the result that there are over a million applicants from America awaiting their turn to receive training in China. It is fascinating to see cases suffering from a wide variety of chronic and acute afflictions having tried out avenues of different systems of medical treatment turning in frustration to a acupuncturist and getting positive relief. Certainly, not being a substitute for modern medical procedures, acupuncture is a highly useful option in the hands of a medical practitioner.

5. I hope and pray that this Book will fulfil a very urgent need of the medical profession and wish to thank Dr. Muhammad Salim for devoting much of his time and effort in making his extraordinary knowledge and experience available through the medium of this Book.

February, 1980
Islamabad.

C.K. HASAN HI(M), MBE,
M.B., B.S., D.P.H., F.C.P.S.,
Lieutenant General (Retired)
Secretary Health and Social Welfare.
Government of Pakistan.

PREFACE TO THE 3RD EDITION

In 1974 first edition of my book was published. It was intended only to introduce this unfamiliar Chinese system of 'Acupuncture' treatment to the readers in Pakistan. Since then I had three trips to China for advance studies in acupuncture treatment. The knowledge thus gained was utilized in treating hundreds of patients with a variety of diseases with great success.

During this period I had the opportunity to carry out more than hundred surgical operations under Acupuncture Anaesthesia with great success.

I also had the opportunity of thumbing through a vast material in the shape of books and articles written by English, French and Japanese doctors on this subject. Enlightened with these studies and enriched with the experience I was compelled to revise this book.

The readers would find themselves that this book has almost been re-written to encompass the vast theoretical intricacies to practical points. All the chapters have been re-arranged in proper sequence and grouped into various parts to ensure a logical order. Each part serves as a base for the understanding of the next part. A few chapters on Acupuncture Anaesthesia have been added in this edition. A chapter on glossary of terms has also been added in this edition for the convenience of the reader, to help grasp the various Chinese terms for making the reading not only more useful but enjoyable.

It is sincerely hoped that this revised edition will help the reader to understand the eastern system of medicine more scientifically. It is a humble contribution towards spreading the knowledge in our country.

At the end I would like to acknowledge the help rendered by my colleagues in revising and compiling this work. I am thankful to Surgeon Cdr. Irshad Ali.

I am particularly indebted with gratitude to Lt. Col. Muhammad Hashmat Ullah for his valuable assistance in compiling the book, without the help of whom it would have rather been difficult to publish edition early this year.

Feb. 1980
Rawalpindi.

M. SALIM

FOREWORD TO THE 1ST & 2ND EDITION

Since long we have good relation with China. The people of Pakistan have been reading and hearing about a strange method of medical treatment called acupuncture. According to reports, this treatment consists of inserting fine needles in the various parts of the body to restore homeostasis internal balance and thereby treating a great variety of disease.

This book written by Dr. M. Salim has its purpose to give brief explanation of this fascinating therapy.

Acupuncture is claimed to be a pan of complete medical system. Underlying all Chinese medicine is the philosophy of ancient times which studied man in relationship to his environments. The laws of health were stated very precisely not only physical health but emotional and moral as well. The effects on man of climate, diet, social customs, emotional attitude and even geography were noted.

The Chinese admittedly do not have a full explanation, yet acupuncture works empirically—a needle prick at one point leads to a reaction at another point. Since Chinese seem happy to blend western medicine with traditional Chinese practices, should we be less willing to learn from the wisdom of the East? All inventions, all methods, are built up on the accumulated experience of others, of this and earlier generations.

All European acupuncturists owe Soulie de Morant a debt for his original translation of Chinese treatises, and what is more, his understanding of the subject and its practical application. Dr. M. Salim learnt French only to read French books on acupuncture before any literature was available in English. I would rather say without fear of contradiction that he was the pioneer to introduce acupuncture in Pakistan. I am sure this book will prove valuable in our modern practice as a method of easing pain and treating many ailments.

Oct. 74
Damascus (Syria)

Colonel B.A. Rathore,
M.B.B.S., F.R.C.S.,
Orthopaedic Surgeon.

PREFACE TO THE 1ST & 2ND EDITION

This book is only an introduction. I have used Chinese and French at many places, it would be helpful to the readers if they want to consult other large books on acupuncture.

Most of clinical material is taken from French, Japanese and Chinese books, and I have added many points in treatment from my own clinical experience.

I am grateful to Major General M.A. Badera, G.O.C., Col. Ahmed Abu Azma (Surgeon) and Col. Abdul Aziz Mirdad, F.R.C.S., who allowed me to practice acupuncture on their patients from Saudi Forces along Golan heights in Syria.

I am also obliged to my colleagues on whom I tried acupuncture in the beginning to localize meridian points. Major Mahmood Malik, Major Saleem Mirza, Capt. Iftikhar and Capt. Aftab Ali are worth mentioning.

Last but not the least I am thankful to Professor Wajih Moallam, Anaesthetist of Damascus University, who helped me in clinical aspect of the acupuncture.

I am much obliged to Mrs. Norma, Marlene and Helen for typing and sketches, without their assistance this work would have been incomplete.

June, 1974.
Damascus (Syria)

M. SALIM

CONTRIBUTORS

My thanks cannot match the zeal or the calibre of the contributors. My grateful thanks are due to all of them in equal measure. Perhaps, in rather an unusual acknowledgement for aspiring authors. I Wish to place on record the debt I owe to all of them, to: those whose complete texts are included in the book; those whose texts have been partially used in relevant sections; all those authors who allowed me to cite them as references and authorities.

My grateful thanks are due to my publishers who took on this difficult task and performed it efficiently. I particularly wish to express my gratitude to *Mr. Firdous*, who was struck at the prime of his life by untimely death, and to his eagerness on the stage when the book was under print. Also to, *Mr. Saleem Javed Khan, Aziz-ul-Haq (Khokan), Mr. Ghulam Mustafa Abbasi, Mr Muhammad Bashir and R.H. Zaidi.*

Last but not the least to my trainee doctors *Capt. Naeem, Capt. Tassadaq & Capt. Sikandar & also Mr Amera Saeed.*

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“History of Acupuncture in Pakistan”

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ACUPUNCTURE TREATMENT AND ANAESTHESIA

5th EDITION

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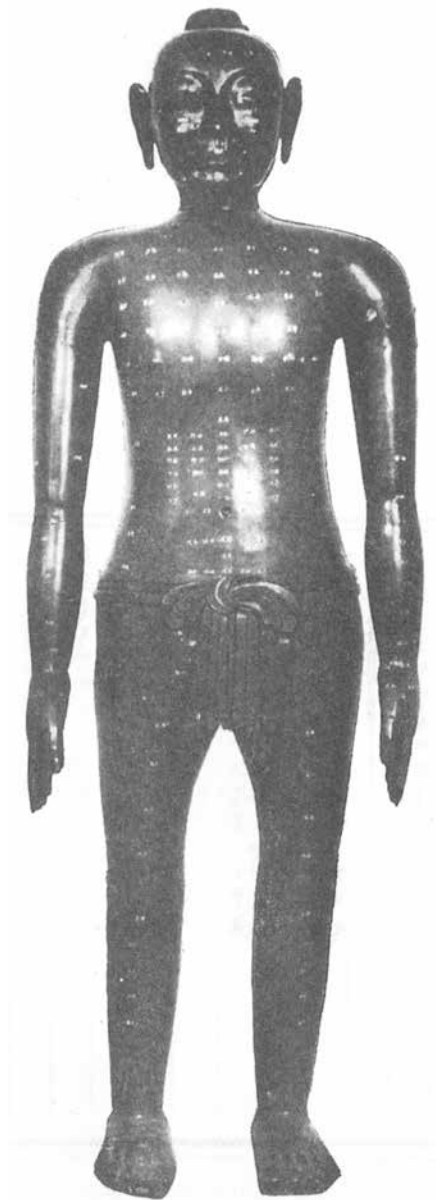
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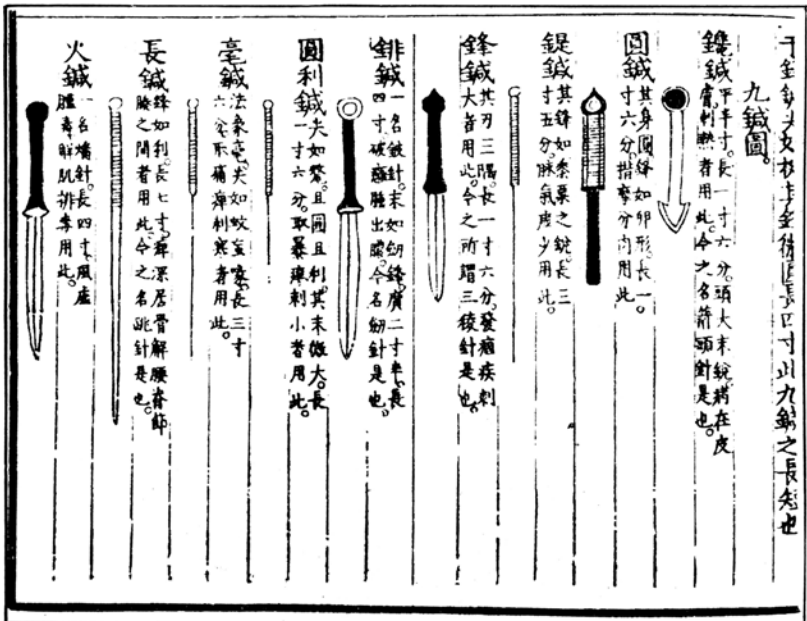
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**HISTORY
OF
ACUPUNCTURE**



This bronze figure showing acupuncture points is a reproduction of one cast in 1443 A.D., during the Ming Dynasty.



In Zhen Jiu Da Cheng (Compendium of Acupuncture and Moxibustion) compiled in 1601, nine kinds of needles and their various clinical applications are recorded.

HISTORY OF ACUPUNCTURE

Acupuncture (*Latin* : *ACUS* - *needle*, *PUNGERE* - to prick) is indeed the oldest system of medicine known to man. Its origin is a mystery which has yet to be unravelled. From the existence of stone needles we may reasonably infer that it had been practised even in the Stone Age. A Chinese book called *Shuo Wen Jie Zi* (Dictionary of Characters) compiled about 2000 years ago during the Han Dynasty mentions *bian* which means “cure of diseases by pressing with a stone”.

Rudimentary forms of acupuncture which probably arose during the Stone Age have survived in many parts of the world right down to the present day. The Eskimos, for instance are still using sharpened stones for treating their illness. The Bantus of South Africa scratch certain areas of their skin to allay the symptoms of many illnesses, while in Brazil there is a tribe whose method of treating illness is to shoot tiny arrows from a blowpipe on to specific areas of the skin. The practice of cauterizing a part of the ear with a hot metal probe has also been reported among certain tribes in Arabia. This is probably a vestige of the acupuncture practised in ancient Egypt and Saudi Arab. The Ebers papyrus of 1550 B.C. (now in the British Museum) describes a system of channels and vessels in the body which approximates more closely to the Chinese system of channels than to any known system of blood vessels, lymph vessels or nerves.

The earliest written records about acupuncture is found in the Chinese medical treatise called the *Huang Di Nei Jing* (Yellow Emperor's Classic of Internal Medicine). This is said to be the oldest medical book in the world. Its authorship is attributed by Chinese tradition to the legendary Yellow Emperor (Huang Di) who is said to have reigned 2696-2598 B.C. It is more probable however that it is a collective work which has been added upon through many centuries. It may therefore be regarded as a compendium of all the medical

knowledge accumulated during a period of over four thousand years. The book owes its present form largely to the commentator Wang Bing of the ninth century A.D. who claimed to have discovered and used its original edition. The *Huang Di Nei Jing is the basis of traditional Chinese medicine*. Upon it is built the whole edifice of Chinese medical thought and practice. It consists of two parts - the *Su Wen* (Simple Questions) which is a treatise on general medicine, and the *Ling Shu* (Magic Gate or Spiritual Pivot) which is a special section devoted to acupuncture and moxibustion.

The earliest recorded case of a cure by acupuncture is found in the “Biographies of Bian Que and Zang Kung” found in the *Shi Ji* (Historical Records) written about 2000 years ago. According to this book, the physician Bian Que (known as “Father of the Pulse”) applied acupuncture-moxibustion to the ailing Prince of Kuo State and brought him out from a deep coma. Bian Que lived in the 5th century B.C. during the Chou Dynasty (1122-255 B.C.).

During the *Han Dynasty* (206 B.C. - 220 A.D.) lived the famous surgeon *Hua Tuo* who was one of the greatest figures in Chinese medicine. He was an expert in the art of acupuncture, and a whole line of acupuncture points (called the *Huatuojiaji Points*) on the back of the trunk are named after him. Hua Tuo discovered that a mixture of hemp and strong wine was good anaesthetic agent, and by using this medication which he called ‘ma fai san’ he was able to perform complicated brain and spinal surgery. He was thus the first surgeon in history known to have operated under general anaesthesia. Hua Tuo was also the originator of hydrotherapy and medicinal baths. Unfortunately this great surgeon met with an untimely death due to treachery. The ruler of the country had a brain tumour which Hua Tuo diagnosed and undertook to operate on. Hua Tuo’s enemies spread the wily rumour that he wanted to kill the emperor. The ruler fearing that it was a plot by Hua Tuo to assassinate him did not submit to surgery and instead executed the surgeon. Before his death Hua Tuo predicted that the ruler would lose his sight and be paralysed and die in a coma, which came true later.

During the *Tsin Period* (265-420 A.D.) acupuncture and moxibustion developed yet further. At this time there appeared a book, which dealt exclusively with these subject for the first time. This was the *Zhen Jiu Jia Yi Jing* (An Introduction to Acupuncture and Moxibustion). It summarized all that was known of acupuncture and moxibustion upto this period, and dealt comprehensively with the theory and principles of acupuncture, the properties and indications of each point, methods of manipulation, dangerous points and prohibitions. The influence of this book was to be felt in China and abroad for a thousand years at least. Coloured diagrams, and acupuncture charts were made during this period, and the an; of “cupping” also made its appearance as an ancillary method used in combination with acupuncture and venesection.

The *Tang Dynasty* (618-907 A.D.) is important because it was at this time that the Imperial Medical College with a special department for acupuncture moxibustion was established. This was the first organized medical school in China. It came into being 200 years before the first medical school in Europe. The school was staffed by well qualified specialists and there were over 300 medical students. Buddhist influence on Chinese medicine also began to be felt at this time, “and the works of the great Indian teachers Charaka and Susruta were translated into Chinese with the help of Buddhist Scholars. Observance of the highest ethical principles in medical practice was also encouraged by the contact with Buddhism. The invention of plate printing about this time was another factor which contributed greatly to the re-edition and re-publication of older medical books and the publication of new ones.

The *Sung Dynasty* (960-|279 A.D.) during time which lived Shen Kun, an intellectual genius who postulated (before Kepler did in Regensburg, Europe, 1609 A.D.) that the apparent course of the sun around the earth was not circular but elliptical. In 1027, A.D. the physician *Weng Wei-yi* had two hollow life-size bronze figures cast with the points and channels marked clearly on the surface. Tong Jen or ‘the Man of Bronze’ as they were called, later became models for teaching and examination purposes.

Hollow life-size wooden or bronze manikins were provided in the examination room. Holes had been punched out at acupuncture points, the statues were covered with wax so as to make the holes invisible, and then filled with water. Given the clinical picture of a hypothetical patient, the student was then required to perform acupuncture on the waxed model. If he was accurate in locating the selected points on the model, water would gush out from the sites of puncture. If the student got sufficiently wet he passed the examination!

Weng Wei-yi also wrote a book which became a standard text for acupuncture examinations. It was called *Tong Jen Shu Xue Zhen Jiu Tu Jing* which means "Illustrated Manual on the points for Acupuncture and Moxibustion as found on the Bronze Figure". The various acupuncture points and their individual properties were discussed at great length in this book which marked another milestone in the literature on acupuncture. The method of presentation was crisp, logical and exhaustive, and divergent views were presented.

During the *Ming Dynasty* (1368-1644 A.D.) all previous knowledge about acupuncture was once again summarized by *Yang Chi-chou* in his *Zhen Jiu Da Cheng* (Compendium of Acupuncture and Moxibustion). This book which succeeded to some extent in unifying previously divergent views about points and channels, became a very popular text. It was encyclopaedic in size and written in short lines of rhythmic prose. Unwritten traditions as well as classical concepts were fully discussed, and exhaustive sections on clinical and therapeutic procedures were included.

The *Ching Dynasty* (1644-1911 A.D.) was a period when China was thrown open to Western influence. This was the time when the Manchus seized power through all China. Huge encyclopaedias which were four times the size of the Encyclopaedia Britannica were published at this time. One of them called the Golden Mirror of Medicine dealt exclusively with medical science and was fully illustrated. The Ching nilers were however hostile towards acupuncture and issued a decree in 1822 to ban its practice. But owing to its acceptance by the masses of ordinary people, this measure was not very successful. Visiting German.

Dutch and French scholars including physicians, sinologists and Jesuit missionaries were impressed by the therapeutic value of acupuncture and commenced introducing it to their respective countries during this period. The Western physicians who had not been to the East found these writings very amusing and altogether unacceptable.

After the first *Opium War* (1839-1842 A.D.), the Western colonial powers established themselves in China, thereby hastening the dissolution of a social order which had prevailed unbroken for several millennia. The rule of the Manchu ended in 1911, and Sun Yat Sen became President. After a period of civil wars the *Guomindang* regime came into power in 1927 with *Chiang Kai-Shek* as president. The *Guomindang* paid little attention to the heritage of traditional medicine and branded it as quackery. In 1929 the Government proposed to declare a complete ban on traditional medicine, but this suggestion met with such bitter opposition by the people that they had to withdraw. Nevertheless everything possible was done to discourage traditional forms of medicine, and a rift was created between traditional doctors (*chung-i*) and doctors who were trained in Western medicine (*hsi-i*).

In 1949 when the *Guomindang* regime was ended by the victory of the Red Army under *Mao Zedong*. The developments which followed opened an entirely new chapter in the history of acupuncture. It is amazing that the foundations for this new era of progress were laid by *Mao Zedong* even before his accession to power. In 1928, he suggested the integration of Western medicine with traditional Chinese medicine in an article written by him entitled, "*The struggle in the Ching Kang Mountains*". The appeal was made at a time when the liberated area was blocked by the *Guomindang*, and medical equipment and drugs were in short supply. Malaria was rampant among the troops and the situation seemed hopeless as no anti-malaria drugs were available. Necessity is the mother of invention and someone suggested that the malaria be treated by acupuncture. Incredible as it may sound, it has been estimated that no less than 182,000 cases of malaria were treated successfully by acupuncture and herbal medicines during this campaign, thus "making the past serve the present", Through this first

hand experience, the founders of the new Republic came to appreciate the legacy of their traditional medicine, and no efforts were spared to “explore them, and raise them to a higher level”.

In October, 1944, at a conference held in Yeman in the Shensi-Kansu Ningsia border region, Mao Zedong called upon Western doctors and traditional practitioners to forget their professional jealousies and work together in a common programme of disease prevention and health upliftment. This was followed soon after, in April 1945, by the opening of an acupuncture clinic at Yeman Peace Hospital. Classes in acupuncture were started all over the country and every encouragement was given to its practitioners.

In 1949 the People’s Republic of China founded, and acupuncture had once more become an officially accepted form of therapy. The next decisive step was taken in 1955 when the *Academy of Traditional Chinese Medicine was set up in Peking* with the Research Centre for Acupuncture and Moxibustion as a key faculty. Through this organization, and others in big cities like Shanghai, and in communes which dot the entire countryside, acupuncture is being studied from every possible angle and its use has been successfully extended into hitherto neglected fields like the treatment of deaf-mutism. Not only fully qualified doctors but para-medical personnel like the so-called “barefoot doctors” are enthusiastically pursuing this research. New methods are constantly being devised and their efficiency tested by practical experiment on the principle that “all genuine knowledge originates in direct experience”. This son of pragmatic approach has resulted in break - throughs which might have eluded more conventional methods.

Apart from acupuncture analgesia which has internationally become the most widely discussed medical topic in recent times, doctors in the People’s Republic of China have made other notable advances in acupuncture techniques for purposes of therapy. Electro- acupuncture, auriculotherapy, scalp needling, surgical suture embedding therapies, hot needling and point injection therapies, penetration puncture, swift

insertion, strong stimulation, and non- retention of the needle are some of these developments.

ACUPUNCTURE IN NEIGHBOURING COUNTRIES:

The spread of Chinese medicine to several neighbouring countries and to the West began as early as 1000 B.C. when the trade routes along the famous silk route were opened. Silk, paper, porcelain, jade and salammoniac came via the silk route from China through Persia and into Europe through the Brenner Pass — in exchange for pig-iron, steel, coats of mail and jewellery; and along with the goods, people and cultures exchanged experience, knowledge and techniques.

In 219 B.C. the Chin Emperor sent a medical emissary to Japan and in 541 A.D. China had sent physicians to Korea. Eleven years later the first written acupuncture scripts were sent to Japan for study. After the sea routes opened up with the discovery of the magnetic compass by the Chinese, the concepts of Chinese medicine also spread throughout the South Pacific and the Arab world. *Avicenna* (980-1037 A.D), adopted Chinese concepts of energetic channels or meridians in his medical writings.

There was little mentioned of acupuncture in the West until the 16th century when several Dutch East Indies company physicians were fascinated by it. *Willem Ten Rhyne* a Dutch doctor who had travelled to the Orient .was the first to describe acupuncture. Unfortunately, excessive claims were often made for acupuncture's curative powers and the procedure was rejected for long periods of time, so that the practice of acupuncture in the West waxed and waned. Typically, it was rediscovered, practised widely and then given up. This process has occurred about three or four times each century since 1683. We seem to be in a period of rediscovery at present, with a wave of enthusiasm and excitement that has crept across Western medicine as never before.

Felix Vicad 'Azyr' (1748-1794) a French author, described it as a form of effective therapy. During the 19th century, it became extremely popular in Europe and the French Academic des Sciences appointed a commission to study it.

In 1829, *Gustaf Landgren of Sweden* wrote a thesis on acupuncture for the degree of Doctor of Medicine at Uppsala University. Experiments both on animals and man were carried out in Europe long before the time of the great French physiologist Claude Bernard (1813-1878) who is the father of modern experimental medicine. From the late 19th century, however, interest in acupuncture therapy has oscillated.

With the introduction of Western medicine to China in 1822, the Ching Dynasty rulers (1644-1911) ordered the suspension of all teaching of acupuncture. In 1914 the northern Military authorities of China tried to abolish Chinese medicine and again in 1929 the Guomindang Party unsuccessfully tried to discontinue its use because it was considered unscientific.

At the time acupuncture was being suppressed in China, interest was being revived in France by *Georges Soulie de Morant* who had spent the early years of this century in China as a French diplomat in Nanking and Shanghai. As an observer of a cholera epidemic in South China, he was fascinated by the remarkable recovery the patients were making with acupuncture treatment. He immediately began an intensive study of the numerous volumes of Chinese medicine and in 1939 published in French *L'Acupuncture Chinoise*. It opened a new 'era in French medicine and soon was being practised in hospitals and clinics and taught and researched in many French universities. The author (Salim) purchased this book in 1973 for 440 liras (U.S. Dollar 150/-) while he was on deputation to Syria. It is 1021 pages book with separate 90 pages atlas. There was no english literature available till 1973 and author learnt French to translate this book. Unfortunately, *Soulie de Morant* died a disillusioned and sad man when the very physicians whom he taught acupuncture turned against him and prevented him practising acupuncture as he was not qualified in Western medicine.

America has been less liberal in its acceptance of acupuncture, although the Chinese, who immigrated to the United States in large numbers to work on the railroads were practising acupuncture among their own communities for more than 150 years, little known to other ethnic groups.

However, *James Reston's* article, written during former president *Richard Nixon's visit to China*, "Now About my Operation in Peking" appeared in the *New York Times* on July 25, 1971, and dramatically opened a renewed interest in acupuncture therapy and anaesthesia. He reported that acupuncture was successfully used to relieve the severe post-operative pain following his appendectomy when drugs had failed to do so. It was greeted with diverse reactions, from praise for the accomplishments of Chinese medicine to accusations of a hoax or even hypnosis. Moderates, however, called for scientific research. Public interest and demand forced the National Institute of General Medical Services, U.S.A. to explore the analgesic qualities attributed to acupuncture. This committee on acupuncture later concluded that it did relieve pain in some acute and chronic disorders and may be useful in certain surgical procedures. As a result of these findings, 36 U.S. project grants were awarded in the following years for further research on relief of pain by the use of acupuncture. In spite of these results, many U.S. government agencies and states still regard acupuncture as experimental.

In India after considerable setback due to the sour political relations with China, Acupuncture is making a strong spurt particularly due to the yeoman efforts of Professor Arjun Agrawal, President of the Acupuncture Foundation of India. Dr. B.K. Basu of Calcutta, who took part in the Communist Revolution alongside Mao Zedong, is also helping to spread acupuncture.

In *Pakistan* Dr. M. Salim (Author of this book) is pioneer of introducing acupuncture. He is often known as '*Acupuncture-Wala*' (Man-of Acupuncture).

The Europeans in China

During the *Ming dynasty* contact was established with Europe, the earliest date being 1504 when the Portuguese landed at Macao. At about the same period, China's fleets began to visit India, Persia and some of the Arab states. *Cheng Ho* led the first recorded fleet of merchant ships to India in 1405, but it is certain that other Chinese

merchantmen had travelled far afield prior to this date. The overland 'silk route' to China had been open for many centuries and merchants had for some time travelled into China and central Asia, following in the footsteps of Marco Polo.

With the advent of renewed interest in China and also the wish of various European nations to 'discover and colonize' the non-European world, the Portuguese began to establish trading settlements in mainland China. With the traders went priests to Convert the 'heathen'. It was through these priests, and also various physicians who visited China, that the idea of acupuncture began to filter through to the west. The Jesuits were particularly active in collecting and disseminating this information in Europe, but the process was far from one-sided as the Jesuits also introduced Western science to China. *Dominique Parrenin*, a missionary, translated a textbook of anatomy into Mandarin but this was banned from general circulation by the Emperor K'ang Hsi as he recognized that many of the Western concepts contradicted those of traditional Chinese medicine.

HISTORY IN THE WEST

It is almost certain that acupuncture has been known and used in the West since the seventeenth century, but the first recorded use of acupuncture was by *Dr. Berlioz* at the Paris medical School in 1810. He treated a young woman suffering from abdominal pain. The Paris Medical Society described this as a somewhat reckless form of treatment, but Dr. Berlioz continued to use acupuncture, and claimed a great deal of success with it.

Acupuncture is not new to England, the first known British acupuncturist being *John Churchill* who, in 1821, published a series of results on the treatment of tympany and rhcumatism with acupuncture *John Elliotson*, a physician at St Thomas' Hospital, also used acupuncture widely in the early part of the nineteenth century. In 1823 acupuncture was mentioned in the first edition of the *Lancet*, and in 1824 Dr. Elliotson began to use this method of treatment, In 1827 he published a series of results on the treatment of forty-two cases of

rhcumatism by acupuncture, and came to the conclusion that this was an acceptable and effective method of treatment for these complaints.

Acupuncture points have a variety of names, such as trigger points (for pain), or motor points. In 1977 Dr. Melzack, who has been awarded the Nobel prize for his work in the field of pain, correlated these trigger points with acupuncture points, and found that most of the trigger points were already well known as acupuncture points. There are a number of explanations for the existence of trigger points but, as yet, there is no clear answer to this phenomenon. It is interesting to note that the Chinese realized this fact at least some three thousand years ago, and the *Ling Shu* summarises this approach when it says 'In pain, puncture the tender point'.

HISTORY IN PAKISTAN

Zaffar ul Hassan

Before 1965, the word of Acupuncture was not heard off in Pakistan whence two teams of Chinese Acupuncturists came to Combined Military Hospital, Rawalpindi, Pakistan in 1965 and then in 1971 to introduce acupuncture. However, the doctors at that time did not convince and Chinese got no appreciation but rather they were discouraged. Even *our beaurocracy* did not pay much attention to them and we could not avail the benefits of these visits.

In 1972 one army doctor, *Dr. Col. M Salim* (Anaesthetist) who was posted abroad, learnt acupuncture in Syria from Chinese experts. Finding this treatment useful for the public, he wrote the first ever article "Acupuncture and Analgesia which was published in Armed Forces Medical Journal, April 1973, Vol. XXIV No. 2.

He is also the first Pakistani author who wrote a book on acupuncture by the name "AN INTRODUCTION TO ACUPUNCTURE TREATMENT" which was published in 1974.

In 1975, Government of Pakistan in collaboration with World Health Organisation sent the 1st ever group of few leading doctors to attend the 1st *International Acupuncture Training Course*, in Beijing. This was the first ever course arranged by Government of China for foreign medical graduates.

Acupuncture books in English were specially printed by Peking Foreign Language Press for this historical occasion.

Dr. Mohammad Suleman Shaikh (Anaesthetist)' now Patron of the association A.P.A. was included in that first group of acupuncture trainees. On return to Pakistan, he submitted a report to W.H.O. and Government of Pakistan, favouring the use of acupuncture in this country.

After 1975, Government of Pakistan sent seven more groups of Government Employees doctors to China under Pak-China Protocol. Some other doctors have also learnt acupuncture at their own expenses. However, the cost of acupuncture training in various countries is so high that an ordinary physician, belonging to the developing countries can not afford it.

Current Situation:

In Pakistan, Acupuncture has been recognized by Government of Pakistan.

At present, 5 Acupuncture Departments are working in the country.

- (1) Acupuncture Department of Army Medical College and Pain Clinic C.M.H. Rawalpindi established in March 1979 by Dr; Col. M Salim. It provides treatment to army personnels and their families.
- (2) Two Acupuncture Departments of Pakistan International Airlines (P.I.A.) which were established in November 1980 by Dr. Iftikhar uddin and Dr. Mrs. Laila Rizvi in Karachi and by Dr. Tanveer Zia in Lahore. It provides its services to P.I.A. employees and their families.
- (3) Acupuncture Department of Polyclinic, Islamabad which was established in January, 1981 by Dr. Mohammad Shoaib. This is the only department in Civil Government Sector which is working for the general public.
- (4) Acupuncture Department in Mental Hospital, Lahore, established by Dr. Nusrat Habib in 1983.
- (5) Besides these departments, acupuncturists are working in big cities like Karachi, Lahore, Quetta, Peshawar, Rawalpindi and Islamabad. Because of the increasing popularity of acupuncture there is also inflow of Chinese acupuncturists and new acupuncture clinics are opening every day. There is no official data about the acupuncturists in this country and only A.P.A. has taken up this important matter.

According to our survey, there are approximately 100 - Pakistani and Chinese acupuncturists, who are working in Pakistan. Most of them have learnt acupuncture from China e.g. Gen. M.A.R. Khan, Gen. Shoaib, Dr. Multi, Prof Munawar Hayat, few from Hong Kong, U.S.A., U.K., Canada and Sri Lanka. Mostly the doctors who practice acupuncture are basically anaesthetists, others Psychiatrist, Neurologist, Orthopaedic Surgeon and General Practitioners.

There was no acupuncture training institute in the country. However, due to struggle of A.P.A. The College of Acupuncture Sciences was established in January 1986, which is now affiliated with JPMC (Jinnah Postgraduate Medical Centre) Karachi. Candidates with minimum M.B.,B.S. qualification are admitted in the College. In Year 1986, 20 doctors qualified 'Diploma Examination'.

Mostly the patients which are being treated by the acupuncturists belongs to chronic pain, neurological, musculo-skeletal disorders, nerve deafness, allergic disorders, bronchial asthma and addictions. Mostly the patients taking acupuncture treatment belongs to educated class. First surgical operation (Thyroidectomy) was done in 1975 under Acupuncture analgesia in Pakistan. Col. M. Salim and Gen. M.A.R. Khan are pioneers in this field of anaesthesia.

There are no rules and regulations governing the acupuncture practice in this country. The supreme governing body of doctors namely Pakistan Medical & Dental Council (P.M.D.C.) has not yet clearly stated its policy about acupuncture. However, the members of another big organisation of Doctors, namely, Pakistan Medical Association are individually practising acupuncture.

Acupuncture Promotion:

After realizing the importance of acupuncture for the developing countries, this author (Zaffar ul Hassan) established an organization by the name of "Association for the Promotion of Acupuncture in Pakistan (A.P.A.P) in November 1981. Before this period, all the efforts done to promote this art were either sluggish or in a haphazard manner. Later on this association was registered with the Government' and now it is the only registered association engaged in promotion of acupuncture in this country. It comprises of qualified doctors and acupuncturists.

Its membership extends through out the country. The immediate programme of the association is to give acupuncture training to a large number of doctors. The association has demanded that acupuncture must be patronized by the Government and acupuncture department be opened in all Government hospitals and dispensaries. The Planning and Development Division of Government of Pakistan had commended the efforts of A.P.A. to promote acupuncture skill in the professional community in 1982.

The Aims and Objects of the Association

- 1) To introduce and promote the art of Acupuncture in Pakistan.
- 2) To popularise the Acupuncture among the public.
- 3) To establish the Acupuncture training institutes in the country
- 4) To provide the Acupuncture treating facilities for the ailing-humanity.
- 5) To get the Acupuncture recognized by the Government
- 6) To make the Acupuncture-instruments available in Pakistan.
- 7) To publish an Acupuncture Journal from Pakistan.
- 8) To collect the Acupuncturists on one platform.
- 9) To keep close contact with Acupuncture Associations in other countries.
- 10) To formulate rules and regulations for acupuncturists.
- l 1) To struggle for the inclusion of Acupuncture in medical curriculum.
- 12) To exchange the latest scientific information.
- 13) To encourage research in the field of Acupuncture.
- 14) To improve the health standards in Pakistan.
- 15) To establish a "LIBRARY" purely on the subject of Acupuncture and traditional Chinese medicines.

Since its inception, the association has done a lot to increase the knowledge of doctors and general public about acupuncture. For this reason we have published articles in medical magazines and daily news papers,

regularly arranged' lectures and seminars on acupuncture, met with the senior officials to introduce acupuncture, requested Pakistan Medical & Dental Council (P.M.D.C.) to recognize acupuncture and start its education at an undergraduate level. We regularly inform the public through press media about our activities. Our members also participates in television programmes regarding the subject of acupuncture. We have mobilized the masses and acupuncture is gaining increasing popularity among the public physicians. Recently, my association has also announced "SALIM GOLD MEDAL" which will be awarded every year to that doctor whose work will be recognised in the field of "ACUPUNCTURE AND PAIN RELIEF " by A.P.A. This will act as a great incentive for young doctors to work for acupuncture. In 1984 first "Salim Medal" was awarded to "Professor Anton Jayasuria" for his untiring struggle to promote acupuncture in Sri-Lanka. Association for the promotion of Acupuncture in Pakistan (A.P.A), has also developed its international relations with W.H.O., and other organisations concerned with acupuncture promotion. The activities of the Association are run by the Cabinet of A.P.A. which is elected every year. It comprises of President, Honorary General Secretary, Joint Secretary, Treasurer, Public Relation Officer and 5-Executive members. There is one patron and two advisers. The author (Salim) of this book is Chief Adviser to A.P.A.

Future and Prospects :-

Acupuncture is gaining popularity in Pakistan because mostly "Drop-out cases" which were not cured by conventional Western methods, responded to acupuncture. Besides promoting acupuncture in Pakistan, A.P.A. wants to do organised studies for certain special projects.

- (1) *NARCOTIC CONTROL*: According to the survey report of Pakistan Narcotic control board, there are 1.3 million Heroin addicts in Pakistan. Acupuncture has proved successful in detoxification of Heroin addicts in Hong Kong, U.S.A and different other countries. On March 22, 1975, Acupuncture treatment for drug dependence was given for the first time

in Pakistan with encouraging results. This is- a cheaper and quick way of addiction treatment. We suggest that W.H.O. can help in this regard under its drug-control programme.

- (2) *PAIN RELIEF CLINICS*: Chronic pain is always a problem for medical profession. New and costly analgesic antirheumatic drugs are being marketed every day. But all these drugs have some side effects. Pakistan is a developing country which cannot afford costly drugs. Acupuncture has been found very useful in the treatment of various painful disorders. We want to popularize acupuncture for pain relief in all hospitals.
- (3) *ACUPUNCTURE AND RURAL HEALTH PROGRAMME*: Pakistan has an area of 307, 374 square miles. It has a population of 83.78 million. The rural population comprises of 72% while urban population is 28%. The per capita yearly income is about Rs. 2,837 (US\$ 245). The doctors and patients ratio in Rural areas of Sind Province is 1/57, 964. The people are very poor and cannot afford the expenses of their treatment. Moreover, in third world countries, one child in every three dies due to poverty or disease before the age of five i.e. five million every year. In present system of medicine, most of the health budget spends on hospitals that are located mostly in Urban areas.

We want that free and charitable acupuncture clinics should be established in rural areas to provide the benefits of acupuncture to poor and non-affording patients. These rural clinics would attract the majority of public and we can study the results of acupuncture in different disease conditions.

- (4) *POLIO CLINICS*: Polio is a serious problem of our country which makes lot of children crippled every year. Acupuncture has good results in post- polio~paralysis particularly in early stages. We can prevent the crippling and sufferings of new generation by providing them the benefits of acupuncture. W.H.O. can help in establishing *polio- acupuncture-clinics* like E.P.I. Centres at different places.

- (5) *DEAF AND DUMB*: Acupuncture has good results in “neural-type” of deafness. We can provide acupuncture treatment facilities to the children in Deaf and Dumb schools.

Conclusion:

Acupuncture way of treatment is very suitable for the developing countries. It employs simple equipment for service and research and is, therefore, readily applicable in primary health care. The third world countries can not afford costly western medicine for the disease treatable by acupuncture. By promoting acupuncture, we conserve lot of money which can be utilized in decreasing the price of life saving drugs and doing research about the cure of diseases that are still challenges for medical science. If we want to achieve the target of W.H.O. “Health for all by the year 2000 A.D.” then we have to develop acupuncture way of treatment in our communities. It is high time that W.H.O. and other international agencies must produce large number of acupuncturists, through an accelerated programme. *For this purpose:*

- 1) Acupuncture training institutes should be established in all countries.
- 2) It should be taught in all medical colleges.
- 3) Regular conferences and seminars should be arranged at an International level.
- 4) Acupuncture education should be made more cheaper.
- 5) Prizes and Scholarships should be offered to those persons who will do research work in acupuncture.
- 6) Research Programmes should be started at different places to explore the mechanism of acupuncture.

Those days are not far, when patient would prefer acupuncture and not the drugs. All drugs have some side effects and acupuncture is free from serious side effects.

“The further back we look the further forward may we see.”

ANATOMY AND PHYSIOLOGY OF ACUPUNCTURE POINTS

Pekka J. Pöntinen

I. ACUPUNCTURE POINTS

A. *Introduction*

Traditionally acupuncture means stimulation of specific points on the surface of the body in order to produce mainly regulatory effects on the functions of the internal organs. The same points have been used to increase or decrease the functional state of different organs. The selection of the proper points has been as important as the correct type of stimulation, either reinforcement or sedation. In the traditional Chinese medicine the human model has been mainly energetic, physiological, not anatomical. The changes in the energy flow induced by the blocks in the channels or acceleration of the flow leading either to the deficit or excess of the vital energy, *chih*, were believed to be the origin of diseases, *The acupuncture points were the loci to balance the energyflow through needle stimulation.*

B. *Anatomy of acupuncture points.*

Much research has been done through centuries to identify the anatomical structures corresponding to the acupuncture points and channels, but the results have been disappointing. In 1963 Kim Bong Han¹ of North Korea reported that he had found specific anatomical structures, a system of duets, corpuscles and circulating fluid independent of nervous, circulatory and lymphatic systems. These finding, however, have not been confirmed by other scientists.

More recently Senelarz² reported of specific anatomical structural arrangements at the site of the acupuncture points. Small vessels, arterioles and venules as well as lymphatic vessels penetrate vertically through the subcutaneous tissue at the site where the connective tissue

fibres lie vertically in the deeper layers of the skin together with thin myelinated A delta-fibres and unmyelinated C-fibres.

Gunn from Vancouver has classified four types of acupuncture points on the basis of their relationship to human neural structures³⁻⁴:

Type I corresponds to a known anatomical entity — the motor point of the muscle; .

Type II corresponds to the focal meeting of superficial nerves in the sagittal plane;

Type III lie over the superficial nerves or plexi;

Type IV are the Golgi tendon organs at the muscle - tendon junction.

The most important of these are the Type I and IV points where the largest diameter afferent fibres originate from the annulospiral endings. Other studies including those made by Proff Zhang Xiantong at the Shanghai Institute of Physiology have confirmed that some of the main acupuncture points like Hegu and Zusanli are situated at the sites which are particularly rich of nerve endings.

Anatomically there seems to be a great variety of structures which are related to different types of acupuncture points, although many of the points are close to the neural structures.

We may conclude that no specific single anatomical entity corresponds to the acupuncture points.

C. *Physiology of acupuncture points.*

Physiologically it is possible to define the acupuncture points in many different ways. It has been shown that whereas local analgesia of the skin and subcutaneous tissue has no effect on acupuncture phenomena, analgesia of the deeper tissues such as muscles at the acupuncture site inhibits them.

Electrical DC-resistance of the skin is claimed to be markedly lower and the conductance higher at the acupuncture loci than on the surrounding skin⁵⁻⁷. Already in 1927 Kaufmann and Weiss had

showed that DC-resistance was low at the so-called “nerve points” (Nervenpunkte), which they treated with electric current to alleviate pain.

Hyvarinen and Karlsson⁹ studied the low-resistance points on the skin of the hands and ears in human healthy volunteers. They were able to locate in a reproducible way low-resistance points having a diameter of about $1.5 + 0.5$ mm and abrupt boundaries with the surrounding skin. Within these points skin resistance was less than $100\text{K}\Omega$, whereas for a similar area in the surrounding skin resistance was $1\text{-}3\text{ M}\Omega$). Some points, on the contrary, have higher resistance than the surrounding skin. Skin resistance is not stable but depends on the humidity and temperature as well as on the pressure applied at the measuring site.

Skin resistance may be significantly decreased at certain acupuncture points during pain or dysfunction of the related internal organs. Matsumoto and Hayes^w noted a significant difference in the skin resistance before and after vagotomy in rabbits, recording the lowest values from the third post-operative day onwards. In animals in which acupuncture with electrical stimulation was given at three days after surgery the readings started to return back to normality but did not reach the preoperative values during one week’s control period.

Local tenderness is also typical to acupuncture loci. When palpated there is a local tenderness and in many instances a so-called techi-or deqi-sensation is included along the corresponding imaginary channel. This phenomenon, called PSC-phenomenon (Propagated Sensation along the Channel) is more common during disease and pain than during normal health.

In infra red thermography some acupuncture points are shown as hot points. Omura[”] has demonstrated that a general increase in infra red emission throughout the back area may follow an acupuncture stimulation in the neck. Especially warm were small areas or points along the paravertebral and lumbar areas somewhat corresponding to the acupuncture points of the bladder meridian.

D. *PSC-phenomenon.*

In the traditional Chinese acupuncture techi-or deqi-sensation played an important role. It means numbness, sensation of heaviness,

radiation of warmth, tingling sensation or a feeling like cold water were flowing along the channels in the extremities. When the Chinese started again their studies on this phenomenon in the Chinese in 1970s they renamed it as PSC-phenomenon. PSC-phenomenon like is typically two-phasic: the first phase is a fast, painful sensation like an electric shock, which spread through the whole channel in a fraction of a second; the slow second phase starts in 1 to 2 minutes and slowly spreads along the channel (3-20 cm/s). During the second phase a 1 to 2 cm wide hypoanalgetic band is formed along the imaginary channel in the extremities. On the trunk this band may become hyperaesthetic. The formation of the hypoanalgetic band is the basis for some types of acupuncture analgesia.

This hypoanalgetic band of PSC corresponds roughly to the channels of traditional Chinese medicine. The low resistance points are located along the PSC-band. In normal healthy subjects the latent PSC-phenomenon may be turned active through tapping along the channel or through electric stimulation of the distal acupuncture points¹². Electric conductance is markedly higher along the latent PSC-band than in the nearby skin¹³.

In a Chinese study¹⁴ with 9 sensitive persons who were able to create altogether 88 different channels about 81% followed the traditional channels or collaterals. The channels in the upper extremities corresponded better to the old channels than those in the lower extremities. On the trunk deviations were common and the biggest variations were noticed in the face and head. An interesting finding was the variations between the right and left side. As mentioned earlier during tissue injuries or pain the PSC-band may deviate towards the traumatic area and sensations from many channels may contribute to the same area. Thus the traditional acupuncture charts should be regarded as interesting and decorative masterpieces of art from ancient times but not giving exact location for the acupuncture points or channels. *The acupuncture loci should be confirmed through palpation and PSC-sensations.*

It is possible to inhibit or block the PSC-phenomenon by mechanical compression upon the channel (c. 800 g/cm²), or by lowering the temperature in the muscles of the channel area

below +21°C, or by infiltrating the tissues with a local analgesic or physiological saline down to the muscles¹⁵.

The Chinese have studied PSC-phenomenon in amputees¹⁶. It was possible to create phantom sensations and phantom limbs, even phantom pain through stimulation of body acupuncture points in the same quadrant, PSC-phenomenon moved on to the phantom limb similarly to the normal limbs. It was postulated that PSC-phenomenon is produced in the cerebral cortex. Another interesting finding was that patients often fall asleep when the PSC-sensation reaches the head¹⁷⁻¹⁸. Our Chinese colleagues regard the PSC-phenomenon as an example of a primitive regulatory system which supplements our somatic and autonomic nervous system.

Only some 2-4% of healthy people have PSC-phenomena to any marked distance from the stimulation site and less than 0.5% are able to demonstrate the complete channel according to the Chinese studies^{4,9}. In our own studies we found PSC-phenomena in healthy medical students when stimulating Shangyang (LI 1) and Hegu (L I4) points in the left hand. Electric stimulation of the needles with 2 Hz frequency for 20 minutes produced PSC-phenomenon in 12/24. PSC-sensation reached wrist in 3, elbow in 6, shoulder in 2, and opposite corner of the eye in one subject. Analgesia effect in tonsillar region was tested with a sharp probe. Analgesia developed in 14/24; ipsilaterally in 9, contralaterally in 2 and bilaterally in 3 subjects. When silver spike electrodes were used instead of needles at the same acupuncture loci and similarly stimulated with 2 Hz frequency 5 out of 11 subjects developed PSC-sensation; 2 up to the wrist and 3 to the elbow. Analgesia developed in 3/11; ipsilaterally in 2 and bilaterally in one case.

As a summary we may say that the channel sensations do not follow exactly the channels in the ancient Chinese drawings. Any trauma or lesion may deviate PSC-phenomenon towards it. Although there is no anatomical structure corresponding to the channels some people are able to demonstrate them and even to create dermatography along the imaginary channel when the acupuncture points belonging to this channel are stimulated.

We may conclude that acupuncture points and channels exist as functional units.

E. *The importance of specific acupuncture points for pain relief.*

Although acupuncture points do not correspond to any known single anatomical entity they have specific functional characteristics. Do we then need those specific functional points? Is there any difference between the responses to acupuncture point stimulation and to any other non-specific peripheral stimulation? First we should consider the analgesic effects and differentiate between experimental pain, acute clinical pain and chronic pain.

I. *Experimental pain.*

It has been shown in many studies that acupuncture (peripheral stimulation) effectively relieves pain induced by electrical stimulation of tooth pulp. In the studies conducted by Seven Andersson and his group in Gothenburg²⁰⁻²² the local segmental stimulation was more effective than the stimulation of remote Hegu points. In our studies²³ and in the studies conducted at the Acupuncture Research Department of Shanghai First Medical College²⁴ Hegu point stimulation has provided better analgesia than the stimulation of some other acupuncture points. There are also other important parameters for effective stimulation e.g. the intensity and the duration of the stimulation. In our earlier studies we compared manual stimulation of the needles with electrical and vibratory stimulation at different locations²⁵. These studies revealed that acupuncture point (specific) stimulation was effective in only some 10-15% of cases whereas segmental, non-specific stimulation was effective in the majority of cases. The degree of analgesia was deeper in those rare cases which responded to acupuncture point stimulation and created marked techi-sensations (PSC) proximally when stimulated at the distal points in the extremities. It was possible to induce complete surgical analgesia with all these different types of stimulation: mechanical, electrical, vibratory. Induction time depended on the frequency of the stimulation, not on its site. In general: the higher the frequency, the shorter is the induction time. With low frequency stimulation (1-2 Hz) the induction time may exceed 30 minutes and the peak of the analgesia effect is at about one hour. Normally analgesia disappears in a few minutes after the cessation of the stimulation. In certain exceptional cases, however, the analgesia continued over several hours after the cessation of the stimulation.

There seems to be at least two different mechanisms behind this type of stimulation analgesia in man: an opiate-linked (naloxone reversible) and a nonopiate-linked (not reversed by naloxone) analgesia. In most reports the analgesia induced by low-points is naloxone reversible.²⁶⁻³⁰ The high-frequency segmental stimulation creates analgesic effect which is not reversed by naloxone.³¹ Chapman, however, has been unable to reverse the analgesia produced by low-frequency stimulation to Hegu point by naloxone.³² In our own studies while repeating Mayer's and Chapman's work only two out of 11 subjects reacted to naloxone. Later in personal discussions also Chapman admitted that there was one responder to naloxone in his studies, but this subject was excluded for other reasons from the final report. In some other studies transcutaneous electrical stimulation has induced deeper analgesia than needles.

2. *Acute clinical pain.*

In Chinese acupuncture analgesia great emphasis is laid on the techi-sensation (PSC) which is produced through stimulation of the needle in exact location, acupuncture point. In the most Western studies the success rate of acupuncture analgesia is less than 30% often only some 10%. The higher success rate in China is not explained by the better location of the points, but by the high doses of analgesics given during the operation. Undoubtedly there are some cases where acupuncture point stimulation produces profound analgesia. However, segmental non-specific transcutaneous electrical stimulation produces relative analgesia in almost 90% of cases as was shown in our studies on patients undergoing upper abdominal surgery³³. Segmental stimulation paravertebrally has been used successfully also in the relief of labour pain.³⁴⁻³⁵ Tsubulyak and coworkers³⁶ compared different types of electroanaesthesia and electrical stimulation during surgery. They combined general anaesthesia with peripheral stimulation. In thoracic surgery corporeal electro-acupuncture was effective in 92% of cases and the reduction in the use of analgesics was 80%. During vascular microsurgery the most effective combination was electroanaesthesia (electrodes on the forehead and occiput) with auricular electro-acupuncture. Analgesia was sufficient in 60% of all cases and the reduction in the use of analgesic in the remaining cases was 38%. Postoperative analgesia was marked and lasted up to 10-12

hours. Similar findings were done in our own studies where we used pethidine as an analgesic. The pethidine dose was lower in our studies than normal during acupuncture analgesia in China.

We may conclude that exact acupuncture points are not essential for the analgesic effect during acupuncture analgesia.

3. *Chronic pain.*

Rutkowski's group in Gliwice (Poland)^{37,38} has successfully applied electrical stimulation' intrigeminal neuralgias and low back pain over 10 years. Their method is very simple-two sterile hypodermic or less traumatic acupuncture needles are inserted symmetrically into both forearms, anywhere between the wrist and elbow into the depth of about one cm. The only reason for the choice of this location is its convenience for needle insertion. To close the circuit, another electrode is placed in the interscapular region. The parameters for the stimulation are: sine wave; 2-15 V, 200-600 microamperes, 1.5-2.5 Hz, 15 minutes. For low back pain treatment the needles are inserted into the calves at any place between the ankle and knee and the earthing plate under the sacral bone. Their success rate compares favourably with other studies where exact needle locations are used.

Kaada³⁹⁻⁴⁰ stimulates any healthy extremity for 30-45 minutes with low frequency bursts (2 Hz) of high frequency stimulation (100 Hz) through transcutaneous electrodes. The electrodes are most often placed upon *Hegu* points or on *Zusanli* point area without exact location of the points. Again points are of secondary importance as far as pain relief and vasodilatation are concerned.

In our own studies with chronic pain patients we have used either hands or legs for non-specific TENS and specific acupuncture loci for needle stimulation either manually or electrically. Pain relief has been achieved with all different variations. Interesting have been the results in phantom limb pain. Some patients not reacting to segmental trigger point treatment or to contralateral local analgesia have responded favourable to remote, non-segmental TENS.

Myofascial pain syndromes form an important and common pain problem. These patients respond also well to non-specific peripheral

stimulation therapy but often the basic problem - the trigger activation - can not be solved without treatment of the specific trigger points in the affected muscles. These points coincide mainly with the traditional Chinese acupuncture points.⁴¹

It is also remarkable that a specific acupuncture treatment directed to relieve a certain syndrome may abolish symptoms of quite different origin, e.g. acupuncture treatment for an acutely stiff shoulder may keep migraine symptoms silent for many years or a regular stimulation of the points in lower extremities and lumbo- sacral region in chronic saerolumbalgia or ischialgia may substantially relieve symptoms of bronchial asthma.

E. *The importance of specific acupuncture points for regulatory effects.*

In Chinese acupuncture certain acupuncture points are claimed to have specific regulatory effects. So e.g. *Neiguan* and *Zusanli* should be effective against nausea and vomiting. The stimulation of *Zusanli* point may as well increase peristalsis. *Renchong* is the proper point in shock. *Quchi* and *Neiguan* are effective in lowering high blood pressure, *Dachui* is an antipyretic point, etc.

The regulatory effects of acupuncture have been studied less frequently in the West. The main obstacles have been the difficulties in the design of a proper study. There are, however, some Western studies which do not entirely support the importance of the specificity of the acupuncture points for regulatory effects.

I. *Circulatory effects.*

In healthy volunteers we see most often a marked vasoconstriction first. This is later followed by vasodilatation which may last several hours in some subjects. Vasodilatation may begin already during stimulation but is more often delayed from one to three hours. Vasoconstriction is more intense in the stimulated extremity, although both vasoconstriction and vasodilatation are seen in all extremities. In our studies these responses have been similar after manual acupuncture, low frequency electrical acupuncture and TENS. No specific acupuncture points are needed to produce these effects.⁴²

Omura has studied the circulatory effects of acupuncture with an ultra-miniature reflection type plethysmographic sensor⁴³ He was able to show that acupuncture induces first a vasoconstriction (15-30 s) followed by a phase of quasi-control (10 s to 2 min) and vasodilatation (2 min to week).

Lin and coworkers⁴⁴ studied the effects of unilateral stimulation of Neigunn, Zusanli, Sanyinjiao and Quchi points. The stimulation of Neiguan, Zusanli and Sanyinjiao points decreased temperature of the stimulated as well as the contralateral extremity during the stimulation period, whereas Quchi point stimulation increased skin temperature bilaterally.

Lee and Ernst⁴⁵ demonstrated increased temperature bilaterally with infra-red thermography after dry needling of Hegu point in the right hand for 15 minutes. There was a marked vasodilatation during the stimulation and 10 and 30 minutes alter the removal of the needle.

Wong and Brayton⁴⁶ investigated the effects of acupuncture (*Hegu*, *Quchi*, *Lieque*) on the peripheral circulation using electrocapacitance plethysmography to measure the blood flow in the contralateral forearm. They observed an average reduction of 33% during the course of acupuncture (range 24-51%).

Laitinen⁴⁷ evaluated the changes in the vasomotor activity of the hand skin induced by acupuncture using skin temperature measurements and photoelectric plethysmography. The needle insertion (pain) induced a minimal and short-term temperature fall in all tested subjects. In another experiment no changes were seen in three subjects during and after needling of *Hegu* and *Taodao* points. It was not possible to draw any firm conclusions due to the small number of subjects and controversial results.

In pain patients skin temperature is often markedly lower in the painful extremities. Pain relief is usually followed by a temperature increase to the level or exceeding that of the healthy side. This may occur in some patients during the stimulation, in most cases, however, as a poststimulatory effect even 4-6 hours later.

Abram and coworkers⁴⁸ were able to demonstrate that skin temperature rose in both ipsilateral and contralateral extremity in

patients who experienced relief of pain during stimulation. There was no significant change in skin temperature in those patients who experienced no pain relief. They used high frequency TENS to the painful areas for 20 to 45 minutes and measured the temperatures from the thumbs or big toes only before and during stimulation.

Laitinen⁴⁷ was not able to show any temperature change during and after acupuncture (Hegu, Taodao) in patients with partial plexus brachialis paralysis. Stimulation lasted 20 minutes and the last measurement was done 10 minutes later. This experiment was repeated a week later. The painful, cold hands were now warmer, although the difference was not statistically significant. The propagation time of the plethysmogram which was 4 csec shorter in the cold sick hands than in the healthy hands was equalized after needle insertion. This statistically significant change was maintained at least one week.

Cao⁴⁹ has reported on changes in skin temperature and finger plethysmogram in patients waiting for operation under acupuncture analgesia. Patients showing an increase, or a transient fall, followed by an increase of palm temperature during acupuncture, usually showed good acupuncture analgesia effect during the operation. On the contrary, all patients with a constant fall of palm temperature induced by acupuncture showed poor acupuncture analgesia effect. Finger plethysmogram confirmed these findings.

In patients with peripheral vascular disease the temperature changes have been equally marked after stimulation. Remarkable is the late onset and the long duration of the effect.

Kaada³⁹⁻⁴⁰ has demonstrated in patients with Raynaud's disease and in those with diabetic polyneuropathy that low-frequency TENS of remote sites (non-segmental) for 30-45 minutes caused a dramatic peripheral vasodilatation in the cold limbs with a rise in skin temperature of 7-10 °C for periods of 4-8 hours or more. This temperature rise was associated with relief of ischaemic pain. The vasodilatation was widespread, affecting the skin of all extremities, with slight temperature elevations in the warm body parts. It also included the cranial vessels as V judged from the induced migraine-like headaches in some patients. Kaada also compared the effects of

unilateral TENS and bilateral Hegu point needling in a patient with Raynaud's phenomenon. A similar vasodilatation resulted after both types of stimulation, although the effect was less marked on pain after acupuncture stimulation.

Lee and Ernst⁴⁵ demonstrated a dramatic increasing warming effect on both hands as a result of unilateral Hegu-point needling confirmed with a thermogram.

Tmavsky⁵⁰ treated patients with blocked femoral artery with low-frequency TENS to the painful extremity. He demonstrated an increased blood flow only after the stimulation of specific acupuncture points. This effect was not seen in the measurements performed one hour after the stimulation.

Seven Andersson and his group⁵¹⁻⁵² stimulated the sciatic nerve of normotensive and spontaneously hypertensive rats. The poststimulatory decrease in blood pressure was greater in hypertensive rats and lasted some hours after the cessation of the stimulation. The site or the type of stimulation seemed to be of secondary importance as e.g. extensive physical exercise (rats in the running wheel) provided similar poststimulatory responses. These circulatory effects were reversed by massive doses of naloxone (15-25 mg/kg).

Rutkowski and Henderson-Baumgartner⁵³ have demonstrated that repeated electrical stimulation to non-acupuncture points is effective in the treatment of essential hypertension.

Ionescu-Tirgoviste and coworkers⁵⁴ treated patients suffering from essential hypertension with dry needling to known acupuncture points (2-7 sessions at 2-7 days intervals) having reasonable good results in younger subjects and during the first evolutionary stages of hypertension. During the maintenance about 1/3 of their patients remained at normotensive levels.

2. *Gastrointestinal effects.*

Several Chinese studies deal with the effects of acupuncture on peristalsis and gastrointestinal secretion. These include both animal (rats, rabbits, dogs) and human studies. At the same time there is lack

of dependable Western studies on the same subject. There is, however, increasing evidence of the effectiveness of peripheral stimulation in gastrointestinal disorders.

Andersson⁵⁵ has applied cholera toxin locally to rats in order to investigate the effects of low-frequency (4 Hz) stimulation of sciatic nerve on the profound diarrhoea induced. Stimulation inhibit greatly the secretion through the intestinal wall. It was even reversed to absorption in some cases. The inhibitory effect lasted about 60 minutes after the cessation of the stimulation. When the nerves to the intestinal wall were blocked with a local analgesic the inhibitory effect was lost.

Matsumoto and Hayes¹⁰ demonstrated already more than 10 years ago that low-frequency stimulation of Zusanli point induced peristalsis in post-vagotomy gastrointestinal atony. Similar response has been seen with segmental TENS (12 Hz) after upper abdominal surgery³³.

Kaada⁵⁶ has reported on a return of peristalsis in the lower oesophagus and disappearance of dysphagic symptoms during non-segmental TENS in a patient with systemic sclerosis.

Sodipo and Falaye⁵⁷ demonstrated a decrease in gastric acidity after acupuncture stimulation of classical Chinese points, some of them stimulated electrically with low frequency.

Kuussaari⁵⁸ reported recently of his experience in acupuncture treatment of aerophagia in horses. The results were encouraging in horses suffering simultaneously from gastrointestinal disorders. Low-frequency electrical stimulation was directed mainly to combat the gastrointestinal disorders.

Feng Ke-rong⁵⁹ used same type of stimulation in the treatment of equine intestinal impaction. The main point in these two latter reports was Guanyuanshu.

3. *Respiratory effects.*

It is extremely difficult to draw any firm conclusions from the studies on the long-term effects of acupuncture in chronic respiratory diseases as these are mainly cases reports or follow-up studies without

controls. In our own experience respiratory responses are not point-specific. Stimulation of points or areas on thoracic wall may induce bronchodilation but it may also increase bronchial secretion and lower the consistency of sputum. This leads in some asthmatic patients to acute respiratory difficulties at the beginning of therapy. Later in the course of therapy this reaction disappears and our patients are able to empty their bronchi easier and are less prone to bronchoconstriction. It has been seen in some patients with chronic obstructive respiratory disease that their attacks disappear during repeated peripheral stimulation for other reasons (e.g. ischialgia) where points in the lower extremities or in the lower back only have been used.

Berger and Nolte⁶⁰ compared the effectiveness of acupuncture points known to have beneficial effects in asthma with those known unsuitable for the treatment of asthma. In their study the airway resistance was significantly lower after real acupuncture at 10 minutes, 1 hour and 2 hours. The medium values after placebo- acupuncture were slightly increased throughout the experiment.

Virsik and coworkers⁶¹ investigated the same problem in asthmatic patients. Their acupuncture points were on the thoracic wall and along the Lung channel, and included Hegu point and point on the ear lobe as well. The placebo points were chosen on the gluteal region 2 cm laterally from the urinary bladder channel. Their results indicated that stimulation of specific acupuncture loci in asthmatics can partially reverse bronchospasm and hyper inflation but this needling effect is inferior to that after inhaled bronchodilating drugs. The needling effects were most evident at 30 and 60 minutes. There is a very slow return to initial values 2 hours after the beginning of stimulation. Tashkin and coworkers⁶² have reported of similar results when comparing real and stimulated acupuncture and isoproterenol in metacholine - induced asthma.

Facco and coworkers⁶³ compared the respiratory effects of acupuncture and pentazocine during the immediate postoperative period. In addition to the analgesic effect of acupuncture which was equivalent to that of 30 mg pentazocine, acupuncture increased the vital capacity up to 3-4 hours. The stimulated acupuncture points were all located in the lower extremities.

4. Hormonal responses.

The generalized effects of peripheral stimulation are mediated mainly through neuropeptides, which behave like neurotransmitters, neuromodulators or hormones. Some of the neuropeptides like ACTH belong to the conventional hormones family. Guillemin with his group⁶⁴ have demonstrated that during stress analgesia there is a concomitant release of beta-endorphin and ACTH from the pituitary gland.

Omura⁶⁵ has reported of an increase in serum cortisol up to about 220% between 12 and 24 hours after bilateral Zusanli needling (continuous manipulation for 1.5 to 4 minutes).

Pellegrin, Mion and Bossy⁶⁶ investigated the effects of bilateral *Taichong* point stimulation (needles left in situ without stimulation for 15 minutes) on ACTH and cortisol secretion. From ACTH data it was not possible to draw any conclusions. Cortisol secretion was changed in 1/3 of their patients. These same patients showed satisfactory clinical results with acupuncture treatment.

Liao and his group⁶⁷ have demonstrated the importance of stimulation parameters on the production of adrenocortical hormones. They compared the effects of manual acupuncture and electrical stimulation of variable duration in rabbits. Their results indicate that adrenal production of corticosterone and cortisol was enhanced by 15 minutes' manual acupuncture at *Zusanli* point. Electrical stimulation of 15 to 30 minutes was more potent than manual stimulation at least up to 12 hours. The non-point stimulation induced only a transient increase in the plasma levels of these hormones. When electric stimulation was applied for one hour the resultant production of adrenocortical hormones was poorer than with other treatment schedules. All these experiments were performed under non-stressing conditions. In their second experiment⁶⁸ they investigated the effects of acupuncture on the production of adrenocortical hormones during three different types of stress: immobilization, exposure to cold and exposure to heat. Electroacupuncture at *Zusanli* point bilaterally for 30 minutes effectively inhibited the stress-induced hypersecretion of

adrenocortical hormones. In the non-point group this inhibition was minimal.

Nappi and coworkers⁶⁹ compared the effects of manual acupuncture and electroacupuncture on the release of pro-opioid related peptides. They measured the plasma levels of beta-lipotropin, beta-endorphin and ACTH after traditional manual acupuncture, electroacupuncture and sham-electroacupuncture (needles in the same points as in electroacupuncture but without stimulation). After electroacupuncture beta-lipotropin concentration was markedly elevated and it was still increased at the end of the observation period (60 minutes after the needle removal) and beta-endorphin and ACTH plasma levels were increased at 5 and 20 minutes after the needle removal. After traditional manual acupuncture a significant increase in the plasma levels of both beta-lipotropin and beta-endorphin was observed at 5 minutes only. No increase was seen in the plasma levels of ACTH. These data indicate that the plasma opioid release induced by electroacupuncture and traditional manual acupuncture may have different origins.

Fava, Bongiovanni and Frassoldati reported of the use of manual stimulation of the metameric points Rugen and Shanzong in order to induce or increase lactation in hypogalactia. Their clinical results were good and there was a marked increase of prolactin levels in 1/3 of the cases.

4. *Immunological effects.*

During the first National Symposium of Acupuncture and Moxibustion and Acupuncture Anaesthesia in Beijing 1979 many reports of the effectiveness of acupuncture in infectious diseases were presented.⁷¹ Daily acupuncture stimulation up to one week was reported to be effective in acute bacillary dysentery and viral hepatitis among others. In the experimental works the production of antibodies appeared earlier in the acupuncture group than in the control group and reached higher levels.

Sabolovic and Michon⁷² have reported that an altered composition of T and B lymphocytes in patient's blood returns to normal value together with improvements of clinical symptoms after the treatment

with acupuncture alone. In their preliminary reports two other study groups have showed that the white cell count and antibody titres are increased after acupuncture stimulation.⁷³⁻⁷⁴

Sin and coworkers⁷⁵ have tested the effect of electric acupuncture stimulation on the experimental arthritis in male Wistar rats. Their results showed that there was a significant decrease in the number of exudate leucocytes in the inflammatory cavity and a decrease in volume of exudate fluid after acupuncture stimulation. Conversely, there was an increase in the peripheral white blood cell count and a reduction in the leucocyte adherence to vascular endothelial cells. The insertion of the needles into the inflammatory cavity gave the most effective response thus supporting an earlier clinical finding that arthritis is treated more effectively by insertion of needles into the affected joint cavity⁷⁶.

As a conclusion we may say that acupuncture points as physiological entities are necessary in the treatment of myofascial pain syndromes and probably for some regulatory effects. For pain relief segmental stimulation is more effective in the majority of cases than nonsegmental stimulation. Most circulatory effects seem to depend mainly on the intensity, duration and frequency of stimulation and to a much lesser degree on the site of it.

Acupuncture points have, however, an important role in the formation of a reliable contact between patient and doctor. When searching after the tender (trigger, acupuncture, low resistance) points with our fingertips we have to touch our patient repeatedly and ask for his or her sensations.

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**MATERIAL
AND
TECHNIQUE**

ACUPUNCTURE MATERIAL AND TECHNIQUE

The acupuncture needle:-

The following is a description of the types of needles in common use today:-

a) **The filiform needle (capillary needle)**

The needle can be divided into four parts: the handle, the root, the body and the tip. The length of the needle varies, those commonly used being 0.5, 1.0, 1.5, 2.0, 2.5, 3.0 and 3.5 inches in length. The thickness of the needle also varies; numbers 26, 28 and 30 gauge are common, with number 30 being the most often used. The needles are made with stainless steel. One should choose needles which have a smooth body, a sharp tip and resilience.

How to practice using the needle:-

Since the capillary needles are thin and flexible, it is necessary to develop “finger force” in order to avoid difficulty in inserting the needle in the patient's body in a manner causing pain. It is obvious that one should first practice with short, thick needles, and after mastering this technique then practice with thin, long ones.

Practice on paper pads: Use thin, soft paper folded to a pad of 5 x

8cm, 1 cm in thickness. Tie it together tightly with threads. Hold this paper pad in the left hand, and hold the needle with the thumb, index and middle fingers of the right hand. Then twist the needle in and out of the paper, i.e. push in and pull out the needle, while rotating it. Gradually increase the thickness of the paper pad used.

Practice on cotton balls: Make a cotton ball, the size of a tennis ball and tighten it with threads. This exercise is especially good for practicing the pushing in and pulling out of the needle with rotation.

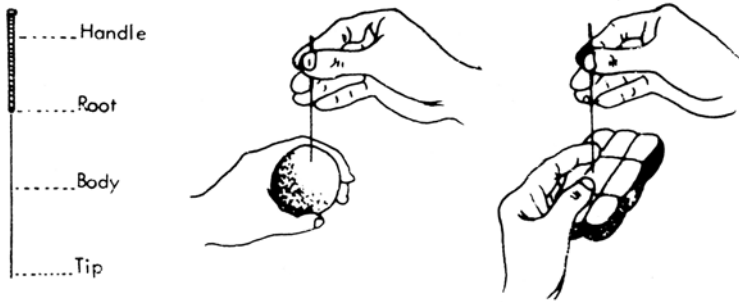


Figure 2-1: The Capillary Needle

b) **The embedding needle:-**

Also called the press needle, intradermal needle and implanted needle, they come in several shapes depending on their use.

- i) **The thumbtack type:-** This looks like a small thumbtack. The body of the needle is in the form of a small circle about 3 mm, in diameter and its tip stands out at right angles to the circle. It penetrates to a depth of 2-3 mm. It is used more commonly in ear acupuncture.
- ii) **The “fish tail” type:-** This is similar to the thumbtack type except that its shaft lies at the same plane as its body. This needle is used on certain body acupuncture points for continuous stimulation. It is inserted horizontally under the skin, and then fixed with adhesive tape.

Both these types of needles are indicated in chronic conditions like bronchial asthma, epilepsy, and in painful conditions like migraine. They may be kept in place for up to seven days and are therefore useful in providing mild stimulation of an acupuncture point between treatment sessions. In warm weather it is advisable to change the needle in about half this time.

- iii) **The spherical press needle (ball bearing type):-** This may also be used for the same purpose. This is becoming more popular nowadays as it is safer. It consists of a tiny stainless

steel ball which is fixed on the skin at the acupuncture point with adhesive tape.

- iv) The muscle embedding needles- These are slightly longer than the fish tail type and are used to allay very intractable pain conditions like phantom limb pain and pain of secondary cancer. The muscle embedding needle is left in situ at local painful points in the muscle (Ah-Shi points) for a few days.

c) **The “Plum Blossom” needle:-**

This is also known as the “Five Star” or “Seven Star” needle. It is made up of 5 or 7 short filiform needles attached to a holder at the end of a long handle. The plum blossom needle is used to tap on the skin along a channel or at specific points, It is indicated in children, in weak patients, in skin diseases and in those who dislike puncturing.

d) **The three-edged (or prismatic) needle:-**

This has a triangular point and is used to bleed certain areas in skin disorders, arthritis, and in acute emergencies. (In modern acupuncture a syringe and an intravenous needle are used for the same purpose.)

e) **The hot needle:-**

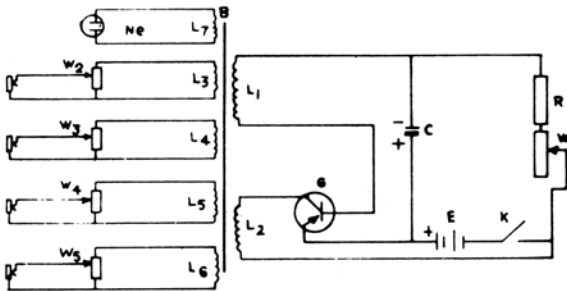
This is a special silver alloy needle which is heated and used to puncture certain superficial lumps such as “ganglions” on the back of the wrist, thyroid adenomas, enlargements, and other benign tumours.

2) **Apparatus for the electrical stimulation of needles:-**

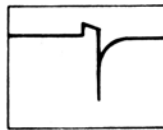
Instead of manual stimulation the needle could also be stimulated by the use of electrical pulses. This is referred to as electro-acupuncture or electro-needle treatment, and was invented in China in 1954. Apart from the advantage of saving on the tedium of manual stimulation, it is possible to regulate precisely the amount of stimulation required. It is also possible to produce stronger stimulation, thus making it a convenient alternative method for acupuncture anaesthesia. There are many kinds of electro-acupuncture apparatus currently available. The type that is most favoured uses a biphasic spiked pulse output (typically the model G. 6805 made in China or B.T. 701).

The electronic circuitry of an acupuncture stimulator is not complicated. There are two models widely used in China. The effectiveness of these units has been attested by long successful experience in acupuncture. Their circuits and specifications are briefly described as follows:

A.B.T.-701 Stimulator



BT-701 STIMULATOR



WAVE FORM

Figure 2-2: BT-701 Stimulator

I. Specifications:

The wave from is biphasic and pointed, as shown in the diagram. Pulse frequency varies from 120 to 2400 cycles per minute. Without load, output potential varies from 0 to 70 volts.

2. Parts:

E : 6 volt battery, consisting of four D-cells.

R : 2000 ohm resistor.

C : 10 volt, 20 uf electrolytic capacitor.

W1: 47,000 ohm potentiometer with switch.

W2, W3, W4 and W5 : 10,000 ohm potentiometer.

BG : 3AD6 power transistor.

B : Coil 13, 12, L1 = 12 3 1 : 3. Coils 3, 14, L5, L6 and L7 represent 1200 rounds of 0.07 millimeter of lacquer wire (LW); Coil

L1, 300 rounds of 0.10 millimeter of LW; Coil 12 100 rounds of 0.35 millimeter LW. The core consists of 0.35 millimeter thick D42 E-shaped silicon steel plates.

Ne: Neon bulb.

Output voltage of knobs:-

Knob position	Positive wave	Negative wave
1	6	3
2	6	6
3	10	10
4	28	18
5	50	50

Position	Frequency/min
1	120
2	140
3	200
4	480
5	3000

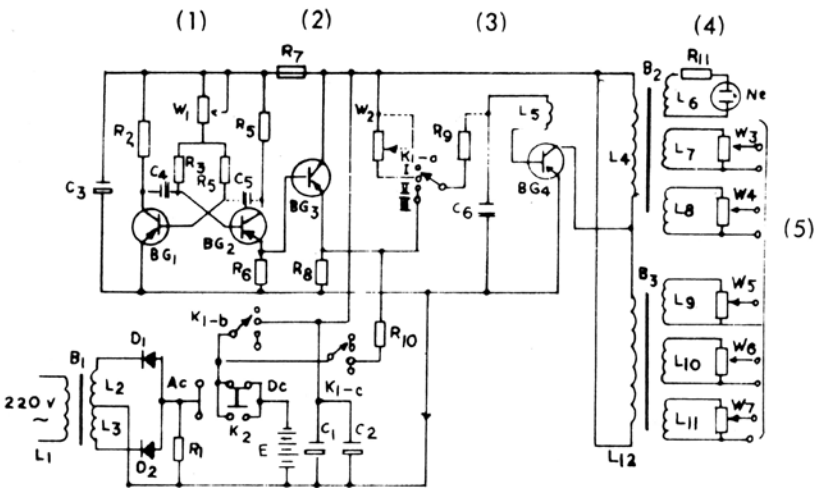


Figure 2-3: G6805 Stimulator

B. G6805 Stimulator**1. Specification :****Continuous wave:**

Frequency:	160 to 5000 cycles per minute
Intensity:	Positive pulse: 50 volts. Negative pulse: 35 volts. Positive pulse: 0.5 msec. Negative pulse: 0.25 msec.

Variable interval wave:

Frequency:	14 to 26 cycles per minute.
Intensity:	Positive pulse: 50 volts. Negative pulse: 35 volts.
Pulse width:	Positive pulse: 0.5 msec. Negative pulse: 0.25 msec.

Interrupted wave:

Frequency:	14 to 26 cycles per minute.
Intensity:	Positive pulse: 50 volts. Negative pulse: 35 volts.
Pulse width:	Positive pulse: 0.5 msec. Negative pulse: 0.25 msec.

2. Explanations :

- 1) Multifrequency oscillator.
- 2) Output circuit.
- 3) Pulse oscillator.
- 4) Output monitor.
- 5) Output.

3. Parts:

- E : 6 volt battery, consisting of four D-cells.
- R1: 200 ohm 1/8 w resistor.
- R2: R5: 2,000 ohm 1/8 w resistor.
- R3: R4: 18,000 ohm 1/8 w resistor.
- R6: 750 ohm 1/8 w resistor.
- R7: R9: 1000 ohm 1/8 w resistor.
- R8: 2700 ohm 1/8 w resistor.
- R10: 12,000 ohm 1/8 w resistor.

- R11: 6,800 ohm 1/8 w resistor.
- W1: 47,000 ohm potentiometer.
- W2 to W7: 22,000 ohm potentiometer.
- D1, D2: Diode 2 cp 21A.
- BG1, BG2, BG3: Transistor 3AX3 l.
- BG4: Power transistor 3AD6.
- C1, C2: 10 volt 200 uf electrolytic capacitor.
- C3, C4, C5: 10 volt 100 uf electrolytic capacitor.
- C6: 10 volt 20 uf electrolytic capacitor.
- Ne: NHO-4C Neon bulb.
- K1: 3X4 band switch.
- K2: 2X2 tobbler switch.
- B2, B3: Coil L4 represents 55 rounds of 0.35 millimeter LW; L5, 150 rounds of 0.10 millimeter LW, L6, 3000 rounds of 0.05 millimeter LW ; L12, 55 rounds of 0.35 millimeter LW ; L7 to L11, 1000 rounds of 0.1 millimeter LW. The core consists of 0.35 millimeter thick, D42 E-shaped silicon steel plates.
- B1: Coil L1 represents 4830 rounds of 0.095 millimeter LW; L2, 290 rounds of 0.35 millimeter LW. The core consists of 0.35 millimeter thick D42 E-shaped silicon steel plates.

Output voltage of knobs:-

Intensity position	Positive wave	Negative wave
1st	2 v	2 v
2nd	5 v	4 v
3rd	15 v	10 v
4th	50 v	35 v

Position	Frequency per min.
1	220
2	240
3	280
4	320
5	400
6	550
7	800
8	1800
9	6000

3. Apparatus for detection of acupuncture points (Acupunctoscope):-

It could be shown that the electrical resistance of the skin at an acupuncture point is less than the resistance of the surrounding area. The acupuncture point detector is an instrument incorporating a circuit which could register the exact point by means of an ammeter or a source of sound which changes pitch as a suitable electric current passes through the acupuncture point area. There are many varieties of point detectors available. Often they are incorporated in one instrument with the electro-acupuncture stimulator.

The point detector is also useful in diagnosis and prognosis as the skin resistance of an acupuncture point is further lowered in disease. As the patient recovers it progressively returns to its normal levels.

Electrical point detectors are mainly used in ear acupuncture as the location of the reactive points is important for diagnosis.

4. Sterilization of needles:-

The method generally adopted is to let the needles stand overnight in 75% alcohol. However, it is important to make a clear distinction between sterilization and disinfection. Sterilization means to kill all pathogenic and non-pathogenic germs by physical or chemical methods. Disinfection does not kill all the germs. Boiling in water or keeping in alcohol is a form of disinfection and this is not sufficient to kill all viruses or spores e.g., hepatitis virus or *Bacillus anthrax*.

There are different methods of sterilization probably, the most conventional of these being the use of an autoclave.

A recent innovation is the glass bead sterilizer which is particularly suited for sterilizing acupuncture needles in a small clinic.

The most important part of the aseptic procedure however is for the acupuncturist to wash his hands well with soap and water using a nail brush. It is much more likely that an infection can be introduced with dirty hands than with unclean needles.

Plastic plum-blossom needles cannot be sterilized in the usual manner. They should be washed in soap and water.

POSTURE OF THE PATIENT DURING ACUPUNCTURE THERAPY

The posture of the patient during acupuncture depends on the area to be needled. At all times the patient should be comfortable and needling should be carried out with the minimum of pain or discomfort to the patient. It is always preferable to have nervous, old and very ill people lying down rather than seated when administering acupuncture. The common postures of the patient are as follows:-

a) **The sitting position:**

- i) With knee flexed and spine resting on back of chair.
- ii) With elbow flexed, hand resting on table in front.
- iii) With hands on table in front and head resting on hands.

b) **The lying down position:-**

- i) Supine (facing upwards).
- ii) Prone (facing downwards).
- iii) Recumbent (lying on a side, left or right as convenient).
- iv) Lithotomy (labour room position: lying down facing upwards with hips and knees flexed).
- v) Genupectoral or knee-elbow position (facing downwards with weight on elbows and knees).

The most comfortable position for each patient compatible with the points selected should be adopted.

The general, it would be preferable to treat patients in groups as this tends to lessen the anxiety of apprehensive individuals. Discussion with each other of the progress of their illness also seems to re-inforce the cure.

METHODS OF LOCATING ACUPUNCTURE POINTS

There are many methods of locating acupuncture points. Each acupuncture point has its most convenient method and for some

points two or more methods may be applied with equal ease. Some of the more commonly used methods are described here.

1) **Anatomical landmarks:**

Prominent anatomical markings of the body surface are made to serve as a basis for locating points. These include the bony points felt or seen on the surface, the sense organs, the eyebrows, the hairline, joint creases, the nipples, and the umbilicus. For example, Yintang (Ex. 1), lies at the midpoint between the eyebrows. Weizhong (U.B. 40), is situated in the middle of the posterior crease of the knee joint (i.e., in the middle of the popliteal fossa).

2) **Finger measurements:-**

In this method, the Chinese “body inch” or “cun” is taken as a standard. When an acupuncture point is situated some distance away from anatomical landmarks, its position can be defined only by stating the distance from such landmarks. But owing to the wide variation of the body build of different people it is not realistic to use inches or centimetres as units of measurement. The finger measurements of the patient is therefore taken as the criterion.

- a) When the tips of the thumb and the middle finger are brought together to form a circle, there are the two creases of the middle finger well outlined. The distance between these two creases in the extended middle finger is equal to one cun.
- b) The breadth of the distal phalanx of the thumb at its widest point is also equal to one cun.
- c) The combined breadth of the four fingers at the level of the proximal interphalangeal joint of the little finger is equal to three cun.
- d) The combined breadth of the index finger and the middle finger is equal to 1.5 cun.



C

Sitting with hands supporting chin



D

Sitting in prore position



E

Sitting with hands stretched on table palms up



A

Sitting with arms bent and palms facing chest.



B

Lying on one side.



C

Lying in supine position with knees bent.



D

Lying in prone position.

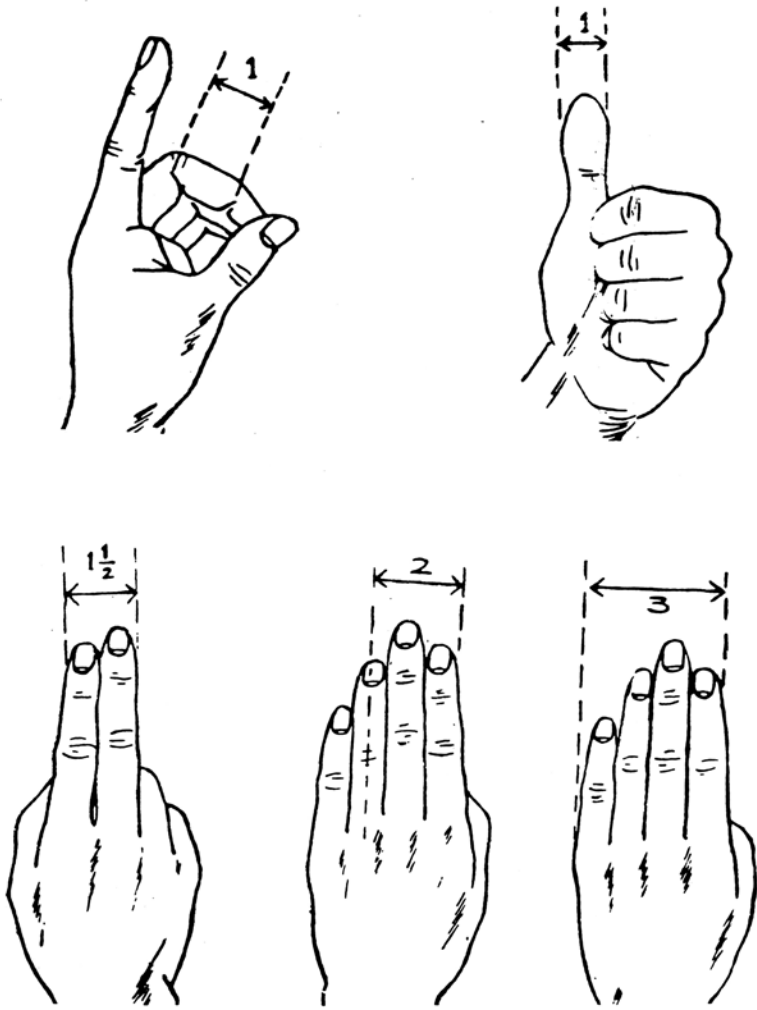
Figure : 2-4 The position of Treatments.

If the patient's body build is about the same as that of the physician, then the physician would be able to locate the points using his own fingers. If the patient's size differs widely from that of the physician, or when treating a child, proportionate adjustments must be made when locating points with the physician's fingers.

3) **Proportional measurement:-**

This method takes as its basis that various parts of the body are generally in relative proportion to each other. In "cun" measurement therefore there would be a constancy of lengths from person to person regardless of body build. Based on this principle, the distance between certain important anatomical landmarks have been noted in order to facilitate the location of acupuncture points.

Head and neck area:	Cun
The anterior hairline and the posterior hairline at their midpoints:	12
The anterior hairline and the eyebrow line:	3
The midpoint of the posterior hairline and the Spinous process of 7 th cervical vertebra:	3
The two comers of the anterior hairline:	9
The tips of the mastoid processes:	9
Chest and abdomen area:	
The two nipples:	8
Two ribs:	1
The inferior margin of the sternum and the umbilicus:	8
The umbilicus and the superior border of 5 the pubic symphysis:	5
Back of the trunk:	
The medial margins of the sacro-iliac joints:	3
Upper Limb:-	
Anterior or posterior axillary fold and the elbow crease:	9
The elbow crease and the wrist crease:	12



- 1 cun = 10 fen
- 2 cun = 2 1/2 finger breadths
- 5 cun = 6 1/2 finger breadths

Figure 2-5: The proportional Measurement

Lower Limb:-

The greater trochanter of the femur and the middle of the patella:	19
The middle of the patella and the tip of the lateral malleolus:	19

4) Location of points by posture:-**a) The patient's posture:-**

In this method, the patient is asked to assume certain postures which will help to identify the point.

The following are some examples of this method:

- i) The point Hegu (L.I. 4), may be located at the highest point of the muscle of the back of the hand when the thumb and the forefinger are juxtaposed.
- ii) The point Quchi (L.I. 11), is located at the lateral end of the elbow crease when the elbow is semi-flexed.
- iii) The point Fengshi (G.B. 31), can be located by asking the patient to stand and hold his arms at full stretch down the side of his thighs; the point will be found on his thigh at the tip of his middle finger.

b) The acupuncturist's posture:-

Some examples of this method are:

- i) For locating the point Xuehai (Sp. 10), the physician places his palm over the patient's knee cap; the point lies at the tip of the physician's thumb.
- ii) Similarly the point Femur-Futu (St. 32), is found at the tip of the acupuncturist's middle finger when he places his palm over the patient's knee cap with his fingers along the thigh of the patient.

Proportionate adjustment will of course have to be made if the patient's body built differs significantly from that of the physician.

5) Tender Points:-

Certain points of the body (which may or may not coincide with an acupuncture point) become tender to finger pressure in conditions of disease. The Chinese call them “Ah-Shi” points. The needle is inserted at the centre of the tender area. As the patient’s condition improves it will be found that the tenderness progressively decreases till it disappears altogether. Alarm points are also similarly located.

6) Location of points with an acupunctoscope:-

This method depends on the fact that the skin at acupuncture points have high electrical conductivity due to lowered electrical resistance. Based on this principle, different types of electronic point detectors called acupunctoscopes have been devised. The patient is asked to grip one of the two electrodes connected to the instrument and the acupuncturist uses the other electrode, which is equipped with a blunt point, to explore the body surface for reactive points. Correct location is signalled by the deflection of an ammeter needle, or the flickering of a source of light, or by a high “bleep” produced by a sound amplifying device.

With this instrument it is possible to locate an acupuncture point very accurately. It has, however, the disadvantage that it is a very time consuming procedure. The use of this device is more popular in ear acupuncture where the points are visibly more reactive and the area for exploration is restricted. Unless it is a very sensitive acupunctoscope the body points may be very difficult to locate.

7) Location by reference to another point:-

Examples of this method are:

- a) Sishencong (Ex. 6), which is located by reference to Baihui (Du. 20);
- b) Fenglong (St. 40), and Tiaokou (St. 36), which are both located by reference to Zusanli (St. 36).

8) Cunometer:-

This is a specially designed pair of double callipers by which the patient’s “cun” is directly measured. With this one measurement the

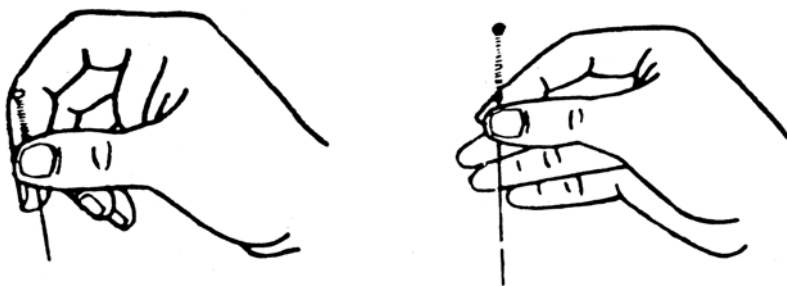
instrument could show multiples of cun. Nowadays this method is generally used for the location of points in acupuncture anaesthesia for surgery where a high degree of accuracy is required.

METHODS OF NEEDLE PUNCTURE

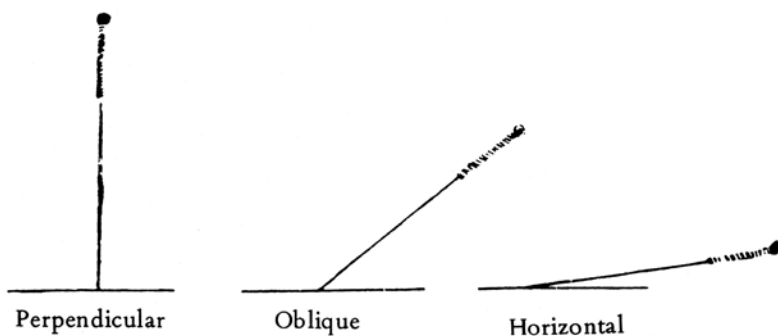
1) **Insertion of the needle:-**

There are many ways in which the needle could be inserted and the technique to be used for a particular acupuncture point depends upon the site of the point and the length of the needle. The most frequently employed are described here. It is assumed that the acupuncturist is right handed.

- a) Press the patient's skin beside the acupuncture point with the tip of the thumb or forefinger of the left hand. Hold the handle of the needle with the right forefinger and thumb, with the middle finger and ring finger resting lightly on the upper part and lower part respectively of the needle stem. Exert a little more downward pressure with the tip of the index finger or thumb of the left hand and insert the needle rapidly into the skin at the acupuncture point. The needle may thereafter be penetrated to its proper depth either fast or slow with a to and fro screwing movement. This technique is ideally suited for the short needle (1.5 cun or less).
- b) Grip the shaft of the needle with the thumb and forefinger of the right hand so that about 0.2 cun of the needle at its tip is exposed. Then aim at the point and insert the needle rapidly. Now hold the lower part of the needle shaft with the thumb and forefinger of the left hand, and the handle of the needle with the thumb and forefinger of the right hand. Push the needle slowly in to its proper depth using both hands together. Although this technique may be used satisfactorily at most acupuncture points, it is particularly recommended when using the longer needles in areas where the muscular mass is thick, e.g., the point Huantiao (G.B. 30).
- c) Pinch the skin with the left forefinger and thumb and lift it up a little with the acupuncture point exposed at the top.



METHODS OF HOLDING THE NEEDLE

*Figure 2-6: The Direction of Insertion*

Then insert the needle with a quick movement of the right hand. This method is suitable for points of the face or where the muscular mass is thin, e.g., Yintang (Ex. 1).

- d. Stretch the skin beside the acupuncture point with the thumb and forefinger and insert the needle rapidly with the right hand. This method is useful where the skin lies over loose tissue such as on the abdomen, e.g., Tianshu (St. 25).
- e) Insertion through a guide:- Some acupuncturists find it convenient to insert the needle through a tiny cylinder made of glass or metal. The type of needles used in this method have a smooth cylindrical handle that fits precisely inside the guide. This technique is popular in Japan, South Korea and in some Western countries.

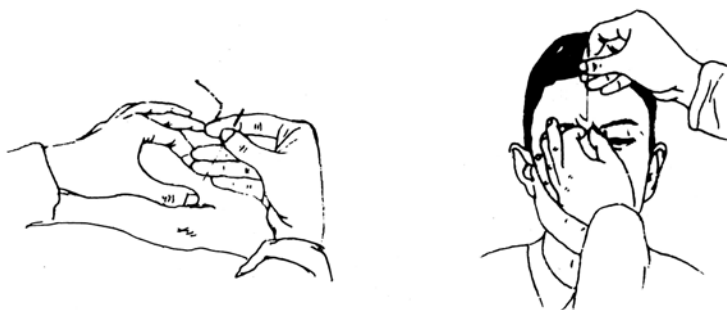


Figure 2-7: Method of Needle Puncture

The depth and direction of needle insertion vary with each situation.

The direction of insertion may be described in terms of the angle the needle makes with the skin surface. There are three directions of insertion:-

- | | | |
|---------------|---|--|
| Perpendicular | - | 90° to the skin,
e.g., Hegu (L.I. 4), Zusanli
(St. 36). |
| Oblique | - | 45° to the skin,
e.g., Liangmen (St. 21), Zhongfu
(Lu. 1). |
| Horizontal | - | 15° to the skin,
e.g., Baihui (Du 20),
Shanzhong (Ren 17). |

Perpendicular insertions are made when the underlying muscle is thick. Oblique insertions are made usually where an underlying structure has to be avoided. Horizontal insertions are made where the overlying tissue is very thin, e.g., all points in the scalp area.

Retaining of the needle:

Usually the needle is retained in position for 30 minutes and removed. Treatment is carried out for 15 days daily, every other day,

or every third day. Then a period of 15 days rest is given to allow for further improvement and hereafter the condition is reviewed. In the case of patients who are found not able to tolerate the retention of needles, each needle may be rapidly stimulated after insertion and withdrawn immediately.

In acute diseases like diarrhoea treatment may be carried out 3 or 4 times a day.

In very painful conditions like trigeminal neuralgia the needles may be retained up to one hour during which period intermittent strong stimulation may be given manually, or where an electrostimulator is available, continued dense-disperse electrical stimulation may be given.

Removal of the needle:

The needle is removed at the end of the period of treatment, rapidly but gently. Any jerky movements' can cause pain. The acupuncture point is then massaged with a dry sterile piece of cotton wool. This is done to prevent the entry of infection or the escaping of vital energy.

STIMULATION:

The stimulation with the needle at an acupuncture point is usually carried out in acute diseases, in paralytic conditions, for obtaining acupuncture anaesthesia, and (for a very short time) in the case of some patients who faint if the needles are left in the body.

Stimulation may be performed manually or electrically.

The following methods may be used in manual stimulation:-

i) *Lifting and thrusting:*

After insertion to the correct depth, hold the needle between the thumb and the forefinger, lift it a little and then thrust it

back to the original depth. The amplitude of the movement should not be more than a few millimeters.

ii) *Rotation:*

After insertion to the correct depth rotate the needle clockwise and counter-clockwise at an amplitude of not more than 180°. If the amplitude is greater, fibrous tissue and nerve tissue may get entangled in the needle causing undue pain to the patient. The needle is also liable to get stuck.

iii) *Combination of lifting and thrusting with rotation:*

This method generally gives better results but a good deal of practice is required to perfect the technique.

Under manual stimulation may be included the use of acupressure at points such as Renzhong (Du 26) in emergencies.

Electrical stimulation is more convenient and has the added advantage that the degree of stimulation could be more precisely regulated. However electrical stimulation must be performed with great care so that undue pain is not caused to the patient.

The frequency of manual stimulation is generally from about 30 times a minute up to about 200 times a minute. Where electrical stimulation is used for acupuncture anaesthesia the frequency used may vary from about 50 Hertz to about 6000 Hertz.

Manual stimulation should not be carried out at points close to vital organs, major blood vessels, special sense organs, or at Dangerous points. Electrical stimulation should not be carried out at Baihui (Du 20), and Neiguan (P. 6.). In the case of pregnant women, very small children, old and debilitated people and those with bleeding diathesis, it is wise not to stimulate any point as a rule.

Mild stimulation (re-enforcing method) is used in Yin disorders (deficient activity disorders) to increase the vital energy. Strong stimulation (reducing method) is used in Yang disorders (excessive activity disorders) to reduce the vital energy. The former procedure is known as tonification (Accumulation), and the later as sedation (dispersion) according to traditional Chinese medicine. When strong stimulation is being carried out the patient must be watched carefully and the stimulation discontinued as soon as adequate needle sensation is felt.

NEEDLING SENSATIONS (Deqi-Teh'chi)

The ancient Chinese physicians called the sensations felt on needling “deqi”. They attached great importance to the producing of deqi as this was usually an indication of the needle having been inserted at the correct point and to the correct depth, thus promising better therapeutic results.

The sensations felt by the patient are subjective and are described as:-

- a) numbness;
- b) heaviness;
- c) soreness;
- d) distension;

Radiation of one or more of these sensations usually along the Channel, may also be felt. This characteristic is referred to by modern acupuncturists as the P.S.C. phenomenon (Propagated Sensation along the Channels). P.S.C. can occur even in the missing part of a limb, thus the radiation is probably a central neurological happening.

It has been observed that different acupuncture points produce different qualities of sensations. Generally, when needling in areas where the muscular mass is thin, the sensation is one of local distension, while in areas where muscular mass is thick it is one of numbness or

soreness. When needling close to a nerve trunk, a sensation of “electric shock” may run down the path of the Channel (or nerve): for example, when needling the point Huantiao (G.B. 30), a sensation of electricity may run down the leg to the region of the ankle.

The sensation of deqi must be distinguished from pain due to improper needling.

DANGEROUS ACUPUNCTURE POINTS

There are certain acupuncture points overlying vulnerable structures. These are useful points in the treatment of common disorders and are therefore used very frequently. It is advisable for the beginner to learn puncturing these sites under the guidance of an experienced acupuncturist.

Following is a list of these points.

- a) Points of needle insertion into the orbit of the eye:-
 - i) Jingming (U.B. 1).
 - ii) Chengqi (St. 1).
 - iii) Qiuhou (Ex. 4).

- b) Certain points in the neck area:
 - i) Front of neck: Tiantu Ren 22 (- superior mediastinum).
 - ii) Side of neck: Neck-Futu (L.I. 18) (- over the great vessels of neck).
Tianrong (S.I. 17) (- over the carotid body).
 - iii) Back of neck: Yamen (Du. 15) (- over the spinal cord).
Fengfu (Du. 16.) (- over brain stem; introduction of needle in

the wrong direction may cause death by t damaging the upper part of the spinal cord or the brain stem).

- c) Points over the chest unprotected by bone or cartilage, e.g., Zhongfu (Lu. 1), Jianjing (G.B. 21).
- d) The point Liangmen (St. 21) on the right side as it overlies the gall bladder area. In order to prevent damage to the gall bladder, the needle at this point must be inserted superficially or obliquely, or the left side only may be punctured.
- e) Points in close proximity to the large vessels: Care must be taken to locate these points precisely to avoid damage to the large vessels, e.g., Taiyuan (Lu. 9), Quze (P. 3).
- f) The point Taichong (Liv. 3), can produce overcorrection of certain physiological conditions. In particular, hypertensive patients may suffer from too- rapid lowering of blood pressure.
- g) Ah-Shi points situated close to vulnerable structures.

A knowledge of anatomy is extremely important in carrying out acupuncture in order to avoid untoward complications resulting from damage to vulnerable structures.

It is best to avoid acupuncturing certain pathological sites such as an area of varicosity of veins, or an inflammatory area of unhealthy skin.

The author always stresses that acupuncture should be learnt after qualifying basic medical diploma such as M.B., B.S. etc. Non medical persons should be discouraged. This is the basic requirement of “Association” for promotion of acupuncture in Pakistan (APA), and author is advisor to this association.

CONTRAINDICATIONS OF ACUPUNCTURE

There are some diseases which do not respond to acupuncture. In these conditions it is advisable to avoid acupuncture and recommended the patient to seek other appropriate remedies.

A summary of some of these contraindications are given below:-

1) *Cancer and other malignant diseases:*

Acupuncture has no curative effect on malignant disorders. However, secondary effects such as severe pain, loss of appetite, mental depression and lack of sleep can be effectively and safely managed with acupuncture.

2) *Mechanical obstructions:*

If there is a mechanical obstruction like a twisted loop of intestine, severed tendon, or some object stuck in the throat, these will have to be mechanically removed.

3) *Clear indications for surgery:*

Fractured bone, a dislocated joint, a bleeding wound, congenital defects (like a hare-lip/cleft palate) are examples of this type of contraindication.

4) *Fulminating infections:*

Antibiotics are preferable in such cases. Acupuncture may however be combined with drug therapy, especially to relieve symptoms. Where the infection is resistant or the patient is sensitive to the antibiotic, acupuncture may be used.

5) *Pregnancy:*

In the first three months and the last three months of pregnancy it is best to avoid acupuncture as needling may cause abortion or premature delivery. This is only a relative contraindication. Vomiting of pregnancy has been effectively

treated with acupuncture. Acupuncture is also effective as a means of relieving the pain of childbirth.

Points which are likely to disturb a pregnancy are:

Hegu (L.I. 4).

Sanyinjiao (Sp. 6).

Zusanli (St. 36).

Taixi (K. 3).

Zhiyin (U.B. 67).

Points of the lower abdomen.

Ear (auriculotherapy) points related to the genitourinary system.

Strong manual stimulation or electrical pulse stimulation must be strictly avoided at all stages of pregnancy.

6) *Drugs:*

Patients receiving drug treatment for certain diseases may suffer complications due to the over correction of that condition by the homeostatic action of the needling. In this respect particular attention must be paid to patients having high blood pressure and to diabetic patients.

- a) An abrupt fall of blood pressure has been known to occur sometimes when patients suffering from very high blood pressure are needled at the point Taichong (Liv. 3). In hypertensive patients therefore the use of this point should be avoided. If this point is used in the treatment of hypertension itself; blood pressure levels should be watched during therapy. In all cases it is advisable to have the patient recumbent when using this point.
- b) In the case of diabetics it is possible that a hypoglycaemic state may occur. This type of situation can be brought about by a patient taking acupuncture treatment for some ailment other than diabetes mellitus and

continuing to take antidiabetic medication. It is prudent therefore to ascertain whether a patient is on such medication before commencement of treatment. His sugar level should be regularly determined during the course of treatment and the antidiabetic drug dosage adjusted accordingly.

- 7) *Haemorrhagic diseases:*
In haemorrhagic diseases needling must be done with care.
- 8) *Miscellaneous conditions:*
 - a) Very old patients.
 - b) Debilitated and dying patients.
 - c) Patients who have just had an intensive emotional experience or a period of excitement.
 - d) Patients sweating profusely.
 - e) Patients under the influence of alcohol.
 - f) Immediately after a hot bath.
 - g) Immediately after sexual intercourse.

COMPLICATIONS OF ACUPUNCTURE

1) *Pain:*

Causes of pain during needling may be due to

- a) Bad acupuncturist (unskilful insertion, clumsy stimulation, needle striking a sensitive structure).
- b) Bad needle (blunt or hooked needle).
- c) Bad posture (the patient is not correctly postured at the commencement of the needling).
- d) Bad patient (e.g., tense and anxious patient). Some degree of pain will always occur when acupuncturing close to special organs like the eyes, nose and ear. However at the majority of other points needling should be relatively painless, but pain threshold varies in different patients.

2) *Bleeding:*

Bleeding sometimes occurs on withdrawal of the needle. This may be considered a minor complication. Bleeding can often be prevented by avoiding any visible veins in the area. If bleeding occurs, massaging the point with a dry cotton swab will stop the bleeding and seal the wound.

Slight bruising and ecchymosis at the site of acupuncture is fairly common but has no dangerous implications.

3) Fainting (vaso-vagal):-

Fainting can be avoided by explaining the procedure of acupuncture to the patient beforehand to allay his anxiety, The anxious patient should preferably be treated in a recumbent position. Fainting can be alarming to the patient and onlooker alike. However it has been observed that the patient who faints will be found to respond very well to acupuncture treatment. This should be explained to the patient and his relatives. On the patient's first visit it is best to insert only one or two needles. Afterwards and number of needles at each sitting should not generally exceed 6 to 8.

When fainting occurs, remove the needles immediately, place the patient in a recumbent position, and perform acupressure at the point Renzhong (Du 26), or needle Yongquan (K.l) or other Jing-Well point. After the patient has recovered he may be given a hot drink.

It is not very unusual to have a patient fainting at his first sitting. However if fainting occurs at subsequent sitting the technique of quick insertion, stimulation and immediate withdrawal should be practised. This procedure is known as the non-retention method of needling.

Patients who take treatment in a seated position should be closely watched at the initial sittings. The needles should be

immediately removed if any untoward feeling is complained of by the patient.

The following are the less common complications of acupuncture.

4) *Bent, broken or stuck needle:-*

The bending of a needle after it has been inserted may occur due to too forcible insertion of the needle or due to the patient changing his posture after insertion. The angulation may be visible at the skin surface or it may be at a deeper level. The patient should be put back to his original posture and the needle should then be withdrawn following the bend. Efforts at forcible withdrawal may result in a broken or stuck needle, but it is very rare.

A stuck needle is caused by the impaction of the needle in the surrounding tissues, making it difficult if not impossible to remove. It may be due to muscular spasm, or the entanglement of the needle in fibrous tissue during manual stimulation, or the patient having changed position after the insertion. The management of this complication consists of allaying the patient's apprehensiveness, relaxing his muscles or changing his posture slightly, after which gentle removal of the needle should be attempted. Application of light massage around the area of the stuck needle, or insertion of another needle at points above and below the stuck needle may help in obtaining better relaxation of the muscles. If the needle is entangled in fibrous tissue it should be rotated in a direction opposite to the original direction of rotation until, it becomes disentangled.

5) *Infection:*

It is strange to note that complications like abscess formation or systemic infection are hardly ever reported. The reason for this is not clearly understood, but it may possibly be due to the

leucocytosis and increase of immune responses associated with acupuncture. Nevertheless, every attempt should be made to maintain asepsis. In particular, precautions must be taken to prevent the transmission of infective hepatitis by the needles. Aseptic precautions must also be particularly observed in ear acupuncture as the cartilage of the ear, being avascular is very resistant to treatment.

6) *Injury to internal organs or vital structures:*

This is an unlikely complications as not much damage can be done to an internal organ with a filiform needle.

7) *Fall in sugar and blood pressure level:-*

a) Fall of blood sugar below the normal level (hypoglycaemia) in a diabetic patient who is on antidiabetic drugs.

b) The too rapid fall of blood pressure in a hypertensive patient.

8) Addiction, to acupuncture is seen sometimes in chronic pain patients.

9) Following rare complications have also been recorded:- Nerve, artery and vein damage, injury to middle ear, haemarthrosis, cardiac tamponade, generalised convulsion paralytic ileus, foreign body granuloma cardiac dysrhythmias etc.

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**THE CONCEPT
OF
CHANNELS**

THE CONCEPT OF CHANNELS AND COLLATERALS

Chinese traditional medicine considers that channels (jing) and collateral (luo) are pathways distributed in the human body in which “blood” and “qi” (vital energy) circulate. They form a network connecting the superficial and deep portions of the human body, regulating the function of the whole body.

Channels are the main trunks running length wise, while the collaterals are their branches.

Channels can be classified into two groups: the regular channels and the extra channels. Together they form the channel system. Generally, the regular channels are known as the Twelve Channels and the extra channels as the Eight Extra Channels.

As for collaterals, there are the major collaterals and the sub-collaterals. They make possible connection between one channel and another.

The channels are symmetrically distributed over the entire body. Internally, they connect with the viscera, and externally with the four extremities, skin and the sense organs; making the body an organic whole.

Chinese discovered in the course of struggling against disease that stimulating certain spots of the body surface cured internal diseases. They called such spots “points” They further discovered that stimulating a definite series of points ameliorated the syndrome of diseases of a specific organ. As they connected these points and the functions of the organs into a system, the theory of the channels and collaterals was gradually formed.

The Twelve Channels:

Because the Twelve Channels, in their course of circulation, superficially connect with the upper and lower extremities, head and trunk, and internally with the zang organs (heart, pericardium, liver, spleen, lung, kidney) or the fu organs (gall bladder, stomach, small intestine, large intestine, urinary bladder, Sanjiao - the upper, middle and lower portions of the body cavity), and as the medial aspect of the extremities and the zang organs are considered to relate to -yin (yeen) while the lateral aspect of the extremities and the fu organs are related to yang (young), the name of a channel is composed of three parts: (a) hand or foot, (b) yin or yang, and (c) zang or fu.

The channels taking their course in the planner (anterior) aspect of the upper extremities and pertaining to the zang organs are called the Three Yin Channels of Hand, while those taking their course in the dorsal (posterior) aspect of the upper extremities and pertaining to the fu organs are called the Three Yang Channels of Hand; likewise, the channels which run in the medial aspect of the lower extremities are termed as the Three Channels of Foot, while those channels which run in the lateral aspect of the lower extremities are known as the Three Channels of Foot. Collectively they are known as the Twelve Channels.

THE TWELVE CHANNELS (Meridians)

<i>Name of the Regular Channels (Meridians):</i>	<i>Abbrev.</i>
1. The Lung Channel of Hand-Taiying	Lu.
2. The Large Intestine Channel of Hand-Yangming	L.I.
3. The Stomach Channel of Foot-Yangming.	St.
4. The Spleen Channel of Foot-Taiyin.	Sp.
5. The Heart Channel of Hand-Shaoyin.	H
6. The Small Intestine Channel of Hand-Taiyang.	S.I.
7. The Urinary Bladder Channel of Foot-Taiyang	U.B.
8. The Kidney Channel of Foot-Shaoyin.	K.

- | | |
|--|------|
| 9. The Pericardium Channel of Hand-Jueyin. | P. |
| 10. The Sanjiao Channel of Hand-Shaoyang. | S.J. |
| 11. The Gall Bladder Channel of Foot-Shaoyang. | G.B. |
| 12. The Liver Channel of Foot-Jueyin | Liv. |

Name of the Extra Channels (Meridian):

1. Du or Governor Meridian
2. Ren or Conception Meridian H. S.I. U.B K. P. SJ. G.B Liv. Du. Ren

12 REGULAR MERIDIANS

THE LUNG MERIDIAN (Lu)

The Lung Meridian of Hand-Taiyin

Course: This channel (Meridian) originates in Zhong jiao (the middle portion of the body cavity), running downward to connect with the large intestine. Turning back it follows the cardiac orifice, then passes through the diaphragm to enter its pertaining organ - the lung. From the portion between the lung and the throat it comes out transversely (Zhongfu, Lu. 1), Descending, it runs along the medial aspect of the upper arm and passes in front of the Heart Channel and the Pericardium Channel, reaching the cubital fossa. From there it runs along the anterior border of the radius on the medial aspect of the forearm and goes into Cunkou (above the radial artery of the wrist where the pulse is felt). Then it passes Pt. Yuji (Lu. 10) and emerges from the medial side of the tip of the thumb (Shaoshang, Lu. 11). The Branch of the Proximal Aspect of the Wrist splits from Pt. Lieque (Lu. 7), then runs directly to the radial side of the tip of the index finger (Shangyang, L.I. 1). It connects with the Large Intestine Channel of Hand-Yangming.

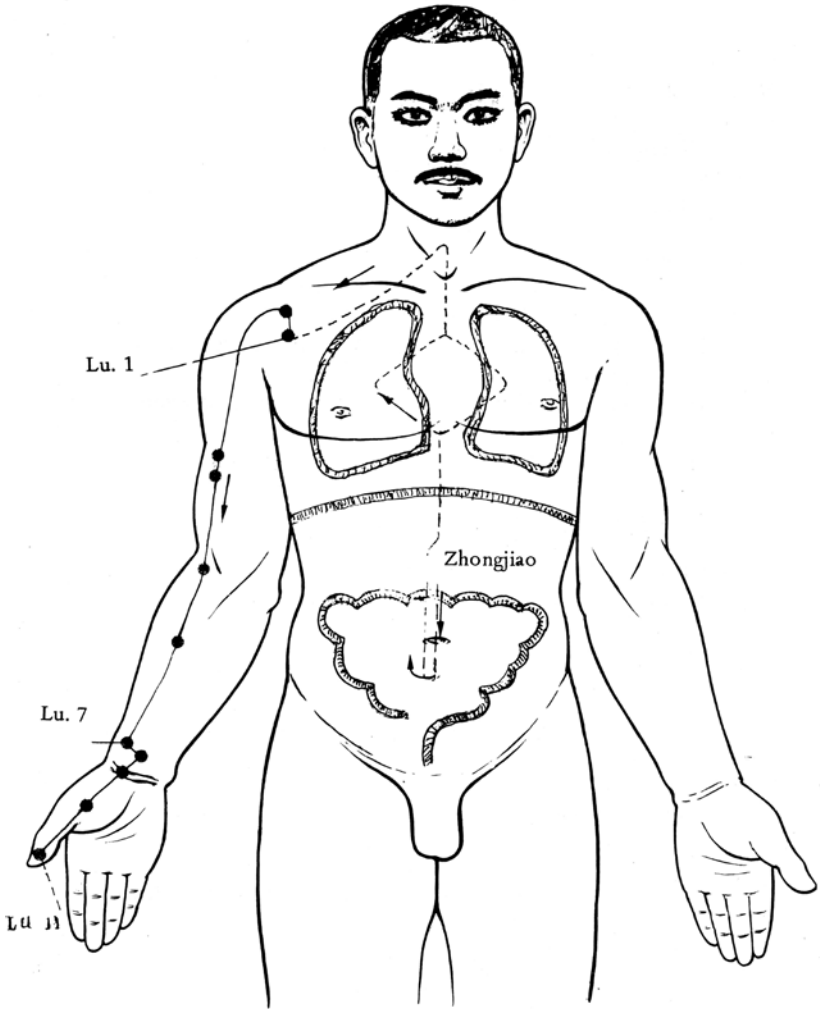


Figure 3-1: The Lung Channel of Hand-Taiyin.

LUNG CHANNEL (Lu).

Polarity	:	Yin
Number of points	:	11
Pertaining Organ	:	Lung
Related Channel	:	Large Intestine Channel (Li)
Element	:	Metal
Energy flow	:	Centrifugal

Clinical uses:

- 1) Disorders along the Lung Channel.
- 2) Disorders of the respiratory system.
- 3) Skin disorders (Lung is connected to the tissue, skin).
- 4) Vascular disorders.
- 5) Disorders of the Large Intestine (the related Yang Organ).
- 6) Neck disorders.

Description of the commonly used points:

Zhongfu (Lu. 1). (Chung/ii). Alarm (Mu Front point of the lung)
Dangerous point.

- Location: (1) At the level of the interspace between the 1st and 2nd ribs, 6 cun lateral to the midline.
- (2) In the infraclavicular fossa 1.5 cun below the midpoint of the clavicle.

Indications: Cough, pain in the chest and shoulder area, diseases of the lung, bronchial asthma, bronchitis.

Puncture: 0.5 cun laterally and horizontally. Moxa is applicable.

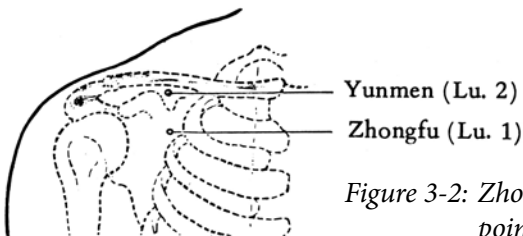


Figure 3-2: Zhongfu (Lu.1) Mu-Front point of the Lung

- Note:
- a) As the lung lies underneath this point, it is a Dangerous point. Inserting the needle perpendicularly may cause collapse of the lung. The beginner must be careful if this point is used. It is advisable for the beginner to use the point Shanzhong (Ren 17) for the same indications.
 - b) This is the *Front Alarm point* of the Lung. In disorders of the Lung this point becomes tender (painful to pressure). (An Alarm point is a specific acupuncture point which becomes tender when there is disease of the related Organ).
 - c) This point illustrates a fundamental principle of acupuncture that all acupuncture points treat diseases of the local and adjacent areas.

(Recent research has shown that the local points are generally the most effective points in the treatment of most disorder).

Chize (*Lu. 5*). (*Chihitse*). Water point. Son point.

Location: At the level of the elbow crease, on the lateral (radial) border of the tendon of the biceps muscle. (This tendon is better felt when the elbow is lightly flexed.)

Indications: Pain and swelling of the elbow, arthritis of the elbow, skin diseases.

Puncture: 0.5 cun perpendicularly. Bleeding at this point is carried out for skin disorders. This is a very effective therapy for psoriasis and for eczema especially with pruritus.

Kongzui (*Lu. 6*). (*Kungtsui*). Xi-Cleft point.

Location: 5 cun distal to Chize (*Lu. 5*) on the path of the Channel. It is located on the medial border of the radius.

Note: 5 cun = 6 finger breadths.

Indications: Used in acute respiratory diseases, e.g., an acute attack of asthma, tonsillitis, acute cough, acute rhinitis, pruritus.

Puncture: 0.5 cun perpendicularly. Strong manual stimulation is carried out.

Note: In each Channel there is a point for treating acute disorders of the pertaining Organ. This point is known as the *Xi-Cleft point*. For treating acute disorders of the Lung, for example in acute bleeding from the lung (haemoptysis), this point may be used until specialized medical treatment becomes available. It is very effective in the treatment of acute asthmatic attacks.

Lieque (*Lu. 7*). (*Liehchueh*). Luo-Connecting point. One of the six important Distal points. Confluent point of the Ren Channel.

Location: When the index fingers and the thumbs of both hands of the patient are crossed, this point is under the tip of the upper index finger. However, the better method of locating this point is by measuring 1.5 cun proximally from the wrist joint crease on the outer, radial or lateral border of the forearm. (1.5 cun = 2 finger breadths).

Indications: Headache on the back of the head (Occipital headache), stiff neck, cervical spondylosis, pain along the back of the chest, lung disorders such as bronchial asthma, bronchitis, skin disorders,



Figure 3-3: Location of Lieque I.u-7):

Puncture: 0.5 cun horizontally. The needle is directed proximally in proximal disorders i.e., where it is used as a Distal point. In disorders such arthritis of the wrist the needle is inserted distally. Local moxibustion is carried out in De Quervain's disease.

Note: All points distal to the elbow and distal to the knee also treat proximal disorders. There are six commonly used Distal points. Of these, 3 are situated in the arm and 3 in the leg:-

<i>Distal Point</i>	<i>Proximal Areas of Influence</i>
<i>Arm:</i>	
<i>Lieque (Lu 7):</i>	Back of the head and neck. Lung diseases, disorders of the upper half of the spine.
<i>Hegu (L.I. 4):</i>	Front of head and neck, face and Hegu special sense organs. (This is the most potent analgesic point of the body).
<i>Niguan (P. 6):</i>	Front of chest and upper half of abdomen (above the umbilicus), and the internal organs in these regions.
<i>Leg:</i>	
<i>Zusanli (St. 36):</i>	Abdomen, including the internal Abdominal organs. (This is also a general Tonification point).
<i>Weizhong (U.B. 40):</i>	Low backache, sciatica, genito-urinary disorders.
<i>Sanyinjiao (Sp. 6):</i>	Pelvic disorders, external genitalia, perineal area. (This is also a Tonification point).
<i>Taiyuan (Lu. 9):</i>	Yuan-Source point, Influential point for vascular disorders. Earth point. Mother point

Location: At the outer end of the wrist crease, on the lateral side of the radial artery.

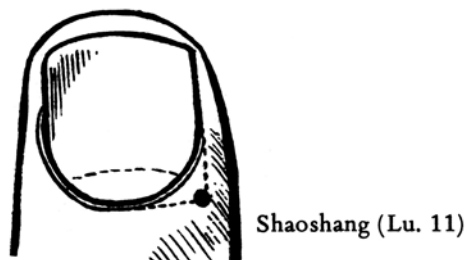


Figure 3-4: Location of jing-well point Shaoshang (Lu. 11)

Indications: Diseases of the wrist joint, arteriosclerosis and other vascular disorders.

Puncture: 0.3 cun perpendicularly (avoiding the radial artery).

Note: An Influential point is an acupuncture point used to treat specific tissue disorders. According to traditional Chinese medicine there are 8 such specific tissues, and therefore 8 named Influential points.

Shaoshang (Lu. 11). (*Shaoshang*). *Jing-Well point.*

Location: 0.1 cun proximal to the outer (lateral or radial) corner of the nail of the thumb.

Indications: Hysterical attack, fainting, epileptic attack convulsions, high fever, cardiac arrest, drowning, respiratory arrest, and other acute emergencies, Resuscitation of the newborn.

Puncture: 0.1 cun perpendicularly to cause bleeding or strong acupressure to cause intense pain.

Note: a) **The distal most point of each of the 12 Channels is known as a jing-Well point.** These points are used to treat acute emergencies such as coma, severe pain, high fever and shock. The point Yongquan (K.I.) is generally considered the most responsive point. However, the point Renzhang (Du 26) is used more often in practice due to its easier accessibility and its responsiveness even to finger-pressure.

This is the yang-most point in the body, as there are 3 yang Channels crossing here.

- b) **A Yuan Source point is a point at which the energy accumulates.** From here the Yin energy is converted to yang energy, or vice versa, before it is transferred to the Paired Channel via the Luo-Connecting point of the latter Channel. A Yuan-Source point may be specifically used in treating subacute and chronic disorders of the pertaining Organ. Where there is an imbalance of energy between two Paired Channels of their respective Organs, a combination of the relevant Yuan-Source and Luo-Connecting points may be used to re-establish the balance (for the Luo-Connecting point of the deficient Channel of Organ only may be needed.).

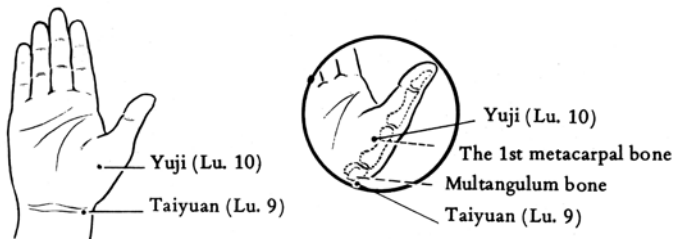


Figure : 3-5 Location of Lu. 9. and Lu. 10.

Figure 3-5: Location of Lu. 9. and Lu. 10

- c) The Lung Channel and the Large Intestine Channel (as also the other Paired Channels) have points called Luo-Connecting points which serve the function of connecting the Yin and Yang Channels which are paired, thereby obtaining a balancing of the vital energy. This connection is achieved by collateral Luo channels connecting the Yuan-Source point and Luo-Connecting point of the Paired Channels, thus:-

<i>Yuan-Source Point</i>	<i>Luo-Connecting Point</i>
Taiyuan (Lu. 9).....	and..... Pianli (L.I. 6).
Hegu (L.I. 4).....	and..... Lieque (Lu. 7).

Each of the Fourteen Channels has a Luo-Connecting Point, with an extra point possessed by the Spleen Channel, making a total of 15. They are used for treating diseases

involving both Paired Channels caused by an imbalance of vital energy between them. Energy may flow in either direction in the Luo channels. When an imbalance occurs in the coupled Organs or Channels, the Luo-Connecting point of the deficient Organ or Channel is needed.

List of all the acupuncture points of the Lung Channel):

- | | | |
|--------|--|---|
| Lu. 1 | Zhongfu
(central prefecture) | - Alam point (Mu-Front) of the Lung,
Dangerous point. |
| Lu. 2 | Yunmen
(cloud gate) | |
| Lu. 3 | Tianfu
(heaven prefecture) | |
| Lu. 4 | Xiabai (gallantry) | |
| Lu. 5 | Chize
(short narrow marsh) | - Water point. Son point. |
| Lu. 6 | Kongzui
(extreme short coming) | - Xi-Cleft point |
| Lu. 7 | Lieque
(broken sequence) | - Luo-Connecting point, one of the 6 important Distal points.
Confluent point. |
| Lu. 8 | Jingqu
(meridian gutter) | - Metal point (Element point),
Horary point. |
| Lu. 9 | Taiyuan
(great gulf) | - Yuan-Source point, influential point Earth point Motor point. |
| Lu. 10 | Yuji (Fish border) | - Motor point Fire point. |
| Lu. 11 | Shaoshang
(yang tradesman) | - Jing-Well point Wood point. |

Note 1: There are 12 Paired Channels on each side (6 Yin and 6 Yang), Each Yin Channel is coupled to a Yang Channel. Thus there are 6 pairs coupled as follows:

Lu.-L.I., St.-Sp., H.-S.I., U.B.-K.; P.-S.J. G.B.-Liv. Vital energy flows sequentially in this order. From the Liver Channel the energy flows to the Lung Channel again, to complete the cycle.

The maximum flow of energy takes a period of two hours in each of the Twelve Channels thus completing a full cycle within a 24 hour period. In the Lung Channel the cycle commences at 3.00 a.m. and ends at 5.00 a.m. The use of the appropriate time of day using the Horary (Element) point to treat an Organ disorder is known as the Noon-Midnight Law (also called Midday-Midnight Law or the Organ Clock), the phenomenon of circadian rhythm or biorhythm.

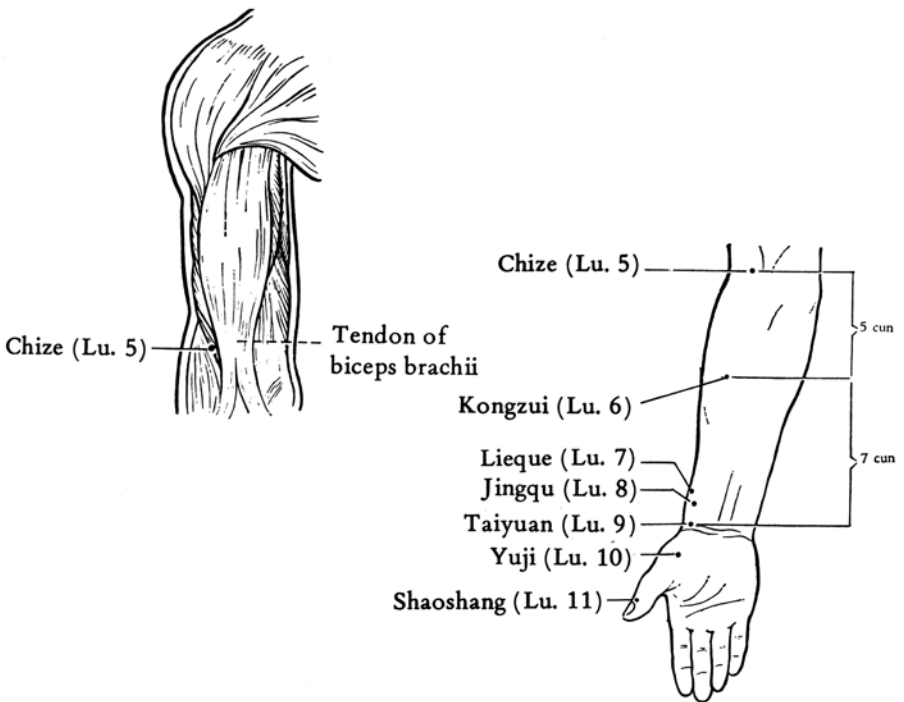


Figure 3-6: Points on Lung Meridian

THE LARGE INTESTINE MERIDIAN (LI)

The Large Intestine Channel of Hand-Yangming

Course: This channel (meridian) starts from the tip of the index finger (Shangyang, L.I. 1). Then it runs upward along the radial side of the index finger, passing through the interspace of the first and the second metacarpal bones (Hegu, L.I. 4). From there it goes into the depression between the tendons of m. Extensor pollicis longus and brevis, then along the antero-lateral aspect of the forearm to the lateral side of the elbow. From there it runs along the anterior border of the lateral side of the upper arm to the highest point of the shoulder (Jiayu, L.I. 15), and along the anterior border of the acromion up to the 7th cervical vertebra (Dazhui, Du 14), from where it turns downward into the supraclavicular fossa to communicate with the lung. It then passes through the diaphragm and enters its pertaining organ—the large intestine. The Branch from the Supraclavicular Fossa ascends through the neck, passes through the cheek and enters the lower teeth and gum. Then it curves around the upper lip and crosses the symmetrical channel at the philtrum. From there the channel of the left side crosses over to the right and the right side channel crosses to the left, leading to the sides of the nose (Yingxiang, L.I. 20) and connecting with the Stomach Channel of Foot-Yangming.

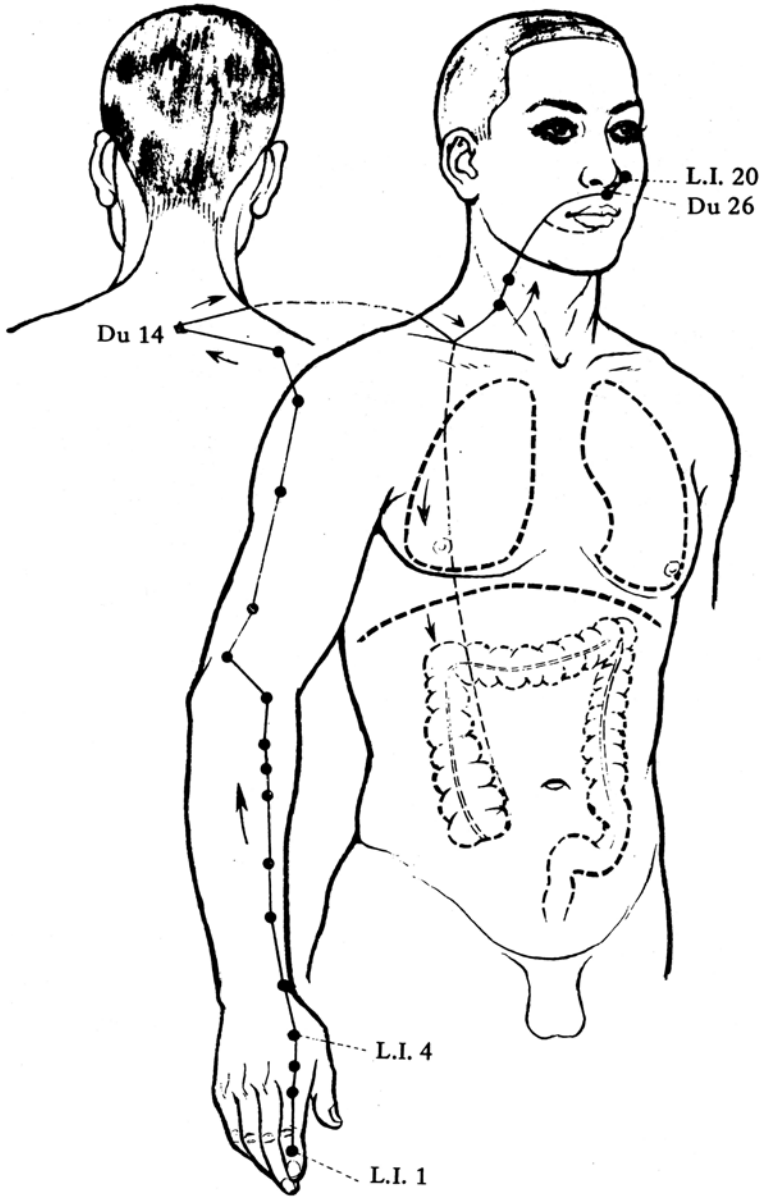


Figure 3-7: The Large Intestine Channel of Hand-Yangming

LARGE INTESTINE CHANNEL (LI)

- Polarity : Yang
- Number of Points : 20
- Pertaining Organ : Large Intestine.
- Related Channel 1 Lung Channel (Lu)
- Element: Metal
- Energy flow: Centripetal.

Clinical uses:

- 1) Relief of pain. The point Hegu (L.I. 4), is the best analgesic point in the body.
- 2) Diseases along the Channel, e.g.; paralysis of the upper limb, frozen shoulder.
- 3) Respiratory disorders, e.g., rhinitis, pharyngitis.
- 4) Fever.
- 5) High blood pressure.
- 6) Skin disorders.
- 7) Therapy and surgery of thyroid gland disorders.

Description of the commonly used points .

Hegu (L.I. 4). (*Hoku*). Yuan-Source point. (In Chinese “Hegu” means “the great eliminator”. One of the six important Distal points.

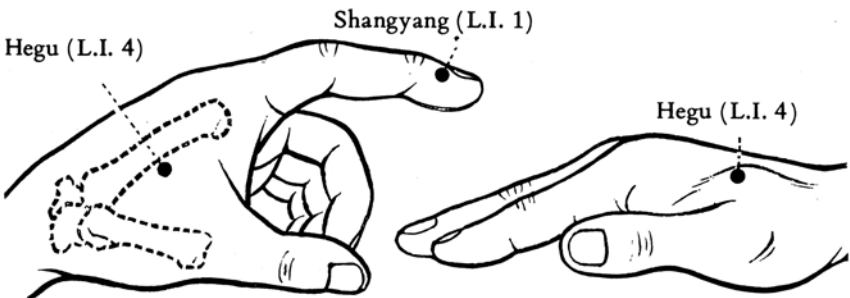


Figure 3-9: Method of Localizing Hegu (L.I. 4)

Location: It is situated in the web between the forefinger and thumb on the dorsal (posterior) aspect of the hand, and may be located by one of 4 methods:-

- a) When the forefinger and the thumb are adducted, at the highest point of the muscles on the back of the hand.
- b) At the midpoint of line drawn from the junction of the 1st and 2nd metacarpal bones to the middle point of the border of the web.
- c) Place the distal-most crease of one thumb against the web between the opposite thumb and forefinger. Where the tip of the former thumb (when it is flexed) then rests, is the point Hegu (L.I. 4), of the later hand.
- d) At the middle of the 2nd metacarpal bone, on the radial aspect (The acupuncture point falls more medially by this method. This is the method commonly used in acupuncture anaesthesia.).

Note: The 2 locations described by these methods lie in relation to the motor points of the adductor pollicis and of the first dorsal interosseous muscles respectively.

Indications:

- a) Disorders of the thumb, forefinger and wrist joint.
- b) The best analgesic point of the body both for therapy and anaesthesia.
- c) Distal point for front of the head, face, special sense organs, and front of neck.
- d) Disorders of the large intestine, e.g., acute intestinal colic).
- e) Disorders of the lung.

Puncture: 0.5 to 0.1 cun perpendicularly, or towards Laogong

Note: There are 5 important physiological effects of needling. This point exhibits all effects' well, although its principal effect is the analgesic effect. There is likewise a specificity of effect at certain

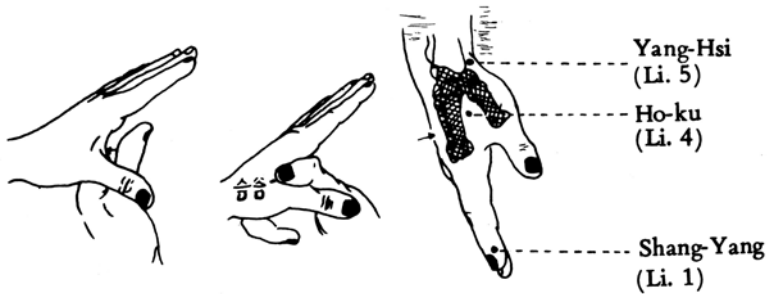


Figure 3-10 : Methods of Locclizing Hegu LL 4.

acupuncture points, i.e. these 5 physiological effects are found to be more pronounced at certain points. These points are summarised below:-

<i>Eject</i>	<i>Acupuncture Points</i>
1) Analgesic.	Hegu (L.I. 4), Neiting, (St. 44).
2) Sedative.	Baihui (Du 20), Shenmen, (H.7), Shenmai (U.B. 62).
3) Homeostatic (regulatory)	Quchi (L.I. 11), Zusanli (St. 36), Sanyinjiao (Sp. 6).
4) Immune-enhancing, anti-inflammatory.	Dazhui (Du 14), Quchi (L.I. 11), Sanyinjiao (Sp. 6).
5) Motor recovery.	Acupuncture points situated over the motor points of the affected muscles, e.g., Femur-Futu (St. 32).

Shousanli (L. I 10.). 6S'housanli). Shiatsu point to relieve pain.

Location: On the lateral aspect of the forearm, 2 cun below Quchi (L.I. 11). Motor point of the brachio-radialis muscle.

Indications: Tennis elbow, arthritis of the elbow, pain, tremor or paralysis of the forearm as in stroke, paraesthesia.

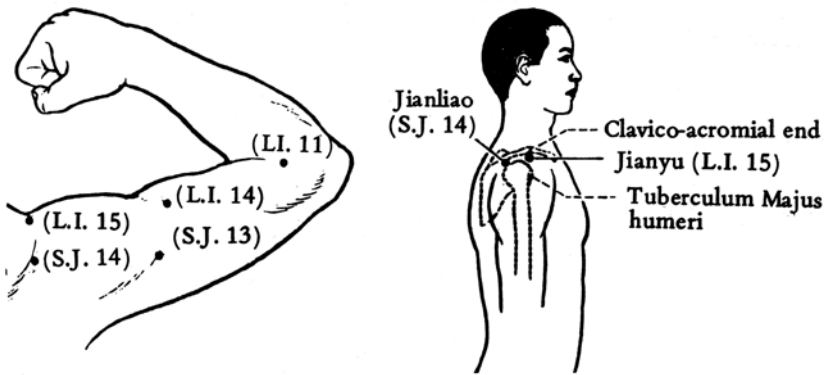


Figure 3-11: Location of Quchi (L.I. 11) and Hanyu (L.I. 15)

Puncture: 1.0-1.5 cun perpendicularly. Acupressure to relieve pain.

Quchi (L.I. 11). (Chuchih). Homeostatic point.

- Location:*
- a) At the outer end of the elbow crease when the elbow is semiflexed.
 - b) Midway between Chize (Lu. 5) and the lateral epicondyle of the humerus when, the elbow is semiflexed.

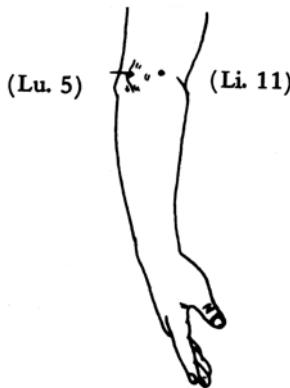


Figure 3-12: Location of Quchi (L.I. 11)

Indications: Disorders of the elbow, tennis elbow paralysis of the arm, high blood pressure, skin diseases. This is the best homeostatic point of the body.

Puncture: 1.0 to 1.5 cun perpendicularly. Moxibustion may be used in deficiency disorders.

Jianyu (LL 15.). (*Chienyu*). In Chinese “Jian” means shoulder.

Location: At the anterior depression lateral to the tip of the acromion process.

Indications: Disorders of the shoulder joint and the surrounding tissues, e.g., periarthrosis of the shoulder (frozen shoulder), paralysis of the arm.

Puncture: 0.5 to 1.0 cun perpendicularly.

Note: This point is commonly used for disorders of the shoulder joint in combination with Jianliao (S.J. 14) and Jianzhen (S.I. 9.). When pain is present, the Distal point Hegu (L.I. 4) may be added for very effective results. A frozen shoulder responds quicker to acupuncture than to any other form of treatment (Refer also to point Tiaokou St. 38).

Nec-Futu (LL 18.) (*Futu*). *Endocrine point.*

Location: 3 cun lateral to the prominence of the thyroid cartilage, (the Adam’s apple).

Indications: Cough, excessive sputum, sore throat, thyroid enlargement, insufficiency of the thyroid gland, diabetes mellitus. This point is commonly used as the local point in thyroid surgery.

Puncture: 0.5 cun perpendicularly.

Note: This is a Dangerous point (vulnerable point) as the great vessels of the neck, vagus nerve, sympathetic trunk and the baro-receptors are situated in this area. This point is used mainly for thyroid surgery.

Nose-Heliao (L.I. 19). (*Heliao*).

Location: 0.5 cun lateral to point Renzhong (Du 26.), after the channel has crossed the midline.

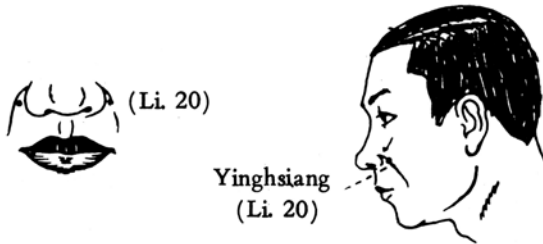


Figure 3-13: Point of Large Intestine Yinghsiang (LI. 20)

Indications: Bleeding from the nose (epistaxis), nasal obstruction, facial paralysis, trigeminal neuralgia, toothache.

Puncture: 0.3 to 0.5 cun obliquely and directed medially.

Yingxiang (L.I. 20), (*Yinghsiang*). In Chinese “Yingxiang” means welcome fragrance.

Location: In the horizontal line drawn from the outermost point of the ala nasi on the naso-labial groove.

Indications: Rhinitis, nose bleeding (epistaxis), blocking of the nose due to an inflammation, sinusitis, facial paralysis, trigeminal neuralgia, toothache.

Puncture: 0.3 to 0.5 cun obliquely and directed medially.

List of all the acupuncture points of the Large Intestine Channel:

- | | | |
|--------|-------------------------------------|----------------------------------|
| L.I. | Shangyang
(merchant yang) | - Jing-Well points, Metal point. |
| L.I. 2 | Erjian
(second interval) | - Water point. |

- L.I. 3: **Sanjian**
(third interval) - Wood point.
- L.I. 4: **Hegu**
(joining of the valley) - Yuan-Source point, the best analgesic point of the body, one of the 6 important Distal point.
- L.I. 5: **Yangxi**
(yang stream) - Fire point.
- L.I. 6: **Pianli**
(inclined passage) - Luo-Connecting point.
- L.I. 7: **Wenliu**
(warm current) - Xi-Cleft point.
- L.I. 8: **Xialian**
(lower angle) - Best homeostatic point of the body, immune enhancing point, Earth point.
- L.I. 9: **Shanglian**
(upper angle)
- L.I. 10: **Shousanli**
(three miles)
- L.I. 11: **Quchi**
(crooked pond)
- L.I. 12: **Zouliao**
(elbow bone)
- L.I. 13: **Wuli**
(five miles)
- L.I. 14: **Binao**
(outer bone of arm)
- L.I. 15: **Jianyu**
(shoulder bone)

L.I. 16: **Jugu** (great bone) - Dangerous point.

L.I. 172: **Tianding**
(heavenly vessel)

L.I. 18: **Neck-Futu**
(support and rush)

L.I. 19: **Nose-Heliao** (grain bone)

L.I. 20: **Yingxiang**
(welcome fragrance)

From Yingxiang (L.I. 20) the Yang vital energy flow on to Chengqi (St. 1). The Large Intestine channel is therefore the mother of the Stomach channel, which is the son channel.

Note: The Lung and the Large intestine are related to the skin and also to the body hair. These two organs are also connected to the nose. Every Organ is similarly connected to specific tissues and to a special sense organ. The Large Intestine Channel is not usually used in treating chronic disorders of the Large Intestine.

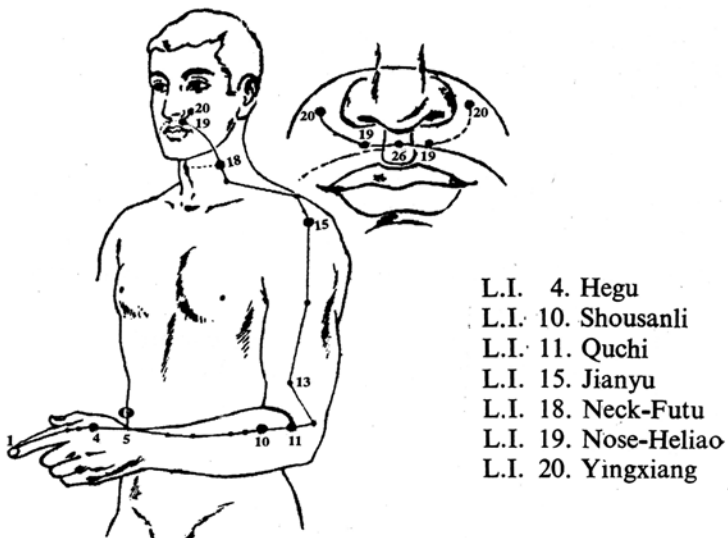


Figure 3-14: Important Points on Large Intestine Meridian.

THE STOMACH MERIDIAN

The Stomach Channel of Foot-Yangming

Course : This channel (Meridian) starts from Pt. Yingxiang (L.I. 20) lateral to ala nasi, then it ascends to the root of the nose meeting the Urinary Bladder- Channel at Pt. Jingming (U.B. 1). Descending along the lateral side of the nose (Chengqi, St. 1), it enters into the upper gum. Emerging and curving around the lips, it meets the symmetrical channel at the middle of the mental labial groove (Chengjiang, Ren 24). Coming out at Pt. Daying (St. 5) and running along the angle of the jaw (Jiache, St. 6), it goes upward in front of the ear and passes through Shangguan (G.B. 3) of the Gall Bladder Channel of Foot- Shaoyang, then following the hairline it reaches the forehead (Touwei, St. 8).

The Facial Branch sprouts in front of Daying (St. 5), running downward to Renying (St. 9). From there it goes along the throat to the supraclavicular fossa, descending through the diaphragm to enter its pertaining organ, the stomach, and communicate with the spleen.

The main channel runs straight downward from the supraclavicular fossa along the mammillary line, then medially descends along the sides of the umbilicus and enters the lower abdomen (Qichong, St. 30).

The Stomach Branch starts from the pylorus, descends inside the abdomen and joins the original channel at Qichong, (St. 30). Running downward, passing Biguan (St. 31) further through Femur-Futu (St. 32) right to the knee, it runs along the antero-lateral aspect of the tibia directly to the dorsum of the foot from where it reaches the lateral side of the tip of the second toe (Lidui, St. 45).

The Tibial Branch deviates at Pt. Zusanli (St. 36) 3 cun below the patella and terminates at the lateral side of the middle toe. The Branch from the Dorsum of Foot splits at Pt. Chongyang (St. 42) and

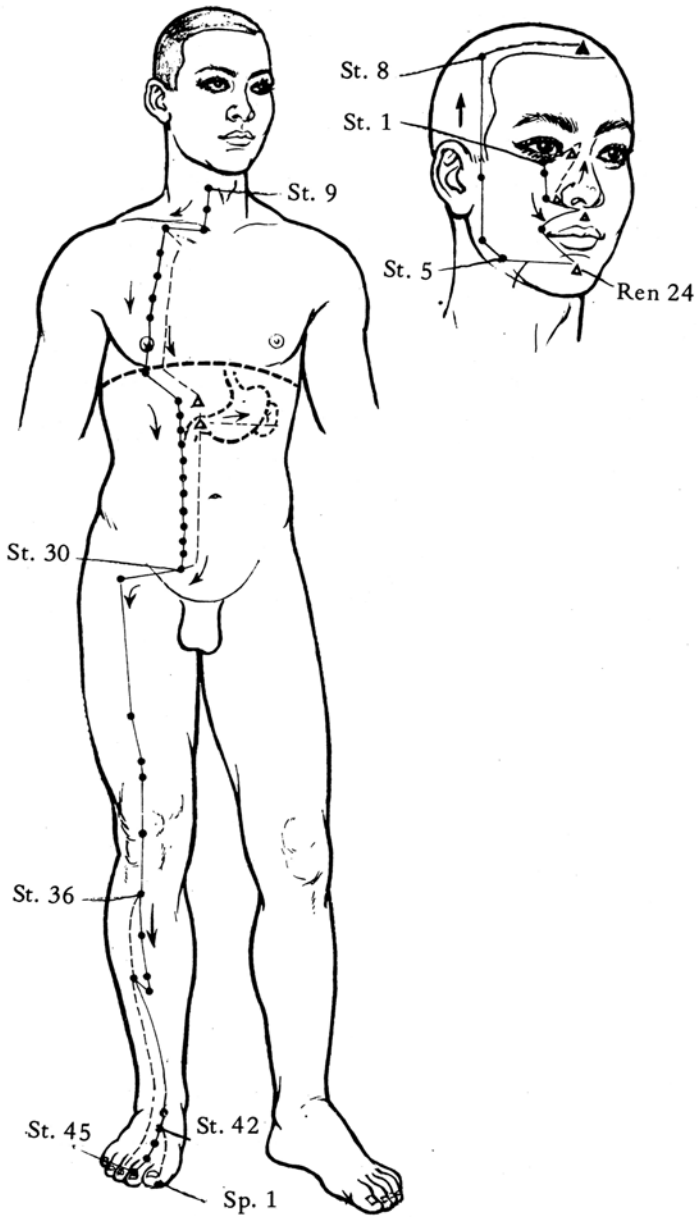


Figure 3-15: The Stomach Channel of Foot-Yangming

terminates at the medial side of the great toe (Yinbai, Sp. 1). There it connects with the Spleen Channel of Foot-Taiyin.

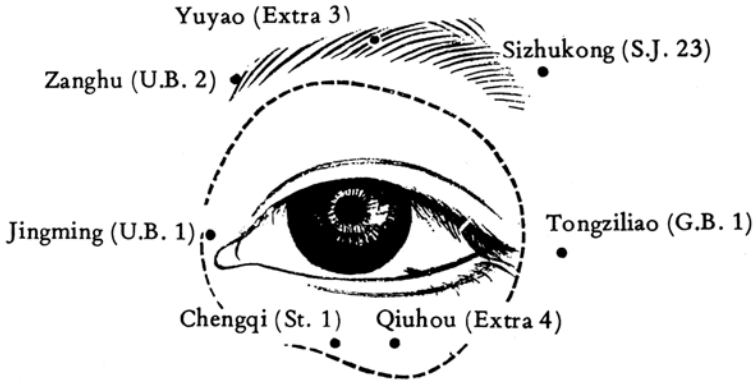


Figure 3-16: Start of Stomach Meridian: Point Chengqi (St. 1)

STOMACH CHANNEL (ST)

- Polarity: Yang
- Number of points 145
- Pertaining Organ: Stomach
- Related Channel: Spleen Channel (Sp)
- Element: Earth.
- Energy flow 2 Centrifugal.

Clinical uses :

- 1) Disorders of the stomach and other abdominal organs.
- 2) Disorders along the Channel:-
 - a) face area, e.g., trigeminal neuralgia, toothache, facial paralysis, sinusitis
 - b) chest diseases
 - c) abdomen, e.g., gastro-intestinal disorders, menstrual disorders :
 - d) lower limb, e.g., paralysis of the lower limb, disorders of the joints of the lower limb.

Description of the commonly used points :

Chengqi (St. 1). (*Chengchi*).

Location: Below the eyeball at the midpoint of the lower margin of the orbit.

Indications: Disorders of the eyes and eye-lids.

Puncture: 0.3 to 0.5 cun perpendicularly. Insert the needle along the floor of the orbit, with the patient's eyeball turned upwards.

Note: a) All points located in the orbit are Dangerous Points i.e., Chengqi (St. 1). Jingming (U.B. 1). Qiuhou (Extra 4). Great care and good sterilization of the needles must be ensured when needling these points. No force must be applied during insertion. No stimulation should be carried out at these points.

b) The first 4 points of the Stomach Channel are in a straight line drawn vertically downwards on the face from Chengqi (St. 1). This is called the mid-pupillary line.

Sibai (St. 2). (*Szupai*).

Location: 0.7 cun below Chengqi (St. 1.) in the infraorbital foramen.

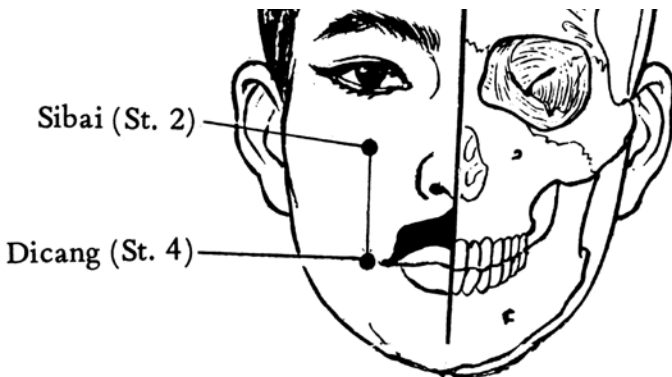


Figure 3-17: Location of Sibai (St. 2)

Indications: Eye diseases, facial paralysis, trigeminal neeuralgia.

Puncture: 0.3 cun perpendicularly into the infra-orbital foramen.

Juliao (St. 3). (*Chuliao*).

Location: Directly below Sibai (St. 2), at the level of the lower border of the ala nasi.

Indications: Facial paralysis, trigeminal neuralgia, rhinitis, toothache.

Puncture: 0.3 to 0.5 cun obliquely.

Dicang (St. 4). (*Titsang*).

Location: 0.4 cun lateral to the corner of the mouth.

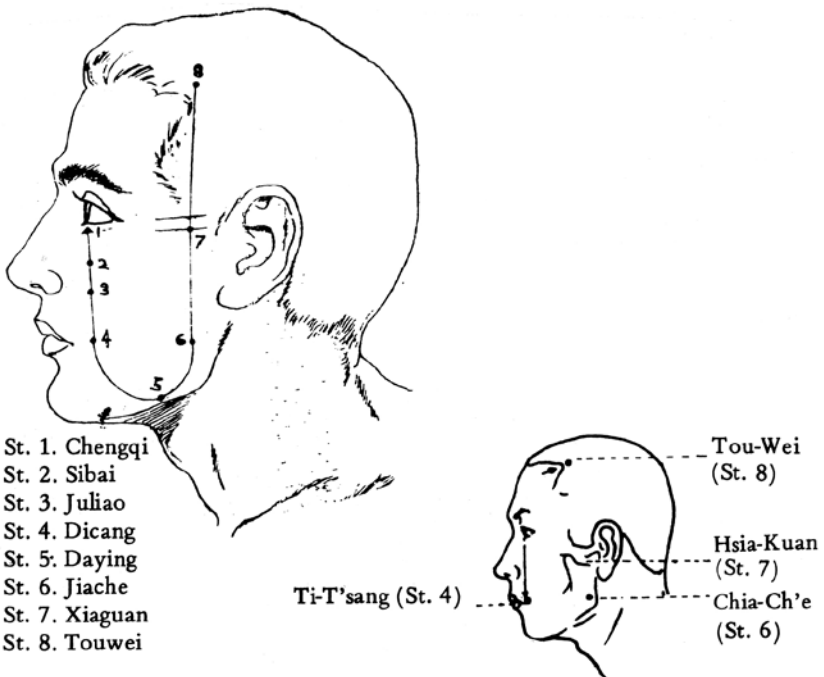


Figure 3-18 & 18a: Location of Stomach Points on Face

Indications: Facial paralysis, trigeminal neuralgia, excessive salivation, cheilosis, speech difficulties, mutism, disorders of upper teeth, anaesthesia for extraction of upper teeth.

Puncture: 0.5 inch obliquely; or 2.0-3.0 cun horizontal insertion towards Jiache (St. 6).

Daying (Si. 5). (*Taying*).

Location: At the lowest point of the anterior border of the masseter muscle.

Indication: Facial paralysis, trigeminal neuralgia, toothache parotitis, swelling of the cheek, trismus.

Puncture: 0.5 cun perpendicularly or obliquely.

Jiache (St. 6). (*Chiache*).

Location: At the most prominent point of the masseter muscle, felt on clenching the jaws. This is a motor point.

Indications: Facial paralysis, trigeminal neuralgia, toothache, parotitis, spasm of the masseter muscle, trismus.

Puncture: 0.3 cun perpendicularly; or horizontally towards Dicang (St. 4).

Xiaguan (St. 7) (*Hsiakuan*).

Location: In the depression on the lower border of the zygomatic arch.

Indications: Facial paralysis, trigeminal neuralgia, toothache, arthritis of the mandibular joint.

Puncture: 0.5 cun perpendicularly.

Touwei (St. 8). (*Touwei*).

Location: 0.5 cun lateral to the corner of the anterior hairline.

Indications: Migraine, ophthalmoplegia, increased lacrimation.

Puncture : 0.5 inch horizontally, directed posteriorly for headache, anteriorly for eye disorders.

- Note:**
- At all points of the scalp the needles are inserted horizontally, because there is no fleshy mass of muscle under the skin to stabilise the needles.
 - If the patient has a receding hairline, then locate the hairline at 3 cun above the eyebrows or glabella. It extends 4.5 cun on either side from the midline.
 - The distance between the two points of each side is 9 cun.

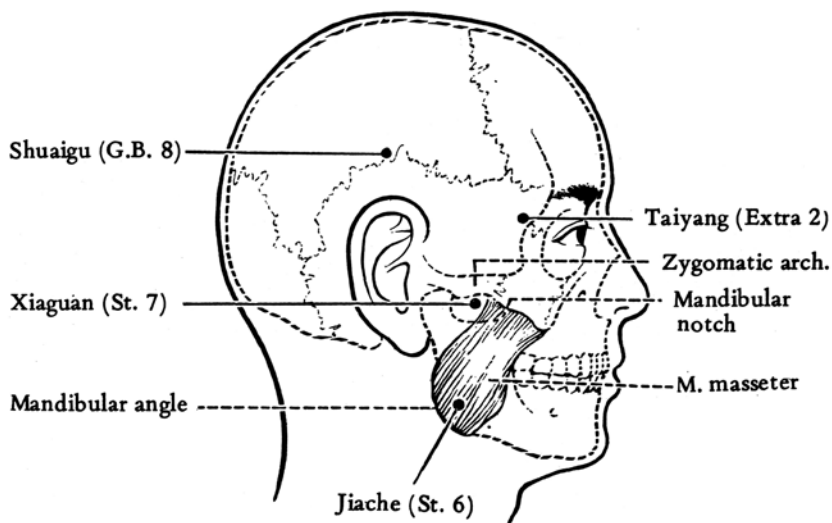


Figure : 3- 19 Location of Jiache (St. 6) and Xiaguan (St. 7)

Ruzhong (St. 17.). (*Juchung*). (*The Nipple*).

This is a Prohibited point for acupuncture and moxibustion. It is used only as a landmark. The anatomical location of the nipple is the level of the 4th intercostal space, 4 cun lateral to the midline.

Rugen (St. 18.). (*Juken*).

Location: On the nipple-line, in the 5th intercostal space.

Indications: Mastitis, deficient lactation, chest pain, cough, dyspnoea, angina pectoris and other heart disorders.

Puncture: 0.5 cun obliquely, or horizontally outwards.

Note:- This is Dangerous point, as it is situated in an intercostal space.

Liangmen (St. 21) (*Liangmen*).

Location: 4 cun vertically above Tianshu (St. 25.) and 2 cun lateral to Zhongwan (Ren 12).

Indications: Acute and chronic gastritis, peptic ulcer, nausea, vomiting, (i.e., upper abdominal disorders).

Puncture: 0.5-1.0 cun perpendicularly on the left side or obliquely on the right side as it is over the gall bladder.

Note:- This point on the patient's right side is a Dangerous point, as it overlies the gall bladder. A distended gall bladder is liable to be punctured.

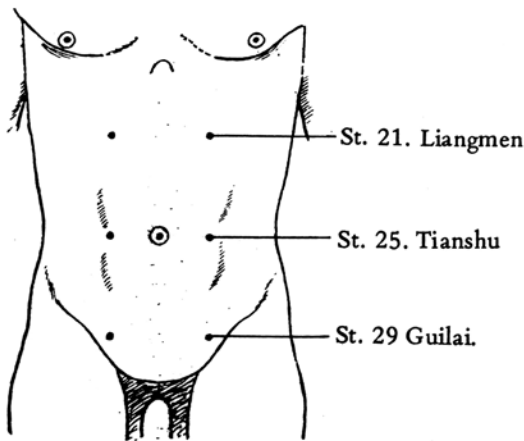


Figure 3-20: Stomach Points on Abdomen

Tianshu (St. 25). (*Tienschu*). Alarm point (Mu-Front of the Large Intestine.)

Location: 2 cun lateral to the umbilicus.

Indications: Acute and chronic gastro-enteritis, diarrhoea, constipation, acute appendicitis, intestinal paralysis (paralytic ileus), paralysis of the muscles of the abdominal wall (i.e., all abdominal disorders).

Puncture: 0.5-1.0 cun perpendicularly.

Biguan (St.31.). (*Pikuan*).

Location: The meeting points of the vertical line from the anterior superior iliac spine and the horizontal line from the lower border of the pubic symphysis.

Indications: Paralysis of the lower limb as in hemiplegia, osteoarthritis of the hip, sensory disorders of the lower limb.

Puncture: 1.5 cun perpendicularly.

Note: In the treatment of hemiplegia, the commonly selected points are those of the Large Intestine Channel in the upper limb and Stomach Channel in the lower limb together with Yanglingquan (G.B. 34), the Influential points for muscle and tendon.

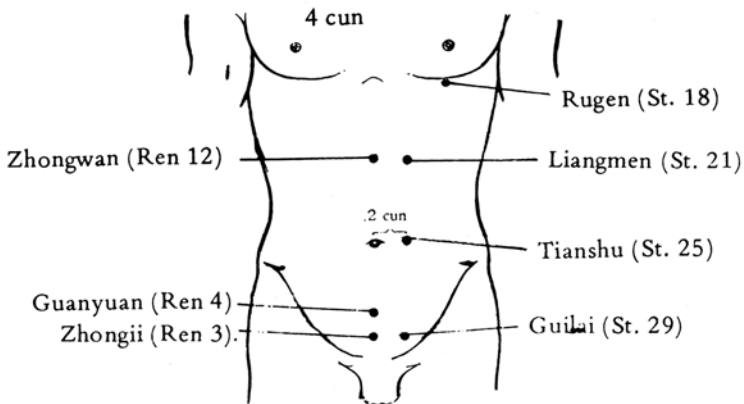


Figure 3-21: Location of Stomach points in Abdomen and Chest

Femur-Futu (St. 32). (*Futu*).

- Location: a) 6 cun above the supero-lateral point of the patella.
- b) With the patient seated, place the contralateral wrist crease of the acupuncturist, on the middle of the patient's knee-cap with the fingers along his thigh. This point is located at the tip of the middle finger of the acupuncturist.

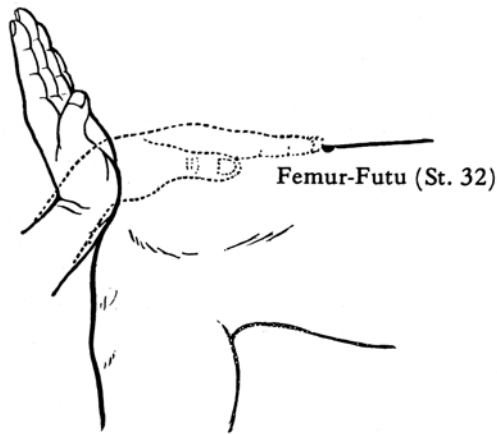


Figure 3-22: Location of Femur Futu (St. 32)

Indications: Paralysis of lower extremities, arthritis of the knee, wasting and weakness of the quadriceps. This is a motor point.

Puncture: 1.5 cun perpendicularly directed towards the lateral border of the femur, or 2.0-3.0 cun obliquely in a proximal direction.

Liangqiu (St. 34). (*Liangchiu*). Xi-Cleli point.

Location: 2 cun above the lateral end of the upper border of the patella.

Indication: Disorders of the knee, acute gastro-intestinal disorders.

Puncture: 1.0 cun perpendicularly.

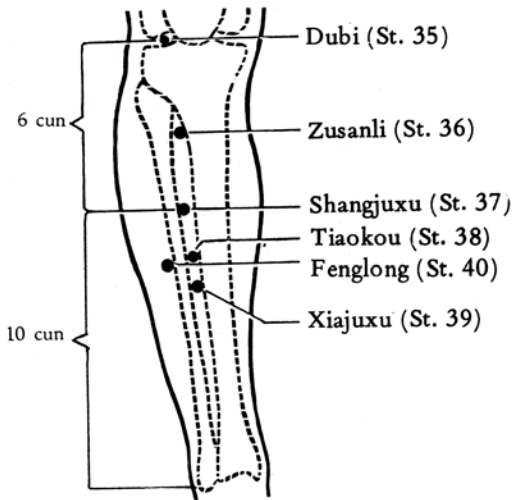


Figure 3-23: Stomach Points a Leg

Dubi (St. 35) (*Tupi*). (Also known as Lateral-Xiyan).

Location: This is in the depression (below the patellae) on the lateral side of the ligamentum patellae. It is best located with the knee slightly bent (flexed).

Indications: Arthritis of the knee, sprain and strain of the knee.

Puncture: 0.5 cun obliquely and medially.

Note: There are two depressions on either side of the ligamentum patellae. The medial depression is the point Xiyan (Extra.). These two points and Hedong (Extra.) treat disorders of the knee. “Dubi” in Chinese means the “nose of the calf”.

Zusanli (St. 36) (*Tsusanli*). One of the six important Distal points. General Tonication point.

Location: One finger breadth lateral to the inferior (distal) end of the tibial tuberosity.

Indications: Gastritis, nausea, vomiting, enteritis, diarrhoea, obesity, constipation, appendicitis and other diseases of the digestive tract,

paralysis of lower limb, polyneuropathy of the lower limb. This is also a general Tonification point and Homeostatic point.

Puncture: 1.5 cun perpendicularly.

- Note:
- a) The Stomach Channel runs one finger breadth lateral to the anterior border of the tibia.
 - b) The general Tonifications points are:-
 - Zusanli (St. 36.).
 - Sanyinjiao (Sp. 6.).
 - Qihai (Ren. 6.).
 - c) Many acupuncturists find this point a good analgesic point for the lower half of the trunk and lower limbs, particularly in anaesthesia for abdominal surgery.

Shangjuxu (St. 37). (*Shangchushu*). Lower He-Sea point of the Large Intestine.

Location: 3 cun distal to Zusanli (St. 36.). One finger breadth lateral to the anterior margin of the tibia.

Indications: Acute appendicitis, paralysis of the lower limb. Large Intestine disorders.

Puncture: 1.5 cun perpendicularly.

Note: *Lanwei* (*Extra.*), however, is the most effective point for acute appendicitis. It is situated on the Stomach Channel, 2 cun below Zusanli (St. 36.). It is an Alarm point, becoming tender in diseases of the appendix. This point therefore may be used to diagnose diseases of the vermiform appendix.

Tiaokou (St. 38). (*Tiaokou*).

Location: 5 cun below Zusanli (St. 36.), one finger breadth lateral to the anterior border of the tibia.

Indication: Frozen shoulder.

Puncture: 1.5 cun perpendicularly, or penetrate through to Chengshan (U.B. 57).

Note: In a frozen shoulder this point could be manually stimulated while the patient mobilizes the shoulder joint to obtain an increased range of movement. (A significant improvement in the range of movement may be obtained with the first treatment in about 75% of cases.).

Xiajuxu (St. 39). (*Hsiachuhsu*). Lower He-Sea point of the Small Intestine.

Location: 3 cun distal to Shangiuxu (St. 37.).

Indications: Paralysis of the lower limb. Small Intestine disorders.

Puncture: 1.0 cun perpendicularly.

Fenglong (St. 40). (*Fenglung*). Luo-Connecting point.

Location: One finger breadth lateral to Tiaokou (St. 38).

Indications: Cough, excessive sputum, epilepsy.

Note: According to traditional Chinese medicine, epilepsy and excessive sputum are related.

Puncture: 1.5 cun perpendicularly.

Jiexi (St. 41). (*Chiehhsi*).

Location: On the front ankle crease, midway between the tips of the malleoli, between the extensor digitorum longus and extensor hallucis longus tendons.

Indications: Disorders of the ankle joint and soft tissues of the area, paralysis of the leg, foot drop, hemiplegia, varicose veins, chronic ulcers of the ankle area.

Puncture: 0.5 cun perpendicularly.

Xiangu (St. 43). (Hsienku).

Location: In the depression between the bases of the 2nd and 3rd metatarsals.

Indications: Mainly used as an analgesic point of the leg in surgery of the lower limb and of the brain. Local or facial oedema.

Puncture: 0.5 cun perpendicularly. Strong stimulation is used during surgery.

Neiting (St. 44). (Neiting). Analgesic point.

Location: 0.5 cun proximal to the web margin between the 2nd and 3rd toes.

Indications: Distal point for toothache, headache, best analgesic point of lower limb and can be used for relief of pain in the lower limbs, in arthritis of joints of toes and feet.

Puncture: 0.3 cun perpendicularly or obliquely.

Note: This is the best analgesic point of the leg for therapy. It also one of the Bafeng (Extra) points.

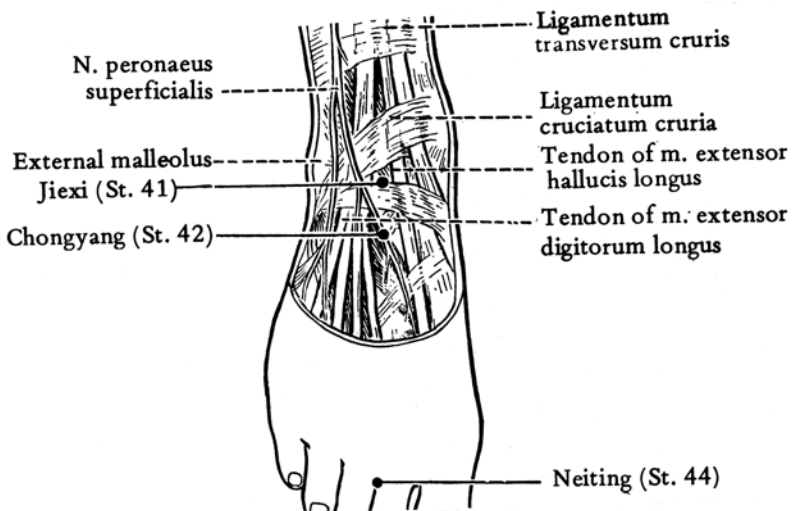


Figure 3-24: Location of St. 41, St. 42 & St. 44

 List of all the acupuncture points of the Stomach Channel.

St. 1:	Chengqi	(Receive Tears)	- Dangerous point.
St. 2:	Sibai	(Four Whites)	
St. 3:	Juliao	(Great Bone)	
St. 4:	Dicang	(Earth Granary)	
St. 5:	Daying	(Big Welcome)	
St. 6:	Jiache	(Jaw's Vehicle)	
St. 7:	Xiaguan	(Lower Gate)	
St. 8:	Touwei	Head Support)	
St. 9:	Renying	(Man Welcome)	
St. 10:	Shuitu	(Water Rushing)	
St. 11:	Qishe	(Energy Shelter)	
St. 12:	Quepen	(Broken Bowl)	
St. 13:	Qihu	(Energy Cottage)	
St. 14:	Kufang	(Store House)	
St. 15:	Wuyi	(Room Screen)	
St. 16:	Yingchuang	(Breast Window)	
St. 17:	Ruzhong	(Middle of Breast)	- Forbidden point.
St. 18:	Rugen	(Breast Root)	
St. 19:	Burong	(No Entry)	
St. 20:	Chengman	(Receiving Fullness)	
St. 21:	Liangmen	(Beam Door)	
St. 22:	Guanmen	(Gate, Door)	
St. 23:	Taiyi	(Celestial Sten)	
St. 24:	Huaroumen	(Slippery Meat Door)	
St. 25:	Tianshu	(Heavenly Pivot)	- Alarm point. (Mu-Front) of the Large Intestine.
St. 26:	Wailing	(Outside Mound)	
St. 27:	Daju	(Big, Great)	
St. 28:	Shuidao	(Water Path)	
St. 29:	Guilai	(The Return)	
St. 30:	Quichong	(Rushing Energy)	
St. 31:	Biguan	(Thigh Gate)	
St. 32:	Femur-Futu	(Prostate Hare)	- Motor point.
St. 33:	Yinshi	(Yin Market)	
St. 34:	Liangqiu	(Beam Bound)	- Xi-Cleft point.
St. 35:	Dubi	(Calf Nose)	
St. 36:	Zusanli	(Leg Three Miles)	- Tonification point;

- | | | | |
|---------|-----------|---------------------|------------------------------------|
| St. 37: | Shangjuxu | (Upper Great Void) | - Lower He-Sea point (L.I.). |
| St. 38: | Tiaokou | (Line Mouth) | |
| St. 39: | Xiajuxu | (Lower Great Void) | - Lower He-Sea point (S.I.). |
| St. 40: | Fenglong | (Abundant Bulge) | - Luo-Connecting point. |
| St. 41: | Jiczi | (Dissolve Stream) | - Fire point. |
| St. 42: | Chongyang | (Rushing Yang) | - Yuan-Source point. |
| St. 43: | Xiangu | (Sinking Valley) | - Wood point. |
| St. 44: | Neiting | (Inner Courtyard) | - Water point.
Analgesic point. |
| St 45: | Lidui. | (General Exchange). | - Metal point. |
- Note: St. 36-Distal point for abdominal disorders.
St.38-Distal point for shoulder disorders.
St. 40-Distal point for chest disorders.
St. 43, St. 44-Distal points for painful conditions of the face and head area respectively.

It will be observed from this example that points further distal on a Channel treat disorders which are more proximal. This phenomenon is explained on the Thalamic Neuron Theory.

THE SPLEEN MERIDIAN (Sp.)

The Spleen Channel of Foot-Taiyin

Course: This channel (meridian) originates in the medial side of the great toe at Pt. Yinbai (Sp. 1). From there it runs along the junction of the “red and white” skin of the medial aspect of the foot and ascends in front of the medial malleolus up to the leg. From there it runs along the posterior surface of the tibia, medial aspect of the leg, and crosses and runs in front of the Liver Channel of Foot-Jueyin, then it passes through the anterior medial aspect of the knee and thigh and further upward to enter the abdominal cavity and go into the spleen, its pertaining organ, and communicate with the stomach. From there it passes through the diaphragm and, ascending along the oesophagus, reaches both sides of the root of the tongue and spreads over its lower surface.

The Branch of the Stomach leaves the stomach, passes upward through the diaphragm, dispersing into the heart, to connect with the Heart Channel of Hand-Shaoyin.

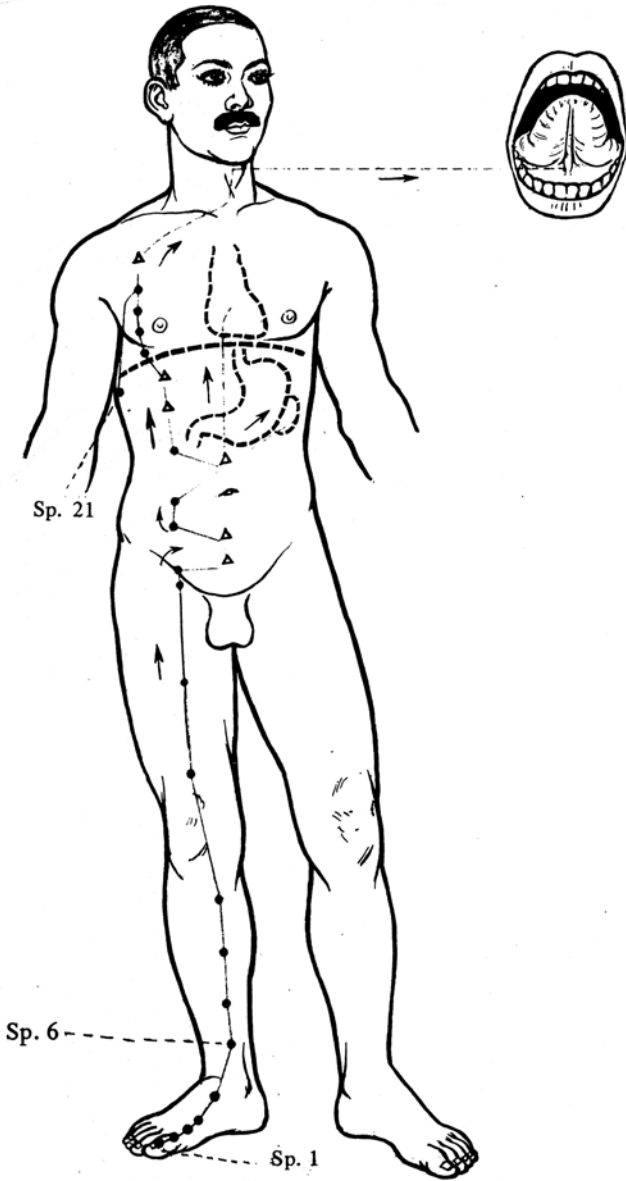


Figure 3-25: The Spleen Channel of Foot-Taiyin

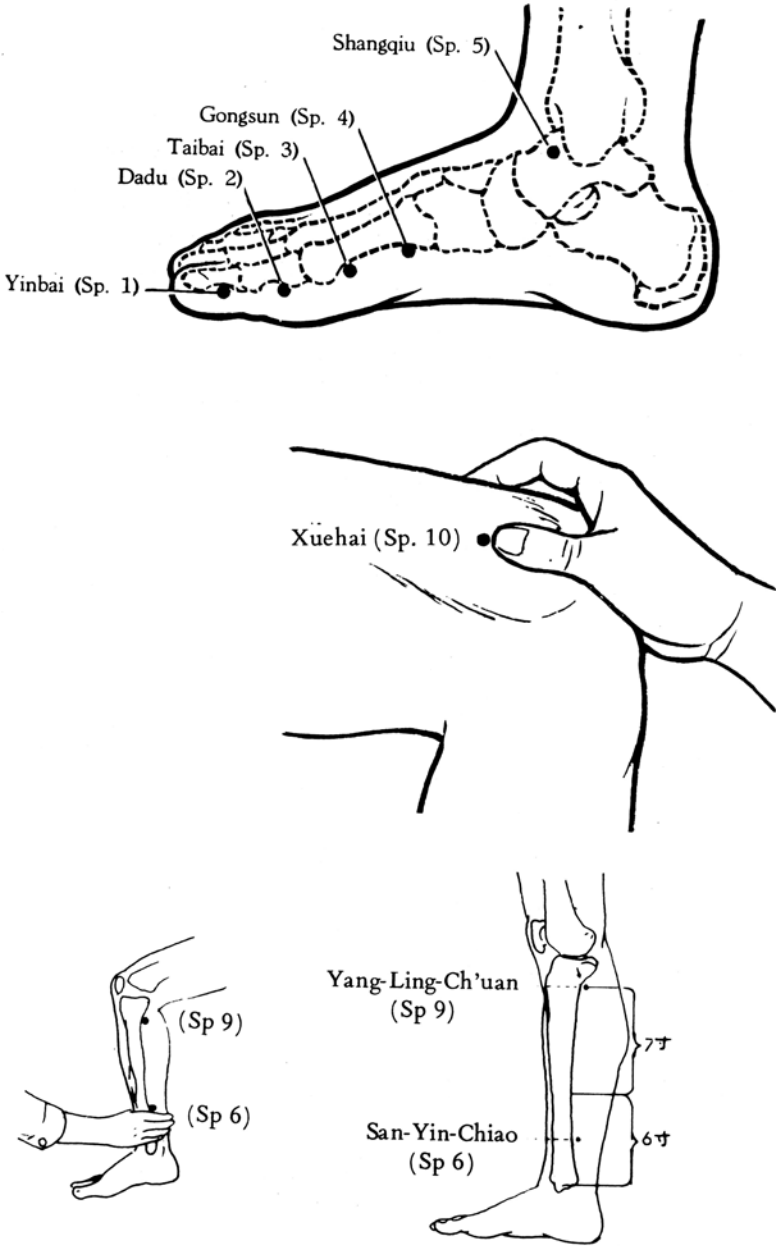


Figure 3-26: Points on Spleen Channel

SPLEEN CHANNEL (Sp)

- Polarity: Yin.
- Number of points: 21.
- Pertaining Organ: Spleen.
- Related Channel: Stomach Channel (St.).
- Element Earth.
- Energy flow: Centripetal.

Clinical Uses:

- 1) Diseases along the Channel, e.g., genital disorders.
- 2) Disorders of the spleen, pancreas and digestive disorders.
- 3) Metabolic disorders and immune mechanism disorders.
- 4) Skin disorders.
- 5) Oedema and ascites.
- 6) Perineal, external genital and pelvic disorders.
- 7) Disorders, of soft tissue (e.g. muscle and tendon), lips and mouth cavity.

Description of the commonly used points.

Note: This channel is related to the digestive, metabolic and immune mechanisms in the body. According to some authorities the Spleen Channel represents the splenopancreatic functions as well as reticulo-endothelial mechanisms.

Gongsun (Sp. 4) (*Kungsun*). Luo-Connecting point Confluent point.

Locations: On the medial side of the foot in the depression below the base of the 1st metatarsal bone, at the junction of the two colours of the skin on the medial border of the foot.

Indications: Very acute diarrhoea.

Puncture: 0.5 cun perpendicularly, using strong manual stimulation.

Note: Gongsun is a very painful point as it is situated close to the sole of the foot and is therefore generally used in very acute conditions only.

Sanyinjiao (Sp. 6). (*Sanyinchiao*). One of the six important Distal points. General Tonification point.

Location: 3 cun above the tip of medial malleolus on the medial border of the tibia.

Indications: Gastro-intestinal disorders, genito-urinary disorders, lower limb disorders, muscle disorders, skin disorders, mouth disorders. General Tonification point.

All three Yin Channels of the leg meet at this point and it is therefore used in disorders of the Liver, Spleen and Kidney.

Puncture: 1.0 cun perpendicularly.

Note: a) “San” = 3, “Jiao” = Junction. Sanyinjiao in Chinese therefore means “the junction of the three Yin Channels.”

b) The main General Tonification points of the body area:-

Zusanli (St. 36).

Sanyinjiao (Sp. 6)

Qihai (Ren 6).

Yinlingquan (Sp. 9). (*Yinlingchuan*).

Location: At the level of the lower border of the tibial tuberosity, in the depression below the lower border of the medial condyle.

Indications: Oedema and ascites. (Spleen is connected to soft tissues.)

Puncture: 1.5 cun perpendicularly.

Note: Combination of points that may be used in oedema and ascites:

Yinlingquan (Sp. 9).

Shimen (Ren 5).

Shuifen (Ren 9).

Pishu (U.B. 20).

Xiangu (St. 43)–especially in oedema of the face and feet.

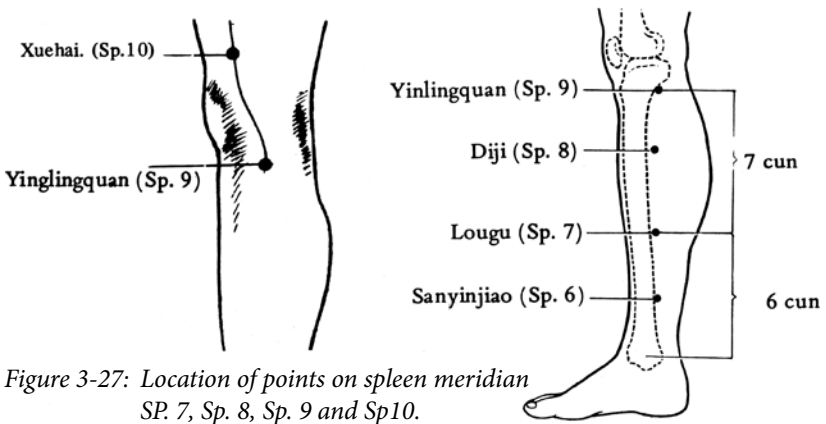


Figure 3-27: Location of points on spleen meridian
 SP. 7, Sp. 8, Sp. 9 and Sp10.

Xuehai (Sp. 10) (*Hsuehhai*). Xuehai in Chinese means “the sea of blood”

- Location:
- At the highest point of the prominence of the vastus medialis muscle.
 - 2 cun above the medial end of the upper border of the patella
 - Have the patient seated with his knees bent at right angles. The acupuncturist then places his right hand on the patient's left patellae with the centre of his palm on the middle of the patella and his thumb resting on the inner surface of the thigh. The thumb should be held in a position midway between adduction and full abduction. The point will then lie at the tip of the thumb. This method is only valid if acupuncturist's and the patient's hands have similar proportions.

- Indications:
- Urticaria, allergies, skin disorders.
 - Dysmenorrhoea, functional uterine bleeding, irregular menstruation.

Puncture: 1.5 cun perpendicularly. Strong stimulation is carried out in allergies and to allay pruritus. Moxibustion is also very effective in allergies of extrinsic origin.

Daheng (*Sp. 15.*). (*T aheng*).

Location: 4 cun lateral to the umbilicus (on the nippleline).

Indications: Constipation, diarrhoea, intestinal paralysis (paralytic ileus), intestinal parasitosis, dyspepsia, abdominal distention.

Puncture: 1.0 cun perpendicularly.

List of all the acupuncture points of the Spleen Channel.

- | | |
|--|--|
| Sp. 1: Yinbai (Hidden White) | - Wood point. |
| Sp. 2: Dadu (Big Capital) | - Fire point. |
| Sp. 3: Taibai (Supreme Whiteness) | - Yuan-Source Point:
Earth point. |
| Sp. 4: Gongsun (Grand father) | - First (Minor) Luo-
Connecting Point. |
| Sp. 5: Shangqiu (Merchant Wound) | - Metal point. |
| Sp. 6: Sanyinjiao (Three Yin Crossing) | - Tonification point: |
| Sp. 7: Lougu (Leaking Valley) | |
| Sp. 8: Dijì (Leaking Organ) | - Xi-Cleft point. |
| Sp. 9: Yinlingquan (Yin Mound Spring) | - Water point. |
| Sp. 10: Xuehai (Sea of Blood) | - Anti-allergic |
| Sp. 11: Jimen (Basket Door) | |
| Sp. 12: Chongmen (Rushing Door) | |
| Sp. 13: Fushe (Mansion Door) | |
| Sp. 14: Fujie (Abdomen Knot) | |
| Sp. 15: Daheng (Big Horizontal) | |
| Sp. 16: Fuai (Abdomen Sorrow) | |
| Sp. 17: Shidou (Food Drain) | |
| Sp. 18: Tianxi (Heavenly Stream) | |
| Sp. 19: Xiongxiang (Chest Village) | |
| Sp. 20: Zhourong (Encircling Glory) | |
| Sp. 21: Dabao (Big Enveloping) | - Second Luo-
Connecting point.
(Major Luo point). |

From Dabao (Sp. 21), the vital Yin energy flows on to Jiquan (H.I.).

THE HEART MERIDIAN

The Heart Channel of Hand-Shaoyin

Course: This channel (meridian) starts from the heart, passing through the diaphragm to communicate with the small intestine.

A branch emerges from the heart, runs upward along the side of the oesophagus and joins the eye.

The original channel runs transversely from the heart to the lung, then descends, emerges from the axilla, passing along the posterior border of the medial aspect of the upper arm behind the Lung Channel of Hand-Taiyin and the Pericardium Channel of Hand-Jueyin down to the cubital fossa, then along the posterior border of the medial aspect of the forearm to the capitate bone proximal to the palm, then via the palm along the medial, side of the little finger to its tip (Shaochong, H-9) it connects with the Small Intestine Channel of Hand-Taiyang.

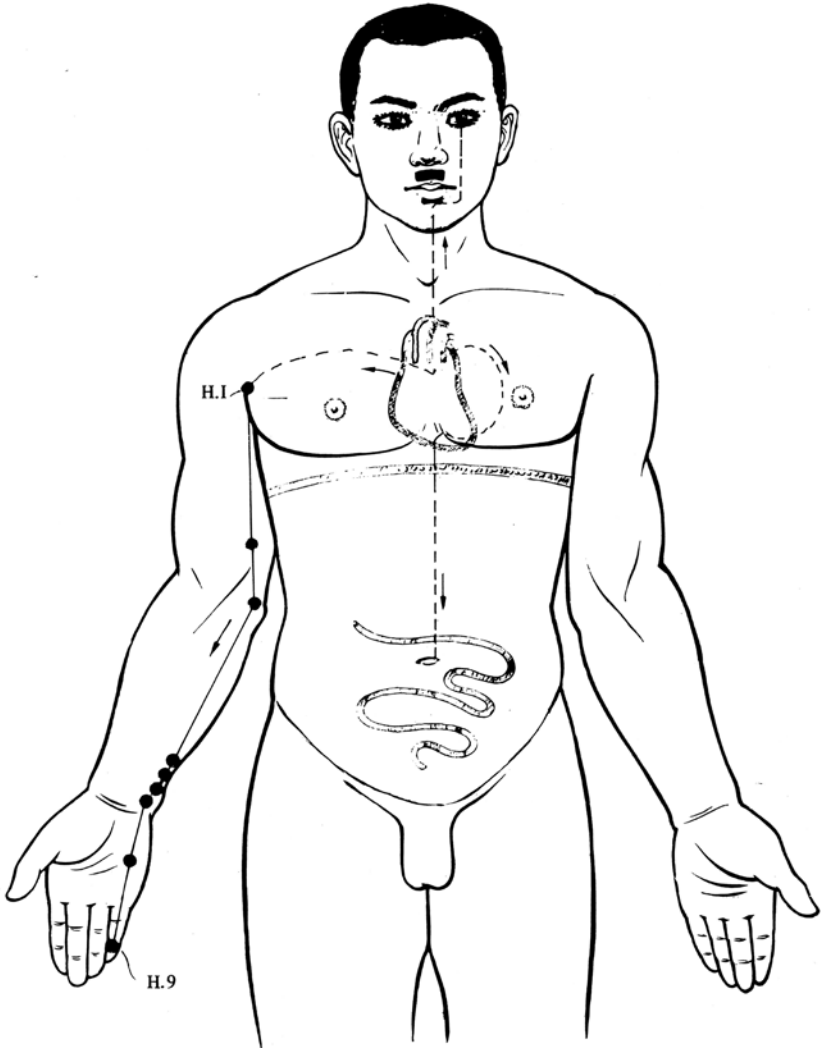


Figure 3-29: The Heart Channel of Hand-Shaoyin

HEART CHANNEL (H.)

- Polarity: Yin. - Number of points: 9.
- Pertaining Organ: Heart.
- Related Channel: Small Intestine Channel (S.I.).
- Element: Fire.
- Energy flow: Centrifugal.

Clinical Uses:

- 1) Diseases along the Channel.
- 2) Heart diseases.
- 3) Mental disorder (Heart is related to the Brain), e.g., anxiety, hysteria, schizophrenia, insomnia, epilepsy.
- 4) Tremors, chorea, athetosis, parkinsonism.
- 5) Speech disorders (Heart is connected to the tongue).
- 6) Autonomic disturbances, `e.g. increased sweating.

Description of the commonly used points:

Shaohai (H. 3). (*Shaohai*).

Location: At the medial end of the elbow crease and medial epicondyle of the humerus when the elbow is fully flexed.

Note: Quchi (L.I. 11) is located when the elbow is semi-flexed.

Indications: Disorders of the elbow and soft tissues around it, numbness of upper limb, angina pectoris., golfer's elbow, tremors of the forearm (e.g. chorea, athetosis, parkinsonism).

Puncture: 1.0 cun perpendicularly.

Tongli (H. 5). (*Tungli*). Luo-Connecting point.

Location: 1 cun proximal to Shenmen (H. 7), on the radial side of the tendon of the flexor carpi ulnaris.

Indications: Aphasia, dysphasia, hoarseness of voice, stammering.

Note: Heart is connected to the tongue.

Puncture: 0.5 cun perpendicularly.

Yinxi (H. 6). (*Yinhsi*). Xi-Cleft point.

Location: 0.5 cun proximal to Shenmen (H.7.).

Indication: Angina Pectoris, palpitation, excessive sweating.

Puncture: 0.5 cun perpendicularly.

Note: This is the Xi-Cleft point and is therefore used in treating the symptoms of acute Heart disease:- e.g., palpitation, angina pectoris, maniacal behaviour, severe depression.

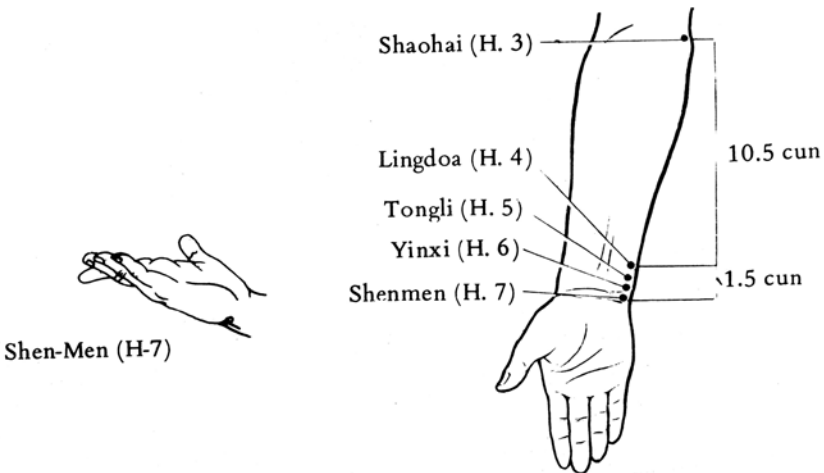


Figure 3-30: Location of H. 3, H. 4, H. 5, H.6 and H. 7

Shenmen (H. 7). (*Shenmen*). Yuan-Source point. An important tranquilizer point. Shenmen in Chinese means “God’s door.”

Location: On the radial side of the tendon of the flexor carpi ulnaris muscle, at the wrist crease.”

Note: H. 5, H.6 and H.7 are all located on the radial border of the tendon of the flexor carpi ulnaris.

Indications: Palpitation, anxiety, hysteria, insomnia, mental disorders, rhythm disorders of the heart.

Puncture: 0.5 perpendicularly.

Note: According to traditional Chinese medicine, the functions of the heart and brain are closely allied. Disorders of the brain are therefore, treated with points of the Heart and Pericardium Channels. The points commonly used in those disorders are: Shenmen (H. 7) and Neiguan (P. 6). The points shenmen (H. 7) and Baihu (Du 20) are the important sedative and tranquilizer points of the body. The Ear Shenmen also has similar therapeutic effects.

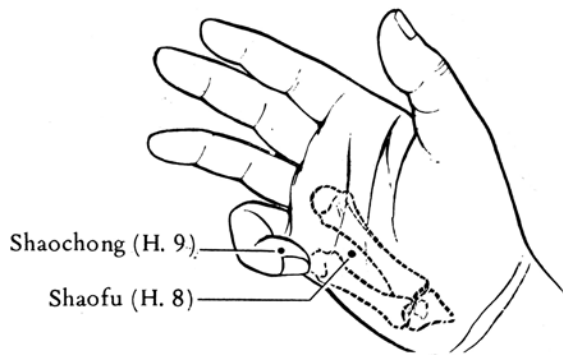


Figure 3-31: Location of H. 8, and H. 9

Shaofu (H. 8), (*Shaofu*).

Location: In the palmar surface of the hand, between the tips of the ring finger and little finger on lightly clenching the fist.

Indications: Disorders of the palm, rheumatoid arthritis of the carpal joints, Duputryen's contracture.

Puncture: 0.5 cun perpendicularly.

Note: This is a painful point. All points on the palms and soles of the feet are painful.

Shaochong (H. 9). (*Shaochung*). Jing Well point.

Location: 0.1 cun proximal to the radial corner of the nail of the little finger.

Indications: Pain in the chest, apoplexy, palpitation and other acute emergencies.

Puncture: 0.1 cun perpendicularly to cause bleeding, or acupressure in emergencies, if a needle is not available.

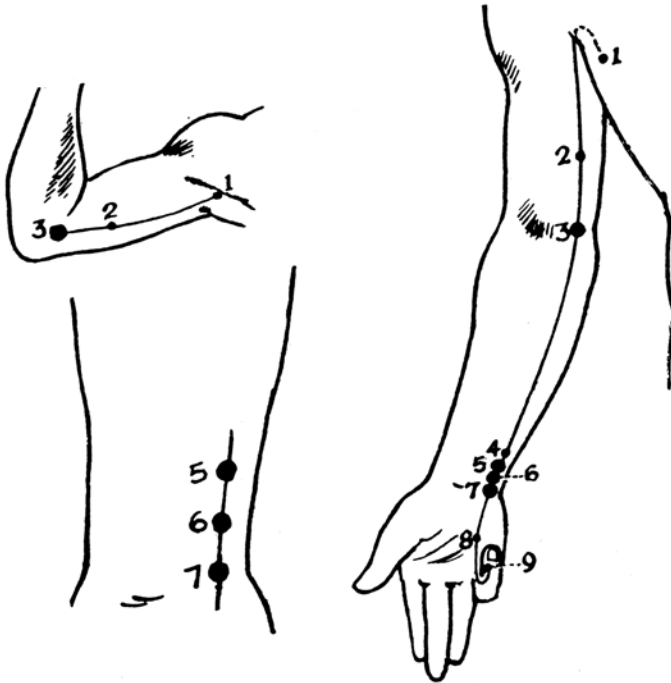


Figure 3-32 : Location of Points on Heart Channel.

Figure 3-32: Location of Points on Heart Channel

List of all the acupuncture points of the Heart Channel:

- | | | |
|-------|-----------------------------|--------------------------------------|
| H. 1 | Jiquan (External Spring) | |
| H. 2: | Qingling (Green Spirit) | |
| H. 3: | Shaohai (Lasser Sea) | - Water point. |
| H. 4: | Lingdao (Spirit Path) | - Metal point. |
| H. 5: | Tongli (Penetrating Inside) | - Luo-Connecting point |
| H.6: | Yinxi (Yin Accumulation) | - Xi-Cleft point. |
| H. 7: | Shenmen (Spirit Door) | - Yuan-Source point;
Earth point. |
| H. 8: | Shaofu (Lesser Mansion) | - Fire point. |
| H. 9: | Shaochong (Lesser Rushing) | - Jing-Well point, Wood point. |

THE SMALL INTESTINE (S.I.)

The Small Intestine Channel of Hand-Taiyang

Course: This channel (meridian) starts from the ulnar side of the tip of the little finger (Shaoze, S.I. 1), follows the ulnar side of the palm to the wrist and emerges from the styloid process of the ulna. From there it passes straight upward along the posterior aspect of the forearm, pass between the olecranon of the ulna and the medial epicondyle of the humerus and runs along the posterior border of the lateral aspect of the upper arm to the shoulder joint, circling around the shoulder and meeting the Du Channel at Dashui (Du 14). Then, turning downward into the supraclavicular fossa, it joins the heart. From there it descends along the oesophagus, passes through the diaphragm to the stomach, finally entering its pertaining organ, the small intestine.

The Branch of the Supraclavicular Fossa emerges from the Supraclavicular fossa, ascends to the neck and further to the cheek via the outer canthus to enter the ear at Tinggong (S.I. 19).

The Branch of the Cheek runs across the cheek and up to the infraorbital region (Quanliao, S.I. 18), whence to the lateral side of the nose, finally passing into the inner canthus (Jingming, U.B. 1) and connecting with the Urinary Bladder Channel of Foot-Taiyang.

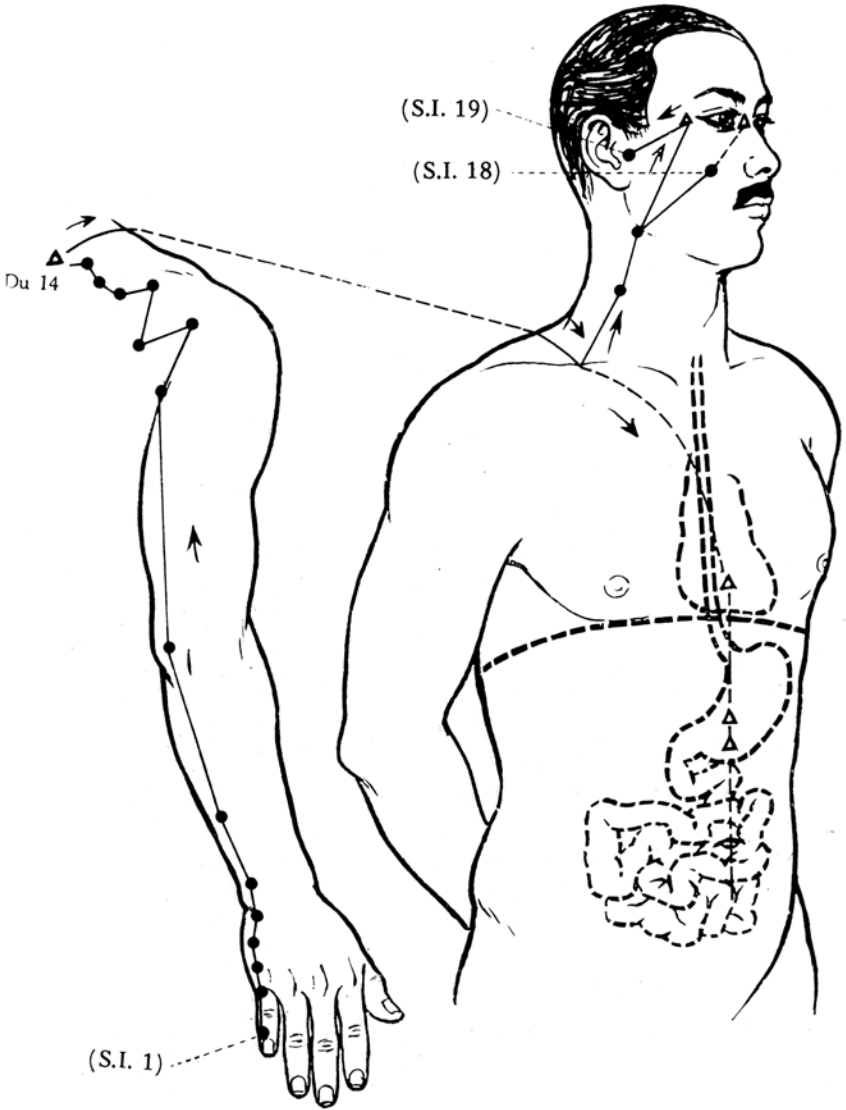


Figure 3-33: The Small Intestine Channel of Hand-Taiyang

SMALL INTESTINE
CHANNEL (S.I.)

- Polarity: Yang.
- Number of points: 19.
- Pertaining Organ: Small Intestine.
- Related Channel: Heart Channel (H.).
- Element: Fire.
- Energy flow: Centripetal.

Clinical uses:

- 1) Diseases along the course of the Channel e.g., deafness swelling of the cheek, stiff-neck, sore throat.
- 2) Disorders of the lower He-Sea point, Xiajuxu (St. 39) is the preferred point).

Description of the commonly used acupuncture points:

Houxi (SL 3). (*Houhsi*). Confluent point of the Du Channel.

Location: At the medial end of the main transverse crease of the palm on clenching the fist.

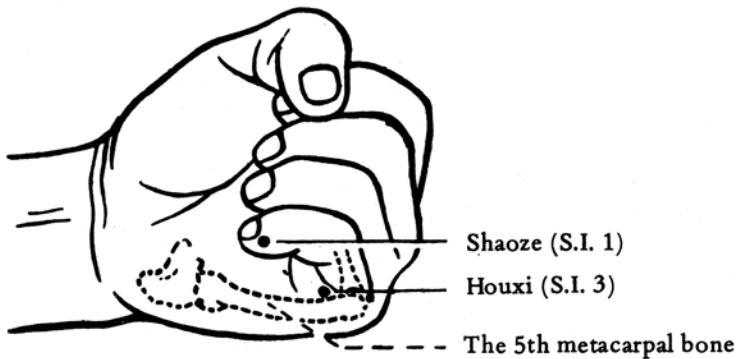


Figure 3-34: Location of S.I. 1, and S.I. 3.

Indications: Acute stiffness of the neck, acute low backache, severe occipital headache.

Puncture: 0.5 cun perpendicularly, with strong manual stimulation of the needle.

Note: This is a very painful point and should be used only in very acute conditions.

Yanglao (S.I. 6). (*Yanglao*). Xi-Cleft point.

Location: a) In the depression on the lateral aspect of the styloid process of the ulna. (It is easier to locate this point with the hand pronated).

b) On the back of the wrist, in the depression proximal to the inferior radio-ulnar joint.

Indications: Pain in wrist, stiff neck, cervical spondylosis. An acute stiff neck could be dramatically relieved by strong manual stimulation of this point. Failing vision in old people. (The energy at the end of this channel flows over the orbit to reach the next (U.B.) Channel).

Puncture: 0.1 cun obliquely towards Neiguan (P.6.).

Jianzhen (S.I. 9). (*Chienchen*).

Location: 1.0 cun superior to the highest point of the posterior muscles, paralysis of the upper limb.

Puncture: 1.0 - 1.5 cun perpendicularly.

Note: This point is often used in combination with two other local points, Jianyu (L.I. 15) and Jianliao (S.I. 14), and with Distal points Hegu (L.I. 4) and Influential point Yanglingquan (G. 34), for disorders of the shoulder joint. Ah-Shi points are also needed.

Tianrong (S.I. 7). (*Tienjung*). Dangerous point.

Location: On the anterior border of the sterno-cleido-mastoideus at the level of the angle of the jaw.

Indications: Tonsillitis, sore throat, aphasia.

Puncture: 1.0 cun perpendicularly.

Note: This point is a Dangerous point as it is situated near the great vessels of the neck. The needle should be directed towards the tonsils not backwards as it may affect the carotid body.

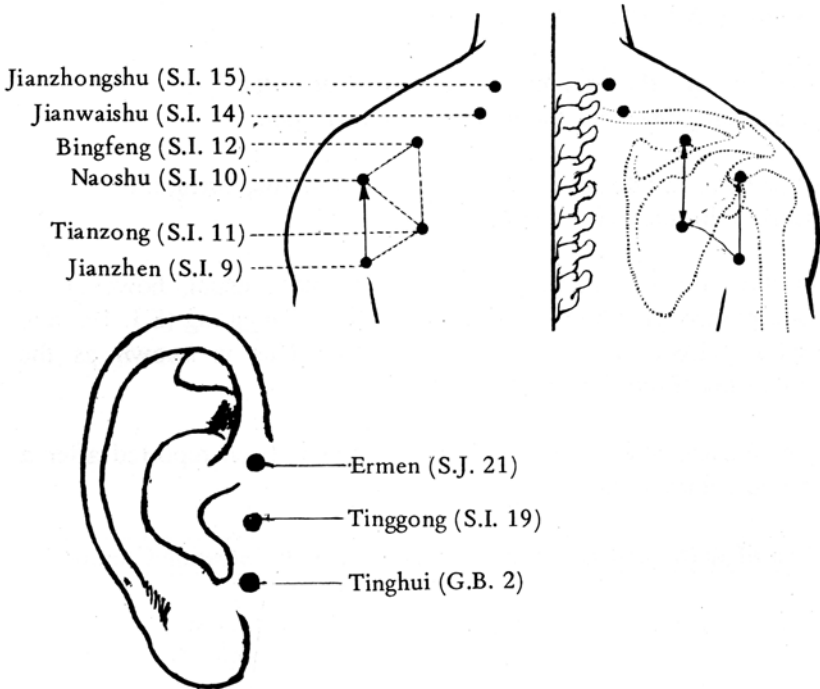


Figure 3-35: Location of S.I. 9, S.I. 10, S.I. 11, S.I. 12, S.I. 14, S.I. 15, and S.I. 19

Quanliao (S.I. 18) (Chuanliao). Regional analgesic point.

Location: In the depression below the prominence of the zygomatic bone on a vertical line drawn (downwards) from the outer canthus of the eye.

Indications: Toothache, trigeminal neuralgia, facial paralysis.

Puncture: 0.3 ~ 0.5 cun perpendicularly. (If inserted too far downwards the needle may enter the mouth cavity and may cause bleeding inside the mouth).

Note: This the best regional analgesic point in the head and neck region. It is often used in tooth extractions, ear, nose, throat surgery and in brain surgery.

Tinggong (S.I. 19). (*Tingkung*).

Location: In the depression felt between the tragus and the mandibular joint when the mouth is slightly open.

Indications: Ear disorders. e.g., deafness, tinnitus, vertigo, Meniere's disease, (chronic) ear infections.

Puncture: 0.5 cun perpendicularly. It is more usual, however, to puncture through the points Ermen (S.I. 21), Tinggong (S.I. 19) and Tinghui (G.B.2) horizontally downwards. This is known as the "puncturing-through technique".

Note: A case of rupture of the ear drum has been reported after a perpendicular puncture.

List of all the acupuncture points of the Small Intestine Channel:

- | | | |
|--|---|----------------------------------|
| S.I. 1: Shaoze (Lesser Marsh) | - | Jing-Well point,
Metal Point. |
| S.I. 2: Qiangu (From Valley) | - | Water point. |
| S.I. 3: Houxi (Black Stream) | - | Wood point.
Confluent point. |
| S.I. 4: Hand-Wangu (Wrist Bone) | - | Yuan-Source point. |
| S.I. 5: Yanggu (Yin Valley) | - | Fire point. |
| S.I. 6: Yanglao (Supporting The Old) | - | Xi-Cleft point. |
| S.I. 7: Zhizheng (Branch Straight) | - | Luo-Connecting point. |
| S.I. 8: Yanglao (Small Sea) | - | Earth point. |
| S.I. 9: Jianzhen (Shoulder Chastity) | | |
| S.I. 10: Naoshu (Shoulder Blade) | | |
| S.I. 11: Tianzong (Heavenly Ancestor) | | |
| S.I. 12: Bingfeng (Facing the Wind) | | |
| S.I. 13: Quyuan (Crooked Wall) | | |
| S.I. 14: Jianwaishu (Outside The Shoulder) | | |

S.I. 15: Jianzhongshu. (Middle of The Shoulder)

S.I. 16: Tianchuang. (Heavenly Window)

S.I. 17: Tianrong (Heavenly Appearance) - Dangerous point, if inserted backwards.

S.I. 18: Quanliao (Cheek Bone) - The best regional analgesic point of the head and neck area.

S.I. 19: Tinggong (Listening Palace)

From Tinggong (S.I. 19) the vital Yang energy flows on to Jingming (U.B. 1) across the eye. The point Yanglao (S.I. 6). may, therefore, be used to treat failing vision, particularly in old people.

Note: The Heart and the Small Intestine are related to the blood vessels. These two Organs are also connected to the tongue and mouth. The Heart and Pericardium together with the blood vessels are related to the Brain. The Brain is considered an Extraordinary Organ in traditional Chinese medicine.

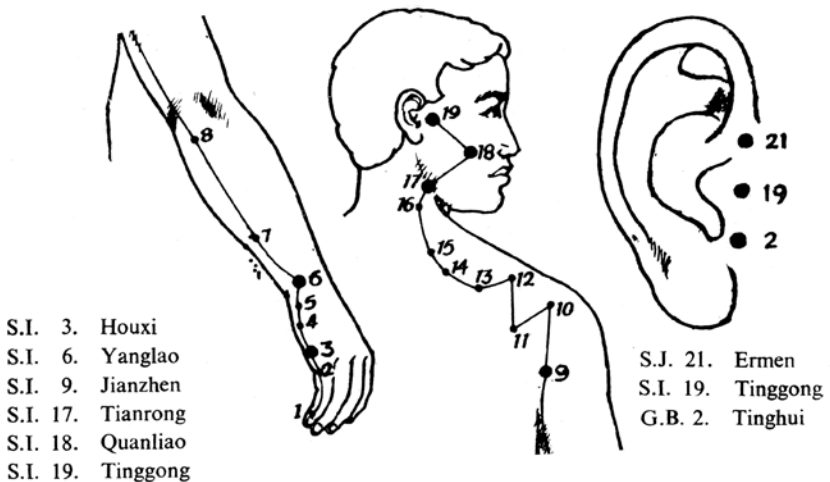


Figure 3-36: Points on Small Intestine Channel

THE URINARY BLADDER MERIDIAN

The Urinary Bladder Channel of Foot-Taiyang

Course: This channel (meridian) commences from the inner canthus (Jingming, U.B. 1), ascends to the forehead and joins its symmetrical channel at the vertex (Baihui, Du 20), where a branch splits off running to the temple. The original channel enters into and communicates with the brain from the vertex, then re-emerges, bifurcating at the back of the neck and running downward along the medial side of the scapula, then parallel to the vertebral column to the lumbar region where it enters the body cavity through the paravertebral muscles, communicating with the kidney and finally joining its pertaining organ, the urinary bladder.

The Branch of the Lumbar Region descends through the gluteal region and ends in the popliteal fossa.

The Branch of the Neck emerges from the original channel at the back of the neck from where it runs straight downward along the medial side of the scapula and passes through the gluteal region (Huantiao, GB. 30) and along the lateral side of the thigh where it meets the branch descending from the lumbar region in the popliteal fossa. From there it runs continuously downward to the leg, then to the posterior aspect of the external malleolus along the 5th metatarsal bone and through its tuberosity to the lateral side of the tip of the small toe (Zhiyin, U.B. 67), finally connecting with the Kidney Channel of Foot-Shaoyin.

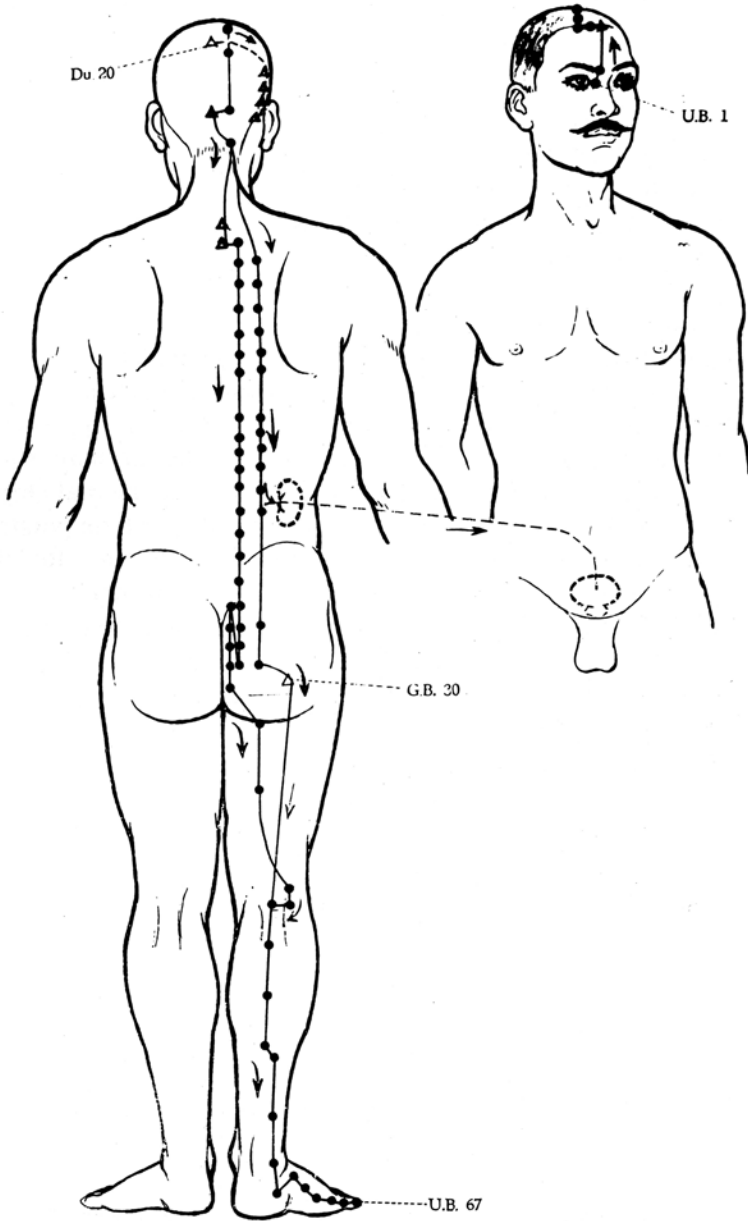


Figure 3-37: The Urinary Bladder Channel of Foot Taiyang

**URINARY BLADDER
CHANNEL (U.B.)**

- Polarity: Yang.
- Number of points: 67.
- Pertaining Organ: Urinary Bladder.
- Related Channel: Kidney Channel (K.).
- Energy flow: Centrifugal.

Clinical uses:

- 1) Points on the face are used mainly for eye disorders.
- 2) There are twelve pairs of points on the back of the trunk, called Back-Shu points, which are related to each of the twelve internal Organs. These points become tender or may show other abnormal reaction when the corresponding internal Organ is diseased and are therefore also categorised as Alarm points.
- 3) Points on the lumbar region are used commonly for the treatment of low backache and genito-urinary disorders.
- 4) Points on the lower limb are used for pain, muscular cramps and other local disorders, while those below the knee also serve as Distal points for the treatment of diseases on the proximal course of the Channel.

Description of the commonly used acupuncture points:

Jingming (U.B. 1) (*Chingming*). Dangerous point.

Location: 0.1 cun medial and superior to the inner canthus of the eye, near the medial border of the orbit.

Indications: Diseases of the eye.

Puncture: As this is a Dangerous point, puncture superficially 0.2 cun, or insert slowly (without any attempt at manipulation), 0.5 - 1.0 cun along the medial wall of the orbit.

Zanzhu (U.B. 2) (*Tsanchu*).

Location: In the depression at the medial end of the eyebrow, directly above the inner canthus of the eye.

Indications: Diseases of the eye, sinusitis, frontal headache.

Puncture: 0.3 - 0.5 cun horizontally downwards, or laterally.

Dashu (U.B. 11). (*Tachu*). Influential point for bone and cartilage.

Location: 1.5 cun lateral to the lower border of the spinous process of the first thoracic vertebra.

Indications: Pain in the shoulder girdle area, arthritis of the joints; used in all joint, bone, and cartilage disorders.

Puncture: 0.3 cun perpendicularly or obliquely downwards.

Feishu (U.B. 13) (*Feishu*). Back-Shu point of the Lung.

Location: 1.5 cun lateral to the lower border of the spinous process of the third thoracic vertebra.

Indication: Lung disease, nose disorders, disorders of the skin (Lung is connected to the skin), lesions of the soft tissue of the dorsal spine area.

Puncture: 0.3–0.5 cun perpendicularly or obliquely downwards.

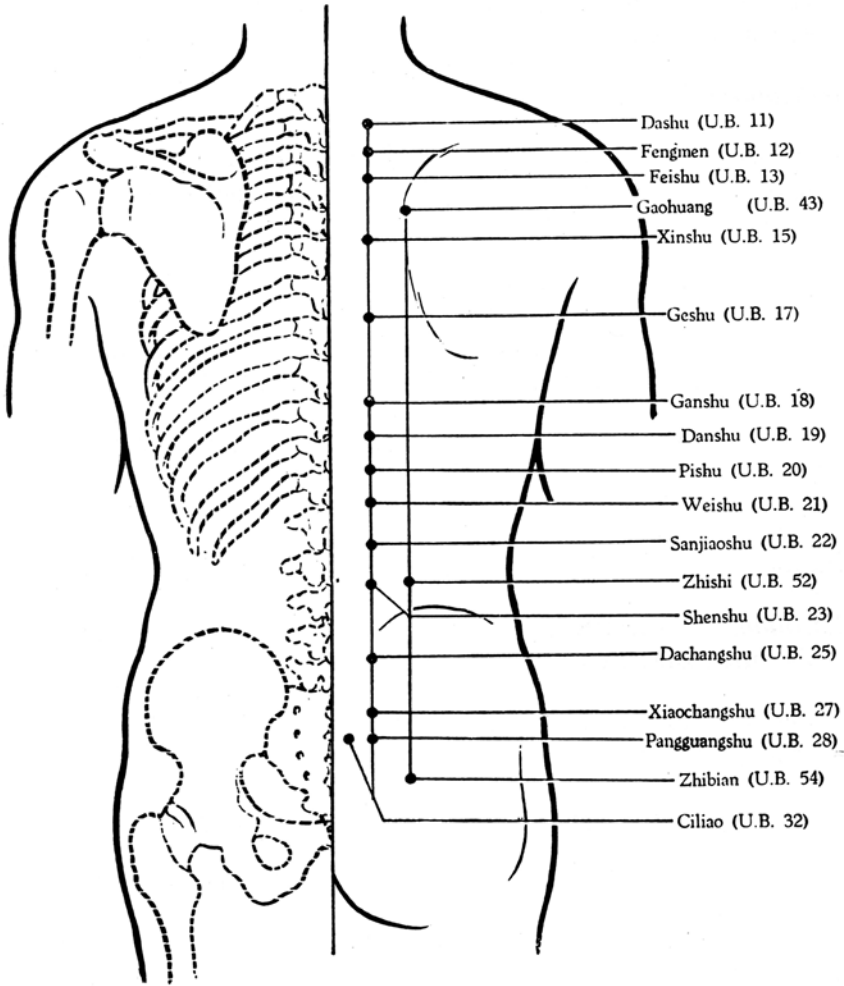


Figure 3-38: Points on Urinary Bladder Channel

Danshu (U.B. 19). (*Tanshu*). Back-Shu point of the Gall Bladder.

Location: 1.5 cun lateral to the lower border of the spinous process of the tenth thoracic vertebra.

Indications: Gall bladder diseases, local disorders of the spine.

Puncture: 0.3-0.5 cun perpendicularly or obliquely downwards.

Pishu (U.B. 20.). (*Pishu*). Back-Shu point of the spleen.

Location: 1.5 cun lateral to the lower border of the spinous process of the eleventh thoracic vertebra.

Indications: Gastro-intestinal disorders, oedema, allergic disorders, soft tissue disorders.

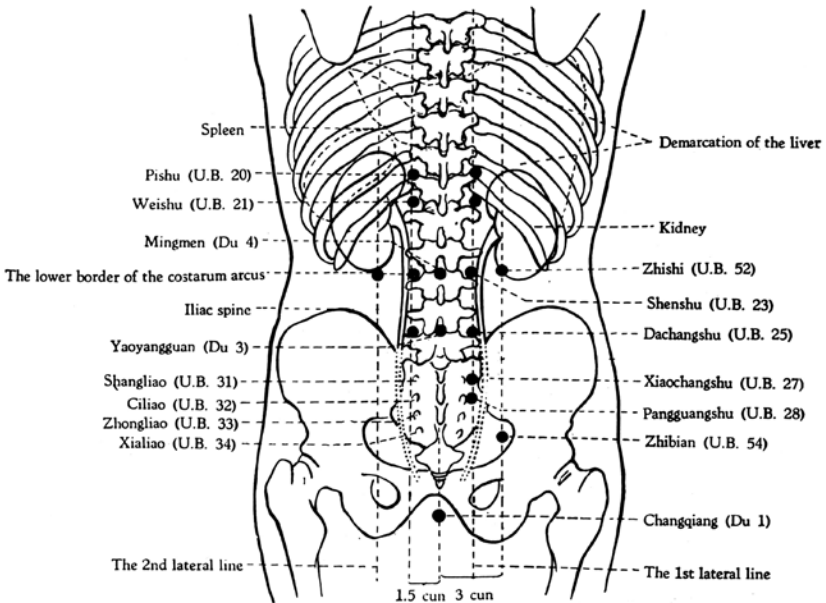


Figure 3-39: The Relationship between the Main Points of the Lumbo-Sacral Region and the Viscera

Jueyinshu (U.B. 14) (*Chuehyinshu*). Back-Shu point of the Pericardium.

Location: 1.5 cun lateral to the lower border of the spinous process of the fourth thoracic vertebra.

Indications: Heart disease, brain disorders.

Puncture: 0.3-0.5 cun perpendicularly or obliquely downwards.

Xinshu (U.B. 15). (*Hsinshu*). Back-Shu point of the Heart.

Location: 1.5 cun lateral to the lower border of the spinous process of the fifth thoracic vertebra.

Indications: Heart disease, neurasthenia, hysteria, epilepsy, schizophrenia, insomnia, anxiety, addictions, behavioural disorders.

Puncture: 0.3 - 0.5 cun perpendicularly or obliquely.

Geshu (U.B. 17). (*Keshu*). Influential point for Blood, Back-Shu point of the diaphragm.

Location: 1.5 cun lateral to the lower border of spinous process of the seventh thoracic vertebra (at the level of the lower border of the scapula).

Indications: Paralysis of diaphragm, hiccough, anorexia nervosa, anaemia, chronic haemorrhagic diseases, leukaemia.

Puncture: 0.3-0.5 cun perpendicularly or obliquely downwards.

Ganshu (U.B. 18). (*Kanshu*). Back-Shu point of the liver.

Location: 1.5 cun lateral to the lower border of the spinous process of the ninth thoracic vertebra.

Indications: Liver disease, eye disease, muscle and tendon disorders local disorders of the spine.

Puncture: 0.3-0.5 cun perpendicularly or obliquely downwards.

Weishu (U.B. 21) (*Weishu*). Back-Shu point of the Stomach.

Location: 1.5 cun lateral to the lower border of the spinous process of the twelfth thoracic vertebra.

Indications: Stomach disorders.

Puncture: 0.3 - 0.5 cun perpendicularly or obliquely downwards.

Sanjiaoshu (U.B. 22). (*Sanjiaoshu*). Back-Shu point of the Sanjiao (The Three Body Cavities).

Location: Abdominal distension, flatulence, loss of appetite, incontinence of urine, local disorders of the spine.

Puncture: 0.5 - 1.0 perpendicularly.

Shenshu (U.B. 23). (*Shenshu*). Back-Shu point of the Kidney.

Location: 1.5 cun lateral to the lower border of the spinous process of the second lumbar vertebra (at the level of the lower border of the rib cage in the renal angle).

Indications: Gnito-urinary disorders, ear disease, bone disorders, alopecia, local disorders of the spine.

Puncture: 1.0 mm perpendicularly or obliquely towards the vertebral column.

Dachangshu (U.B. 25). (*Tachangshu*). Back-Shu point of the Large Intestine.

Location: 1.5 cun lateral to the lower border of the spinous process of the fourth lumbar vertebra (at the level of the upper border of the iliac crest).

Indications: Diarrhoea, constipation, low backache, sciatica, paralysis of the lower extremities.

Puncture: 1.0 - 1.5 cun perpendicularly.

Xiaochangshu (U.B. 27). (Hsiaochangshu). Back-Shu point of the Small Intestine.

Location: 1.5 cun lateral to the midline, level with the first posterior sacral foramen, in the depression over the sacro-iliac joint.

Indications: Low backache, enteritis, sacro-iliac diseases.

Puncture: 1.0 - 1.5 cun perpendicularly, or 2 to 3 cun obliquely towards Dachangshu (U.B. 25).

Panguangshu (U.B. 28) (*Pangkuangshu*). Back-Shu point of the Urinary Bladder.

Location: 1.5 cun lateral to the midline level with the second posterior sacral foramen, in the depression just over the sacro-iliac joint.

Indications: Genito-urinary disorders, lumbo-sacral disorders.

Puncture: 0.5–1.0 cun perpendicularly.

Ciliao (U.B. 32). (*Tzuliao*).

Location: On the second sacral foramen.

Indications: Genito-urinary disorders, haemorrhoids, sciatica,

Puncture: 1.0–1.5 cun perpendicularly. Moxa on a needle is used in nocturnal enuresis.

Chengfu (U.B. 36). (*Chengfu*).

Location: In the middle of the gluteal fold.

Indications: Sciatica, paralysis of the lower limb, haemorrhoids.

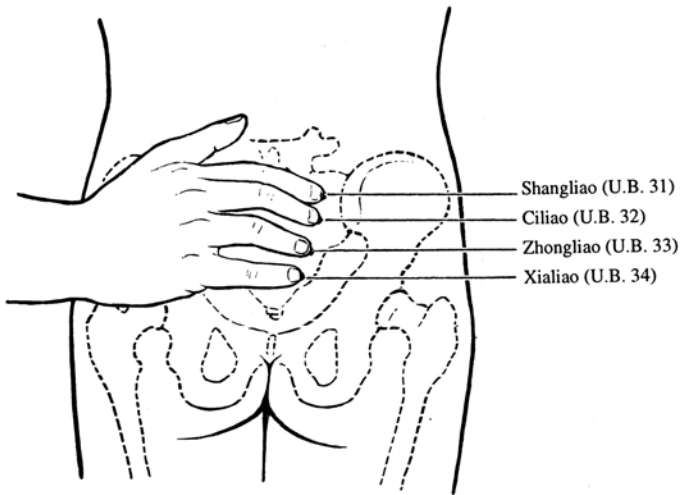


Figure 3-40: The Urinary Bladder Channel Showing Points
UB 31 to UB 34

Puncture: 1.5– 2.0 cun perpendicularly.

Yinmen (U.B. 37). (*Yinmen*).

Location: Midpoint of a line joining Chengfu (U.B. 36.) and Weizhong (U.B. 40.), or 6 cun distal to Changiii (U.B. 36.).

Indications: Sciatica, lumbo-sacral disorders, paralysis of the lower limb.

Puncture: 1.0 - 2_0 cun perpendicularly.

Weizhong (U.B. 40). (*Weichung*). One of the six important Distal points.

Location: At the midpoint of the popliteal transverse crease.

Indications: Sciatica, lumbago, paralysis of the lower limb, genito urinary disorders, disorders of the knee joint, skin disease.

Puncture: 0.5. - 1.0 perpendicularly: or prick to bleed with a three edged needle in skin disease.

Zhibian (U.B. 54). (*Chihpien*).

Location: At the level of the fourth sacral foramen, 3.0 cun lateral to the midline.

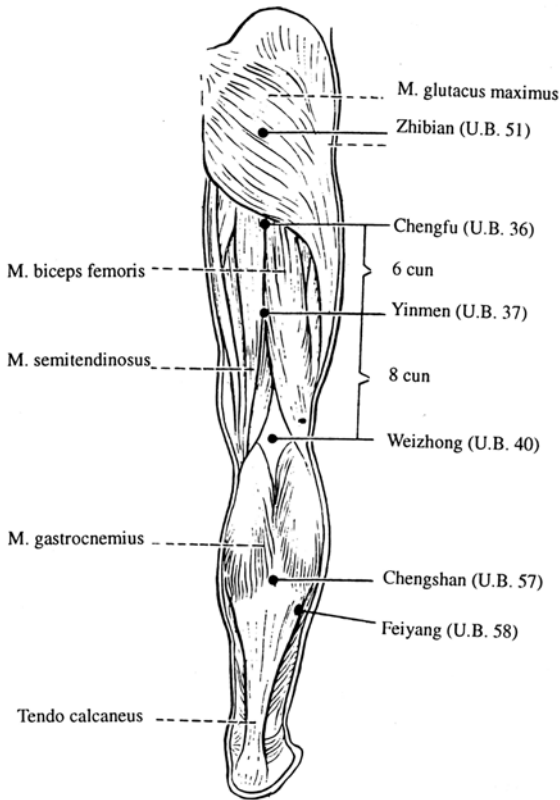


Figure 3-41: Location of Urinary Bladder Channel Points on the Back of the Lower Limb

Indications: Genito-urinary disorders, haemorrhoids, sciatica, hip disorders, paralysis of the lower limb.

Puncture: 1.5 - 2.0 cun perpendicularly.

Chengshan (U.B. 57). (*Chengshan*).

Location: At the level where the two bellies of the gastrocnemius unite to form the tendo Achilles, 8 cun below Weizhong (U.B. 40.), or halfway between Weizhong (U.B. 40) and the ankle joint.

Indications: Sciatica, cramps of calf muscles, pain in the sole of foot, paralysis of the lower limb, haemorrhoids.

Puncture: 1.0 - 1.5 cun perpendicularly.

Feiyang (U.B. 58). (*Feiyang*). Luo-Connecting point.

Location: 7 cun directly above Kunlun (U.B. 60), on the lateral aspect of the calf muscle. One cun inferior and lateral to Chengshan (U.B. 57).

Indications: Ophthalmoplegia.

Puncture: 1.5 cun perpendicularly.

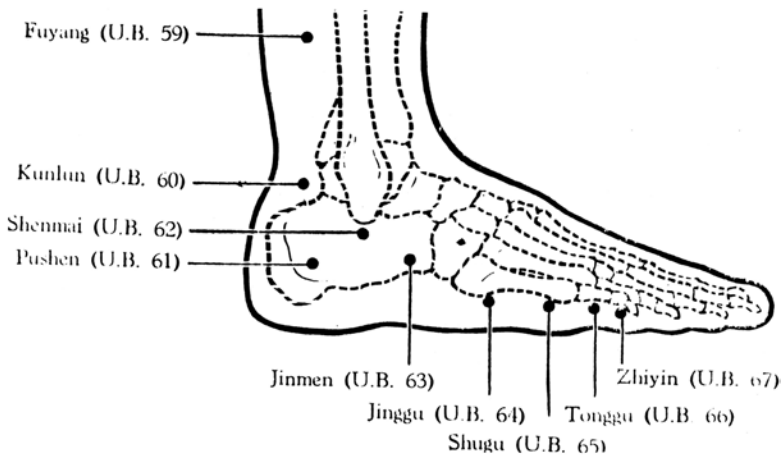


Figure 3-42: Location of Urinary Bladder Channel Points on the Lateral Aspect of the Foot

Kunlun (U.B. 60) (*Kunlun*).

Location: Midway between the prominence of the lateral malleolus and the lateral border of the tendo Achilles.

Indications: Painful disorders of the ankle region (arthritis, Achilles tendinitis), sciatica, lumbago, paralysis of the lower limb.

Puncture: 0.5 - 0.8 cun perpendicularly.

Shenmai (U.B. 62). (*Shenmo*). Confluent point.

Location: 0.5. cun inferior to the tip (or lower border) of the lateral malleolus.

Indications: Convulsions, epilepsy, apoplexy, mental disorders, drug addictions, foot-drop.

Puncture: 0.3 - 0.5 cun perpendicularly.

Note: This is the most important sedative and tranquilizer point of the lower limb.

Zhiyin (U.B. 67). (*Chihyin*). Jing-Well point.

Location: 0.1 cun proximal to the lateral end of the proximal border of the little toe.

Indications: Malposition of the foetus, difficult labour helps to reinforce uterine contractions and expedite delivery at full term. (Abortion may be caused in the earlier months of pregnancy).

Puncture: 0.1 cun perpendicularly. Moxibustion on a needle.

List of all the acupuncture points of the Urinary Bladder Channel

U.B. 1:	Jingming	(Eyes Bright)	Dangerous point
U.B. 2:	Zanshu	(Drilling Bamboo)	
U.B. 3:	Meichong	(Eyebrow Rushing)	
U.B. 4:	Quchai	(Crooked Servant)	
U.B. 5:	Wuchu	(Five Places)	
U.B. 6:	Chengguang	(Receive Light)	
U.B. 7:	Tongtian	(Penetrate Heaven)	
U.B. 8:	Luoque	(Connecting Deficient)	
U.B. 9:	Yuzhen	(Jade Pillow)	

U.B. 10:	Tianzhu	(Heavenly Pillar)	
U.B. 11:	Dashu	(Big Shuttle)	– Influential point for bone and cartilage
U.B. 12:	Fengmen	(Wing Gate)	
U.B. 13:	Feishu	(Lung Yu)	– Back-Shu (Lung) point.
U.B. 14:	Jueyinshu	(Absolute Yin Yu)	– Back-Shu (Pericardium) point.
U.B. 15:	Xianshu	(Heart Yu)	– Back-Shu (Heart) point.
U.B. 16:	Dushu	(Governing Vessel)	– Specific point for pruritus.
U.B. 17:	Geshu	(Diaphragm Yu)	– Influential point for blood, Back-Shu point of the diaphragm.
U.B. 18:	Genshu	(Liver Yu)	– Back-Shu (Liver) point.
U.B. 19:	Danshu	(Gall Bladder Yu)	– Back-Shu (Gall Bladder) point.
U.B. 20:	Pishu	(Spleen Yu)	– Back-Shu (Spleen) point.
U.B. 21:	Weishu	(Stomach Yu)	– Back-Shu (Stomach) point.
U.B. 22:	Sanjiao-Shu	(Triple Wamier)	– Back-Shu (Sanjiao) point.
U.B. 23:	Shenshu	(Kidney Yu)	– Back-Shu (Kidney) point.
U.B. 24:	Qihuishu	(Sea of Chi Yu)	
U.B. 25:	Dacang-shu	(Large Intestine Yu)	– Back-Shu (Large Intestine) point.
U.B. 26:	Guanyuanshu	(Gate Origin Yu)	
U.B. 27:	Xiao-changshu	(Small intestine Yu)	– Back-Shu (Small Intestine) point.
U.B. 28:	Pang-guangshu	(Bladder vu)	– Back-Shu (Urinary Bladder) point.
U.B. 29:	Zonglushu	(Middle of Baek vu)	
U.B. 30:	Baihuanshu	(White Circle Yu)	
U.B. 31:	Shangliao	(Upper Bone)	

- U.B. 32: Ciliao (Second Bone)
- U.B. 33: Zhongliao (Middle Bone)
- U.B. 34: Xialiao (Lower Bone)
- U.B. 35: Huiyang (Meeting of the Yang)
- U.B. 36: Chengfu (Supplementary Division)
- U.B. 37: Yinmen (Fort Shelter)
- U.B. 38: Fuxi (Floating Xi)
- U.B. 39: Weiyang (Spirit Hall)
- U.B. 40: Weizhon (Sighing) – One of the 6 important Distal points, Earth point.
- U.B. 41: Fufen (Dia Phragm Gate)
- U.B. 42: Pohu (Soul Door)
- U.B. 43: Goahuang (Young Essentials)
- U.B. 44: Shentang (Thought Shelter)
- U.B. 45: Yixi (Surprise)
- U.B. 46: Geguan (Vital Door)
- U.B. 47: Hunmen (Soul's Door)
- U.B. 48: Yangguan (Yang's Parameter)
- U.B. 49: Yishe (Folding Edge)
- U.B. 50: Weicang (Receive and Support)
- U.B. 51: Huangme (Prosperious Gate)
- U.B. 52: Zhishi (Floating Accommodation)
- U.B. 53: Baohuang (Commanding Young)
- U.B. 54: Zhibian (Commanding Middle)
- U.B. 55: Heyang (Uniting Yang)
- U.B. 56: Chengjin (Supporting Muscle)
- U.B. 57: Chengsha (Supporting Mountain)
- U.B. 58: Feiyang (Flying High) – Luo-Connecting Point.
- U.B. 59: Fuyang (Foot Bone Young)
- U.B. 60: Kunlun (Kun Lun Motmtains – Fire point.
Near Tibet)
- U.B. 61: Pushen (Official's Aid)
- U.B. 62: Shenmai (Extended Meridian) – Confluent point.
- U.B. 63: Jinmen (Golden Door)
- U.B. 64: Jingu (Capital Bone) – Yuan-Source Point.
- U.B. 65: Shugu (Bind The Bone) – Wood point.
- U.B. 66: Tonggu (Penetrating The Valley)
- U.B. 67: Zhiyin (Extremity of Yin) – Jing-Well point, Metal point.

THE KIDNEY MERIDIAN

The Kidney Channel of Foot-Shaoyin

Course: This channel (meridian) starts from the inferior aspect of the small toe, running towards the sole (Yongquan, K. 1). Emerging from the inferior aspect of the tuberosity of the navicular bone and running behind the medial malleolus, it enters the heel. Then it ascends along the medial side of the leg to the medial side of the popliteal fossa, advancing further along the medio-posterior aspect of the thigh towards the vertebral column (Changqiang, Du 1) to enter its pertaining organ, the kidney, to communicate with the urinary bladder. Re-emerging from the Kidney, running straight upward and passing through the liver and diaphragm it enters the lung, runs along the throat and terminates at the root of the tongue.

A branch springs front the lung, joins the heart, and Flows into the chest to connect with the Pericardium Channel of Hand-Jueyin

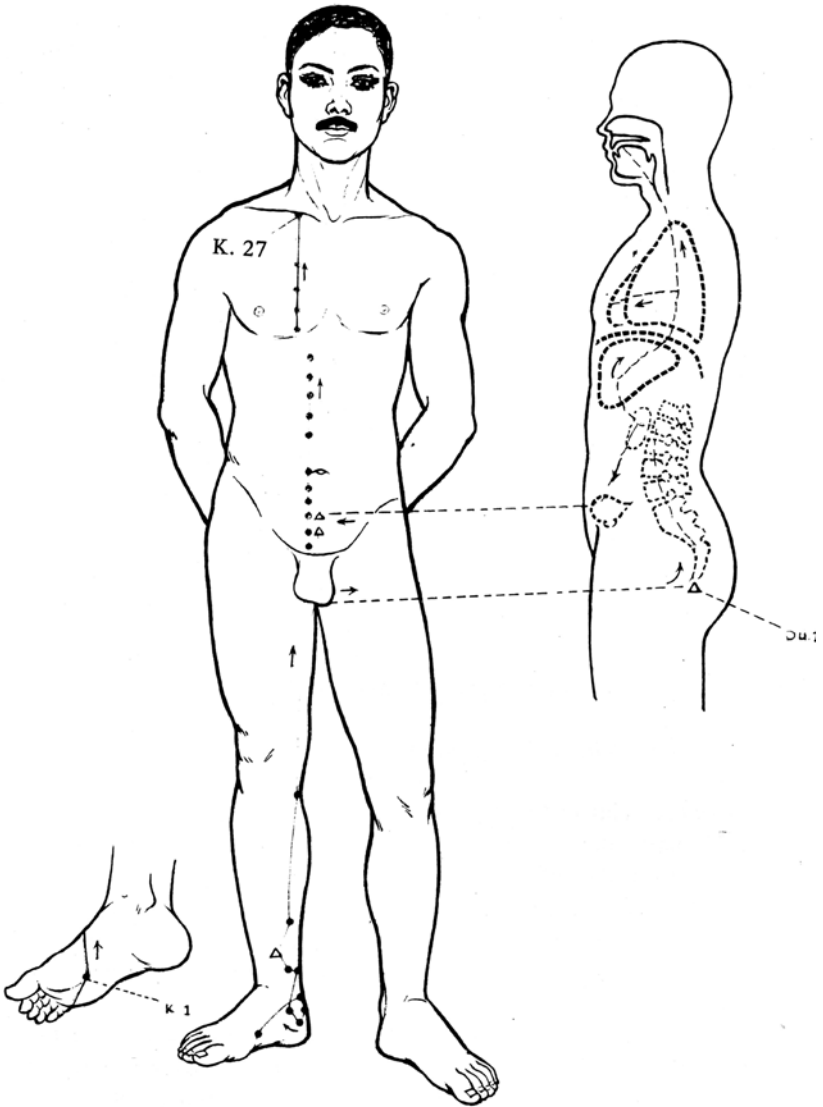


Figure 3-43: Kidney Channel of Foot Shaoyin

KIDNEY CHANNEL (K.)

- Polarity: Yin. - Number of points: 27.
- Pertaining Organ: Kidney.
- Related Channel: Urinary Bladder Channel (U.B.).
- Element: Water.
- Energy Flow : Centripetal

Clinical uses:

- 1) Genito-urinary disorders. (The Organ Kidney of traditional Chinese medicine represents both the urinary and genital functions: the concept of ‘Kidney’ also includes the adrenal glands, particularly the stress mechanisms.
- 2) Low back pain, pain and paralysis of the lower extremities.
- 3) Excess Lung disorder: Water (K.) is the son of Metal (Lu.).
- 4) Oedema, excessive sweating (disorders of the Element Water).
- 5) Convulsions and other acute emergencies [at Yongquan (K. 1).]
- 6) Bone cartilage and nail disorders, ear disorders, alopecia (the Kidney is connected to bone, cartilage, the head hair and the ears).

Description of the commonly used acupuncture points:

Yongquan (K. 1) (Yungchuan). Jing-Well point.

Location: In the sole of the foot, on a line drawn posteriorly between the 2nd and 3rd toes, in the depression formed between the anterior

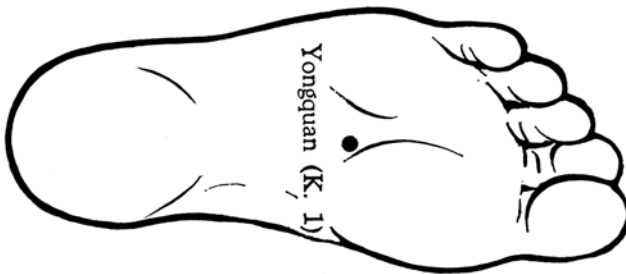


Figure 3-44: Location of Yongquan (K. 1).

one-third and posterior two-third parts of the sole when the toes are plantar flexed.

Indications: This is the most effective Jing-Well point for needling and is used in fainting, coma, shock, hysteria, epileptic attack infantile convulsions, cyclical vomiting, hyperemesis gravidarum and other acute emergency conditions. It is also indicated in plantar fasciitis, plantar warts and excessive sweating of the sole of the foot.

Puncture: 0.5 cun perpendicularly.

Taixi (K. 3) (*Taihsi*). Yuan-Source point.

Location: Midway between the prominence or tip of the, medial malleolus and the medial border of the tendo-Achilles.

Indication: Genital and urinary disorders. importance, low back ache, disorders of the ankle. In acute asthma or in cases of frequent asthmatic attacks. (“excess of Lung”) mild stimulation of this point or Fuliu (K. 7) may be usefully carried out.

Puncture: 1.0 cun perpendicularly, or towards Kunlun (U.B. 60).

Shuiquan (K. 5). (*Shuichuan*). Xi-Cleft point.

Location: 1.0 cun below Taixi (K. 3), on the medial surface of the calcaneum.

Indication: Renal colic.

Puncture: 1.0 cun perpendicularly and employ very strong stimulation.

Zhaohai (K. 6) (*Chaohai*).

Locations: In the depression 1.0 cun directly below the prominence of the medial malleolus, (0.4 cun below the tip or lower border of the medial malleolus).

Indications: Genito-urinary disorders, oedema of the ankle.

Puncture: 0.5 cun perpendicularly.

Fuliu (K. 7).

Location: 2 cun proximal to Taixi (K. 3), on the medial border of the tendo-calcaneus.

Indications: Excessive sweating, bronchial asthma.

Puncture: 1.0 cun perpendicularly.

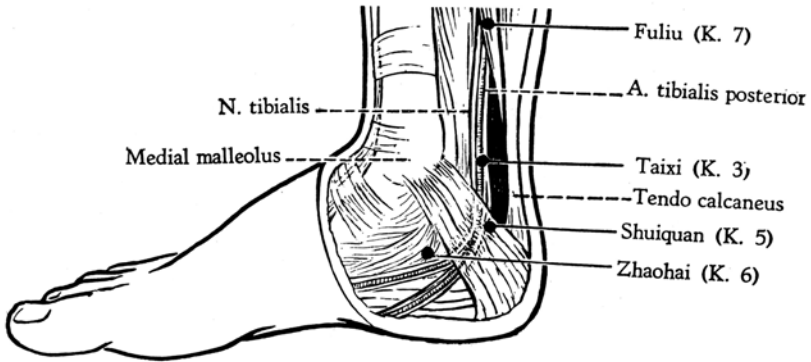


Figure 3-45: Location of Points on the Kidney Channel on the Medial Aspect of the Foot

Note: For excessive sweating, this point may be effectively combined with Hegu (L.I. 4.) and Yinxi (H. 6) and the local points of the areas where there is excessive sweating:-

- Palm:* Yuji (Lu. 10); Laogong (P. 8); Shaofu (H. 8)
- Axilla:* Jiquan (H. 1).
- Sole:* Yongquan (K. 1)

The specific points used for oedema and ascites may also be added.

Yingu (K. 10). (*Yinku*).

Location: On the popliteal crease between the medial border of the semitendinosus and semimembranosus.

Indications: Knee disorders impotence, baldness.

Puncture: 1.0 cun perpendicularly.

List of all the acupuncture points of the Kidney Channel:

K. 1:	Yongquan	(Bubbling Spring)	–	Jing-Well point, Wood point.
K. 2:	Rangu	(Blazing Valley)	–	Fire point
K. 3:	Taixi	(Shining Sea)	–	Yuan-Source point. Earth point.
K. 4 :	Dazhong	(Water Spring)	–	Luo_Connecting point.
K. 5:	Shuiguan	(Big Bell)	–	Xi-Cleft point.
K. 6:	Zhaohai	(Bigger Stream)		
K. 7:	Fuliu	(Returning Current)	–	Metal point.
K. 8:	Jiaoxin	(Echange Letter)		
K. 9:	Zhubin	(Building Bank)		
K. 10:	Yingu	(Yin Valley)	–	Water point.
K. 11:	Henggu	(Transverse Bone)		
K. 12:	Dahe	(Big Brightness)		
K. 13:	Qixue	(Chi Hole)		
K. 14:	Siman	(Four Full)		
K. 15:	Abdomen- Zhongzhu	(Middle Injection)		
K. 16:	Huangshu	(Vital Yu)		
K. 17:	Shangqu	(Mechant's Capital)		
K. 18:	Suiguan	(Stone Fate)		
K. 19:	Yindu	(Ghost's Capital)		
K. 20:	Abdomen- Tonggu	(Penetrating Valley)		
K. 21:	Youmen	(Fate of Hades)		
K. 22:	Bulang	(Walking Corridor)		
K. 23:	Shenfeng	(Spirit Sea)		
K. 24:	Lingxu	(Spirit burial ground)		
K. 25:	Shencang	(Spirit Store)		
K. 26:	Yuzong	(Amidst Elegance)		
K. 27:	Shufu	(Yu Mansion)		

From Shufu (K.27). The Yin vital energy flows on the Tianchi (P.I.).

Note: The Kidney and the Urinary Bladder are related to bone cartilage and to head hair. The Kidney is also connected to the sense organs, the ears.

THE PERICARDIUM CHANNEL (P.)

The Pericardium Channel of Hand-Jueyin

Course: This channel (meridian) commences from the chest where it connects with its pertaining organ, the pericardium. Then it descends through the diaphragm into the abdomen, linking with the upper, middle and lower portions of the body cavity (Sanjiao).

The Chest Branch runs inside the chest, emerges from the costal region at a point 3 cun below the anterior axillary folds (Tianchi, P. 1), and ascends to the axilla. Along the medial aspects of the upper arm it runs downward between the Lung Channel and the Heart Channel to the cubital fossa, then still further downward to the forearm between the tendons of muscle palmaris longus and muscle flexor carpi radialis to the palm. From there it passes along the middle finger right down to its tip (Zhongchong, P. 9).

The Branch of the Palm originates from Laogong (P. 8), runs along the ring finger to its tip (Guahchong, S.J. 1), and connects with the Sanjiao Channel of Hand-Shaoyang.

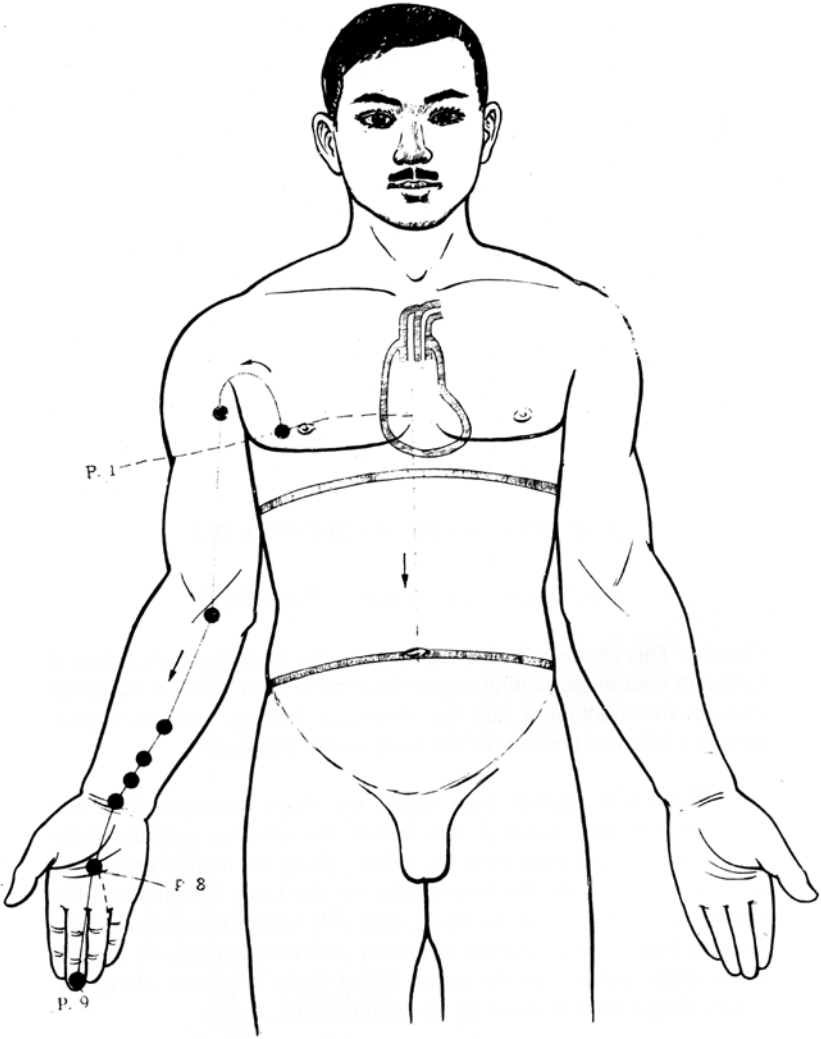


Figure 3.46 : The Pericardium Channel of Hand-Jueyin.

Figure 3-46: The Pericardium Channel of Hand-Jueyin

PERICARDIUM CHANNEL (P.)

Called the Xin Pao Luo Jing in Chinese the name of this Channel is also translated as Circulation, ‘Circulation Sex’ and ‘Heart Constrictor’.

- Polarity: Yin.
- Number of points: 9.
- Pertaining Organ: Pericardium. _ Related Channel: Sanjiao (S.J.)
- Element: Fire.
- Energy flow: Centrifugal.

Clinical uses:

- 1) Heart diseases, especially angina pectoris, palpitation, disorders of rhythm.
- 2) Upper abdominal disorders such as gastritis, peptic ulcer, nausea, vomiting, morning sickness.
- 3) Mental disorders such as schizophrenia, nervous instability.
- 4) Diseases along the course of the Channel.

Note: a) In traditional Chinese medicine the Heart and the Pericardium are associated with the brain and its functions, although the brain is itself classified as an Extraordinary Organ. In the treatment of brain disorders therefore the main Channels to be selected are the Heart and Pericardium Channels. In appropriate case however selection of points may also be made from the Du Urinary Bladder, and Stomach Channels, as they run on the scalp and over the brain.

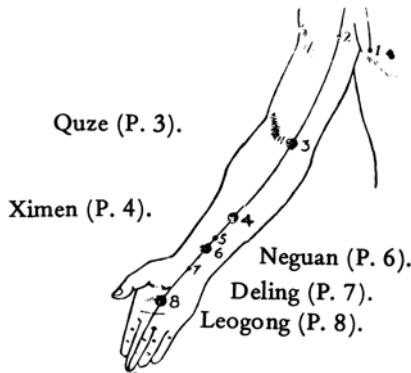


Figure 3-47: The Points on Pericardium Channel

The following are the more common points used in disorders of the brain:-

Shenmen (H. 7).
 Neiguan (P. 6).
 Baihui (Du 20), Shendao (Du 11).

and the points on the three Yang Channels which run from the head to the foot:-

Shenmai (U.B. 62). Xinshu (U.B. 15)
 Yanglingquan (G.B. 34).
 Fenglong (St. 40).

Description of the commonly used acupuncture points:

Quze (P. 3), (*Chutse*).

Location: In the ante-cubital crease, on the medial (ulnar) border of the biceps tendon.

Indications: Angina pectoris, palpitation, anxiety.

Puncture: 1.0 cun perpendicularly: in cases of fever or chronic yin diseases, prick to bleed with the three-edged needle.

Ximen (P. 4). (*Hsimen*). Xi-Cleft point.

Location: 5 cun proximal to the midpoint of the wrist crease, between the tendons of the palmaris longus and flexor carpi radialis muscles.

Indications: As it is the Xi-Cleft point of the Pericardium Channel, it may be used to treat acute heart disease, e.g., angina pectoris, acute depression and hysteria. This point is used for anaesthesia in cardiac surgery.

Puncture: 1.0 cun perpendicularly.

Neiguan (P. 6). (*Neikuan*). One of the six important Distal points. Luo-Connecting point.

Location: 2 cun proximal to the midpoint of the wrist crease, between the tendons of the palmaris longus and flexor carpi radialis muscles.

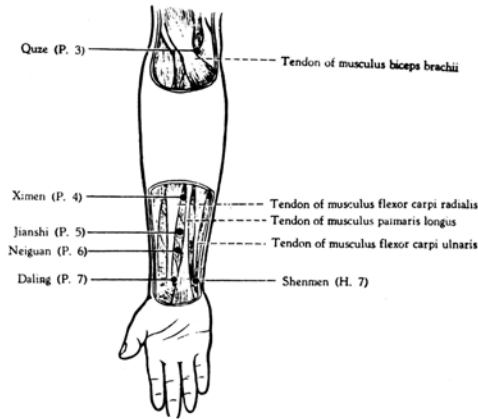


Figure 3-48: Location of Points on the Pericardium Channel

Indications: a) Heart disease: angina pectoris, palpitation, carditis.

b) Brain disorders: mental disorders, epilepsy, hysteria, insomnia, anxiety.

c) Distal point for chest and upper abdominal disorders:

(i) Chest: pain in chest and costal region, hiccough:

(ii) Upper abdomen: nausea, vomiting gastritis, peptic ulcer, discomfort due to hiatus hernia.

d) Morning sickness, hyperemesis gravidarum, also used as prophylaxis in post operative nausea and vomiting.

e) Numbness of the forearm and hands.

f) For acupuncture anaesthesia in thyroidectomy and cardiac surgery.

Puncture: 1.0 cun perpendicularly, or through to Waiguan (S.J. 5).

Daling (P. 7) (*Taling*). Yuan-Source point.

Location: At the midpoint of the wrist crease between the tendons of the palmaris longus and flexor carpi radialis muscles.

Indications: Diseases of the wrist joint, early median carpal compression without positive objective neurological signs.

Puncture: 0.5 cun perpendicularly.



Figure 3-49: Location of Point Laogong (P. 8)

Note: In diseases of the wrist joint this point is usually combined with Shenmen (H. 7) and Taijuan (Lu. 9). This illustrates the principle that when a Channel passes over a joint the acupuncture points in relations to that region are used to treat the joint disorder, (The principle that all points treat disorders of local and adjacent area).

Laogong (P. 8) (*Laokung*).

Location: In the palmar surface, between the tips of the middle and ring fingers as these touch the central region of the palm on lightly clenching the fist.

Indications: Disorders of the palm, rheumatic arthritis of the carpal joints. Dupuytren's contracture, excessive sweating of the palm.

Puncture: 0.5 cun perpendicularly. This is a painful point.

List of all the acupuncture points of the Pericardium Channel

P. 1:	Tianchi	(Heavenly Pond)	
P. 2:	Tianquan	(Heavenly spring)	
P. 3:	Quze	(Crooked Marsh)	– Water point.
P. 4:	Ximen	(Accumulation Door)	– Xi-Cleft point
P. 5:	Jianshi	(The Intermediary)	– Metal point.
P. 6:	Neiguan	(Inner Gate)	– Luo-Connecting point.
P. 7:	Daling	(Big Wound)	– Yuan-Source point, Earth point.
P. 8:	Laogong	(Labour Palace)	– Fire point.
P. 9:	Zhongchong	(Middle Rushing)	– Jing-well point, Wood point.

Note: The main sedative and tranquilizing points of the body are:

- Baihui (Du 20). Anmiam I (U. Ex.).
- Sishcmcong (Ex. 6). Anmiam II (U. Ex.).
- Shenmen (H. 7). Yaoqi (Extra).
- Neiguan (P. 6).
- Shenmai (U.B. 62).
- Xinshu (U.B. 15).
- Yanglingquan (G.B. 34).
- Fenglong (St 40).
- Shendao (Du 11).

MERIDIAN OF (SAN-JIAO) (S.J.)

The Sanjiao Channel of Hand-Shaoyang

Course: This channel (meridian) originating from the ulnar side of the tip of the ring finger at Guanchong (S.J. 1), runs between the 4th and 5th metacarpal bones up the dorsal side of the wrist, then to the dorsal side of the forearm between the radius and ulna, and still further upward, passing the olecranon along the lateral aspect of the upper arm and reaching the shoulder region. Running across and posterior to the Gall Bladder Channel of Foot-Shaoyang, and winding over to the supraclavicular fossa, it branches out in the chest, communicating with the pericardium. Then it descends through the diaphragm, goes directly down to the abdomen and links successively the upper, middle and lower portions of the body cavity.

The Chest Branch originates in the chest, ascending to the supraclavicular fossa. From there it runs superficially upward to the neck, along the posterior border to the ear, turns downward to the cheek and terminates in the infraorbital region.

The Auricular Branch originates in the retro-auricular region where it enters the ear, then emerges in front of the ear, crosses the above-mentioned branch at the cheek and reaches the outer canthus (Sizhukong, S.J. 23) where it connects with the Gall Bladder Channel of Foot-Shaoyang.

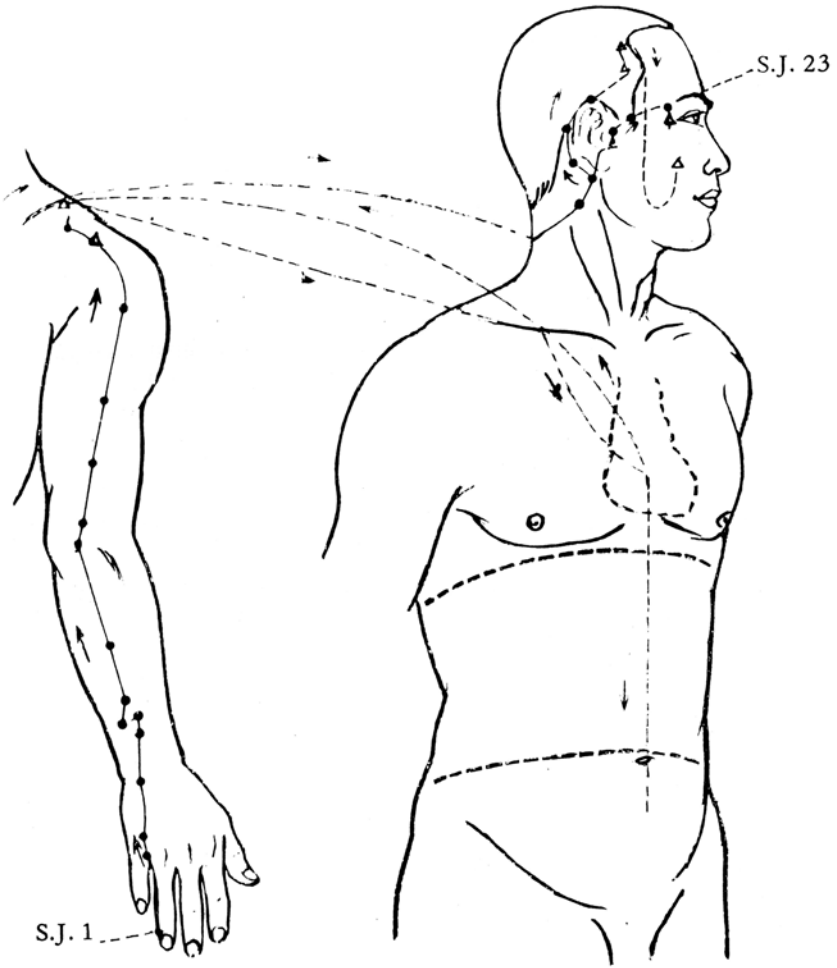


Figure 3-50: The Sanjiao Channel of Hand Shaoyang

SANJIAO CHANNEL (S.J.)

Sanjiao in Chinese means “Three Body Cavities”. It is also translated as the “Triple Warmer” and the “Three Burning Spaces”.

- Polarity Yang.
- Number of points: 23.
- Pertaining Organ: Sanjiao.
- Related Channel 2 Pericardium (P.).
- Element: Fire.
- Energy flow: Centripetal.

Clinical uses:

- 1) Disorders of the ear.
- 2) Constipation (the commonest disorder of the abdominal cavity).
- 3) Paralysis, pain and polyneuropathy of the upper limb.
- 4) Pain in the shoulder and the back of the chest.
- 5) Eye diseases.

The Three Body Cavities are the thoracic cavity, the abdominal cavity, and the pelvic cavity. It is the tissue enclosing the organs of these three areas that is considered as Sanjiao in traditional Chinese medicine. The Sanjiao is a conceptualization of the harmony that exists between the different Internal organs.

Description of the commonly used acupuncture points:

Zhongzhu (S.J. 3) (Chungchu).

Location: On the dorsum of the hand, in the depression between the heads of the 4th and 5th metacarpal bones. This point is best located by clenching the fist.

Indications: Ear disorders, paralysis of the upper extremities.

Puncture: 0.5 cun perpendicularly.

Waiguan (S.J. 5.). (Waikuan).

Location: 2 cun proximal to the midpoint of the dorsal transverse crease of the wrist, between the radius and the ulna.

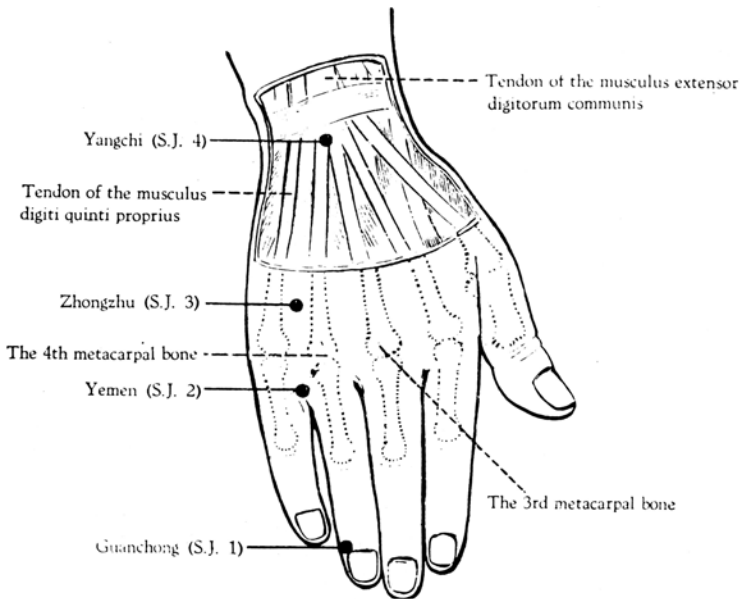


Figure 3-52.

Indications: Paralysis of the upper limb, temporal headache, ear disorders, stiff-neck.

Puncture: 1.0 cun perpendicularly.

Zhigou (S.J. 6). (*Chihkou*).

Location: 1.0 cun proximal to Waiguan (S.J. 5).

Indications: Constipation.

Puncture: 1.0 cun perpendicularly.

Sanyangluo (S.J. 8). (*Sanyanglo*).

Location: 1.0 cun proximal to Zhigou (S.J. 6).

Indications: Pain in the costal region (as in herpes zoster); acupuncture anaesthesia for thoracic surgery (e.g. lobectomy).

Puncture: 1.0 cun perpendicularly.

Jianliao (S.J. 14). (*Chienliao*).

- Location:*
- With the arm abducted to a horizontal position, In the posterior depression of the origin of the deltoid muscle from the lateral border of the acromion.
 - With the arm by the side, between the acromion and the greater tuberosity of the humerus.

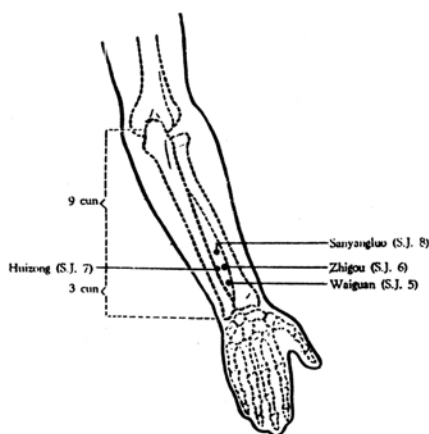


Figure 3-53: The Location of Points of the Sanjiao Channel on the Dorsal Aspect of the Forearm

Indications: Frozen shoulders, pain in the arm, paralysis of the arm.

Puncture: 1.0 cun perpendicularly towards Jiquan (H. 1).

Yifeng (S.J. 17). (*Yifeng*).

Location: In the highest point of the depression behind the ear lobe, between the angle of the mandible and the mastoid process.

Indications: Ear disorders, facial paralysis.

Puncture: 1.0 cun perpendicularly.

Jiasun (S.J. 20). (*Jiasun*).

Location: On the scalp at the apex of the ear, when the ear is folded forwards. Endocrine Point.

Indication: Endocrine disorders, especially of pituitary origin e.g. dwarfism.

Puncture: 0.5 cun obliquely downwards.

Ermen (S.J. 21). (*Erhmen*).

Location: In the depression in front of the supra-tragic notch. It is easier to locate this point when the mouth is slightly open.

Indications: Ear disorders.

Puncture: 0.5 cun perpendicularly, or more usually, horizontally downwards through Tinggong (S.I. 19) to Tinghui (G.B. 2) (“puncturing-through technique”).

Sizhukong (S.J. 23) (*Ssuchukung*). “The tip of the bamboo leaf.”

Location: In the depression at the lateral end of the eyebrow.

Indications: Eye diseases, temporal headache, frontal sinusitis.

Puncture: 0.5 cun horizontally and posteriorly in the direction of Shuaigu (G.B_ 8). Sometimes a long needle is inserted connecting these two points, especially for temporal arteritis.

List of all the acupuncture points of the Sanjiao Channel:

S.J. 1:	Guanchong	(Gate Rushing)	–	Jing-Well point, Metal point.
S.J. 2:	Yemen	(Fluid Door)	–	Water point.
S.J. 3:	Zhongzhu	(Middle Islet)	–	Wood point.
S.J. 4:	Yangchi	(Yang pond)	–	Yuan-Source point.
S.J. 5:	Waiguan	(Outer Gate)		
S.I. 6:	Zhigou	(Branch Ditch)	–	Fire point.
S.J. 7:	Huizong	(Meeting Origin)	–	Xi-Cleft point.
S.J. 8:	Sanyangluo	(Three Young Luo)		
S.J. 9:	Sidu	(Four Gutters)		
S.J. 10:	Tianjing	(Heavenly Well)	–	Earth point.
S.J. 11:	Qinglengyuan	(Pure cold Gulf)		
S.J. 12:	Xiaoluo	(Thawing Luo River)		
S.J. 13:	Naohui	(Shoulder Meeting)		
S.J. 14:	Jianliao	(Shoulder Bone)		
S.J. 15:	Tianliao	(Heavenly Bone)		
S.J. 16:	Tianyou	(Window of Heaven)		
S.J. 17:	Yifeng	(Window Screen)		
S.J. 18:	Qimai	(Feeding Meridians)		
S.J. 19:	Luxi	(Skull Rest)		
S.J. 20:	Jiaosun	(Angle of the ear)		
S.J. 21:	Ermen	(Ear Door)		
S.J. 22:	Ear-Heliao	(Ear Harmony Bone)		
S.J. 23:	Sizhukong	(Tip of Bamboo Leaf)		

Note. The Sanjiao is not intelligible on Western medical concepts of anatomy. According to some authorities, the Sanjiao is a conceptualization of the preservation of the homeostasis of the Internal Organs, According to some authorities the 3 body cavities represent

- (a) the cardiorespiratory,
- (b) digestive and
- (c) metabolic, excretory and reproductive functions respectively.

THE GALL BLADDER MERIDIAN (G.B.)

The Gall Bladder Channel of Foot-Shaoyang

Course: This channel (Meridian) starts from the outer canthus (Tongziliao, G.B. 1), ascends to the corner of the forehead (Hanyan, G.B. 4), curves downwards to the retro-auricular region (Fenchi, G.B. 20) and runs along the side of the neck in front of the Sanjiao Channel to the shoulder. Turning back to the posterior of the Sanjiao Channel, this channel runs downward to the supraclavicular fossa.

The Retro-auricular Branch originates in the retro-auricular region, enters the ear and, after emerging, passes from the pre-auricular region to the posterior aspect of the outer canthus.

The Outer Canthus Branch arises from the outer canthus, runs downward to Daying (St. 5) and meets the Sanjiao Channel of Hand-Shaoyang in the infraorbital region; then it descends and passes through Jiache (St.6.) to the neck, enters the supraclavicular fossa and joins the original channel, further descending into the chest, passing through the diaphragm and communicating with the liver to enter its pertaining organ, the gall bladder. Running inside the hypochondriac region it emerges on the side of the lower abdomen near the femoral artery at the inguinal region. Running superficially along the margin of the pubic region, it winds into the hip region (Huantiao, G.B. 30).

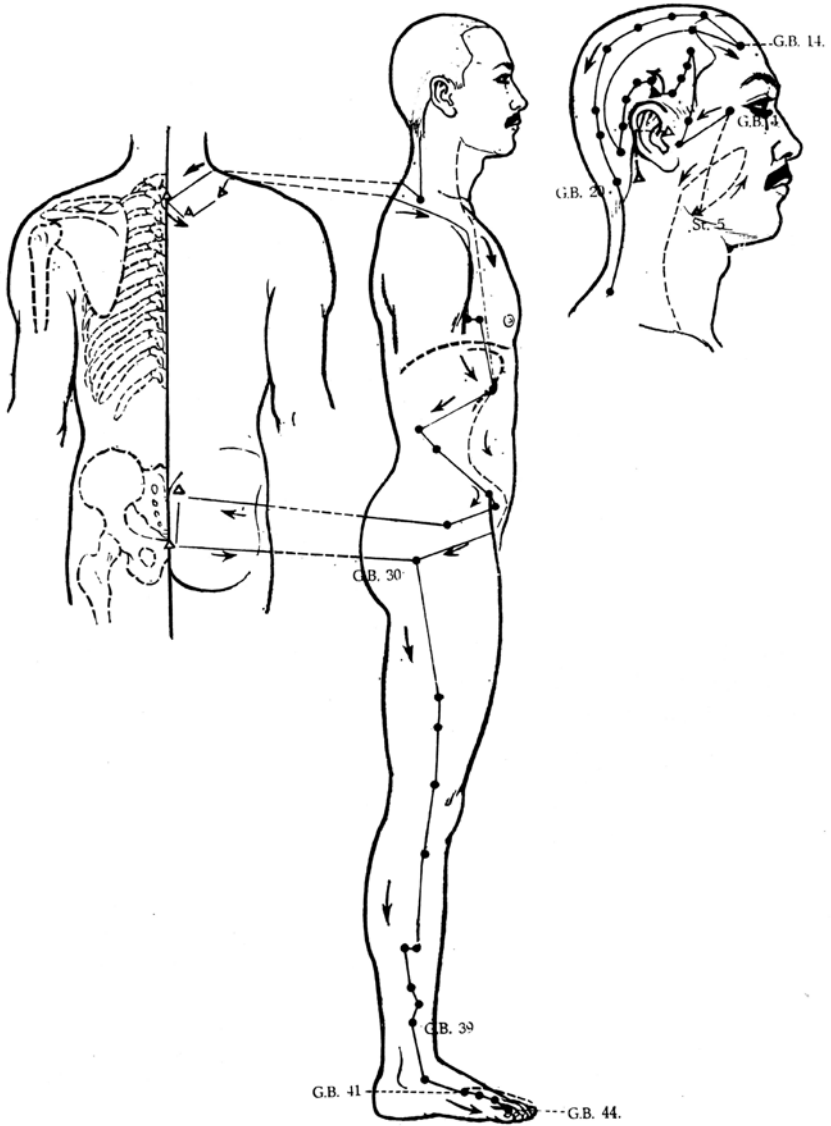


Figure 3-54: The Gall Bladder Channel of Foot Shaoyang

The original channel runs straight downward from the supraclavicular fossa, passes in front of the axilla and along the lateral aspect of the chest, passing through the free ends of the floating ribs to the hip region, where it meets the above-mentioned branch. Then it descends along the lateral aspect of the thigh to the lateral side of the knee, from where it continues downward, passes through the anterior aspect of the fibula directly to its lower end (Xuanzhong, G.B. 39), then runs further downward and anteriorly to the external malleolus, along the dorsum of the foot, terminating at the lateral side of the tip of the 4th toe (Foot-Qiaoyin, G.B. 44).

The Branch of the Dorsum of the Foot arises from Pt. Foot-Linqi (G.B. 41), and runs between the 1st and 2nd metatarsal bones to the distal portion of the great toe (Dadun, Liv. 1) where it communicates with the Liver Channel of Foot-Jueyin.

GALL BLADDER CHANNEL (G.B.)

- *Polarity: Yang. - Number of points: 44.*
- *Pertaining Organ: Gall Bladder.*
- *Related Channel: Liver Channel (Liv.).*
- *Element: Wood*
- *Energy flow: Centrifugal.*

Clinical uses:

Disorders along the course of the Channel such as diseases of the eye, ear, neck, mental disorders, lactation disorders, gall bladder and liver disorders, pain in the gluteal region, low backache, sciatica, paralysis of the lower limb.

Note: The Channel lies in relation to the eye, the ear, the head brain and neck, ribs, breast, liver, gall bladder and sciatic nerve areas. A number of important Distal points of the Channel treat proximal diseases in these regions.

Description of the commonly used acupuncture points:

Tongziliao (G.B. 1). (*Tungtzuliao*).

Location: 0.5 cun lateral to the outer canthus of the eye.

Indications: Eye diseases, facial paralysis, headache, trigeminal neuralgia.

Puncture: 0.5 cun horizontally and posteriorly.

Tinghui (G.B. 2). (*Tinghui*).

Location: In the depression immediately in front of the intertragic notch, when the mouth is open,

Indications: Ear disorders, chronic infections of the auditory canal and the external ear, arthritis of the mandible, trismus facial paralysis, trigeminal neuralgia.

Puncture: 1.0 cun perpendicularly, or use the puncturing-through techniques (see under Ermen S.J. 21).

Shuaigu (G.B. 8). (*Shuaiku*).

Location: Directly above the apex of the ear, 1.5 cun above the hairline. (The apex of the ear may be conveniently located by folding the ear over forwards, on itself.).

Indications: Migraine, ear diseases, dizziness, vertigo.

Puncture: 1.0 cun horizontally either anteriorly or posteriorly.

Yangbai (G.B. 14.). (*Yangpai*).

Location: 1.0 cun above the midpoint of the eyebrow.

Indications: Facial paralysis, frontal headache, frontal sinusitis, night blindness, glaucoma and other eye disease

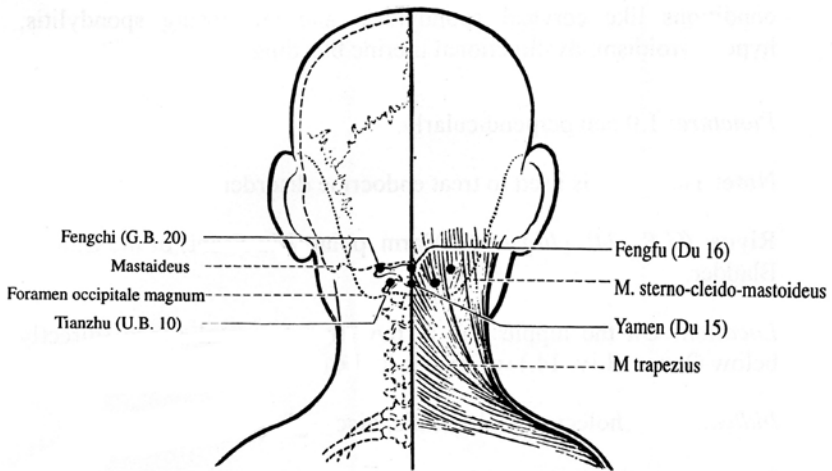


Figure 3-55: Location of Fengchi (G.B. 20)

Puncture: 0.5 cun horizontally and inferiorly through towards, of through to Yuyao (Ex.3).

Fengchi: (G.B. 20) (*Fengchih*).

Location: In the depression medial to the mastoid process between the origins of the trapezius and stemo-mastoid muscles.

Indications: Occipital headache, common cold influenza, stiff neck, cervical spondylosis.

Puncture: 1.0 cun with the needle directed towards the inner canthus of the opposite eye. Strong stimulation of this point is said to relieve or abort an attack of the common cold.

Note: Too deep an insertion should be avoided.

Jianjing (G.B. 21). (*Chienching*). Special Alarm point of the Gall Bladder. Endocrine point.

Location: Midway between Dazhui (Du 14.), and Jianyu (L.I. 15). (Directly posterior to midpoint of clavicle, halfway between it and the superior border of the spine of the scapula).

Indications: Pain in the shoulder region, stiffness of the neck in conditions like cervical spondylosis and ankylosing spondylitis, hyperthyroidism, dysfunctional uterine bleeding.

Puncture: 1.0 cun perpendicularly.

Note: This point is used to treat endocrine disorders.

Riyue (G.B. 24) (*Jihyueh*). Alarm point (Mu-Front) of the Gall Bladder.

Location: On the nipple line in the 7th intercostal space (directly below Qimen (Liv. 14.) which lies in the 6th intercostal space).

Indications: Cholecystitis, hepatitis, hiccough, gastritis.

Puncture: 0.5 cun obliquely.

Note: Insertion must be done obliquely as this is a Dangerous point.

Jingmen (G.B. 25). (*Chingmen*). Alarm point (Mu-Front) of the Kidney.

Location: At the free end of the 12th rib.

Indications: Nephritis, costal pain, abdominal distension, flatulence.

Puncture: 0.5 cun perpendicularly.

Daimai (G.B. 26). (*Taimai*).

Location: At the level of the umbilicus, on a vertical line drawn from the free end of the 11th at rib.

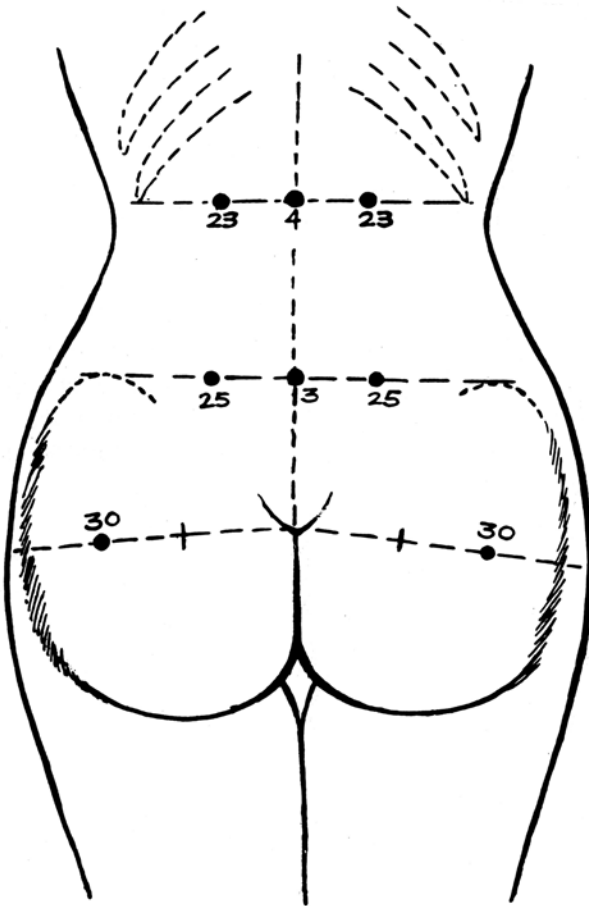
Indications: Pelvic disorders, costal pain, back pain.

Puncture: 1.0 cun perpendicularly.

Huantiao (G.B. 30.). (*Huantiao*).

Location: Draw a straight line between the highest point of the greater trochanter and the sacral hiatus: the point is situated at the junction

THE FREQUENTLY USED POINTS IN THE LOW-BACK AREA



- | | |
|----------------------|--------------------|
| U.B. 23. Shenshu. | Du 3. Yaoyangguan. |
| U.B. 25. Dachangshu. | Du 4. Mingmen. |
| G.B. 30. Huantiao. | |

Figure 3-56.

of the outer third with the medial two-thirds on this line. It is located more easily in a lateral or prone position.

Indications: Sciatica, prolapsed lumbar disc, paralysis of the lower extremities, disorders of the hip joint.

Puncture: Deep perpendicular insertion with a long needle (about 5 cun length). When the needle reaches the sciatic nerve, a sensation like an electric current will be felt travelling down the leg to the ankle region. When this sensation (deqi) is elicited, good therapeutic results may be expected.

Note: This is a very effective point for treating acute sciatica.

Fengshi (G.B. 31). (*Fengshih*).

- Location:*
- On the lateral aspect of the thigh, 7 cun proximal to the transverse popliteal crease, between the vastus lateralis and biceps femoris muscles: or
 - with the patient standing erect or lying supine, hand placed on the lateral side of the thigh, this point lies immediately distal to the tip of the middle finger.

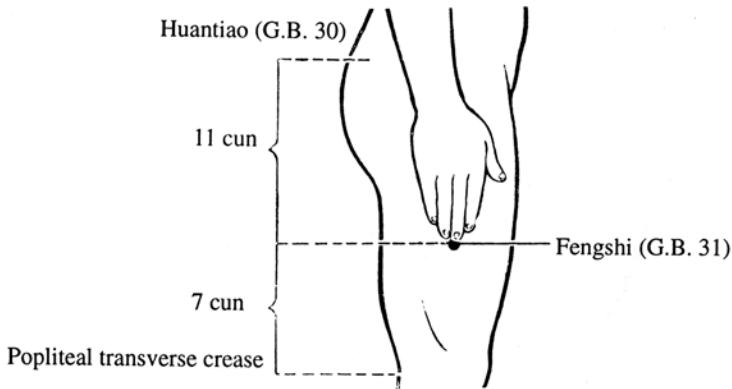


Figure 3-57: Location of Fengshi

Indications: Paralysis and pain of the lower extremities, paraesthesia in the distribution of the lateral cutaneous nerve of the thigh (meralgia paraesthetica).

Puncture: 1.5 cun perpendicularly.

Yanglingquan (G.B. 34.). (*Yanglinchuan*). Influential point for muscle and tendon.

- Location:*
- In the depression anterior and interior to the head of the fibula: or

- b) at the meeting point of two straight lines, one drawn vertically on the anterior margin of the head of fibula, the other horizontally at the neck of the fibula.

Indications: Hemiplegia, pain in or paralysis of the leg, diseases of the gall bladder, muscle and tendon disorders, mental disorders, epilepsy, headaches.

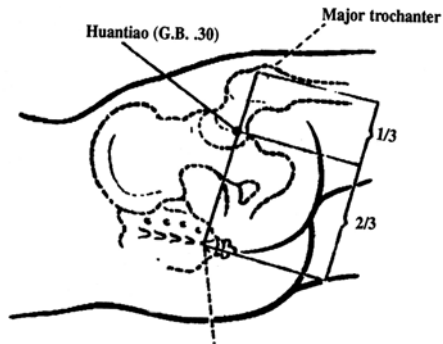


Figure 3-58: Location of Huantiao (G.B. 30)

Puncture: 1.0 cun perpendicularly towards Yinglingquan (S.p. 9), or obliquely downwards, forwards and medially.

Guangming (G.B. 37). (*Kuangming*). Luo-Connecting point. “Guangming” in Chinese means “Bright Sight”.

Location: 5 cun above the tip of the lateral malleolus, on the anterior border of the fibula, (According to some Chinese authorities it is located on the posterior border of the fibula).

Indications: Eye disorders.

Puncture: 1.0 cun perpendicularly.

Xuanzhong (G.B. 39). (*Hsuanchung*). Also called Juegu. Influential point for bone marrow.

Location: 3 cun above the tip of the lateral malleolus, on the posterior border of the fibula.

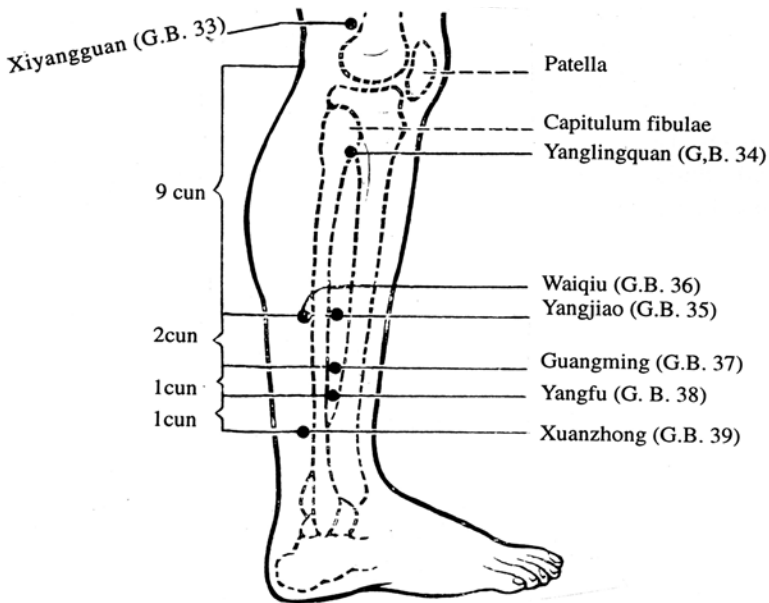


Figure 3-59: Location of Points on the Gall Bladder Channel on the Lateral Aspect of the Leg

Indications: Paralysis of the lower limbs, stiffness of the neck, disorders of the marrow.

Puncture: 1.0 cun perpendicularly.

Qixu (G.B. 40). (*Chiuhsu*). Yuan-Source point.

Location: At the meeting point of two lines, one drawn vertically on the anterior border of the lateral malleolus, the other horizontally on its inferior border.

Indications: Ankle disorders, pain in the chest wall.

Puncture: 0.5 cun perpendicularly.

Foot-Linqi (G.B. 41). (*Tsulinchl*).

Location: In the depression immediately distal to the junction of the base of the 4th and 5th metatarsals.

Indications: Pain in the foot, breast disorders, ear disorders.

This is a supplementary point used in frozen shoulder.

Puncture: 0.5 cun perpendicularly.

List of all the acupuncture points of the Gall Bladder Channel:

- | | | | |
|----------|--------------|-------------------------------|---|
| G.B. 1: | Tongziliao | (Eye Bone) | |
| G.B. 2: | Tinghui | (Hearing Meeting) | |
| G.B. 3: | Shangguan | (Upper Gate) | |
| G.B. 4: | Hanyan | (Jaw Detested) | |
| G.B. 5: | Xuanlu | (Suspended Skull) | |
| G.B. 6: | Xuanli | (Suspended Balance) | |
| G.B. 7: | Qubin | (Twisted Hair on the Temples) | |
| G.B. 8: | Shuaigu | (Leading Valley) | |
| G.B. 9: | Tianchong | (Heavenly Rushing) | |
| G.B. 10: | Fubai | (Floating White) | |
| G.B. 11: | Head-Qiaoyin | (Extreme Yin) | |
| G.B. 12: | Head-Wangu | (Final Bone) | |
| G.B. 13: | Benshen | (Root Spirit) | |
| G.B. 14: | Yangbai | (Young White) | |
| G.B. 15: | Head-Linqi | (Above The Tears) | |
| G.B. 16: | Muchuang | (Eye Window) | |
| G.B. 17: | Zhengying | (Upright Yung) | |
| G.B. 18: | Chengling | (Receiving Spirit) | |
| G.B. 20: | Fengehi | (Wing Pond) | |
| G.B. 21: | Jianjing | (Shoulder Well) | – Special Alarm point of the Gall Bladder. |
| G.B. 22: | Yuanye | (Armpit Pass) | |
| G.B. 23: | Zhejin | (Flank Muscle) | |
| G.B. 24: | Riyue | (Sun & Moon) | – Alarm point (Mu-Front) of the Gall Bladder. |
| G.B. 25: | Jingmen | (Capital Door) | – Alarm point (Mu-Front) of the Kidney. |
| G.B. 26: | Diamai | (Waist Band Extra Meridian) | |
| G.B. 27: | Wushu | (Five Pivots) | |
| G.B. 28: | Weidao | (Binding Path) | |
| G.B. 29: | Femur-Juliao | (Dwelling Bone) | |
| G.B. 30: | Huantiao | (Jumping Circle) | |

- G.B. 31: Fengshi (Wing Market)
 G.B. 32: Femur-Zhongdu (Middle Ditch)
 G.B. 33: Xiyangguan (Knee Yang Gate)
 G.B. 34: Yanglingquan (Tomb Spring) – Influential point for muscle and tendon, Earth point.
 G.B. 35: Yanjiao (Yang Crossing)
 G.B. 36: Waiqia (Outer Mound) – Xi-Cleft point.
 G.B. 37: Guangming (Sight Bright) – Xi-Cleft point.
 G.B. 38: Yangfu (Young Support) – Fire point.
 G.B. 39: Xuan-zhong (Suspended Bell) – Influential point for marrow(Juegu).
 G.B. 40: Qiuxu (Grave mound) – Yuan-Source point.
 Foot-Linqi (Foot Nine Tears) – Wood point.
 Diwuhui (Earth Five Meeting) –
 Xiaxi (Gallantry Stream) – Water Point.
 Foot-Qiaoyin (Foot Extreme Yin) – Metal point.

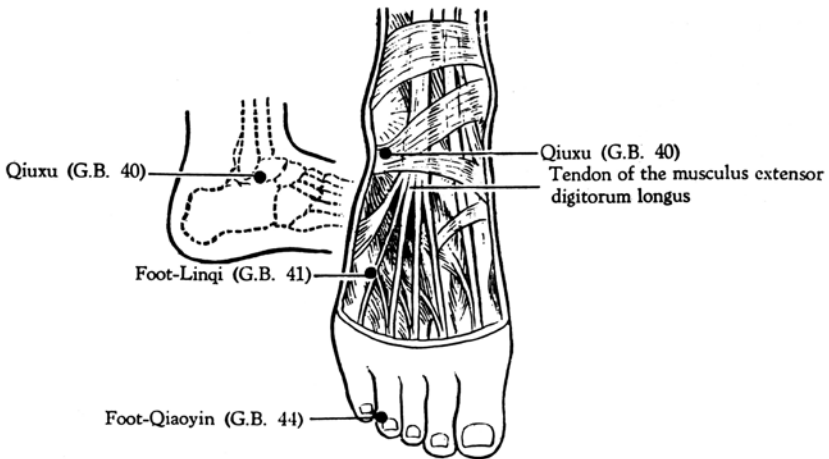


Figure 3-60: Location of G.B. 40, G.B. 41 and G.B. 44

THE LIVER MERIDIAN (Liv.)

The Liver Channel of Foot-Jueyin

Course: The channel starts from the dorsal region of the great toe (Dadun, Liv. 1), passes the dorsum of the foot and reaches Zhongfeng (Liv. 4) one cun in front of the medial malleolus. From there it ascends 8 cun above the medial malleolus, crosses the Spleen Channel of Foot-Taiyin, further ascending along the medial side of the knee and thigh to the pubic region where it curves around the external genitalia to the lower abdomen _ From there the channel runs upward, encircles the stomach and enters its pertaining organ, the liver, to communicate with the gall bladder. Further upward it passes through the diaphragm, the costal and hypochondriac region, ascends along the posterior aspect of the throat to the nasopharynx and connects with the eye, then emerges at the forehead, meeting the Du Channel at the vertex.

The Eye Branch originates in the eye, runs downwards into the cheek and curves around the inner surface of the lips.

The Liver Branch arises in the liver, passes through the diaphragm to the lung, and connects with the Lung Channel of Hand-Taiyin.

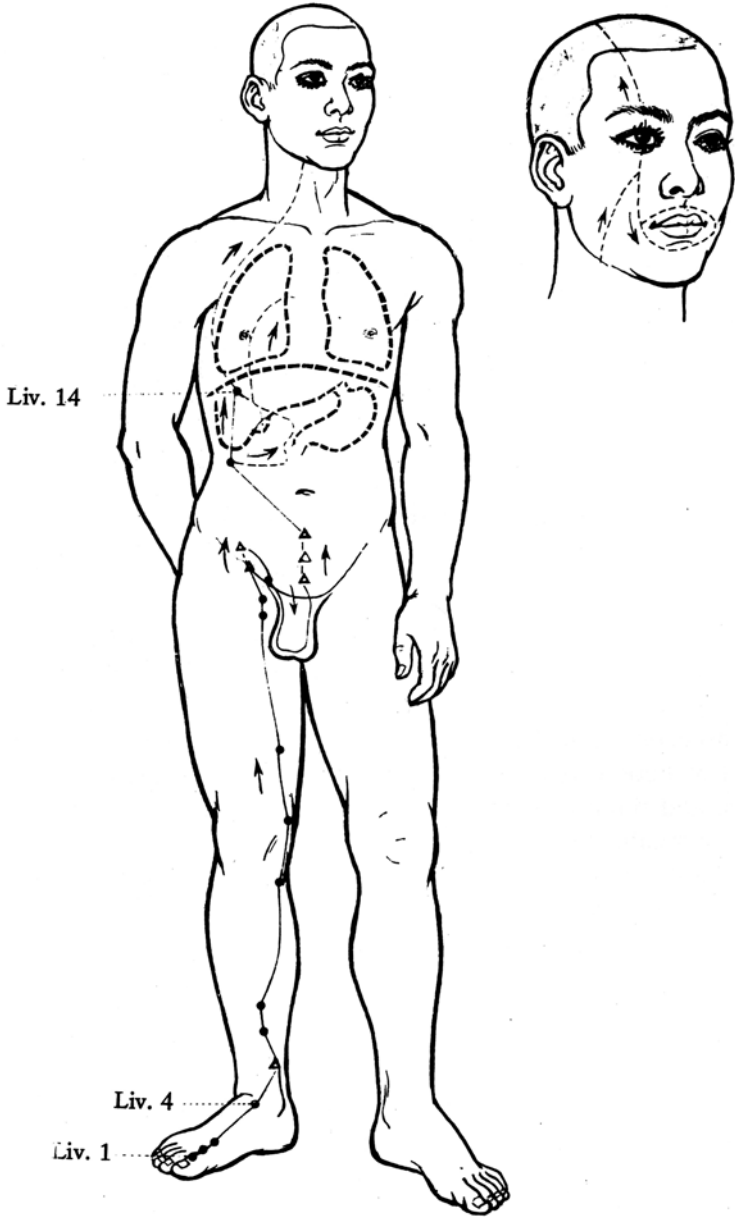


Figure 3-61: The Liver Channel of Foot-Jueyin

LIVER CHANNEL (Liv.)

- Polarity: Yin.
- Number of points: 14.
- Pertaining Organ: Liver.
- Related Channel: Gall Bladder Channel (G.B.).
- Element: Wood.
- Energy flow: Centripetal.

Clinical uses:

- 1) The Distal points are used for:-
 - i) disorders of the Liver (the pertaining Organ)
 - ii) proximal disorders such as eye disorders (the eye is the connected sense organ).
- 2) The points on the leg are used for genito-urinary disorders and muscle and tendon disorders (diseases along the channel; muscle and tendon are connected tissues of the liver).
- 3) The points on the trunk are used for Liver and Gall Bladder disorders, Spleen disorders (Liv. 13), and pain in the flanks.
- 4) Headaches and mental disorders are treated using Taichong (Liv. 3).

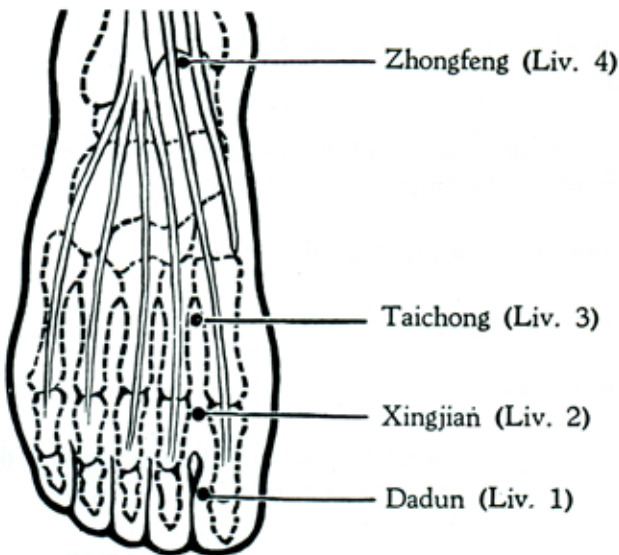


Figure 3-62.

Description of the commonly used acupuncture points.

Taichong (*Liv. 3*). (*Taichung*). Yuan-Source point.

Location: 2 cun proximal to the margin of the web of the 1st and 2nd toes.

Indication: Eye diseases, Hypertension, headaches.

Puncture: 1.0 cun obliquely in a proximal direction.

Note: I This is a good homeostatic point, being most effective in treating hypertension. However caution must be observed as it could cause a sudden fall of blood pressure. It is advisable therefore to have the patient supine when using this point. Acupuncture normally causes homeostasis; this is an exceptional instance when homeostasis can be overshoot.

II This point is located in the foot at a place which is the equivalent of the Hegu (L.I. 4) in the hand, and its properties are similar.

Zhongdu (*Liv. 6*). (*Chungtu*). Xi-Cleft point. Special Alarm point of the liver.

Location: 7 cun superior to the tip of the medial malleolus on the medial border of the tibia.

Indications: Liver and gall bladder disorders.

Puncture: 1.5 cun perpendicularly.

Ququan (*Liv. 8*).

Location: In the transverse crease of the knee joint, at the medial border of the semimembranosus tendon.

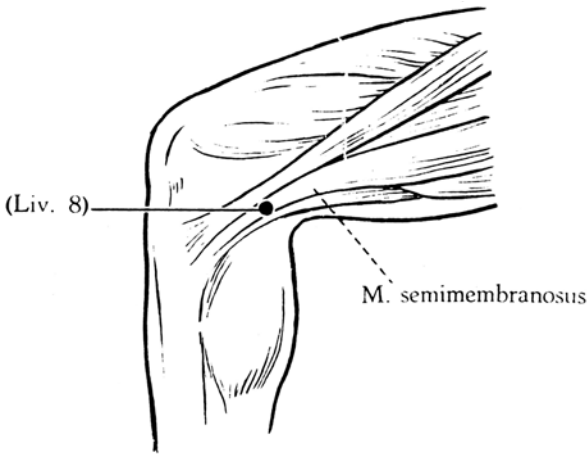


Figure 3-63: Location of Ququan (Live. 8)

Indications: Disorders of the knee joint. This point is specific for the treatment of impotence.

Puncture: 1 cun perpendicularly, or towards Yingu (K. 10).

Zhangmen (Liv. 13). (*Changmen*). Influential point for the Zang Organs. Alarm Point (Mu-Front) of the Spleen.

Location: At the free end of the 11th rib.

Indications: Liver disorders, disorders of the Spleen.

Puncture: 0.5 cun perpendicularly.

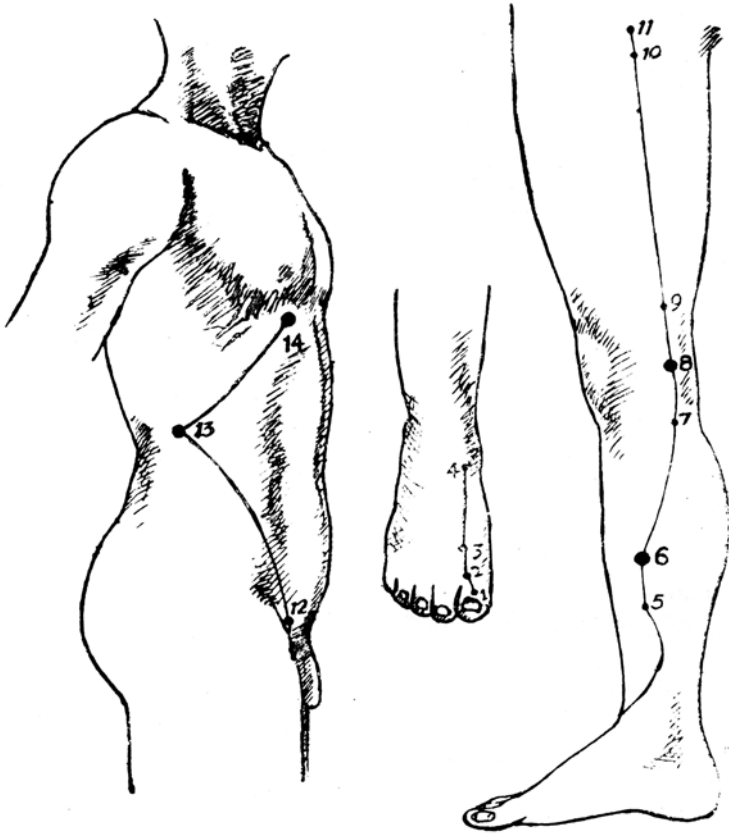
Qimen (Liv. 14). (*Chimen*). Dangerous point, Alarm point (Mu- Front) of the Liver.

Location: Vertically below the nipple, in the intercostal space between the 6th and 7th ribs.

Indications: Hepatitis, chest pain.

Puncture: 0.5 cun horizontally and laterally along the skin.

THE LIVER CHANNEL



- Liv. 3. Taichong
- Liv. 6. Zhongdu
- Liv. 8. Ququan
- Liv. 13. Zhangmen

Figure 3-64: Location of Points on Liver Channel

List of all the acupuncture points of the Liver Channel.

- | | | | |
|----------|------------|------------------------|--|
| Liv. 1: | Dadun | (Big Heat) | – Jing-well point,
wood point. |
| Liv. 2: | Xingjian | (Column
In between) | – Fire point |
| Liv. 3: | Taichong | (Bigger Rushing) | – Yuan-Source point,
Earth point. |
| Liv. 4: | Zhongfeng | (Middle Seal) | – Metal point |
| Liv. 5: | Ligou | (Insect Ditch) | – Luo-Connecting point |
| Liv. 6: | Zhongdu | (Middle Capital) | – Xi-Cleft point. |
| Liv. 7: | Xiguan | (Knee Gate) | |
| Liv. 8: | Ququan | (Crooked Spring) | – Water point |
| Liv. 9: | Yinbao | (Knee Gate) | |
| Liv. 10: | Femur-Wuli | (Five Mile) | |
| Liv. 11: | Yinlian | (Yin Screen) | |
| Liv. 12: | Jimai | (Quick pulse) | |
| Liv. 13: | Zhangmen | (Chapter door) | – Influential point
Alarm point
(Mu-Front) of the
Spleen. |
| Liv. 14: | Qimen | (Expectation Door) | – Alarm point
(Mu-Front) of the
Liver. |

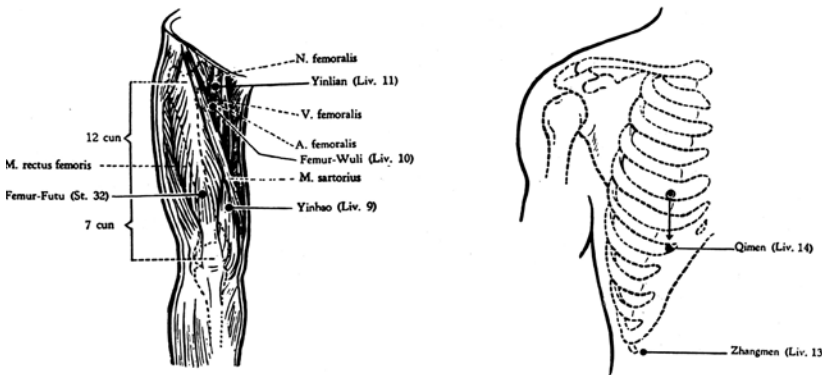


Figure 3-65: Liver Points in Relation to Rib Cage and Thigh

8 EXTRA MERIDIANS

The Eight Extra Channels:

The Eight Extra Channels are the Du, Ren, Chong, Dai, Yinwei, Yangwei, Yinchiao and Yanghiao Channels. They are different from the Twelve Channels as they do not pertain to any of the internal organs. This is the reason for calling the Twelve Channels the Regular Channels and the Eight Channels the Extra Channels.

Only “Du” and “Ren” meridian are important from practical point of view. So only these two channels will be described here:-

Du - MERIDIAN (Du.)
(Governor Meridian)

Du Mai (the Back Midline Channel)

Course: This channel starts in the pelvic cavity, descends and emerges at the perineum, passing through the tip of the coccyx (Changqiang, Du 1) and ascending along the middle of the spinal column to communicate with the kidney in the lumbar region. Then it ascends to the brain, reaching the vertex, winding in the midline of the forehead to the columella of the nose to descend to the upper lip, terminating at Pt. Yinjiao (Du 28).

Records say that the Du Channel is the confluence of the Yang Channels. The word du means to govern, and it is thought that the Du Channel has the function of governing all the Yang Channels.

DU CHANNEL (Du)

- *Polarity: Yang.*
 - *Number of points: 28.*
 - *Related Channel: Ren Channel (Ren.).*
- a) The Du Channel is one of the two unpaired channels, the other being the Ren Channel which runs in the front midline. These two midline channels are also classified with the Eight Extra Channels (as distinct from the Twelve paired (Regular or Organ) Channels. However, the modern practice is to classify, them with the paired Channels to make up the Fourteen Channels.
- b) The Du Channel is not linked to any definite “Organ”; but it has a controlling or “governing” influence on all the other Yang channels, and hence occupies a very important place in acupuncture, “Du” in Chinese means “the Governor”.

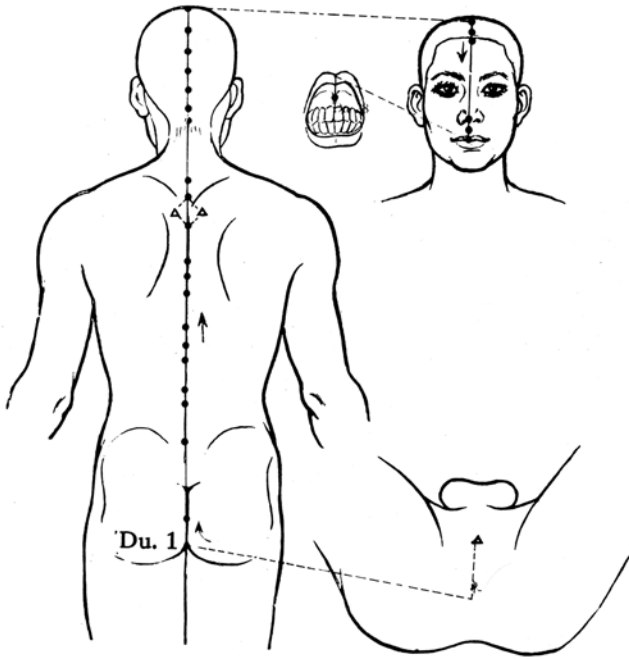


Figure 3-66: Du Mai (The Back Midline Channel)

Clinical uses:

- 1) Ano-rectal disorders, low backache.
- 2) Immune disorders.
- 3) Infective disorders.
- 4) Mental and neurological disorders, deaf-mutism.
- 5) Oral disorders.

Description of the commonly used acupuncture points:

Changqiang (Du 1). (Changchiang).

Location: Midway between the tip of the coccyx and the anus. The point is best located with the patient in the prone or lateral position.

Indications: Haemorrhoids, rectal prolapse, anal fissure, pruritus of anus.

Puncture: 0.5 cun perpendicularly.

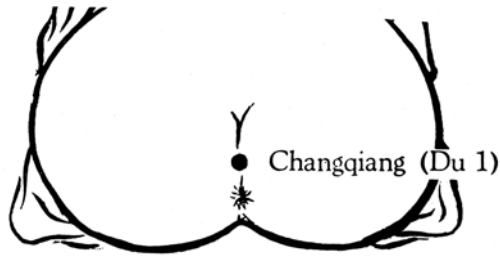


Figure 3-67: Location of Points Changqiang (Du.1.)

Yaoyangguan (Du. 3). (*Yaoyangkuan*).

Location: On the back midline, between the dorsal spines of the 4th and 5th lumbar vertebrae (at the level of the upper border of the iliac crestr.)

Indications: Low backache, genito-urinary disorders, impotence.

Puncture: 1.0 cun perpendicularly; the needle may be pointed slightly upwards. (Superiorly).

Mingmen (Du 4). (*Mingmen*).

Location: On the back midline, between the dorsal spines of the 2nd and 3rd lumbar vertebrae (at the level of the lower border of the rib cage).

Indications: Low backache, genito-urinary disorders, impotence, abdominal and pelvic surgery.

Puncture: 1.0 cun perpendicularly; the needle may be tilted slightly upwards. (Superiorly).

Jizhong (Du 6). (*Chichung*).

Location: On the back midline, between the dorsal spines of the 11th and 12th thoracic vertebrae.

Indications: Haemorrhoids, epilepsy. This point causes muscular relaxation in spastic states. It is also used during abdominal surgery with Yaoshu (Du 2.) or Yaoqi (Ex. 20.) and electrically stimulated.

Puncture: 0.5 cun obliquely upwards.

Shendao (*Du. 11*). (*Shentao*).

Location: On the back midline, between the dorsal spines of the 5th and 6th thoracic vertebrae.

Indications: Loss of memory.

Puncture: 0.5 cun obliquely upwards.

Dazhui (*Du 14*). (*Tachui*).

Location: On the back midline, between the dorsal spines of the 7th cervical (vertebra prominens) and the 1st thoracic vertebra.

Indications: a) Mental disorders, epilepsy, convulsions in children, headache, migraine.

b) Local disorders, e.g., stiff neck, cervical spondylosis, torticollis, sprain of cervical muscles, neck injuries, hypotonia of neck muscles.

c) Frozen shoulder with pain radiating to the back of the chest, paralysis of the upper limb.

d) Pain along the thoracic, (dorsal) spine, ankylosing spondylitis.

e) Lung disorders, e.g., bronchial asthma, bronchitis, cough, and whooping cough,

f) Eczema and other skin disorders.

g) Infective and immune disorders, e.g., cold, influenza, fevers, malaria, infections.

Puncture: 1.0 cun perpendicularly, or pointed upwards at a slight slant.

Note: This is one of the most potent immune enhancing acupuncture points. In very high fever, strong stimulation of the needle at this point tends to bring down the fever quickly, often in a matter of minutes. It is especially useful in children who are toxic and will not tolerate drugs.

Yamen (*Du 15*). (*Yamen*). Dangerous point.

- Location:
- a) At the nape of the neck on the midline, between the dorsal spines of the 1st and 2nd cervical vertebrae.
 - b) On the midline 0.5 cun above the posterior hairline.
 - c) On the midline 3.5 cun above the spinous process of the 7th cervical vertebra when the head is erect.

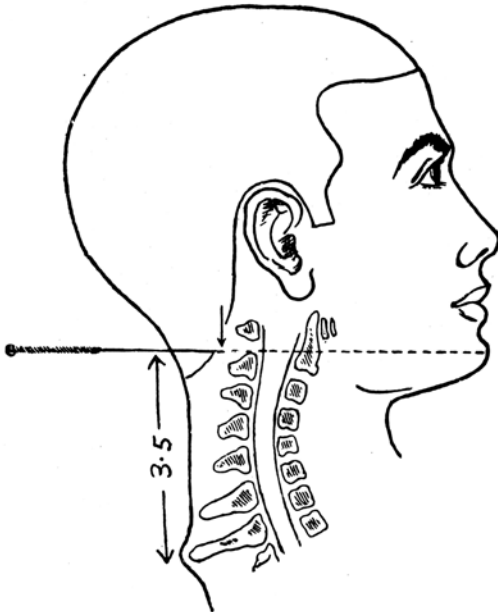


Figure 3-68: *Yamen*. (*Du. 15*)

Indications: Deaf-mutism, aphasia, aphonia, speech difficulties following paralytic strokes.

Puncture: This is a Dangerous point and improper needling can cause serious complications from damage to the medulla oblongata. The patient should be instructed to bend the neck slightly forwards, and the needle should be inserted perpendicularly and slowly in the direction of the point of the chin. The depth of insertion should not generally exceed 1.0 cun and there should be no manipulation. If any discomfort felt, the needle should then be removed immediately. (Many clinicians believe it is best not to retain the needle here).

Fengfu (Du 16). (*Fengfu* 4). Dangerous point.

Location: a) At the nape of the neck on the midline in the depression directly below the occipital protuberance.

b) On the midline 1.0 cun above the posterior airline.

Indications: Mental disorders, common cold, headache.

Puncture: This is a very dangerous point. As in needling Yamen (Du 15), care should be taken not to damage the medulla oblongata. It is perhaps the most vulnerable acupuncture point in the body and it is best that the novice treats this as a Prohibited point. Also, unlike Yamen (Du 15), its usefulness is limited.

Baihui (Du 20). (*Paihui*). (“Baihui” in Chinese means, “meeting point of a hundred points”. This point controls all other points and channels in the body).

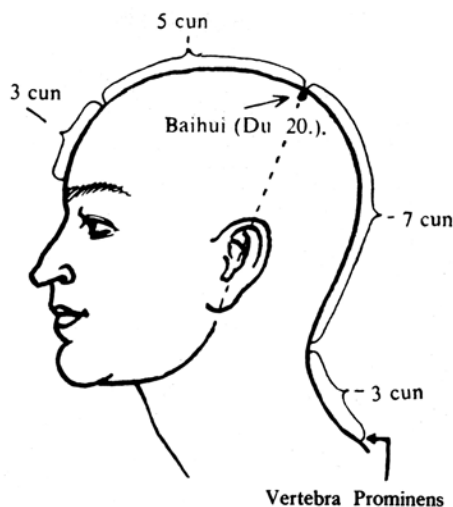


Figure 3-69: Location Baihui (Du. 20)

Location: a) Draw a straight line from the tip of the ear lobe of the apex of the auricle and extend this line upwards on the scalp till it intersects the midline: the point lies at this intersection.

- b) On the vertex of the skull, 5 cun behind the anterior hairline and 7 cun above the posterior hairline in the midline.
- c) On the midline, 8 cun behind the glabella, Yintang (Ex. 1.).
- d) In the midline, 7 cun above the posterior hairline.
- e) On the midline, 10 cun above the vertebra prominens.

- Indications:*
- a) This is the best tranquilizing and sedative point of the body. It treats all psychiatric and neurological disorders, e.g., schizophrenia, epilepsy, insomnia, parkinsonism, neurasthenia, and all conditions where psychogenic factors may exist, such as bronchial asthma, impotence skin disorders.
 - b) Headache (especially vertical headache).
 - c) Apoplexy and other cerebral vascular disorders (in the early stages).
 - d) Loss of memory.
 - e) Diseases of the anal region (as a Distal point).
 - f) Falling of head hair due to pathological causes (alopecia areata).

Puncture: 0.3 – 0.5 cun obliquely or horizontally, with the needle directed posteriorly.

- Note:**
- a) This is a powerful sedative and tranquilizing point. As psychogenic factors are present in almost all diseases, the use of this point on a general basis with other specific points is recommended for good therapeutic results.
 - b) This point also acts as “governor”, having a coordinating effect when points are used on a number of different channels.
 - c) This is a good point to commence the first therapy as it is a relatively painless point and the patient cannot see the point of insertion of the needle.

Shangxing (Du 23.). (*Shanghsin*).

Location: 1.0 cun above the midpoint of the anterior hairline.

Indications: Nasal obstruction, epistaxis.

Puncture: 0.5 cun obliquely downwards.

Suliao (Du 25.). (*Suliao*).

Location: At the tip of the nose.

Indications: Nasal obstruction, epistaxis.

Puncture: 0.2 cun, perpendicularly.

Renzhong (Du 26.). (*Jenchung*). Also called shigou (Shuikou).

Location: At the junction of the upper third and lower two thirds of the philtrum of the upper lip, in the midline.

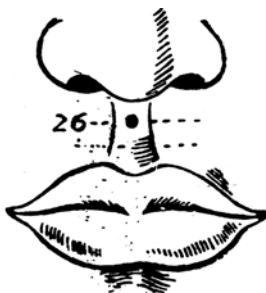


Figure 3-70: Renzhong (Du. 26)

- Indications:*
- a) A Jing-Well point for use in acute emergencies e.g., fainting, epileptic fits, convulsions, shock, heat stroke, hysterical attack.
 - b) Acute low-backache, as a Distal point.
 - c) Facial paralysis, painful disorders and swelling of the face.

Puncture: 0.3 – 0.5 cun obliquely backwards and upwards.

- Note:
- a) In traditional Chinese medicine this point is known as “the point of re-animation” as it is used as emergency treatment for sudden fainting
 - b) In the treatment of emergency conditions, the needle may be manipulated and removed as soon as pain is felt by the patient. It is not necessary to keep the needle longer,
 - c) Acupressure applied with the nail of the index finger (and applied obliquely backwards and upwards) is often found to be equally effective. Firm pressure should be maintained till the patient recovers.
 - d) This point is the meeting point of three yang channels.

Yinjiao (*Du 28*). (*Yinchiao*).

Location: Between the gum and upper lip in the frenulum of the upper lip.

- Indications:*
- a) Pain and swelling of the gums and other oral diseases.
 - b) Haemorrhoids, as a Distal point.

Puncture: 0.1 – 0.2 cun obliquely upwards, or prick to bleed with the three-edged needles.

List of all the acupuncture points of the Du Channel:

Du 1:	Changqiang	(Long Strength)	– Luo-connecting point
Du 2:	Yaoshu	(Lower Yu Point)	
Du 3:	Yaoyangguan	(Lumbar’s Yang’s Hinge)	
Du 4:	Mingmen	(Gate of Life)	
Du 5:	Xuanshu	(Suspended Point)	
Du 6:	Jizhong	(Middle of Spine)	
Du 7:	Zhongshu	(Middle Pivots)	
Du 8:	Jinsuo	(Contracted Muscle)	
Du 9:	Zhiyang	(Extreme Yang)	
Du 10:	Lingtai	(Supernatural Tower)	
Du 11:	Shendao	(Spirit Path)	

Shenzhu	(Body Pillar)
Taodao	(Clean Path)
Dazhui	(Big—Vertebra)
Yamen	(Door Dumbness)
Fengfu	(Wing Mansion)
Naohu	(Brain Shelter)
Qiangjian	(Strength in between)
Houding	(Posterior to Summit)
Baihui	(Hundred Meetings)
Qianding	(Anterior Summit)
Xinhui	(Skull Meeting)
Shangxing	(Upper Star)
Shenting	(Spirit Courtyard)
Suliao	(Plain Bone)
Renzhong	(Middle of the man)
Duiduan	(Extreme Exchange)
Yinjiao	(Gum Crossing)

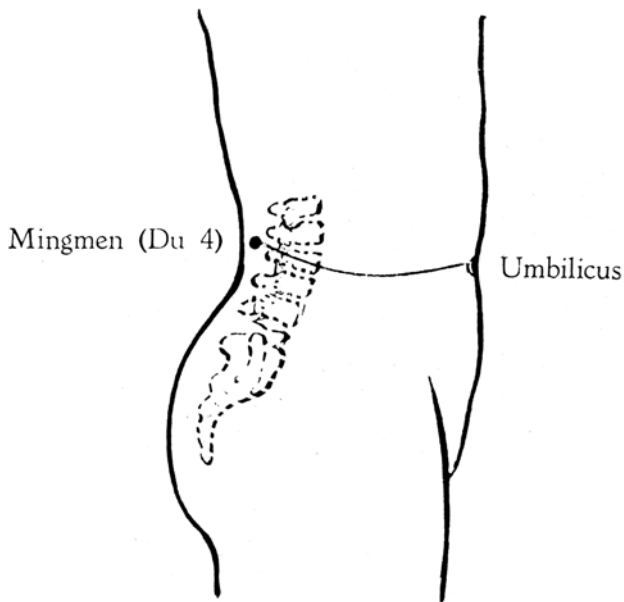


Figure 3-71.

**REN MERIDIAN (Ren)
CONCEPTION MERIDIAN**

Ren Mai (the Front Midline Channel)

Course: This channel starts from the pelvic cavity and emerges at the perineum, then runs anteriorly across the pubic region and ascends along the midline of the abdomen through the chest up to the throat and mandible, curving around the lips and connecting with Pt. Chengjiang (Ren 24).

Ren means responsibility. Responsible for all the Yin Channels, the Ren Channel is recorded as the confluence of all Yin Channels.

REN CHANNEL (Ren)

- Polarity: Yin.
- Number of points: 24.
- Related Channel: Du Channel (Du).

In the front midline, from the front of the anus to below the mouth.

- 1) The Ren Channel, like the Du channel, is not linked to any definite Internal Organ. It has however a controlling influence over all the Yin Channels and on the anteriorly situated Alarm points of certain Internal Organs.
- 2) It has an influence on the reproductive functions, on account of which it is also called the “Conception Vessel.”

Clinical Uses:

Disorders along the pathway of the Channel, such as genito-urinary and gastro-intestinal disorders, heart and lung disorders aphasia, aphonia, dysarthria, facial paralysis, excessive salivation.

Description of the commonly used acupuncture points:

Huiyin (Ren 1). (*Huiyin*).

Location: In the centre of the perineum.

Indications: Haemorrhoids.

Indications: Haemorrhoids.

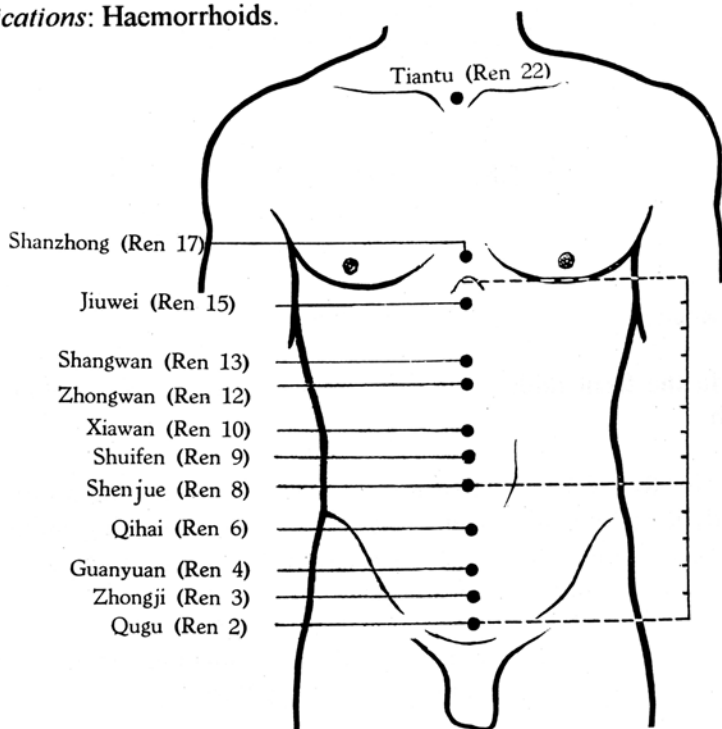


Figure 3-72: Ren Channel

Puncture: 1.0 cun perpendicularly.

Note: This point together with Changqiang (Du 1.), is very effective for early haemorrhoids.

Qugu (Ren 2). (*Chuku*).

Location: immediately above the midpoint of the superior border of the pubic symphysis.

Indications: Genito-urinary disorder e.g.,

- a) incontinence and retention of urine, chronic inflammation, nocturnal enuresis in children;
- b) impotence, spermatorrhoea, ejaculatio praecox.
- c) menstrual disorders.

Puncture: 1.5 cun perpendicularly.

Zhongji (Ren 3). (*Chungchi*). Alarm point (Mu-Front) of the Urinary Bladder.

Location: In the front midline, 4 cun below the umbilicus, 1 cun above Qugu (Ren 2).

Indications: Same as for Qugu (Ren 2).

Puncture: 1.5 cun perpendicularly.

Guanyuan (Ren 4). (*Kuanyuan*). Alarm point (Mu-Front) of the Small Intestine.

Location: In the front midline, 3 cun below the umbilicus. 2 cun above Qugu (Ren 2).

Indications: Same as for Qugu (Ren 2.); also diarrhoea.

Puncture: 1.0 cun perpendicularly.

Shimen (Ren 5). (*Yhihmen*). Alarm point (Mu-Front) of the Sanjiao.

Location: In the front midline, 2 cun below the umbilicus.

Indication: Oedema and ascites.

Puncture: 1.5 cun perpendicularly.

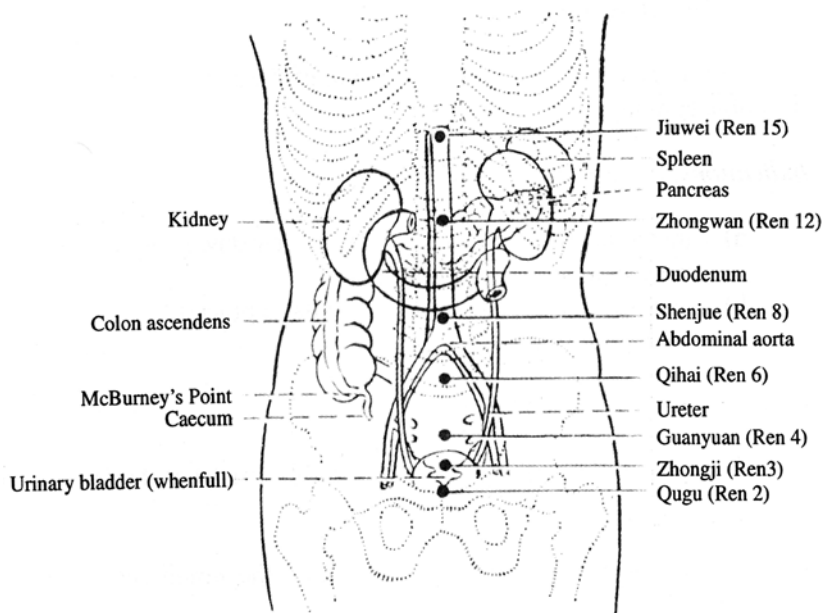


Figure 3-73: The Relationship Between the Points of the Ren Channel of the Abdominal Region and the Internal Organs

Note: A very effective combination of points for oedema and ascites is:- Shimen (Ren 5), Shuifen (Ren 9), Yinlinquan (Sp. 9), Pishu (U.B. 20). There is also an oedema point in the ear.

Microfilarial swellings of the leg (elephantiasis), swelling of the arm following breast surgery, varicose veins and chronic oedema in dependent areas also respond well to these points.

Qihai (Ren 6). (*Chihai*).

Location: In the front midline, 1.5 cun below the umbilicus.

Indications: Neurasthenia. This is a good Tonification point and used in conjunction with Zusanli (St. 36.) and Sanyinjiao (Sp. 6.) for chronic fatigue and hypotension.

Puncture: 1.5 cun perpendicularly.

Shenjue (Ren 8). (*Shenchueh*). Forbidden point for acupuncture.

Location: In the centre of the umbilicus.

Indications: While it is forbidden for acupuncture, it is an anatomical landmark to locate other points. Moxibustion point for chronic diarrhoea and other Yin disorders.

Shuifen (Ren 9). (*Shuifen*).

Location: In the front midline, 1.0 cun above the umbilicus.

Indications: Specific point for oedema and ascites.

Puncture: 1.5 cun perpendicularly.

Zhongwan (Ren 12). (*Chungwan*). Alarm point (Mu-Front) of the Stomach. Influential point for Fu Organs.

Location: In the front midline, midway between the xyphoid process and the umbilicus (or 4 cun directly above the umbilicus).

Indications: Peptic ulcer, abdominal distension, flatulence, dyspepsia, nausea and vomiting.

Puncture: 1.5 cun perpendicularly.

Shanzhong (Ren 17). (*Shenchung*). Influential point for the respiratory system. Alarm point (Mu-Front) of the Pericardium.

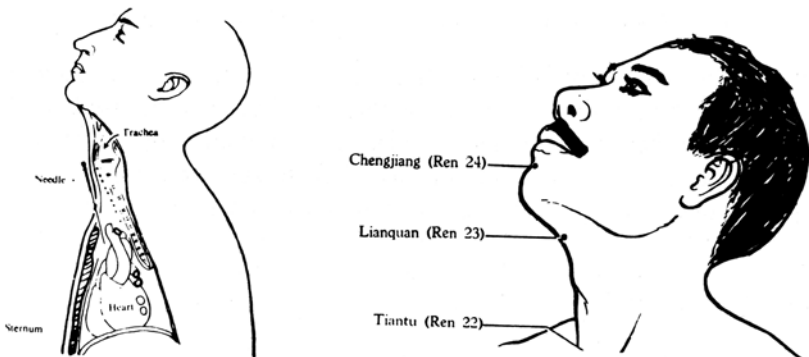


Figure 3-74: Location of Ren Points

Location: On the sternum, midway between the two nipples (at the level of the 4th intercostal space).

Indications: Heart disease, bronchial asthma, and other lung disorders, breast disorders.

Puncture: 1.0 cun horizontally downwards, in breast disease the needle may be directed laterally towards the diseased breast.

Tiantu (*Ren 22*). (*Tientu*). Dangerous point.

Location: At the centre of the suprasternal fossa, 0.5 cun above the sternal notch.

Indications: Bronchial asthma, hiccough, dysphagia.

Puncture: As this is a Dangerous point the following procedures should be observed in sequence:-

- a) Have the patient comfortably seated.
- b) Locate the point.
- c) Insert the needle about 0.3 cun perpendicularly.
- d) Extend the patient's neck.
- e) Change the direction of the needles and then insert further 1.0 – 1.5 cun downwards along the posterior border of the sternum.
- f) Ensure that the patient can swallow without pain and is otherwise comfortable.

All manoeuvres must be carried out gently and precisely.

Note: This is the best point for treating an acute attack of bronchial asthma or hiccough. This point should not however be used until proficiency has been gained under the guidance of a trained acupuncturist. Incorrect insertion may lead to serious complications as a result of damage to the great vessels and other structures in the mediastinum.

Lianquan (*Ren. 23*). (*Lienchuan*).

Location: On the midline of the neck, midway between the Adam's apple and the lower border of the mandible.

Indications: Aphasia, mutism, dysarthria, sudden loss of speech, dysphagia, speech difficulties following paralytic strokes, excessive salivation, pharyngitis, stammering, excessive salivation, pharyngitis, laryngitis, pseudo-bulbar palsy, speech disorders due to parkinsonism.

Puncture: 1.0 – 1.5 cun obliquely towards the root of the tongue, or towards Baihui (Du 20).

Note: Care should be taken to insert in the midline and in the correct direction.

Chengjiang (*Ren 24*). (*Chengchiang*).

Location: In the middle of the mental labial groove, in the depression between the point of the chin and midpoint of the lower lip.

Indications: Facial paralysis, trigeminal neuralgia, toothache of the lower incisors, swelling of the gums, excessive salivation, anaesthetic point for tooth extraction.

Puncture: 0.3 cun perpendicularly or pointing downwards.

List of all the acupuncture points of the Ren Channel:

Ren 1:	Huiyin	(Meeting of Yin)	
Ren 2:	Qugu	(Crooked Bone)	
Ren 3:	Zhongji	(Middle Extreme)	– Alarm point (Mu-Front) of the Urinary Bladder.
Ren 4:	Guanyuan	(Gate Origin)	– Alarm point (Mu-Front) of the Small Intestine.
Ren 5:	Shimen	(Stone Door)	– Alarm point (Mu-Front) of Sanjiao.
Ren 6:	Qihai	(Sea of Chi)	
Ren 7:	Abdomen-Yinjiao	(Yin Crossing)	
Ren 8:	Shenjue	(Spirit Shrine)	
Ren 9:	Shuifen	(Water Division)	
Ren 10:	Xiawan	(Lower Channel)	

- Ren 11: Jianli (Established Mile)
- Ren 12: Zhongwan (Middle Channel) – Influential point for Fu Organs; Alarm point (Mu-Front) of the Stomach.
- Ren 13: Shangwan (Upper Channel)
- Ren 14: Juque (Great Shrine) – Alarm point (Mu-Front) of the Heart.
- Ren 15: Jiuwei (Dove Tail) – Lu-Connecting point
- Ren 16: Zhongting (Middle Courtyard)
- Ren 17: Shanzhong (Platform Middle) – Influential point for the respiratory system; Alarm point (Mu-Front) of the Pericardium.
- Ren 18: Yutang (Jade Hall)
- Ren 19: Chest-Zingong (Purple Palace)
- Ren 20: Huagai (Splendour Covering)
- Ren 21: Xuanji (Pearl Jade)
- Ren 22: Tiantu (Heaven Rushing)
- Ren 23: Lianquan (Screen Spring)
- Ren 24: Chengjiang (Receiving Fluid)

THE EXTRA POINTS (Ex.)

These points are not located on fourteen channels, but they are commonly used due to their great therapeutic value:- Commonly used Extra points:-

Head: Ex. 1 to Ex. 10.

Trunk: Ex. 17, Ex. 20, Ex. 21.

Upper limb: Ex. 28, Ex. 30

Lower limb: Ex. 31, Ex. 32, Ex. 33, Ex. 35, Ex. 36.

Description of the commonly used Extra points:

Yintang (*Ex. 1*). (*Yinthang*). Modern acupuncturists call this point Du 24.5.

Location: On the ridge of the nose, midway between the medial ends of the two eyebrows.

Indications: Rhinitis, headache, eye disease, endocrine disorders.

(Some workers believe that this point controls pituitary functions and improves extra-sensory perception).

Puncture: 0.5 cun horizontally downwards.

Taiyang (Ex. 2). (*Taiyang*).

Location: a) On the temple, in the depression 1.0 cun directly posterior to the midpoint of a line connecting the outer end of the eyebrow with the outer canthus of the eye.
b) Extend the curved lines of the eyebrow and the lower eyelid outwards: the point lies where these two lines cross.



Figure 3-75: Location of Point Taiyang (Ex. 2)

Indications: Headache, migraine, eye diseases facial paralysis trigeminal neuralgia, toothache, sinusitis.

Puncture: 0.5 cun perpendicularly or obliquely: _

- i) perpendicular insertion for headache, migraine, facial paralysis, trigeminal neuralgia;
- ii) oblique insertion towards the eye, for eye disorders;
- iii) oblique insertion downwards for toothache, maxillary sinusitis.

Yuyao (Ex. 3). (*Yuyao*).

Location: At the midpoint of the eyebrow, vertically above the midpoint of the pupil.

Indications: Frontal sinusitis, eye disorders facial paralysis.

Puncture: 0.5 cun horizontally along the skin:

- i) directed medially for frontal sinusitis;
- ii) directed downwards for eye disorders;
- iii) directed laterally for facial paralysis.

Usually this point is punctured in a through and through insertion commencing at Yangbai (G.B. 14.).

Qiuhou (Ex. 4). (*Chiuhou*). Dangerous point.

Location: At the junction of the lateral fourth and the medial three-fourth” of the infra-orbital border.

Indications: Myopia, optic nerve disorders, glaucoma and other eye disorders.

Puncture: 1.0 cun perpendicularly with the patient looking upwards. The needle should be directed along the floor of the orbit in the direction of the optic foramen (i.e., slightly medially and superiorly).

Note: This is a Dangerous point as it is located in the orbit. The beginner should not attempt insertion at this point without the supervision of a trained acupuncturist. Good sterilization of the needle must also be ensured when using this and the other points located in the orbit, viz., Chengqi (St. 1) and Jingming (U.B. 1).

Jiachengjiang (Ex. 5). (*Chiachenchiang*).

Location: In the depression on the mental foramen, 1.0 cum lateral to Chengjiang (Ren 24).

Indications: Facial paralysis, trigeminal neuralgia, lower toothache.

Puncture: 0.2 cun perpendicularly.

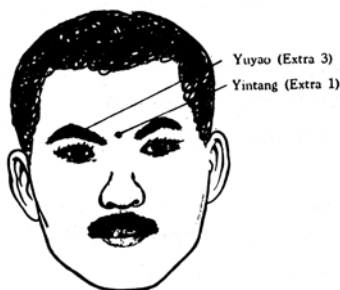


Figure 3-76: Location of Points: Ex. 1 & Ex. 3

Sishencong (Ex. 6). (*Szushentsung*). (“Sishencong” in Chinese means “The Four Intelligences”.)

Location: These are four points situated on the vertex 1.0 cun anterior, posterior and lateral to the point Baihui (Du. 20).

Indications: Headache, apoplexy, epilepsy.

Puncture: 0.5 cun horizontally towards Baihui (Du 20).

Note: These four points are usually used together with Baihui (Du. 20.), They may also be used as an alternative to Baihui (Du.20.). if the patient experiences undue pain at the latter point as sometimes happens.

Yiming (Ex. 7). (*Yiming*).

Location: 1.0 cun posterior to Yifeng (S.I. 17). This point lies on a straight line connecting Yifeng (S.I. 17), and Fengchi (G.B. 20).

Indications: Ear and eye disorders.

Puncture: 0.5 cun perpendicularly.

Anmian I (Ex. 8). (*Anmian I*).

Location: a) Between Yifeng (S.J. 17) and Yiming (Ex. 7)

b) 0.5 cun posterior to Yifeng (S.J. 17).

Indications: Insomnia.

Puncture: 0.1 cun perpendicularly.

Anmian II (Ex. 9). (*Anmian II*).

Location: Between Yiming (Ex. 7) and Fengchi (G.B. 20).

Indications: Insomnia.

Puncture: 0.1 cun perpendicularly.

Anmian I and **Anmian II** are generally used together.

Jinjin (left), **Yuye** (right). (Ex. 10). (*Chinchin, Yuye*).

Location: On the sublingual veins on either side of the root of the tongue.

Indications: Swelling of the tongue, ulceration of the mucous membrane of the mouth, thrush, aphasia, nausea, vomiting, aphthous stomatitis.

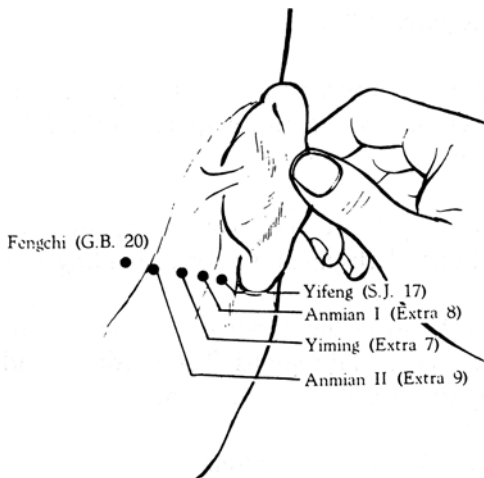


Figure 3-77: Location of Ex. 7, Ex. 8 and Ex. 9

Puncture: With the tongue rolled upwards, 0.5 cun perpendicularly, or prick to bleed with the three-edged needle.

Dingchuan (*Ex. 17*). (*Tingchuan*). (“Dingchuan”). In Chinese means (“Soothing Asthma”). In South China this point is called Pingchuan.

Location: 0.5 cun lateral to Dazhui (Du 14), (This is also one of the Huatuojiayi (*Ex. 21*) points).

Indications: Bronchial asthma.

Puncture: 0.5 cun with the needle directed slightly medially.

Yaoqi (*Extra 20*). (*Yaovqi*).

Location: 2 cun directly above the coccyx.

Indications: Epilepsy, Muscular relaxation together with Jizhong (Du 6.), stimulated electrically.

Huatuojiayi (*Ex 21*). (*Huatuo chiachi*). Named after the famous surgeon Huo Tua (circa 200 B.C.).

Location: These are a series of 28 pairs of points situated 0.5 cun lateral to the lower ends of the dorsal spines of the 1st cervical to the 4th sacral vertebrae.

Indication: Pain along the spine, pain along the segmental nerve, disorders of the Internal Organ at the corresponding level.

Puncture: 0.5 – 1.0 cun in the cervical and thoracic regions 1.0-1.5 cun in the lumbar and sacral regions. The needles should be directed slightly obliquely towards the median plane.

Baxie (*Ex. 28*). (*Pahsieh*). Eight points.

Location: On the dorsum of the hand, on the webs between the 5 fingers; 4 points in each hand, totalling 8 points. (“Ba” means eight in Chinese.). These points are best located having the patient form a fist.

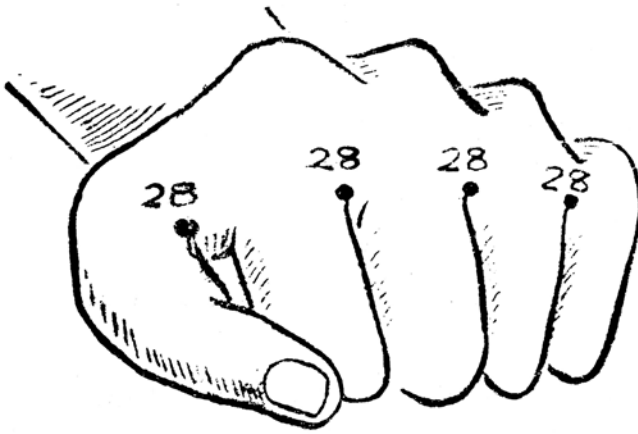


Figure 3-78.
Bixue (Ex. 28)

Indications: Disorders of the fingers, rheumatoid arthritis numbness of the fingers, polyneuropathy.

Puncture: 1.0 cun obliquely and proximally.

Shixuan (Extra 30). (*Shixuan*). Ten points.

Location: On the tips of the ten fingers, about 0.1 cun posterior to the apex of the nail.

Indications: For emergencies such as shock, coma, heat strokes, apoplexy, fever.

Puncture: Prick with three-edged needles or filiform needle to cause bleeding.

Heding (Ex. 31). (*Heting*).

Location: On the midpoint of the upper border of the patella.

Indications: Disorders of the knee joint.

Puncture: 0.5 cun perpendicularly.

Xiyan (Ex. 32). (*Hsiyen*).

Location: In the depression on the medial side of the ligamentum patellae.

Indication: Disorders of the knee-joint.

Puncture: 0.5 cun perpendicularly, or obliquely towards Lateral-Xiyan.

Note: a) The point on the lateral side of the ligamentum patellae coincides with Dub (St. 35) but it is also called “Lateral-Xiyan”, and for this reason the point proper is sometimes referred to as Medial-Xiyan (Nei-Xiyan). “Xiyan” in Chinese means “Knee-Eye”, “ and “Dubi” means “Nose of the Calf”.

b) These two points together with Heding (Ex. 31), are commonly used in treating disorders of the knee.

Lanwei (Ex. 33). (*Lanwei*). Alarm point of the vermiform appendix.

Location: 2 cun below Zusanli (St. 36), on the Stomach Channel.

Indications: Appendicitis, post-operative pain after Appendectomy.

Puncture: 1.0 cun perpendicularly.

Note: “Lanwei” in Chinese means the “vermiform appendix? This point becomes tender in acute appendicitis and is therefore particularly useful in confirming the diagnosis.

Dannang (Ex. 35). (*Tannang*). Distal Alami point of the Gall Bladder Channel.

Location: 1.0 cun below (distal to) Yanglingquan (G.B. 34), on the Gall Bladder Channel.

Indications: Diseases of the gall bladder and the liver.

Puncture: 1.0 cun perpendicularly.

Note: This is the Alarm point in the leg of the Gall Bladder.

Bafeng (Ex. 36). (*Pafeng*). Eight points.

Location: On the dorsum of the foot, 0.5 cun proximal to the borders of the webs between the 5 toes; 4 points on each foot, totalling 8 points.

Indications: Arthritis of the toes, numbness of the foot and the toes, polyneuropathy.

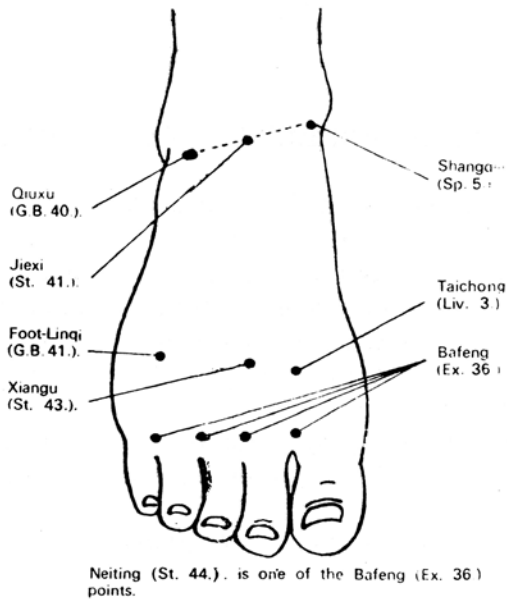


Figure 3-79

Note: Three of these points coincide with Xingjian (Liv. 2.), Neiting (St, 44), and Xiaxi (G.B. 43.).

THE UN-NUMBERED EXTRA POINTS (U.Ex.)

These are points which have been discovered in recent times, most of them by medical workers in the People's Republic of China, especially the points used in acupuncture anaesthesia. There is still no universal agreement among acupuncture regarding the uses of these points; time must elapse and more experience gained-before they could be more precisely categorised. Although there is a large collection of these points, only those in common use have been described. The total number described in international literature exceeds a staggering 1500. They also known as Trigger points.

Bientao (*also called Tungfeng and Bientaotih*).

- Location:*
- a) At the level of the lower margin of the angle of the jaw, immediately anterior to the carotid artery.
 - b) 1.0 cun directly inferior to Jiache (St. 6.).

Indications: Acute tonsillitis, especially with trismus.

Puncture: 1.0 cun horizontally through to Jianyu (L.I. 15) or to Jianliao (S.J. 14).

Taner (*Thaner*). Motor point of the deltoid.

Location: Midpoint of the deltoid muscle (on the S.J. Channel).

Indications: Paralysis of the deltoid muscle, stroke.

Puncture: 1.5 cun perpendicularly.

Yaoyang (*Yaoyang*).

Locations: In the depression over the sacra-iliac joint.

Indications: Low backache, sacro-iliac disease, pain of secondary carcinoma of the spine.

Puncture: 0.5 perpendicularly.

Dingchan (also called Chienhsi).

Locations: 3 cun directly above (proximal) to Heeding (Ex. 31),

Indications: Arthritis of the knee, paralysis of the lower limb. particularly useful for knee disorders with wasting of the quadriceps.

Puncture: 1.0 – 2.0 cun obliquely, directed proximally.

Neima (*Neima*). In Chinese “Nei” means medial, and “Ma” means anaesthetic.

Location: on the medial border of the tibia, midway between the ankle joint and the knee joint. This point coincides with Zhongdu (Liv. 6).

Indications: This is an anaesthetic point used in lower abdominal, pelvic and perineal surgery. It is also used to achieve childbirth together with the point Sanyinjiao (Sp. 6).

Puncture: 1.0 cun perpendicularly.

Weima. (*Weima*). In Chinese “Wei” means lateral, and “Ma” means anaesthetic.

Location: a) On the same level as Neima on the lateral side of the leg on the Stomach Channel.

b) 9 cun above the tip of the lateral malleolus on the Stomach Channel.

Indications: All abdominal and pelvic surgery.

Puncture: 1.0 cun perpendicularly.

Puncture: 1.0 - 1.5 cun perpendicularly, avoiding the carotid artery.

Note: This is Dangerous point as it is close to the baro-receptors.

Posterior-Tinggong (*Houtingkung*).

Location: On the root of the ear, level with Tinggong (S.I. 19).

Indications: Deafness, deaf-mutism, dizziness, vertigo, chronic ear infections, pain of middle ear disease.

Puncture: Insert needle along the junction of the external ear with the scalp so that the tip of the needle rests in the crus of the helix. Penetrate 0.5 - 1.5 cun forward and slightly upwards in the directions of the crus of the helix.

Bipay

Location: At the upper end of the anterior crease of the axilla.

Indications: Heart disease, especially angina pectoris and rhythm disorders. Excellent point for dysrhythmia.

Puncture: 1.0 cun perpendicularly.

Jianneiling (*Jianqian*).

Location: Midway between Bipay (U. Ex) and Jianyu (L.I. 15).

Indications: Tendinitis of the long head of biceps associated with frozen shoulder.

Puncture: 1.0 cun perpendicularly.

Jianquan (*Chienchuan*).

Location: Midway between Jianyu (L.I. 15) and Jianliao (S.J. 14).

Indications: Supra-spinatus tendinitis.

THEORY OF YIN AND YANG

THE THEORY OF YIN AND YANG

According to the Yin-Yang theory, the Universe was originally in a state of primordial chaos without force, form or substance. It then resolved into the negative (Y in) and Positive (Y ang) forces, and order was produced out of Tao. It is said, therefore that a balance exists in the Universe in its normal state, because Yin and Yang relate to each other in harmony. Natural disasters such as earthquakes, floods, and volcanic eruptions are brought about by an imbalance of the Yin and Yang forces. However, these forces are constantly interacting with each other; this is why everything in the Universe is neither stable nor final. It is, in fact, the dynamic balancing of this duality which brings about both equilibrium and change. They are therefore, like the different but inseparable poles of a magnet, or the pulse and interval of an oscillation. As is written in the Huang Di Nei Jing, "The universe is in a state of oscillation of the forces of Yin and Yang and their changes."

This dynamic concept is the keystone of the entirety of Chinese philosophy and of Chinese medicine. Yin is conceptualized as being cold, dark and female. Yang is warm, light and male. Yin is passive and signifies that which is deep and hidden. Yang is active and signifies that which is above the surface. Since Yin and Yang are constantly changing their relationship to each other. Thus there is no night without day, no inside without outside and no virtue without vice. As described by the philosopher Chuangtzu, "One Yin and one Yang is called the Toa. The passionate union of 'Yin and Yang is the eternal pattern of the Universe.

Even in terms of modern physiology we know that there are mechanisms to raise and lower the blood pressure, mechanisms to raise and lower the rate of respiration and mechanisms to regulate the levels of blood sugar. Each individual cell is a miniature chromosomic representation of the whole individual and a myriad of biochemical reaction unceasingly occur to preserve the dynamic state of life. For instance, if we consider the distribution of the two ions Na^+ and K^+ , inside and outside the cell, we can clearly see how Yin-Yang type of reactions occur unceasingly in order to preserve the vitality and integrity of the living cell. The hormonal balance in a healthy individual is a perfect example-of this Yin-Yang dynamism. In fact the concept of homeostasis in modern physiology is none other than the establishment of a Yin-Yang balance as applied to the known parameters of the biochemical physiology of the organism. The basic postulates of the Yin-Yang theory are therefore valid, even in the context of today's scientific milieu, if we can adjust our minds to these ancient semantics.

“The tissues and organs of the human body may pertain either to Yin or Yang according to their relative locations and functions. Viewing the body as a whole, the trunk surface and the four extremities, being on the exterior, pertain to yang, while the zang-fu organs are inside the body and are yin. Viewing the body surface and the four extremities alone, the back pertains to yang, while the chest and abdomen pertain to yin, the portion above the waist pertains to yang and that below pertains to yin; the lateral aspect of the four extremities pertains to yang and the medial aspect to yin the channels running along the lateral aspects of an extremity pertain to yang, while those along the medial aspect pertain to yin. When speaking of the zang-fu organs alone, the fu organs with their main function of transmitting and digesting food pertain to yang; while zang organs with their main function of storing vital essence and vital energy pertain to yin. Each of the zang-fu organs itself can again be divided into yin or yang. e.g., the yin and the yang of the kidney, the yin and the yang of the stomach etc. In short, however, complex the tissues and structures of the human body and their functional activities be, they can be generalized and explained by the relationships of yin and yang.

The interdependent relation of yin and yang means that each of the two aspects is the condition for the other's existence and neither of them can exist in isolation. For instance, without day time there would be no night; without excitation there would be no inhibition. Hence, it can be seen that yin and yang are at once in opposition and in interdependence; they rely on each other for existence, coexistence in a single entity. The movements and changes of a thing are due not only to the opposition and conflict between yin and yang but also to their relationship of interdependence and mutual support.”

YIN-YANG LAWS:

1. *First Law of Yin-Yang.*

“In a stable system, the Yin and Yang are balance; in an unstable system, they are out of balance”. The reverse is also true; that is “If the Yin and Yang are in balance, the system will be stable; if the Yin and Yang are out of balance, the system is bound to be unstable - diseased”.

2. *Second Law of Yin-Yang:*

Neither the sole Yin nor the sole Yang can lead to creation and growth.

3. *Third Law of Yin-Yang:*

“Under favourable conditions, the Yin can become or produce Yang, and the Yang become or produce Yin”.



Figure 4-1: The Symbol of Yin-Yang

Those showing strong, hot bright, hard high big and heavy features belong to Yang, while those showing the opposite features belong to the Yin. Based on this simple notion one can easily make a long list of Yin and Yang:-

YANG	YIN
Bright	Dark
Sun	Moon
Day	Night
Heaven	Earth
Fire	Water
Hot	Cold
Summer	Winter
Spring	Autumn
Male	Female
Out side	In side
External	Internal
Upper	Lower

HSU AND HSIH (XU & SHI)

In that the universe is an oscillation of the forces Yin and Yang, it is possible to define and classify all life forms, including their individual degrees of functional existence in terms of one of these two polar opposites. Indeed, the diagnosis of bodily dysfunctions in terms of Yin-Yang energy balance so as to enable us to plot the most promising course of treatment necessitates a thorough understanding of all aspects on this all-inclusive system of classification. No course of treatment can be expected to yield results if the stage to which a pathological condition has progressed cannot be accurately determined in relation to its Yin-Yang energy balance. Only then can a truly personal programme of therapy be planned, moulded to meet the personal needs of each individual.

But while one may be able to define and classify any condition of the body down to what we can perceive even in an individual cell in terms of Yin-Yang, that ability will give us only partial knowledge upon which to formulate a course of therapy that will have a better-than-average degree of effectiveness. To thoroughly dissect a body, classifying all that we can see of even its most minute structures within each individual cell will give us knowledge based only on our awareness of its external aspects—that which we can see with the physical eye. After peering for hours through an electron microscope in an effort to find some clue to the cause of a bodily dysfunction, can it be implied that we could possibly have bypassed anything? Unfortunately, the answer is “yes”. Just as a man may search for hours for his glasses that all the while have been on his own nose, so too some men may observe and probe into all conditions and aspects of the body in searching for the cause of a disease and may still miss the obvious. ‘We may in

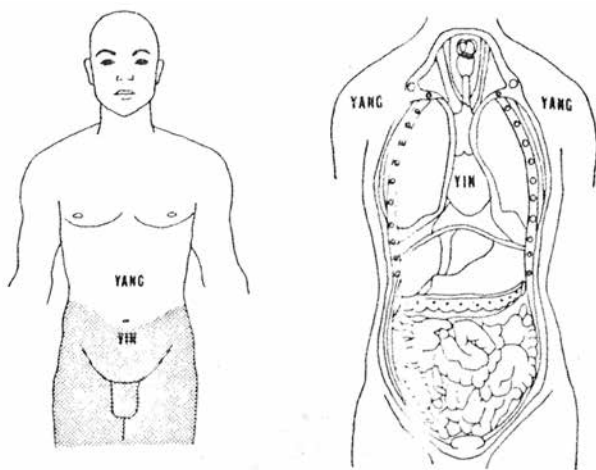


Figure 4-2: The surface of the body is Yang; the inside of the body is Yin

all justification think that we have seen all that can possibly be seen, but have we seen that which cannot be seen? To resolve this dilemma, Chinese medicine introduced the concept of Hsu and Hsih.

Hsu and Hsih, like Yin and Yang, represent extremes or opposites. But while Yin and Yang pertain to all that can be perceived or felt by our senses-both physical and mental-Hsu and Hsih pertain to that which, for the most part, can be said to be invisible. Therefore Hsu and Hsih take us into a realm much more subtle than that of Yin and Yang in that Hsu and Hsih represent the “energy within the energy” of any object or function. In other words, Hsu and Hsih represent the intensity of the energy within any form.

Everything that exists, whether its nature is physiological, anatomical, or inert, is actually a form of energy in that its basic foundation is supported by energy.

The term Hsu represents low-intensity energy, while Hsih represents high-intensity energy; energy itself is Yang. The energy that gives one a deathly shock is termed Yang/Hsih; the energy used to give

a pleasant message is Yang/Hsu. With the explanation of Hsu and Hsih we gain knowledge of the most vital factor in the control of bodily functions.

Yin and Yang indicate and generalize; they are used in relation to external aspects. External is all that can be perceived by both our physical and mental senses, including energy itself Hsu and Hsih specify; they are used in relation to the intensity of the energy that enlivens the external aspects.

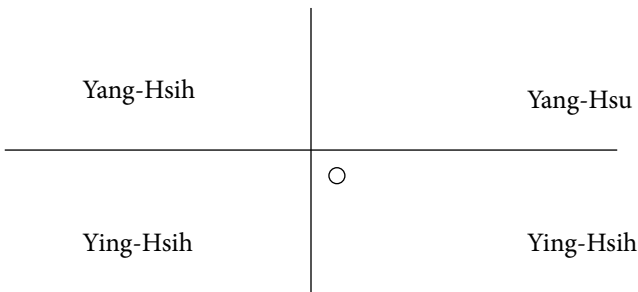


Figure 4-3: Yin and Yang, and Hsu and Hsih as They Are Applied to Bodily Dysfunctions.

Constipation is a Yang disease in that it is a result of a bowel-the large intestine. There are two types of constipation: if a person is very strong, having an abundance of high-intensity energy, all the moisture is absorbed from the stool and it is therefore unable to pass from the body; this type of constipation would be termed Yang/Hsih-energy will have to be dispersed. The second type of constipation is one in which the person is very weak and simply has no energy with which to pass the stool, this type is termed Yang/Hsu-energy will have to be augmented.

Diabetes is a Yin disease in that it is the result of an organ-the pancreas. One person eats an over-abundance of rich foods which, as they are digested, create an over-abundance of heat (energy) that taxes, or over-works, the pancreas; this type of Diabetes is termed Yin/Hsih. Another person has a pancreas that cannot perform its function of aiding in digestion; this is a Yin/Hsu form of Diabetes. Many people ask, "If the person with the weak pancreas eats less food, won't the

pancreas become stronger as a consequence of not having to work so hard?" This was a therapy used many years ago in treating some diabetics, but as we shall see in the next example, Hsu follows Hsih. Once chronic Hsu condition develops, it is impossible to regain energy without outside help.

The first step of the common cold is one in which cold, fever, and nasal congestion rack the body. The symptoms are external and all are a form of abnormal high-intensity energy; therefore, the first stage of the common cold is termed Yang/Hsih. In a few days, the symptoms usually internalize and confine themselves mainly to the lungs causing one to cough constantly and to expel phlegm; this stage of the common cold is termed Yin/Hsih. If, in a few more days, the energy of the lungs is depleted in coping with the symptoms, and pneumonia develops, the disease becomes Yin/Hsu. Thus, a disease progresses through stages, each of which is characterized by Hsih followed by Hsu. If the sixth stage which is absolute (Yin/Hsu) develops, the result is death.

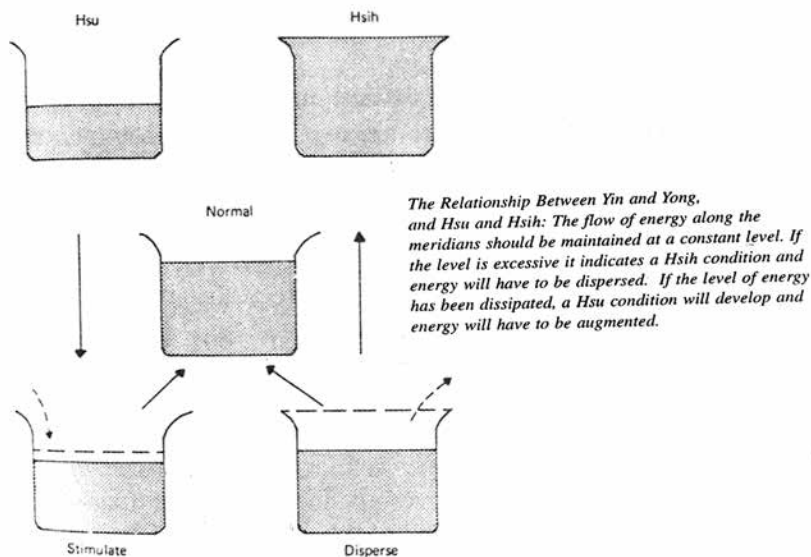


Figure 4-4.

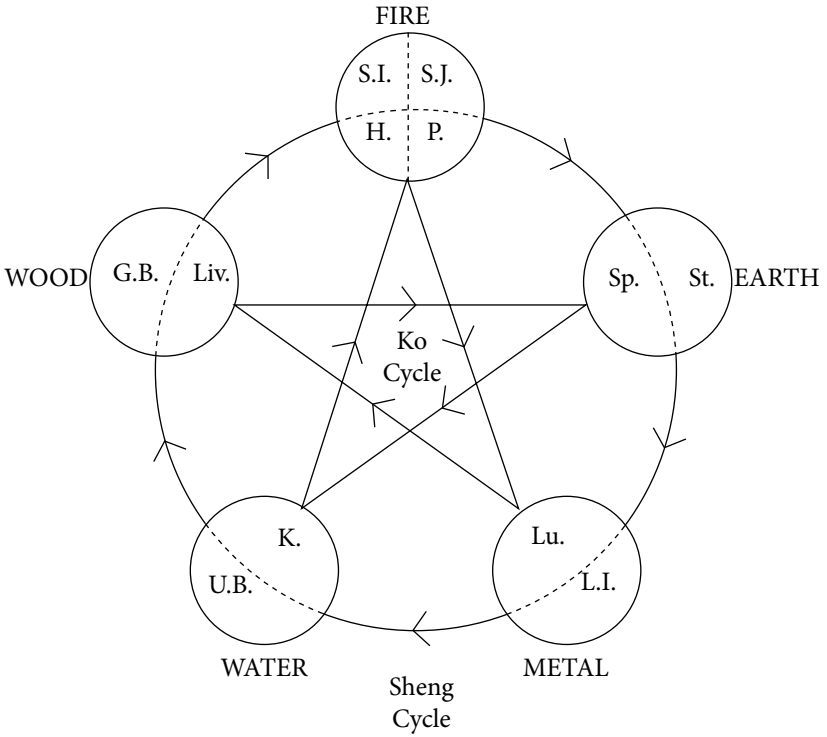
VITAL ENERGY (CHI) QI

The interaction of Yin and Yang produces “Qi”, (pronounced as chee) the bipolar flow of energy which pervades the entire Universe. It is bipolar because it is, as everything else in the Universe, subject to the fluctuations of Yin and Yang. Qi is the prime energy which motivates the Tao.

There are many forms of Qi. Heat, light and sound, for example, are various forms of Qi. The Qi that can be manipulated with acupuncture needling is called “Jing Qi” or the vital energy circulating in the Channels. It regulates the circulation of blood, the processes of digestion of food, the auto-protection of the organism and all other vital activities. The body carries a certain amount of Qi at birth. This is depleted by the daily activities of living; it is augmented by the intake of food and air. This depletion or reinforcement, if balanced, maintains growth and health. Imbalance of Qi-its excess or deficiency within the organism - is the cause of ill health. Its absence is death. The purpose of acupuncture is to restore the imbalance of body Qi by puncturing the correct combination of points.

Qi is an abstract philosophical concept which is not adequately translatable from the Chinese medical lexicon to other languages. Qi infuses life with all its protean manifestations. It is an imponderable entity. However it has a multiplicity of materials manifestations as well, such as the circulation of blood and the essences of the body causing growth of the organism. “The spirit” being responsible for the state of consciousness and mental activities, and the secretion of “fluids” such as tears, saliva, sweat, bile and urine, which co-ordinates the smooth functioning of the various organs and tissues.

THE RELATIONSHIPS OF THE FIVE ELEMENTS
AND
THE ZANG-FU ORGANS



Sheng = Generative.
Ko = Destructive.

Figure 4-5.

THE THEORY OF THE FIVE ELEMENTS

In the words of the Huang Di Nei Jing, Su Wen “There are Five Elements in heaven, as also on earth.” The Chinese classified all phenomena of the Universe into the Five Elements.

The five Elements are: Wood, Fire, Earth, Metal and Water. They are related in two cyclic sequences which are termed the generative and the destructive cycles.

In the generative cycle (called the “Sheng” cycle) Fire is fed by Wood; the ashes which form become the Earth; Metal is formed in the Earth; Water springs from Metal (fluidity arises from the solid state); and Water nourishes trees which become Wood, thus completing the cycle.

In the destructive cycle (called the “Ko” cycle) Fire melts Metal; Metal cuts Wood; Wood covers the Earth; and the Earth dams Water.

The Five Elements are therefore not independent entities but exist in an intimate relation to each Element governs and is governed by another Element.

Mu	–	Wood	Corresponds to Liver
Huo	–	Fire	Corresponds to Heart
Tu	–	Earth	Corresponds to Spleen
Chin	–	Metal	Corresponds to Lungs
Shui	–	Water	Corresponds to Kidney

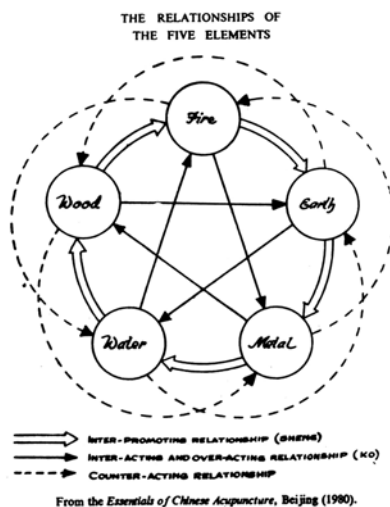


Figure 4-6.

“The theory of the five elements hold that wood, fire earth, metal and water are basic materials constituting the material world. There exists among them an interdependence and inter-restraint which determines their state of constant motion and change.”

“The theory of the five elements basically explains the inter-promoting, inter-acting, over-acting and counter-acting relationships among them. Its application to traditional Chinese medicine is in classifying into different categories, natural phenomena plus the tissues and organs of the human body and the human emotions and interpreting the relationship between the physiology and pathology of the human body and the natural environment with the laws of the inter-promoting, over-acting and counter-acting of the five elements. This theory is used as a guide in medical practice.”

“The theories of yin-yang and the five elements are two outlooks on nature in ancient China, both encompassing rudimentary concepts of materialism and dialectics and to some extent reflecting the objective law of things. They are of practical significance in explaining physiological activities and explaining pathological changes in guiding medical practice. In clinical application the two are usually related with and supplement each other and cannot be entirely separated.

ELEMENT	WOOD	FIRE	EARTH	METAL	WATER
Planet	Jupiter	Mars	Saturn	Venus	Mercury
Direction	East	South	Centre	West	North
Season	Spring	Summer	Indian Summer	Autumn	Winter
Colour	Blue	Red	Yellow	White	Black
Perverse Climate	Wind	Heat	Moisture	Dryness	Cold
Organ	Liver	Heart	Spleen	Lungs	Kidneys
Sense	Sight	Speech	Taste	Smell	Hearing
Parts of body	Muscles Nails	Pulse Complexion-on	Flesh Lips	Skin Body Hair	Bones Hair
Orifice	Eyes	Ears	Mouth	Nose	Anus Urinary
Fluid	Tears	Sweat	Lymph	Mucus	Saliva
Smell	Rancid	Burnt	Sweet	Fleshy	Putrid
Taste	Acid	Bitter	Sweet	Piquant	Salty
Sound	Cry	Laugh	Song	Sob	Groan
Psychic Values	Spirit	Conscience	Ideas	Animal Spirit	Will Ambition
Emotions	Anger	Joy	Worry	Grief	Fear
Dynamic Energy	Blood	Psychic Energy	Physical Energy	Vital Energy	Will Power
Governs	Lungs	Kidneys	Liver	Heart	Spleen
Social Estate	The People	The State	A Prince	A Vassal	What is produced
Animal (domestic)	Chicken	Dog	Ox	Horse	Pig
Animal (wild)	Tiger	Stag	Bear	Bird	Monkey
Grain	Wheat	Millet	Rye	Rice	Peas
Strain	Over-use of Eyes	Over Walking	Over Sitting	Over Lying	Over Standing

The classification into Five Elements of the main phenomena of the Universe (as also applicable in traditional medicine) is as follows:-

Five Elements	Five Cardinal Points	Five Seasons	Five Perverse Climates	Five Colours	Five stages of Development
WOOD FIRE EARTH	East South Centre	Spring Summer Late	Wind Heat Humidly	Green Red Yellow	Birth Growth Transformation Harvest Storage
METAL WATER	West North	Summer Autumn Winter	Dryness Cold	White Black	

Traditional Chinese medicine was well aware that external factors in the environment influence the body in health and disease. The five seasons and the five perverse climates are ready examples. (These are among the exogenous factors that cause disease).

The Historical Classic *Shu Ching* describes the Five Elements as follows:-

“Of the elements, the first is called Water, the second Fire, the third Wood, the fourth Metal, and the fifth Earth, Water is that quality in Nature which we describe as soaking and descending. Fire is that quality in Nature which we describe as blazing and uprising. Wood is that quality in Nature which permits of curved surfaces or straight edges. Metal is that quality in Nature which can follow the form of a mould and then become hard. Earth is that quality in Nature which permits of sowing, growth, and reaping.”

“That which soaks, drips and descends causes saltiness. “That which rises up generates bitterness. That which permits of curved surfaces or straight edges gives sourness. That which can follow the form of a mould and then become hard, produces acidity. That which permits of sowing, growth and reaping, gives rise to sweetness.”

The conception of Five Elements suggests five types of fundamental bio-physical processes as follows:

WOOD	Accepting form by submitting to cutting and carving instruments	Solidity involving workability	Sourness
FIRE	Heating, burning, ascending	Heat, combusting	Bitterness
EARTH	Producing edible vegetation	Nutritivity	Sweetness
METAL	Accepting form by moulding when in the liquid state, and the capacity of changing this form by re-melting and re moulding	Solidity involving congelation and re-congelation (mouldability)	Acidity
WATER	Soaking, dripping, descending, dissolving	Liquidity, fluidity, solution	Saltiness

The Five Elements are five powerful natural forces in ever-flowing cyclical motion, and not passive motionless, fundamental, material substances.

Tung Chung-Shu writing “On the Five Elements”, in 135 B.C. states:

“Heaven has Five Elements, first Wood, second Fire, third Earth, fourth Metal, and fifth Water. Wood comes first in the cycle of the Five Elements and water comes last, earth being in the middle. This is the order which Heaven has made. Wood produces fire, fire produces earth (i.e. as ashes), earth produces metal (i.e. as ores), metal produces water, and water produces wood (for woody plants require water). This is their “father-and-son” relationship. Wood dwells on the left, metal on the right fire in front and water behind, with earth in the centre. This, too, is their father-and-son order, each receiving from the other in its turn. Thus it is that wood receives from water, fire from wood, and so on. As transmitters they are fathers, as receivers they are sons. There is an unvarying dependence of the sons on the fathers, and the direction is always from the father to the son. Such is the Tao of Heaven.”

The idea of successive mutual conquests as phenomena succeed one another in the eternal round of Nature, was well known to the Chinese since 400 B.C. in many writings. The classic Wen Tzu further clearly-states: "Metal may overcome wood, but with one axe a man cannot cut down a whole forest. Earth may overcome water, but with a single handful; one cannot dam up a river. Water may overcome fire, but with no more than a bucketful one cannot put out a large conflagration." This is the counteracting property of the Five Elements.

The Five Elements gradually came to be associated with every conceivable category of phenomena in the universe which it was possible to classify in lives. Such correspondences were the common modes of thought from the Chin dynasty onwards. The Five Element Theory fashioned Chinese thinkings a great deal down the ages up to the present time.

THE THEORY OF ZANG-FU

The concepts of Yin and Ying, Qi, and the Five Elements also apply to Man, the microcosm. In this manner, Man fits into the totality of the Universe and becomes a part of it.

According to the Huang Dinei Jing the different internal Organs are described as having the division of labour exhibited by a properly run state. This is known as the state analogy:-

The Organ	Official Function
The Heart	“The Supreme Controller or the Emperor.”
The Small Intestine	“The separator of the pure and impure.”
The Pericardium	“The protector of the Emperor.”
The Sanjiao	“The controller of temperature (internal environment?)”
The Liver	“The official for judgement and planning.”
The Gall Bladder	“The official for decision making.”
The Lung	“The Receiver of Qi from the heavens.”
The Large Intestine	“The official for the drainage of the drugs.”
The Stomach	“The official for rotting and ripening.”
The Spleen	“The official for transport and distribution.”
The Kidney	“The controller of the storage of vital energy.”
The Urinary Bladder	“The controller of water.”

Another analogy is the universe analogy: the upper half of man, including the heart and brain, represents heaven; the lower half; including the stomach and genitalia, represents the earth. Man is the son of heaven and earth.

The ancient Chinese related the body functions into twelve Organ systems, which were classified according to their characteristics into Zang (Yin) and Fu (Yang), and into the Five Elements.

The Zang Organs have the function of storing and are known as the “Solid Organs”. They are Yin in character. The Fu Organs have the function of digesting and absorbing food and excreting wastes, and are known as the “Hollow Organs”. They are Yang in character. Although the different Organs have separate functions, they work in close co-ordination with each other to preserve the unity of the organism and to carry out its vital functions.

The classification of the Twelve Organs into Yin and Yang and into the Five Elements is correlated as follows:

- a) Each Yin Organ is coupled to a Yang Organ and they are both identified with one of the Five Elements.
- b) Each pair of these coupled Organs relate to the other such pairs of coupled Organs in the generative (Sheng) cycle and in the destructive (Ko) cycle that govern the relationship of the Five Elements.

Each of the Zang and Fu Organs relates to a vital function the body. These relationships are illustrated in the following table:

TABLE FOR THE ZANG-FU THEORY

5 ZANG ORGANS	6 FU ORGANS
<p>Lung Respiration.</p>	<p>Large Intestine Excretion of wastes.</p>
<p>Heart (Pericardium) Circulation of blood. Mental activity.</p>	<p>Small Intestine Separation of the essence from food and transport of waste to the Large Intestine.</p>
<p>Spleen Digestion. Water metabolism. Circulation of blood. Immunity.</p>	<p>Sanjiao Maintaining homoeostasis of the body.</p> <p>Stomach Ingestion, digestion, and transport of food and water.</p>
<p>Liver Bile secretion and transport. Regulation, storage and transport of blood. Control of tendons. Control of endocrines.</p>	<p>Gall Bladder Storage of bile. Mental activity.</p>
<p>Kidney Regulation of blood pressure Growth of bone, cartilage, teeth, nails, and head hair. Promotion of “new life” as an extension of genital functions.</p>	<p>Urinary Bladder Water balance. Genital functions.</p>

The ancient Chinese also discovered that the Zang and Fu Organs were connected to certain areas of the body in such a manner that pathological changes in a Zang or Fu Organ also brought about corresponding changes in related areas or tissues. Some of these changes could be related to the Five Colours. This made it easy to ascertain which set of Zang and Fu Organs needed treatment. These relationships are tabulated below:-

YIN (ZANG) ORGAN	YANG (FU) ORGAN	Connected Tissues	Connected Sense Organ	Connected Colour structures for colour reference	The five Changes
Lung	Large Intestine	Skin. Body hair	Nose	Skin White	
Heart Pericardium	Small Intestine Sanjiao	Brain, Blood vessels	Tongue	Mouth	Red
Spleen	Stomach	Soft tissue, Four Extremities (limbs)	Mouth	Lip	Yellow
Liver	Gall Bladder	Muscle, Tendon	Eyes	Nail	Green
Kidney	Urinary Bladder	Bone, Cartilage, Nails, Teeth, Head hair.	Ears forearm	Inside of	Black

In the same way that pathological changes in the internal Organs could be caused by external (exogenous) factors, changes could also be brought about by internal factors, these being mainly emotional causes (called endogenous factors). The relationship of the five human emotions to the Zang-Fu and their connections, in turn, to several areas of reaction were also of help to the traditional physician in his diagnosis. This set of relationships are shown below:-

ZANG ORGAN	FU ORGAN	The Five Emotions	The Five Sounds	The Five Fluids
Lung	Large Intestine	Sadness	Sobbing	Mucus
Heart (Pericardium)	Small Intestine Sanjiao	Joy	Laughing	Sweat
Spleen	Stomach	Anxiety	Singing	Lymph
Liver	Gall Bladder	Anger	Shouting	Tears
Kidney	Urinary Bladder	Fear	Groaning	Saliva

THE THEORY OF JING-LUO

In traditional Chinese medicine, diagnosis and the treatment are based on the dynamic theory of energy flow, which postulates that Qi or vital energy flows continuously in the body in a definite time sequence and in definite pathways.

The Qi (vital-energy) in the body has three main levels of manifestation: superficial, deep and intermediate. Anything affecting Qi at one level may also affect it at the other levels. The ancient Chinese discovered that it was possible to cause changes in the body by skilfully influencing the Qi at the surface level-and this is, in fact, the object of all acupuncture therapy.

At the deep level, Qi travels along' certain pathways which interconnect the Zang and Fu Organs in the Sheng (generative) and Ko (destructive) cycles.

At the superficial, level Qi flows along a system of conduits or channels called "Jing". These Jing-Channels may be classified into two groups: the regular Channels (known as the Twelve Paired Channels) and the regular Channels (known as the Eight Extraordinary Channels).

There are also several short collateral channels called "Luo" or Connecting Chamiels which maintain the cyclical flows of Qi in the body.

All these Chamiels and collaterals are collectively referred to as the "Jing-Luo". They form the interlacing network which traverses the entire body carrying vital energy to every part of the body.

The main pathological manifestations of the Twelve Regular (Paired) Channels and the Eight Extraordinary Channels are described as follows:

1. Pathological manifestations of the 12 regular channels.

- (1) The Lung Channel of Hand-Taiyin. Cough, asthma haemoptysis, congested and sore throat, sensation of fullness in the chest, pain in the supraclavicular fossa, shoulder, back and the lateral border of the anterior aspect of the arm.
- (2) The large Intestine Channel of Hand-Yangming. Epistaxis, watery nasal discharge, toothache, congested and sore throat, pain in the neck, anterior part of the shoulder and anterior border of the exterior aspect of the upper limb, borborygmus, abdominal pain, diarrhoea, dysentery.
- (3) The Stomach Channel of Foot-Yangming. Borborygmus, abdominal distension, oedema, epigastric pain, vomiting, feeling of hunger, epistaxis, deviation of eyes and mouth, congested and sore throat, pain in the chest, abdomen and lateral aspect of the lower limbs fever mental disturbances.
- (4) The Spleen Channel of Foot-Taiyin. Belching, Vomiting, epigastric pain, abdominal distension, loose stools, jaundice, sluggishness and general malaise, stiffness and pain at the root of the tongue and* mouth, swelling and coldness in the medial aspect of the thigh and knee.
- (5) The Heart Channel of Hand-Shaoyin. Angina, palpitation, hypochondriac pain, insomnia, night sweating, dryness of the throat, thirst, pain in the medial aspect of the upper arm, feverishness in the palms.
- (6) The Small Intestine Channel of Hand-Taiyang. Deafness, yellow sclera, sore throat, swelling of the neck, distension and pain in the lower abdomen, frequent urination, pain along the posterior border of the lateral aspect of the shoulder and arm.
- (7) The Urinary Bladder Channel of Foot-Taiyang. Retention of urine, enuresis, mental disturbances, malaria, ophthalmodynia, lacrimation when exposed to wind, nasal obstruction, rhinitis, epistaxis, headache, pain in the nape,

upper and lower back, buttocks and posterior aspect of the lower limbs.

- (8) The Kidney Channel of Foot-Shaoying. Enuresis, frequent urination, nocturnal emission, impotence, irregular menstruation, asthma, haemoptysis, dryness of the tongue, congested and sore throat, oedema, lumbago, pain along the spinal column and the medial aspect of the thigh, weakness of the lower limbs, feverish sensation in the soles.
- (9) The Pericardium Channel of Hand-Jueyin. Angina, palpitation, mental restlessness, stifling feeling in the chest, flushed face, swelling in the axilla, mental disturbances, spasm of the upper limbs, feverishness in the palms.
- (10) The Sanjiao Channel of Hand-Shaoyang, Abdominal distension, oedema, enuresis, tinnitus pain in the outer canthus, swelling of the cheeks, congested and sore throat, pain in the retro-auricular region, shoulder, and lateral aspect of the arm and elbow.
- (11) The Gall Bladder Channel of Foot-Shaoyang. Headache, pain in the outer canthus, pain in the jaw, blurring of vision, bitter taste in the mouth, swelling and in the axilla, pain along the lateral aspect of the chest, hypochondrium, thigh and lower limbs.
- (12) The Liver Channel of Foot-Jueyin. Low back pain, fullness in the chest, pain in the lower abdomen, hernia, vertical headache, dryness of the throat, hiccup, enuresis, dysuria, mental disturbances.

2. Pathological manifestations of the eight extraordinary channels:

- (1) The Du Channel. Stiffness and pain along the spinal column, opisthotonus, headache.
- (2) The Ren Channel. Leukorrhoea, irregular menstruation, hernia, enuresis, retention of urine, pain in the epigastric region and the lower abdomen.

- (3) The Chong Channel. Colic and pain in the abdomen.
- (4) The Dai Channel. Abdominal pain, weakness and pain of the lumbar region, leukorrhea.
- (5) The Yangqiao Channel. Epilepsy, insomnia.
- (6) The Yingqiao Channel. Hypersomnia.
- (7) The Yangwei Channel. Chills and fever .
- (8) The Yinwei. Chamial Angina.

The Channels described above are those at the superficial levels, by needling which, the acupuncturist is able to influence in order to readjust imbalances. The complete channel system however, by which is meant all the pathways of energy between the surface of the body and the Internal Organs, muscles and other parts of the body, are not and cannot be fully charted as they are so numerous and complex. The fact that the ear, nose, hand and foot are each used as self-contained systems of acupuncture, or that the tongue, the iris and other specific areas are used for diagnosis in respect of the entire body presupposes the existence of a very fine harmonious interconnecting network of channels. It must be remembered that the traditional Chinese physician was unaware of the nervous system as we know it today, and their postulation of the channel system must be regarded as a brilliant attempt to systematize the clinical inter- relationships of the known functions of the body.

THE FOUR TRADITIONAL LAWS OF ACUPUNCTURE

The Four Traditional Laws of Acupuncture may be used to select acupuncture points for therapy. They are:-

- (1) Mother-Son Law.
- (2) Midday-Midnight Law.
- (3) Husband-Wife Law; and
- (4) The Five Elements Law.

(1) Mother-Son Law.

This Law is a consequence of the cyclical flow of Qi (vital energy) along the Channels and the Organs. If the flow is blocked or hindered from circulating freely as the result of a disease factor then an abnormal surplus or deficiency of vital energy may occur. This affects not only that Channel or Organ but also the Channel or Organs which precede and succeed it; disharmony of the entire organism is caused, and a condition of disease is manifested.

In the Mother-Son Law therefore, the recognition of the direction of the flow of vital energy is important. It flows from Channel or Organ just as “the mother nourishes her infant”.

If a Channel or Organ shows an insufficiency of activity then it can be strengthened by stimulating it so that it draws more vital energy from its mother.

The Mother-Son relationship of the Twelve Channels is in the sequence of the normal flow of vital energy of the Organ Clock in the twelve Channels. The Mother-Son relationship of the internal Organs is in the sequence of the generative cycle of the Five Elements (Sheng cycle).

(2) The Midday-Midnight Law (tsu-wu):

According to this Law, vital energy flows through the Twelve Channels in 24 hour cycles. Since the flow is through the Twelve Channels it takes two hours for the surge of energy to pass through each Channel.

The ancient Chinese physicians found that, by utilizing this phenomenon, better results were obtained therapeutically.

The energy tide enters the Lung-Channel at 3.00 a.m. and leaves it to enter the succeeding Large Intestine Channel at 5.00 a.m. The vital energy flows in this manner successively through the twelve channels till it leaves the Liver Channel to re-enter the Lung Channel at 3.00 a.m. of the following day. This flow of energy in this time sequence is known as the "Organ Clock".

THE ORGAN CLOCK

Channel	Time		
Lung	3.00 a.m.	–	5.00 a.m.
Large Intestine	5.00 a.m.	–	7.00 a.m.
Stomach	7.00 a.m.	–	9.00 a.m.
Spleen	9.00 a.m.	–	11.00 a.m.
Heart	11.00 a.m.	–	1.00 p.m.
Small Intestine	1.00 p.m.	–	3.00 p.m.
Urinary Bladder	3.00 p.m.	–	5.00 p.m.
Kidney	5.00 p.m.	–	7.00 p.m.
Pericardium	7.00	–	9.00 p.m.
Sanjiao	9.00 p.m.	–	11.00 p.m.
Gall Bladder	11.00 p.m.	–	1.00 a.m.
Liver	1.00 a.m.	–	0 3.00 a.m.

It has been stated, since ancient times, that there is a specific point in each Channel which is most effective, if used according to

the relevant time of the Organ Clock. These points are known as the Horary points. The twelve Horary points are listed below:-

Horary Point	Channel
Jingqu (Lu. 8).	Lung
Shangyang (L.I. 1).	Large Intestine
Zusanli (St. 36).	Stomach
Taibai (Sp. 3).	Spleen
Shaofu (H. 8).	Heart
Yanqu (S.I. 5).	Small Intestine
Tonggu (U.B. 66).	Urinary Bladder
Yingu (K. 10)	Kidney
Laogong (P. 8)	Pericardium
Zhigou (S.J. 6).	Sanjiao
Foot-Linqi (G.B. 41).	Gall Bladder
Dadun (Liv. 1).	Liver

These are not random points. A Horary point is a point on a Channel which corresponds to the same Element as the element of that Channel e.g. Jingqu (Lu. 8), is the Metal point of the Lung. These points are in fact included among the Sixty Command Points.

The Horary points are used during the appropriate periods of the Organ Clock, when the vital energy is at a peak in a particular Channel. Thus when treating a disorder related to the Lung, the Horary point Jingqu (Lu. 8) may be used during the period 3.00 a.m. to 5.00 a.m. If the energy imbalance stems from a deficiency of energy in the Lung, this point may be punctured in the early part of this period (to take advantage of the surge of energy entering the Channel using the technique of tonification (the “bu” or re-enforcing method). If the imbalance is due to an excess in the Lung, then the point Jingqu (Lu. 8). is stimulated during the later part of this period using the technique of sedation (the “xu” or reducing method).

The treatment according to the Organ Clock also corrects imbalances of vital energy involving the Organ or Channel diametrically opposite to it in the Organ Clock, e.g., treating the Urinary Bladder

Channel at 3.00 p.m. at the point Tonggu (U.B. 66) will have the opposite therapeutic influence on the Lung, into which the peak wave of energy enters at 3.00 a.m.

Even when using points other than the Horary points, particularly when a balancing of energy is carried out, timing the puncturing according to the Organ Clock may bring about more effective therapeutic results.

(3) The Husband-Wife Law:

Excess or depletion of vital energy may be accurately determined by pulse diagnosis by those who are familiar with this diagnostic method. There are twelve pulse positions on the two wrists, each wrist having three superficial and three deep pulses. Each of these positions corresponds to a Channel and its related Organ. The deep pulses relate to the Zang (Yin) Organs, and the superficial pulses relate to the Fu (Yang) Organs. The relative positions of these pulses are in accordance with the Theory of Zang-Fu and the Theory of the Five Elements.

The Husband-Wife Law describes the relationship between the left and right pulse positions and this has been found to be very useful in therapy. In traditional Chinese medicine the left side of the body is considered to be dominant over the right side. Hence all Organs represented as pulse positions on the left wrist are regarded as being dominant or “Husband” in relation to the Organs represented on the right wrist, which are regarded as submissive or “Wife” Organs.

(4) The Five Elements Law (already discussed.).

METHODS OF CHINESE DIAGNOSIS

Diagnosis is the analysis of symptoms of disease in an effort to determine the basic cause of a disease. With Chinese medicine, along with determining in which organ or bowel a disease is situated, the flow of energy along the main meridians is evaluated; the level of energy within the body, being defined in terms of Hsu and Hsih, is of primary importance in eventually plotting the most effective course of therapy. There are several methods of diagnosis, each reinforcing another; they are: observation, hearing, interrogation, reading the pulse, palpitation of abdominal points, and palpitation of points on the bladder meridian.

OBSERVATION

Observation consists of recognising all aspects of a patient's external appearance. An experienced practitioner of Chinese medicine will very easily note many clues to the basic cause of a patient's distress 'in the initial encounter with the patient. An expert practitioner can even draft general course of therapy by acutely observing the intricate details of facial expression.

Important factors in observation:

- 1) Colour of the face and other parts of the body
- 2) Indications of an imbalance in diet
- 3) Condition of the bones, eyes, hair, finger and toe nails, skin and mucosa.

- 4) Coating of tongue and oral fetor.
- 5) Colour of urine, stool, and other secretions.

In general, the colour of the face and other parts of the body is indicative of a specific organ or bowel and its physiological function. and also the degree of meridian involvement, For example, a blackish tone on the inside of the forearm and around the eyebrows indicates a kidney and/or an internal gland dysfunction. Chinese medicine lists five colours as representative of the organs and bowels, and their functions; they are:

- 1) Black-kidneys, bladder, and internal glands; especially a sexual hormone imbalance;
- 2) Red-heart, brain, and blood vessels;
- 3) White-lungs, skin, and respiratory system;
- 4) Yellow-spleen-pancreas, stomach, and lymphatic system,
- 5) Green-liver, and nervous system.

HEARING

The Chinese method of diagnosis by hearing should not be confused with the Western method in which mechanical devices are used. Chinese practitioners use no mechanical devices, but are advised to maintain a “proper” distance (3-4 feet) from the patient. A constant effort to go beyond merely listening to the patient must be exerted. Important factors in hearing:

- 1) The general volume of the voice and the force behind it:
 - a) loud and strong.
 - b) low and weak.
- 2) Aspects of breathing:
 - a) coughing and panting.
- 3) Water and/or gas sounds in the stomach and intestines.

As in observation, the voice of the patient can also be linked to a specific organ depending upon its quality.

- 1) Shouting, or calling-out quality-liver.

- (b) Palpation and inspection of the affected areas, e.g., for Ah-Shi Points' (Tender Points).
 - (c) THE PULSE-This is considered to be the most important step of the traditional diagnostic exercise. In modern China, the pulse diagnosis is not frequently practised. There is much debate today throughout the world on the importance and relevance of pulse diagnosis. This is the most controversial part of traditional Chinese medicine that has baffled modern scientists, who have critically investigated acupuncture.
- (7) Special Tests: Naked eye examination of stools, urine, sputum and other excrescences of the patient.
- (8) Special Examinations:-
- a) Eyes (Conjunctive, sclera, iris).
 - b) Tongue-The different areas of the tongue indicate the pathological state of the different Internal Organs.
 - c) Lips.
 - d) Skin.
 - e) Hair (body hair, head hair).
 - f) Formation of bones, teeth and nails.
- (9) Ear-Inspection in a good light, palpation with the reverse end of an acupuncture needles or a matchstick.
- (10) Interpretation of the dreams of the patient.
- (11) HISTORY II (from a relative or a close friend). This confirms (or contradicts) the history as given by the patient. Also, it helps to ferret out information that the patient may be reluctant to convey readily such as traumatic experiences, alcoholism, indulgence in other vices, promiscuity, social diseases, family problems, financial Worries, etc.

The differentiation of “Cold” from “Hot” diseases:

Parameters	Cold syndrome	Hot syndrome
i) Facial colour	Pale or bluish.	Red face and swollen eyes (excess) Redness over cheeks (deficiency)
ii) Body temperature	On low side; hands and feet cold; patient wants to be warm.	On the high side; hands and feet warm; Patient like cold.
iii) Eating habits	No dryness of mouth, but no desire to drink; patient likes warm food.	Dry mouth with desire to drink; Patient likes cold food.
iv) Cough	The sound is clear sputum is white and frothy.	The sound is heavy and “not clear” sputum is yellowish or rusty colour.
v) Stool	Thin and not formed	Constipation or diarrhoea, yellowish in colour or reddish, with pain and warmth in rectal region.
vi) Menstruation	Dark in colour.	Bright in colour.
vii) Abdomen	Cold; likes warmth	Hot; likes-coolness
viii) Tongue	White. wet and glossy.	Dry, yellowish, or deep red.
ix) Pulse	Slow.	Fast.

(B) The differentiation of “deficiency” from “excess” disease:

Parameter	“Deficiency”	“Excess”
Mental state	Inhibited’ eyes closed and tired looking, depressed emotionality.	Excited and irritable; usually patient lies on his back.

Body build	Thin and weak; tired and no strength.	Solid and strong; fill of strength
Body temperature	On the low side: hands and feet are cold; may have some fever in the afternoon	Normal or with high fever.
Sensations	With pain, but likes massage and may have numbness.	With pain, but refuses to be touched; may have burning pain.
Respiration	Weak, dyspnoea.	Strong, full chest.
Stool	Diarrhoea, food residue in stool; not too strong may have incontinence.	May have painful defecation, constipated or loose stool; stool with strong odour. may have tenesmus or stool with blood
Urine	Incontinence of Urine.	Anuria or oliguria.
Sweat	Profuse or with night sweat	Little or no sweat.
Menstruation	Thin and colourless; postmenstrual dysmenorrhea.	Thick and with deep colour; pain before mens- truation.
Ulcers and wounds	Not red, not swollen, not hot, not hard. no pain, with clear oozing.	Red; swollen, warm with severe pain.
Abdomen	Soft, thin comfortable when pressed.	Tense and tender; painful when pressed.
Tongue	Tongue not coated whitish in colour.	Reddish and coated with thick greasy stuff
Pulse	Thready.	Forceful

AETIOLOGY OF DISEASE:

The causes of disease are divided into four categories

- (A) those originating from outside the body;
- (B) those arising inside the body
- (C) miscellaneous causes, whose origins are neither outside nor inside the body;
- (D) Phlegm.

When the different vital forces of the body are in a harmonious balance, there is positive health. When this balance, is disturbed, there is disease. The development of disease depends on two factors: the immunity level of the body, and the virulence of the disease causing agents. If the body is in positive health there is no way for disease to gain a foothold. Disorders may also arise from internal disharmonies without being caused by exogenous influences. In Chinese Medicine much emphasis is placed on the prevention of disease by the promotion of general health and the early treatment of internal disharmonies.

In Chinese medical terminology, the physiological activities of the Organs, the Qi, and the Blood, all of which have the power to resist disease, are called the Normal Qi. The course of disease is seen as a battle between the Normal Qi and the disease-causing factors. Treatment of the diseases, at any point in time, depends on the dynamic interaction between these two forces. Disorders which are primarily caused by internal disharmony require appropriate treatment so as to properly re-establish normal functioning of the affected Internal Organs.

A. **The Six Excesses:**

The six Excesses are the extrinsic cause of disease.

The Six Excesses are (a) Wind, (2) Cold, (3) Heat, (4) Dampness, (5) Dryness and (6) Summer Heat. They conform to the Five element correspondences (both Heat and Summer Heat correspond to Fire). The term Excess means “Abnormality, Evil, or Pernicious Influence”. When normal environmental forces become excessive (e.g. a particularly cold spell in winter), or occur unseasonably (e.g. a warm spell in the middle of the winter) they may cause disease. However, because of individual physical make up and a latency period in ‘some disease, different people may have different diseases at the same time or the same disease at different times. Clinical differentiation of the Excesses is made on the basis of symptoms, not tests aimed at discovering a precisely defined disease-causing agent. That is to say, the disease is described in terms of the body’s response, rather than in terms of an autonomous disease entity. Two people may suffer from the same “disease” (in the Western medical sense) at the same time, yet, because of differences in their environment and constitution they may exhibit completely different symptoms.

Sometimes an imbalance among the Internal Organs will lead to symptoms similar to those of an externally caused illness. It is usually possible to differentiate between symptoms caused by external Excess with those caused by an imbalance within the body itself from the history of onset of the disorder.

The Excesses (with the exception of Heat) are each related to a particular season and associated with either Yin (which injures Yang forces) or Yang (which injures Yin). The symptomatic manifestations of each Excess resemble the characteristics of their seasonal counterparts in nature. (The original relationships between the Excesses and the seasons were based on the weather patterns in ancient China, and do not necessarily hold true for other parts of the world. In the *Nei Jing* it was recommended for each physician to familiarise himself with the seasonal epidemiology of different illnesses in his area).

1) *Wind (Spring Yang):*

Diseases caused by Wind arise suddenly and change their symptoms quickly. They may be accompanied by symptoms of muscle spasm, vertigo, pruritus or a pain, which often changes location. Wind diseases of an exogenous origin usually affect the skin, head, pharynx and Lungs first. Wind is the Excess which carries others Excesses into the interior of the body.

Internally, when the Liver (Wood-Wind) Yang is hyperactive, dizziness and convulsions occur; similar symptoms accompany high fevers. Both are caused by exterior Wind travelling to the interior of the Body.

2) *Cold (Winter Yin):*

The principal symptom of this Excess is that the whole body or a part of it feels cold. Cold causes fluids to congeal in the body; this causes pain. Pain is caused by the obstruction in the flow of Qi or Blood. Cold causes material substances to coagulate in the channels; this causes cramps and spasm. When Cold diseases are present, the body excretions (mucus, tears, phlegm, urine, stools) are white or clear and watery.

When the Yang Qi is weak, symptoms similar to those caused by Cold may occur.

3) *Heat (Yang):*

The main characteristic of Heat is that the body or a part feels hot. Heat easily injures the body fluids. Thus, the tongue and stools become dry and the patient is thirsty. Heat can cause the Blood to travel outside the channels, leading to haemorrhages or rashes. In the presence of Heat-caused diseases, body excretions are dark or yellow, sticky and foul smelling. Sometimes, the act of expulsion causes Heat in that area of body. Often, diseases caused by one or the other Excesses, transforms into Heat within the body. Heat is also a synonym for Fire.

4) *Dampness (Long Summer Yin):*

This Excess often appears during damp weather or when a person comes into contact with moisture for a prolonged

period of time. Dampness is sluggish and stagnating. Diseases caused by this Excess take a long time to be cured. When Dampness is on the external parts of the body the patient feels anxious, the limbs heavy, and the head feels swollen. When Dampness invades the muscles and joints, all movements become painful and oedema of the affected parts occur. Dampness tends to attack the Spleen. When the spleen's transforming and transporting functions are weak. Interior Dampness may result. (Damp diseases occurring during the Winter are liable to be very serious disorders).

5) *Dryness (Autumn Yang):*

Dryness attacks the fluids of the body and may result in dry skin, chapped lips, hacking cough, constipation. When the body's Yin substances are seriously depleted (as in the later stages of a long febrile disease) similar symptoms may appear.

6) *Summer Heat (Summer Yang)*

The primary characteristic of Summer Heat is fever with pronounced sweating. This injures the Yin and the Qi. Dampness almost always accompanies this Excess.

B. The Seven Emotions:-

The seven Emotions are excessive happiness, anger, worry, Pensiveness, sadness, fear, and anxiety. They are linked with the Five Elements system of correspondences, (both worry and sadness correspond to Metal; both fear and anxiety correspond to Water). Apart from the Seven Emotions, frustration upsets the free-flowing nature of the Liver and not surprisingly, often leads to anger. These are normal emotions which can lead to illness if sustained for a long period of time. These emotions either adversely affect those Organs associated with the same Elements or upset the Yin-Yang balance in the body. Emotion related diseases, which might be labelled psychosomatic in Western medicine, are in Chinese medicine internal imbalances.

C. Causes Which Are Neither Outside Nor Inside A (Miscellaneous Causes):-

These refer to syndromes due to aetiologies that are neither Excesses nor Emotions. Inconsistency in the quantity, quality or time of eating causes indigestion and related diseases. Quality here refers both to the hygienic level of food and to the traditional classification of foodstuffs as either Cold or Hot. Each Organ is associated with a corresponding taste in the Five Element system. Too much of one taste will injure the corresponding Organs.

Sexual activity and the reproductive functions are linked with the Kidneys in men, and with the Kidneys and Liver in women. When excessive sexual activity occurs, the Yin and Yang of these Organs may be damaged. If a woman gives birth too frequently, the Ren channel may be injured, resulting in menstrual problems. The same is true of manual labour; when performed in moderate amounts it benefits the body; when carried out in excess the body is injured.

D. Phlegm:-

In traditional Chinese medicine the word Phlegm does not refer exclusively to the secretions that are coughed up from the Lungs, but also to stagnant fluids in the body. Traditionally, its formation is due to dysfunction in the water metabolism, especially in the transforming-transporting functions of the Spleen. Therefore, the Spleen is the source of Phlegm. When the water in the body becomes stagnant, it transforms into Phlegm. There are many possible reasons for this stagnation, but the most common causes are Deficient Qi and Excess Heat. Phlegm is both the result of dysfunction and the cause of further disease. When Phlegm collects in the Lungs there is coughing and wheezing with profuse expectoration. When it enters the Stomach there is nausea and vomiting. When it invades the channels local swellings occur. When it surrounds the Heart delirium ensues.

(The concept of Phlegm caused disorders includes what is described in modern scientific medicine as endocrine disorders, metabolic disorders, enzymatic and other biochemical disorder).

In practice the various causes of disease often overlap and occur together. Diagnosis is directed towards determining the relationships which exist at a particular time between the different disease-causing factors and their effects on the Organs, Channels and Tissues.

The Eight Principles of Chinese Diagnosis (Ba Kang).

After the examination of the patient, the physician classifies the illness according to the following scheme _which embodies the “Eight Principles of Diagnosis” called “Ba Kang” in Chinese.

Xu	1.	Yin	3.	Interior	5.	Cold	7.	Deficiency
Shi	2.	YANG	4.	Exterior	6.	Hot	8.	Excess

(This is a clinical classification)

The diagnosis in traditional Chinese medicine gives a conceptual picture of the basic dysfunctions of the body and suggests a basis for rational treatment. The first stage in the screening process utilizes the Eight Diagnostic Methods. There are four pairs of broad polarities that provide a preliminary understanding of the nature and intensity of the disease. The Eight Diagnostic Methods (also known as the Eight Principles) are Exterior/Interior (depth of disease), Hot/Cold (nature of disease), Excessive Deficient (strength of disease versus the resistance) and Yin/Yang (overall quality of the disorder). These parameters enable the physician to establish in general terms` the location, quality and intensity of a disease. After this is done other diagnostic methods are applied to identify the disease and select the appropriate treatment. It must be remembered that diseases are complex and ever changing. Sometimes two different, or even contradictory parameters, will appear simultaneously. As the disease progresses, it may move from one parameter to another. It is therefore important to monitor the changes and tailor specific treatment to fit the particular patient at that particular time. Consequently, Chinese physicians continuously adjust and modify their treatment as the disease evolves.

I/II Exterior-Interior:-

These feature delineate the location of disease. The disease process evolves primarily in one of two ways. In the first, the body's balance

between Yin and Yang is upset. These are always interior diseases. In the second, an Excess enters the body from outside and the body reacts to it. Such diseases usually being Exterior disorders, may progress to become Interior. These two processes are not mutually exclusive. In fact, if there is no weakness in the body's Exterior defences, no Excess can penetrate; Here the skin, flesh, and channels are defined as Exterior, while the Internal Organs are defined as Interior.

Exterior symptoms include chills, fever, headaches, sore limbs, running nose, coughing, sore throat and a floating pulse. Ordinarily, Excesses first encroach upon the body through the skin or nose, which are both related to the Lungs. If the Excess succeeds in penetrating these outer defences there must be a weakness in the Protective Qi. Chills may result, which is the definitive symptom of Exterior disorders. Sweating is an important indicator of the strength of the Protective Qi. If the Excess is in the outer and cephalic parts of the channels, headaches and soreness result. This is also reflected in a floating pulse. Some of the common clinical presentations are now discussed.

Exterior Cold:

The chills are more pronounced than fever; the coating on the tongue is white and moist; head and body pains are severe; mucus is clear or white, the throat may be inflamed and the voice raspy, the pulse is floating and tight.

Exterior Hot:

The fever is high, the coating on the tongue is dry and yellow, the throat is very painful and inflamed, mucus from the nose or lungs is yellow and congealed. The pulse is floating and rapid.

Exterior Excess:

There is no perspiration. This usually occurs in a Wind-Cold disease when the Cold Excess is usually so strong that the sweat glands are obstructed.

Exterior Deficiency:

There is perspiration without the usual corresponding reduction of the fever. This is due to a weakness in the Protective Qi, which is not able to regulate the skin temperature.

Interior symptoms, as distinct from Exterior symptoms, are those involving the Organs and deeper tissues of the body. They may arise from Excesses located in the Exterior portions of the body which penetrate the external defences and enter the Organs, or from Excesses which directly attack the Organs themselves. Other frequent causes include emotional imbalance, improper living habits, alcoholism and addiction to drugs. All these disturb the harmony of the Organs.

There are some symptoms that commonly indicate the presence of interior diseases rather than Exterior disorders. These include fever without chills, a feeling of coldness in the body, irritability, pain in the trunk, vomiting and changes in the tongue proper. The appearance of the stools and urine, and the presence of severe thirst (usually normal in Exterior conditions) are important signs in determining the nature of an Interior disease. A comparison between Interior Cold and Interior Hot diseases will serve to give a general idea how these symptoms are actually used in a differential diagnosis.

Interior Cold:

Typical symptoms include a pale complexion, sensitivity to cold at the extremities, no thirst or a desire to drink hot liquids, pain in the abdomen which diminishes upon the application of heat, copious and clear urine, watery stools, pale tongue with a white coating and a deep, slow pulse.

Interior Hot

Common symptoms include a flushed complexion, fever, irritability, thirst, cold beverages, sweating, scanty dark urine, constipation or diarrhoea containing pus or blood, a dark red tongue with a yellow coating and a quick pulse.

In the incubation period of an interior disorder and in diseases due to external factors, there is a period when symptoms are partially Interior. This occurs when there are alternating chills and fever, a fullness in the loins and chest, irritability and restlessness, nausea, lack of appetite, a bitter taste in the mouth, a dry parched mouth, vertigo and a wiry pulse. A carefully selected plan of treatment, focusing upon the channels which traverse the middle of the extremities, is required. Treating these channels (Liver, Gall Bladder, Sanjiao, Pericardium) allays at the symptoms of the half Exterior-half Interior level of the body.

If an Excess attacks both the Exterior and Interior portions of the body simultaneously, or if an Exterior disease complicates a pre-existing Interior condition, these two cases come into effect at the same time. In such instances the selection of points will depend on careful evaluation of the circumstances, with a decision as to the relative importance of each group of symptoms.

III/IV Hot-Cold

When the body is attacked by a Yang Excess, or when the Yin substances are depleted, then Hot symptoms develop. When the body is attacked by a Yin Excess or the Yang activities are weak, Cold symptoms develop.

Hot:

A flushed face, red eyes, heat in any part of the body, fever, irritability, thirst for cold liquids, constipation, scanty dark urine, dark red tongue, rapid pulse, dark putrid or thick secretions may occur.

A pale complexion, a quiet patient, tendency to curl up, feeling of cold, in many parts of the body, or general feeling of cold lack of thirst or desire for hot liquids, severe localized pain, diarrhoea, copious clear urine, slow pulse and a clear or white phlegm are the common symptoms.

When different parts of the body are in different states of disease the Hot and Cold symptoms may appear simultaneously. When either Hot or cold is severe, "false" symptoms may appear. In a Hot disease

this usually takes the form of cold in the limbs because the Yang energy is blocked inside the trunk and cannot circulate in the limbs. In Cold diseases a flushed face, sore throat and irritability may appear due to the rising of the weak Yang. In such cases of disease the majority of the symptoms, particularly the appearance of the tongue and thirst factors, will accurately reflect the state of the illness.

V/VI Excessive-Deficient:

These states describe the degree of the body's resistance (Normal Qi) in response to the virulence of the disease. If the disease occurs because of a weakness in the body defences rather than because of the strength of the Excess, the disease is called an Excessive disease. If the condition of the body is very weak and that of the disease process not necessarily strong or if the disease is caused primarily by internal disharmony or weakness, it is called Deficient. Generally speaking, acute disorders tend to be Excessive and chronic disorders are Deficient.

Excessive:

Symptoms of Excess vary widely depending on the type and location of the disease. However, when compared to deficient diseases, the following symptoms are important; the voice is normal or louder than normal, breathing is heavy, if Ah-Shi points exist in the chest or abdomen they are felt as hard or elastic lumps, which react painfully to pressure, the coating on the tongue is thick and the pulse has great force.

Note: An excess does not invariably lead to an Excessive condition, nor are all Excessive conditions caused by excesses. An excess refers to certain disease-causing factors. Excessive or a symptom of Excess, refers to the degree of the body resistance in relation to the intensity of the disease process.

Deficient:

Deficient symptoms vary depending on whether it is the Qi, Blood, Yin or Yang of a particular Organ that is affected. However, when contrasted with symptoms of Excess, symptoms of deficiency

may be summarized as follows; the patient is quiet and withdrawn, the voice is soft and low, the complexion varies from sickly yellow to ghastly pale, breathing is light, pain diminished upon massage or pressure, swellings are soft, there is a scanty coating on the tongue and the pulse is weak and imperceptible.

As a disease progresses, changes occur with respect to these two signs and if conditions are appropriate, they can both appear simultaneously. In such cases an accurate diagnosis is essential to carry out the proper treatment of the patient.

VII/VIII Yin-Yang:-

Yin and Yang are the larger clinical features within which the others are subsumed. Exterior, Hot, and Excessive symptoms are Yang; interior, cold, and Deficient symptoms are Yin. The classic Yang symptoms correspond to Excessive and Hot conditions, while the classic Yin symptoms correspond to Deficient and Cold condition. Of course, all diseases include both Yin and Yang imbalances in their aetiology.

In traditional Chinese medicine diseases are broadly divided into Shi (diseases characterized by hyperactivity) and Xu (diseases characterized by hypoactivity). In diseases of a Shi nature, there is preponderance of the Yang element, manifestation of external warmth such as flushed face or fever, and general hyperactivity. This is usually seen in acute conditions where the patient's general condition is stable. In diseases of a Xu nature the reverse is true; there is preponderance of the Yin element, the patient is pale and cold, and he feels listless and apathetic' owing to general hypofunction. This is usually the case in chronic disorders. In Western medicine too, we clinically classify a patient as acute or chronic, hyperactive or hypoactive, extrovert or introvert, hypertrophic or atrophic, hypertensive or hypotensive, etc.

The other principles of diagnosis commonly used are:

- a) Differentiation of the syndrome according to the Theory of Zang-Fu.

- b) Differentiation of the syndrome according to the Theory of Jing-Luo.

The method of therapy used, whether acupuncture, moxibustion or herbal therapy, is then decided on the basis of the disease classification according to the Eight Principles of Diagnosis described above. If acupuncture is the therapy of choice in a particular patient, then the disease classification serves as a pointer to the technique of needle insertion and manipulation. For example, if the disease is Shi (hyperactive) in nature, the Xie (reducing) method of needle insertion is used. If it is Xu (hypoactive) in nature, the Bu (reinforcing) method is used. This is known as The Great Law of Bu-Xie.

The principles of diagnosis used in traditional Chinese medicine are the result of clinical observations made on billions of patients over a millennia of clinical practice. As in the procedures of Western medicine (e.g. electro-cardiography, electro-encephalography, auscultation of the heart, etc) these traditional diagnostic methods were not always the products of rationalization about disease, but grew out of empirical observations on the relations between various diseases and their protean manifestations. Some of these observations were recorded in symbolic language in accordance with the custom prevailing at the time, but to regard them as unscientific merely for this reason, would be about as scientific as rejecting the data of electro-cardiography because they are expressed in alphabetical symbols. Some of these ancient observations ranged over a wide field of study and show much evidence of penetrative insight. Several thousands of years before Freud, the importance of examining the content of dreams was evident to Chinese physicians, That dreams were outlets for symbolic wish-fulfilment, and therefore a guide to motivational factors, is clear from several passages in the Nei Jing. This is only an isolated example of the diagnostic ingenuity of the traditional practitioner, which can be appreciated from a modern clinical standpoint.

THEORY OF CHINESE PULSE

In traditional Chinese medicine, examination of the patient's pulse is the keystone in the diagnostic procedure. Twelve main pulses are recognized at the wrists of which, three are superficial and three are deep, at each wrist. The superficial pulses are felt by using only light pressure of the examining finger, while the deep pulses are felt by exerting stronger pressure.

The patient should sit face to face with the physician during the pulse diagnosis. The hand should never be above the heart level. When taking the pulse three fingers should be used, the middle, index, and ring, with the index finger placed closest to the wrist crease.

At first, the three positions are palpated simultaneously, initially, lightly, then with medium pressure, and finally more strongly. After this, each position is checked separately. Different systems are used whereby the pulse at each position is identified with certain Organs. The correlations most commonly used now in China are:

- left hand proximal position corresponds to Kidney yin.
- left hand middle position corresponds to Liver.
- left hand distal position corresponds to Heart.
- right hand proximal position corresponds to kidney Yang (The Sanjiao is linked to this pulse).
- right hand middle position corresponds to Spleen.
- right hand distal position corresponds to Lungs.

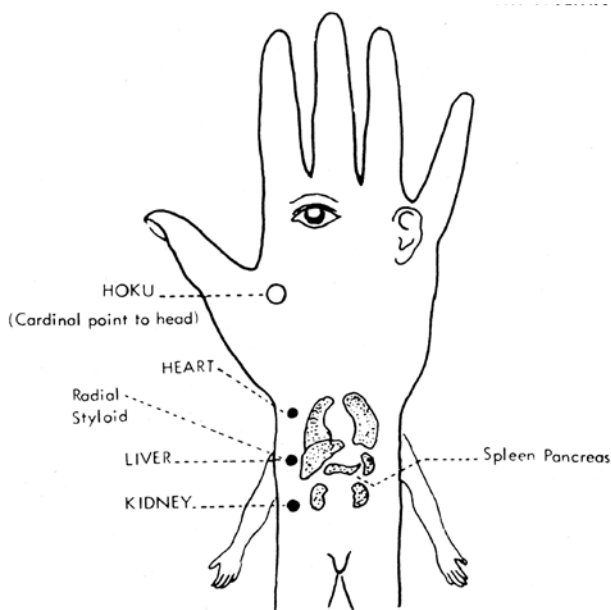


Figure 4-7: Pulse Diagnosis as Micro-System

Because pulse taking is art, it is not surprising that there is no singly orthodox set of correspondences. Rather, there are many ways to integrate the same patterns.

When the pulse is taken, attention is given to the frequency, amplitude and quality of the pulse. A normal pulse is distinct, discernible to the fingertip upon medium pressure, and can still be palpated with the application of heavy pressure. It has what is traditionally known as Stomach Qi, Spirit, and Root. The more these qualities are present in the pulses of a patient, the less serious is the discernible.

‘Stomach Qi is the quality of moderation. The pulse is neither too fast nor too slow, it is unhurried and moderately strong. Because the Stomach is the entrepôt for nutrition of the body, a patient with Stomach Qi can recover from a disease, where as a patient without it cannot. ‘Spirit, ‘is similarly a quality of moderation, but it is moderation in the shape of the strength of the pulse. A weak pulse with Spirit has a core of strength. A strong pulse with Spirit has a feeling of elasticity. ‘Root’ refers to the proximal half of the pulse of Kidney positions. Because

the Kidneys are associated with the basal energy of the body, if their pulses have enough strength the body has defensive energy (Wei Qi.).

In a healthy person the distal position tends to be floating, while the proximal half of the pulse position is usually submerged. Frequency of the pulse is about four beats to each respiration (72 beats per minute). Some variations are normal. Athletes often have a slow pulse. Young children have quick pulses. Fat people have deep pulses, while thin people have pulses with a tendency to be exaggerated than normal. Women's pulses are usually softer and slightly quicker than men's_ Also, women`s right pulses are usually stronger than their left, while the converse is true of men. Some use these sexual differences in the pulses to predict the sex of the fetus. If the mother's pulse is stronger on the right, the child will be a girl. If it is stronger on the left, it will be a boy.

There are many pathological pulses. Different schools name seventeen, twenty-eight, even thirty-two different pulse types. Some of these types are very rare and appear only in the later stages of terminal disease. Others vary only slightly from each other, and require considerable experience to differentiate. Generally, the pulses can be grouped together in categories which correspond to the steps in the procedure of taking the pulse. It must be borne in mind that, nearly always, a person`s pulse, healthy or otherwise, will be a combination of the pulse, types discussed below.

Pulse Characteristics:

DEPTH:

The first quality which the physician searches for is depth. There are two principal abnormal pulses in this category.

Floating. This pulse is distinct when lightly palpated, but fades under greater pressure. This pulse is usually associated with Exterior conditions (chills, fever, running nose). Since these conditions primarily affect the Lungs, it is ordinarily most pronounced in the Lung, pulse. In a very weak person with a cold this pulse may disappear. In chronic

diseases where the Qi and Blood have been seriously depleted (so that the body's Yang Qi is weak and floating, and lacks sufficient Yin) this pulse will be felt, even in the absence of the Exterior symptoms.

Submerged. This pulse is only distinct upon application of considerable pressure. The presence of this pulse signifies that the disorder has advanced to the Interior of the body. Specific symptoms accompanying this pulse depend on the nature of the disease.

RHYTHM:

The next characteristic of the pulse is rhythm. The normal pulse should pulsate about four beats to each breath of the patient. There are two principal types of pulse which are distinguished by their characteristic rhythms:

Slow. The pulse rate is three or less heart beats per respiration. This signifies Cold or Deficient Yang. Symptoms include pronounced sensitivity to cold, poor circulation, loose bowels, white coating on the tongue and general lassitude.

Quick. The pulse rate is six or more beats per respiration. This signifies Heat caused either by the Heat Excess or Deficient Yang. Symptoms include fever, rash and pronounced thirst.

DURATION:

The length of the pulse is another important characteristic.

Long. This pulse can be felt even above the proximal position and beyond the distal position. When a person is ill, this pulse indicates that the disease (usually related to Heat and Blood) is well advanced. The symptoms include fever and irritability. In a healthy person, however, it represents a robust constitution.

Short. The short pulse can only be discerned in the middle position. It signifies insufficiency of Blood and Qi. Symptoms include a pale complexion, lack of energy and the tendency to excessive sleep (hypersomnia).

FORCE:

There are two main pulse types in this group.

Weak. This pulse feels weak and hardly impresses the physicians fingers. Its presence signifies Deficiency, either generally (Qi and/or Blood) or in the Organ corresponding to the specific pulse location.

Strong. This pulse responds strongly to the touch. It signifies the presence of an Excess in ill person, but among the healthy it signifies positive health.

QUALITY:

The last and most difficult aspect to ascertain in a pulse is its quality. This characteristic includes the texture, smoothness, and regularity of the pulse wave. Such differentiation is often crucial to the accuracy of the diagnosis.

Slippery. This pulse can definitely be discerned, but the boundaries are indistinct, as if feeling a ball through a layer of highly viscous liquid. A slippery pulse usually signifies the presence of Dampness or Phlegm in the body. Symptoms include mucus, sluggish digestion, difficulty in mobilising the joints and a heavy coating on the tongue. If a healthy women exhibits this pulse at all positions, it usually indicates that she is pregnant.

Rough. The pulse feels choppy as if the waves of the pulse are irregular (in form not in rhythm). This pulse signifies Congealed Blood (hard, painful nodules in the abdomen, menstrual irregularities), stagnant Qi (inflamed stomach, headaches, abdominal pains) or Deficient Blood.

Wiry. The feeling of this long and taut pulse is like that of a violin or guitar string. It is a strong pulse that pushes back. A wiry pulse appears in Liver diseases accompanied by pain.

Taut. This pulse feels like a taut clothesline (fuller than wiry), and as if it were fast, but in fact is not. The waves are short and follow each other closely. A taut pulse, when accompanied by a floating pulse, is characteristic of Excessive Cold disorders, in particular. Symptoms include severe chills, fever, pain in the joints, clear vomit and a white coating on the tongue.

Huge. This pulse can be felt at all levels and is slightly stronger at the proximal pulses and at the beginning of the pulse waves. It almost always signifies Excessive Heat conditions and is accompanied by high fever, great thirst, and pronounced sweating. However, if it appears suddenly in a long, debilitating disease, it reflects the exhaustion of Qi and is a very bad prognostic sign.

Fine. This pulse is small and thin like a fine thread. It signifies insufficiency of the Blood and Yin. Symptoms include thirst, irritability, low grade fever and a tongue with a red tip.

Irregular. There are three types of irregular pulses, all of which signify disorders of the Heat Qi; (1) Hasty is fast with irregular pauses, and shows Excessive heat Yang or congested Qi in the Upper Burner. (2) Knotted is slow with irregular pauses, and signifies obstruction to Blood in the Heart, with Yin in Excess or Phlegm in the Pericardium. (3) Intermittent is systematic but pauses abnormally. It signifies an exhausted condition in the Organs. All three pulses are very dangerous signs when they appear in an ill person, but may also occur in otherwise healthy people during periods of mental or emotional distress.

The main object of pulse diagnosis is to ascertain whether there is any imbalance of vital energy that requires correction. Imbalance of energy is shown by either excess or deficiency in one or more pulses in the respective positions assigned to each of the patient's wrists. Pulses are connected by internal Channels to the Internal Organs. It is important to note that these are not purely anatomical concepts, if the rationale behind pulse diagnosis is to be understood. In traditional Chinese medicine, the term "Organ" does not refer only to the anatomical structure, which goes by that name. It also includes the whole complex of physiological functions and pathological variations arising in that organ, all local and remote effects of its activities, and

all subjective sensations, which can be related to that Organ on the basis of clinical observations. For instance the Gall Bladder Organ is not merely an anatomical projection of that viscus, but relates to many other functional involvements such as the site of headache in bilious attacks, the site of the referred pain to the shoulder in gall bladder disease, and certain points on the leg which have been found effective in the treatment of such conditions. Similarly, the Gall Bladder pulse is not merely a measure of the emptiness or fullness of that viscera, but expresses the state of depletion or excess of the vital functions associated with the Gall Bladder as a whole.

Pulse diagnosis is a time-consuming and extremely difficult art to master but perhaps it is well worth the effort. Many obscure ailments are due to some kind of imbalance in the body energy which are difficult to detect by the usual methods of Oriental or Western diagnosis, and pulse diagnosis may be very helpful in the diagnosis of such obscure and complicated disorders.

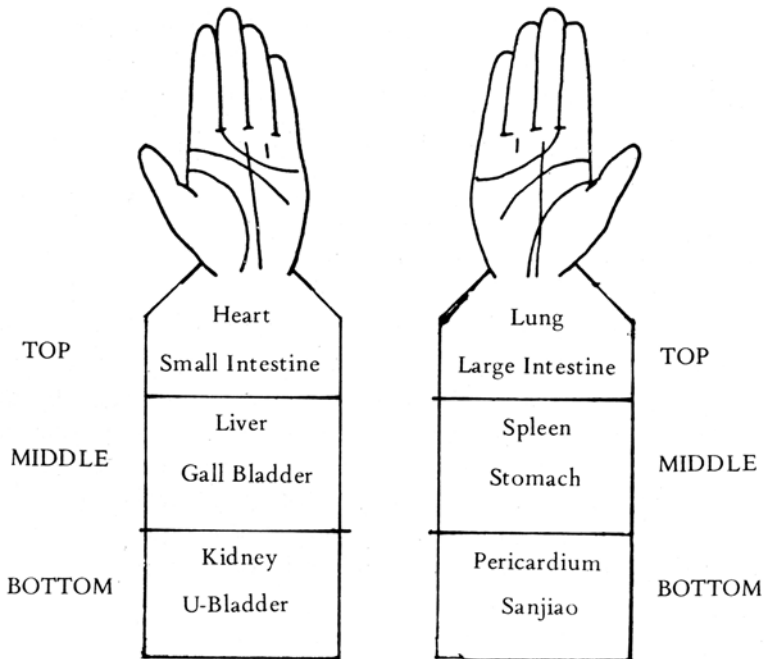


Figure 4-8

In Western medicine too, pulse examination has long been recognised as a procedure of the highest diagnostic value. The Western trained physician is familiar with pulses such as the dicrotic pulse, pulses alternans, pulses bisferiens, pulses paradoxus and so on. Recognition of these pulses are considered important today, for diagnosis as well as for prognosis.

Nevertheless, when it comes to Chinese pulse diagnosis, the western trained practitioner is prone to become hypercritical and to dismiss the subject as rather nonsensical. From a superficial standpoint there may be some justification for this. When it is said that the sensation felt on palpating the pulse is “like a piece of wood floating on water” or “Like a stone thrown into a pond” or “like a pearl rolling inside a basin” or “like a lute string” or “like a rope that is twisted and pulled tight at both ends” or “like an onion stalk which is hollow inside,” or better still “like a weak wind that puffs up the feathers on the back of a bird, flustering and humming”, it is natural for a Western physician to feel that the whole subject is in the realm of fantasy and therefore inaccessible to the kind of objective investigation which his scientific training demands. Again, the postulation of as many as 6 pulses (3 superficial and 3 deep) in the radial position serially arranged at each wrist, is totally alien to his way of thinking, as taught in Western medicine.

To add to his other difficulties the novice realizes that “pulse diagnosis may only be learnt from experience at the bed-side, under the tutelage of an experienced traditional practitioner, after many long years” and that, “the distinction between the deep and superficial pulses requires a discriminating sense of touch and the ability to vary in a controlled manner the pressure exerted by the examining finger”. Little wonder then, that many Western physicians after a few trials, or no experience at all, have dismissed Chinese pulse diagnosis as an impracticable art, based on highly subjective impressions, derived wholly from the amount of pressure exerted by the examining finger and therefore not worth bothering about.

THE PULSE POSITIONS
AS ADOPTED BY MOST WESTERN ACUPUNCTURISTS

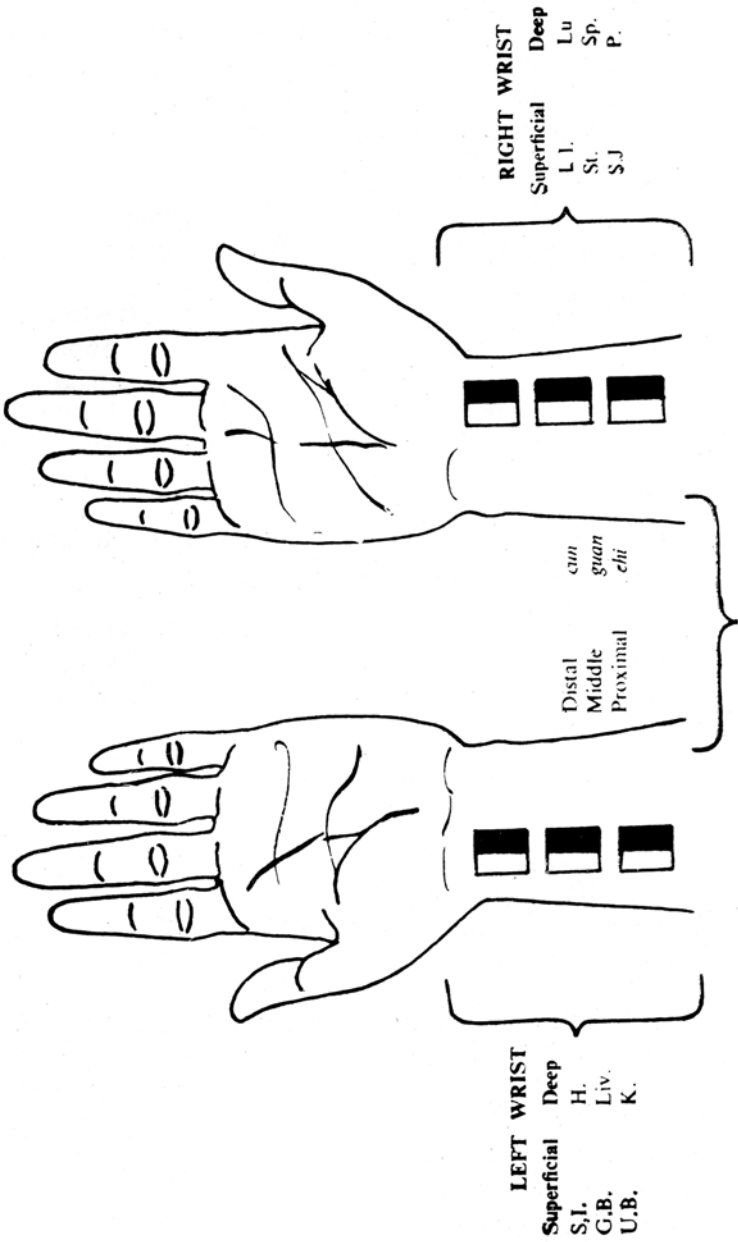


Figure 4-9.

There are three pulse positions at each wrist, each having a superficial and a deep component, thus making a total of twelve pulses in both wrist. "There is, therefore, one pulse pertaining to each Internal Organ. The consensus of opinion today in the West is that the pulse positions are as follows:

**THE PULSE POSITIONS
AS ADOPTED BY MOST WESTERN ACUPUNCTURISTS**

LEFT WRIST		RIGHT WRIST			
Super-	Deep			Super-	Deep
	ficial			ficial	
S.I.	H.	Distal	cun	L.I.	Lu.
G.B.	Liv.	Middle	guan	St.	Sp.
U.B.	K.	Proximal	chi	S.J.	P.

In "Essentials of Chinese Acupuncture", Beijing, (1980) the following pulse positions are described:-

LEFT WRIST		RIGHT WRIST			
Super-	Deep			Super-	Deep
	ficial			ficial	
S.I.	H. (P.)	Distal	cun	L.I.	Lu.
G.B.	Liv.	Middle	guan	St.	Sp.
U.B.	K. (Yin)	Proximal	chi	U.B.	K. (Yang)
				(S.J.)	

(Different ancient authors describe varying pulse positions, Even the Nei Jing describes a different pulse arrangement to the above).

Twenty-eight pathological variants of each pulse form are described in traditional Chinese Medicine and, despite the overlay of poetic imagery, there is a descriptive core which in many instances, may be compromised with western medical observations. The "halting pulse" for example, described as being "rapid, and giving the impression of undue haste, with intermittent, erratic stoppages," are referred to as the compensatory pauses_ which follow the extrasystoles that occur in certain rhythm disorders. Confronted with such descriptions it has to be conceded that observations of a very astute nature have been made by the ancient physicians of China.

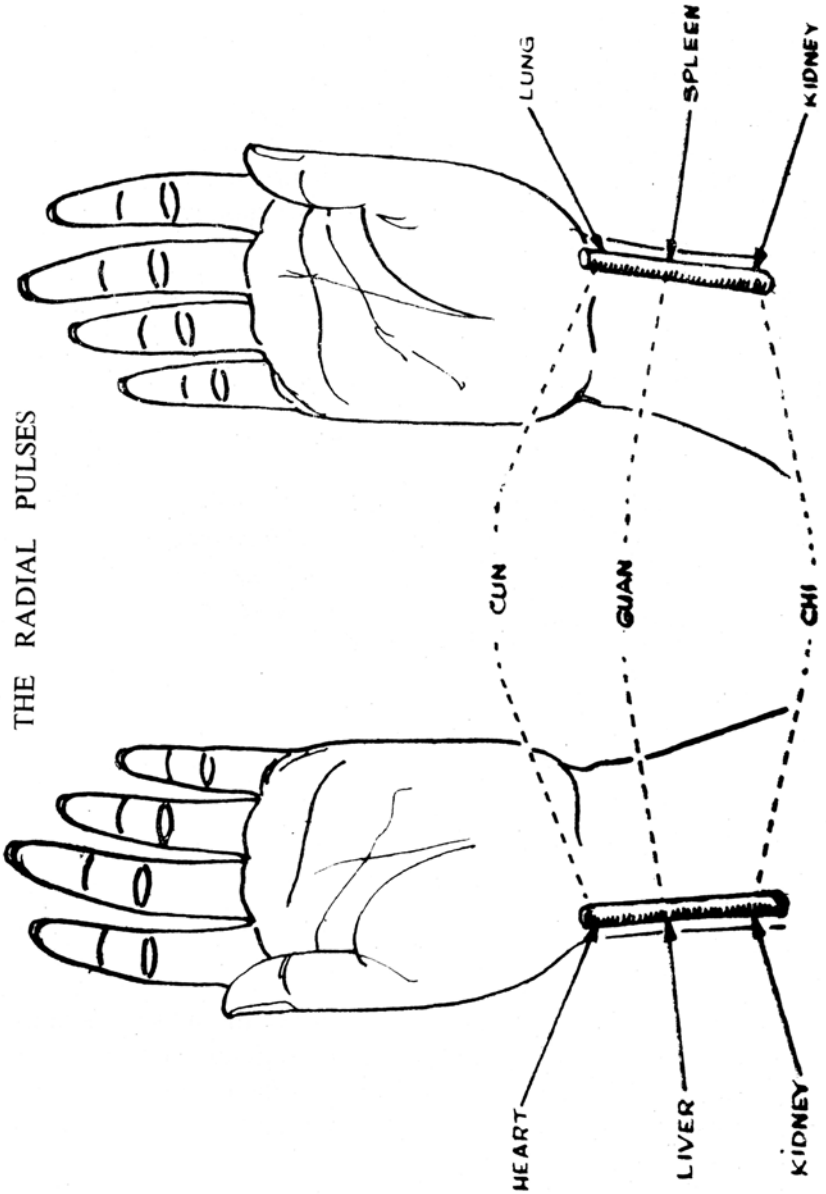


Figure 4-10: According to the "Essentials of Chinese Acupuncture". Beijing, (1980). The pulses are located as shown in this diagram

Apart from the recognition of the 28 pathological pulse modalities which require a degree of competence, which not many acupuncturists can easily attain, the principal object of Chinese pulse diagnosis is to ascertain by the 12 pulses whether there is an imbalance of energy as indicated, that requires correction. Imbalance of energy is shown by an excess or deficiency denoted by the pulse being full or empty at one or more of the pulse positions. The objects of acupuncture, according to traditional theory is to correct such energy imbalances by needling the appropriate acupuncture points.

METHOD OF PALPATING THE PULSE

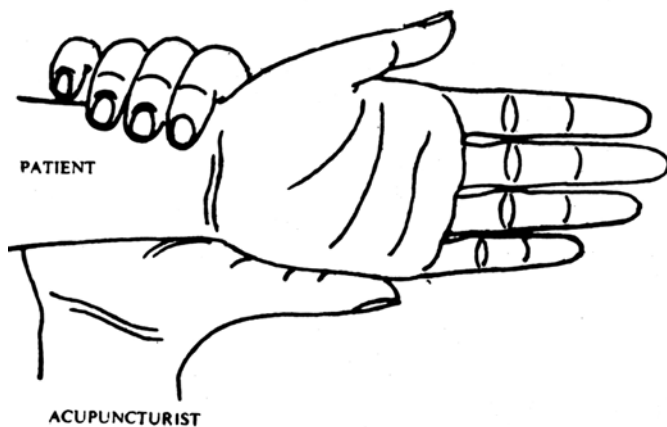


Figure 4-11.

Feeling the pulse:

The location for feeling the pulse is above the wrist, where the radial artery throbs. It is divided into three regions: cun, guan and chi. The region opposite the styloid process of the radius is known as guan, that distal to guan (i.e., between guan and the wrist joint) is cun and that proximal to guan is chi. The three regions of cun, guan and chi of the left hand reflect respectively the conditions of the Heart, Liver and Kidney, and those of the right hand reflect conditions of the Organs Lung, Spleen and Kidney.

In feeling the pulse, let the patient place the hand relaxed on a cushion, palm up. First locate the guan region with the middle finger, then put the index and ring fingers naturally on the cun and chi regions. Finger force is exerted first tightly, then moderately and finally heavily to get a general idea of the depth, frequency, rhythm, strength and form of the pulse. Any abnormal changes in any regions of the pulse should be detected exerting an even force thereafter by feeling the three regions separately and making, comparisons, in order to have a correct impression of the pulse as a whole.

A normal pulse is of medium frequency, i.e., 4-5 beats per breath, and regular rhythm. It is even and forceful.

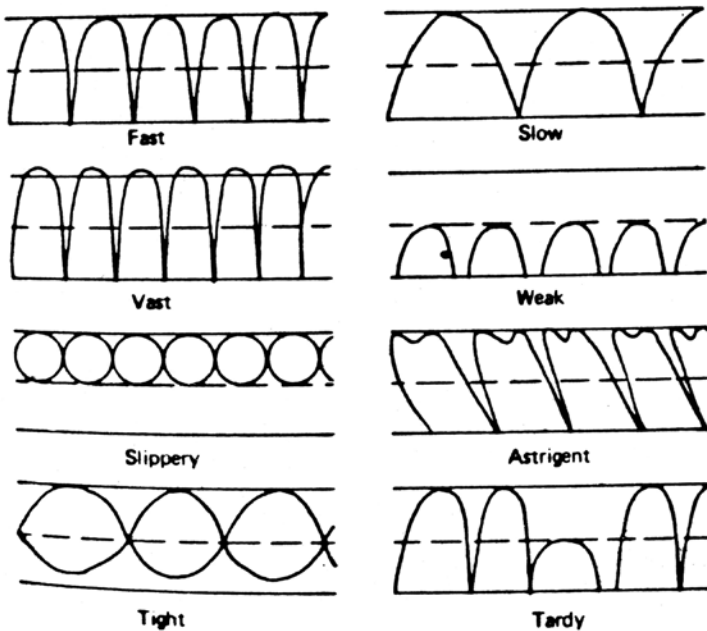
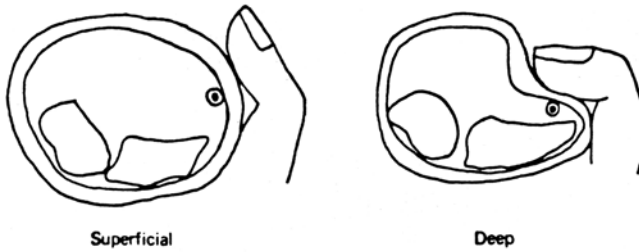


Figure 4-12: The Eight Ordinary Pulses

The mystery of pulse diagnosis is an art which cannot be learned by studying text-books, in as much as one cannot become a cardiologist 'by learning to read electro-cardioid-grams or text-books on the subject. The distinction between the qualities of the deep and

superficial pulses, for instance, requires a discriminative sense of touch and the ability to vary in a controlled manner the pressure exerted by the examining finger. This is a knowledge which may only be gained from experience at the bedside with the help of an experienced acupuncturist.



Radial Pulse

Figure 4-13.

TONGUE DIAGNOSIS

The different areas of the tongue reflect the state of the different Internal Organs as shown in the annexed diagram. The different colours of the tongue are also related to different Internal Organ disorders:

Colour	Internal Organ disorder
Red	Heart (L.) or Small Intestine (S.J.)
White	Lungs or Large Intestine
Green	Liver or Gall Bladder
Yellow	Spleen or Stomach
Black	Kidneys or Urinary Bladder

When examining the tongue the Yin or Yang nature of the disease may also be elucidated as follows:

Yin	Yang
Weak protrusion	Strong protrusion
Light coloured	Red or dark pink
Tooth marks at edges.	No tooth marks

The recent publication from China, *Essentials of Chinese Acupuncture*, Foreign Languages Press, Beijing, describes the pathological changes on the tongue as follow:-

Observation of the tongue:- Observation of the tongue, including the tongue proper and its coating, an important procedure in diagnosis by inspection. There is a close connection between the tongue and the zang-fu organs, channels, collaterals, qi, blood and body fluid. Any disorder of these may result in corresponding manifestation on the tongue. Indications of the nature of the disease can be learned by observing the colour, form and condition of both the tongue proper and its coating, and the motility of the tongue.

A normal tongue is of proper size, light red in colour, free in motion and with a thin layer of white coating over the surface which is neither dry nor too moist.

Below is described the main manifestations of abnormal (tongue) proper and of its coating, and their clinical significance:

1) Tongue proper:

- a. *Pale tongue.* A less than normally red tongue indicates syndromes of the xu or cold type caused by weakness of yang qi and insufficiency of qi and blood or due to the invasion by exogenous pathogenic cold.
- b. *Red tongue.* An abnormally bright red tongue indicates various heat syndromes of the shi type due to invasion by pathogenic heat and various heat syndromes of the xu type resulting from consumption of yin fluid.
- c. *Deep red tongue.* A deep red colour of the tongue occurs in the severe stage of a febrile disease in which pathogenic heat has been transmitted from the exterior to the interior of the body. It can also be seen in those patients suffering from a prolonged illness in which yin fluid has been exhausted and endogenous fire, which is of the xu type, is hyperactive.
- d. *Purplish tongue.* A tongue purplish in colour, or with purple spots indicates stagnation of qi and blood. It also indicates preponderance of endogenous cold due to xu (deficiency) of yang.

THE AREAS OF THE TONGUE CORRESPONDING TO THE INTERNAL ORGANS

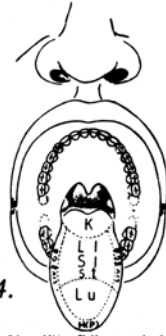


Figure 4-14.

Note: The Spleen and Urinary Bladder correspond to the areas of the Stomach and Kidney respectively.

- e. *Flabby tongue.* A tongue large than normal, flabby, and whitish in colour, sometimes with teeth prints on the border, indicates, xu (deficiency) of both qi and yang and retention of phlegm-damp in the interior. Flabby tongue deep red in colour indicates preponderance of pathogenic heat in the interior and hyperactivity of the fire of the heart.
- f. *Cracked tongue.* Irregular streaks or cracks on the tongue indicate consumption of body fluid by excessive heat, loss of the essence of the kidney and hyperactivity of fire due to xu (deficiency) or yin.

Congenital cracked tongue or a cracked tongue, without any morbid signs, are considered normal.

- g. *Thorny tongue.* The papillary buds over the surface of the tongue swollen up like thorns, and usually red in colour, indicate hyperactivity of pathogenic heat.
- h. *Rigid and tremulous tongue.* A tongue that is rigid and difficult to protrude, retract or roll, leads to stuttering and indicates invasion of exogenous heat and disturbance of the mind by phlegm-heat. It also indicates damage of the yin of the liver by strong heat which stirs up the wind, or obstruction of collaterals by wind-phlegm. The tremulous tongue seen in protracted illness often indicates xu (deficiency) of both qi and yin.

- i. *Deviated tongue.* This indicates obstruction of the collaterals by wind-phlegm.

2. Tongue coating:

- a. *White coating.* The tongue's whitish coating may be thin or thick, sticky or dry. A thin white coating is normal, but when it is seen in an exogenous disease, it usually indicates invasion of the Lung by wind-cold.

Thick white coating usually indicates retention of food. White sticky coating usually indicates invasion by the exogenous cold- damp or retention of phlegm-damp in the interior. Dry white coating usually indicates invasion by the pestilential factor.

- b. *Yellow coating.* A yellow coating on the tongue may be thin or thick, sticky or dry. A thin yellow coating usually indicates invasion of the lung by wind-heat, while a thickly yellow coating usually indicates persistent accumulation of food in the stomach and intestines. Yellow sticky coating usually denotes accumulation of damp-heat in the interior or blockage of the Lung by phlegm-heat. Dry yellow coating usually indicates accumulation of heat in the Stomach and Intestines which results in damage to the yin.
- c. *Greyish black coating.* A greyish black coating on the tongue may be moist or dry. Greyish black moist coating usually denotes retention of cold-damp in the interior or too much endogenous cold due to xu (deficiency) of Yang. Greyish-black, dry coating usually indicates consumption of body fluid by excessive heat or hyperactivity of fire due to xu (deficiency) of yin.
- d. *Peeled coating.* The tongue with its coating peeling off is known as a "geographic tongue." If the entire coating peels off leaving the surface mirror smooth, the condition is known as glossy tongue. Both manifestations indicate the crisis in a long illness in which the antipathogenic factor is severely damaged and the Yin is grossly deficient.

The abnormal changes of the tongue proper and coating suggest the nature and change of disease from different aspects. Generally speaking, observations of the changes in the tongue proper is mainly to differentiate whether the condition of the zang-fu organs, qi, blood and body fluid is in xu or shi state; while observation of the tongue coating is for judging the condition of pathogenic factors. Comprehensive analysis of the changes in both the tongue proper and its coating is therefore necessary when a diagnosis is made by observations of the tongue.

Attention should be paid to the exclusion of false phenomena, such as the tongue proper becoming red and the coating thinner after eating or drinking hot beverages. Some food and drugs colour the tongue coating, e.g., olive, mulberry or plum may give it a greyish black hue; liquat, orange, coptis or riboflavin may make it yellow. Those who smoke or drink alcohol or tea often have a thick yellow or greyish yellow tongue coating. As observation of the colour, of both the tongue proper and its coating, is an important procedure in diagnosis; it is desirable that it be done in daylight.”

THE CIRCULATION OF VITAL ENERGY (Qi)

The circulation of energy is the central thesis of the universalistic Chinese philosophy, on which acupuncture is based. According to this philosophy the universe is in a state of cosmic energy flux. Energy exists in every material and living organism. Energy is transformable from one state to another and may exist even in the non-material state as well (e.g. Tao). These ancient metaphysical concepts, in many respects, show remarkable similarities to the present day Laws of Thermodynamics, and in certain features even anticipated the relativity theories of Einstein. Whereas Einstein hypothesised regarding the energy changes in the external world, the Chinese philosophers concentrated on the internal energy balances of the body in order to understand disease and the life processes.

The basic difference between the orientation of scientific Western medicine and traditional Oriental medical philosophy is that the former is orientated to the biochemical changes in the body, whereas, the latter deals essentially with the energy imbalances in the body. While the therapeutics of Western scientific medicine are concerned mainly with altering the disease state by chemical means, acupuncture seeks to normalise the pathology by correcting the energy imbalances.

CIRCULATION OF Qi IN MERIDIANS:-

In twelve meridians there are three phases of circulation.

First phase of circulation:-

It starts from the Lungs (Arm meridian of Tai Yin) and meets its coupled meridian i.e. large intestine (Yang ming of ami). Then it goes

up towards the head and circulates to the stomach meridian i.e. with the same name (Yang ming of leg), then it goes down towards the toes along the lateral side where it meets its coupled meridian i.e. spleen (Tai Yin of leg).

Second phase of circulation:-

From spleen (leg Tai Yin) Chi circulates towards the heart meridian (Arm Shao Yin) in the chest, then goes to the fingers, to the small intestine meridians (Arm Tai Yang) then rises upwards. From the head it goes towards the leg meridian of the same name i.e. urinary bladder meridian (leg Tai Yang) then to the (leg Shao Yin) kidney i.e. coupled meridian.

Third phase of circulation:-

From the kidney to the Pericardium then to San Jiao towards the Gall bladder to the liver. Then it goes back to the chest i.e. towards the lungs.

The following table represents the circulation of Chi:-



The general rules can easily be remembered if we adopt a posture by raising our arm above the head as shown in the fig Anteriorly are Yin.

The general rules can easily be remembered if we adopt a posture by raising our arm above the head as shown in the fig. 4-15 Anteriorly are Yin:

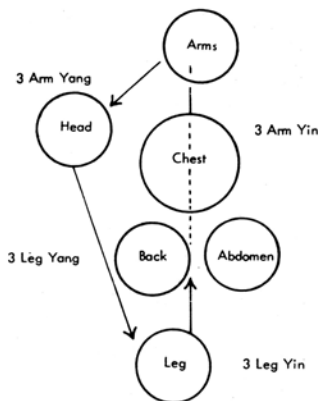


Figure 4-15.

TYPES OF QI:-

In the living organism the principal energy responsible for the life process, according to traditional Chinese medicine, is called Qi or vital energy. The circulation of blood and vital energy, according to the Huang Di Nei Jing, is responsible for the vital functions in man and animals. There are many facets or subdivisions of the vital energy. The main subdivisions of the vital energy are described in the classical texts as follows:-

- 1) Ku Qi :- Physiological energy derived from the essences of food.
- 2) Zeng Qi (Essential Qi) :- Lung energy derived from the Ta Qi (the external energy from the inspired air).
- 3) Qin Qi (Clean, Qi) :- Nourishing energy originating in the Lungs from Ku Qi and Ta Qi. Qin Qi circulates in the Internal Organs.
- 4) Jeng Qi :- Energy from Qin Qi, stored in the Kidneys.

- 5) Jing Qi :- Energy circulation in the Channels, the Collaterals and muscular Channels.
- 6) Xian Tian Qi :- Inherited ancestral energy.
- 7) Yuan Qi (Source Qi) :- The active part of the Xian Tian Qi.
- 8) Ying Qi (Nutrient Qi) :- This is formed from essential substances in the vessels and supplies the viscera.
- 9) Wei Qi (Defensive Qi) :- This is also formed from food and circulates mainly in the soft tissues such as skin, subcutaneous tissues and muscles. It defends the body against the exogenous aetiological factors of disease.

The three levels of Qi:-

There are two main levels of circulating vital energy in a living organism:-

- (a) the superficial energy circulating in the Channels.
- (b) the deep energy circulating in the Internal Organs.
- (c) there is also a third energy stratum permeating the muscular meridians diffusely like a capillary network, nourishing the soft tissues and the supporting structures like bone and cartilage.

The superficial energy circulates mainly in the 12 Channels in a cyclical manner-(a 24 hours circadian cycle, biorhythm). The peak of the flow takes 24 hours to complete the full cycle through the Twelve Channels-(the Organ-Clock). The flow of energy in both the Du and Ren Channels is in an upward direction. Internally the energy descends in both Channels from mouth to anus. According to some

authorities, the energy flow in the Du and Ren Channels occurs in the manner of a figure of eight, and takes 24 hours to complete one cycle. The Internal Organ energy circulates in the sequence of the Five Elements through the Internal Organs and it also exhibits a 24 hour cycle (the phenomenon of circadian rhythm).

THE ENERGY CIRCULATION:-

Although the circulation of energy in the Channels and Internal Organs is considered as “within a closed system”, this is not strictly so, as there are constant energy exchanges with the exterior (with the rest of the universe) as follows:-

- 1) Energy is added on continually to the body by such processes as breathing (Ta Qi), food (Ku Qi). radiation from the external world (mainly via the acupuncture points).
- 2) Energy is continually lost by processes such as sweating, defecation, urination, other excrescences and by radiation to the exterior.

The food enters the Stomach. The digestion occurs by the activity of the Spleen (the Spleen-Pancreatic complex). The metabolic energy of the food, the Ku Qi, enters the Five Element circulation via the Spleen and reaches the Lung. There it combines with the inspired energy, the Ta Qi, and forms the intrinsic Lung energy known as Zong Qi. From the Lung energy originates the energy known as Qin Qi, which circulates in the 5 sets of Internal Organs. The Qin Qi circulates from Lung-Kidney-Liver-Heart- Spleen and back to the lung. (A parallel circulation also occurs in the same sequence through the corresponding Yang Organs). As it circulates a part of this energy is stored as a reserve energy (Jeng Qi) in the Kidney to be mobilized in states of stress. According to several ancient classics, the circulation of energy obtains its propulsive force from the respiratory movements of the lungs.

As the Internal Organs communicate with the Channels, a part of this Jong Qi is shunted by each Internal Organ to circulate in the related Channel as Jing Qi, the circulating energy of the channels.

THE PRINCIPLES OF ENERGY TRANSFER IN ACUPUNCTURE THERAPEUTICS:-

- 1) When transferring energy, the shortest possible pathway is followed. Tonification (bu) must be used in preference to sedation (xie) as it is a more acceptable procedure for the patient.
- 2) Vital energy flows in the Channels and Organs in a “clock-wise” direction. A back-flow does not occur (except to a limited extent in the Coupled Channels). Imbalances in Channels or Internal Organs may be either in the nature of an excess or a deficiency.
- 3) Adjustment of an imbalance in a pair of Coupled Channels or Coupled Organs may be carried out at their communicating points: the Luo-Connecting points (and also at the Yuan-Source points, used as supplementary points).
- 4) The Channels and Organs form a separate “closed” energy system from a thermodynamic point of view. If there is a deficiency in one channel or internal Organ then an excess exists in another, either evident or latent.
- 5) If a Channel is deficient, it may be corrected by energy drawn from its mother. The mother, in due course, will replenish the temporary deficit so created from the point of excess via the natural biorhythmic flow.
- 6) If the deficient Channel commences in the face or the chest region then the point of entry of its circulating energy is the acupuncture point number one (i.e. in a centrifugal Channel).
- 7) If the deficient Channel commences in the hand or foot region then the point of entry of energy is the Luo-Connecting point (i.e. in a centripetal Channel).
- 8) In a deficiency of a Channel, the needling is carried out on the son channel at the points described at paragraphs 6 or 7 above. The technique (polarity) of stimulation is tonification (bu).

- 9) Energy may be transferred from one Internal Organ to another along the pathways of the Sheng and/or Ko Cycles using the Five-Shu (Five element) points. (Energy cannot be transferred in the reverse direction of either of these cycles).
- 10) The Sheng or Ko cycle energy transfers should not be used to treat acute disorders. In acute conditions symptomatic points must first be used to allay the acute presenting symptoms, e.g., in fainting use sedation at Jing-Well points, in severe pain use the analgesic points such as Hegu (L.I. 4); in an acute attack of bronchial asthma use the Xi-cleft point Kongzui (Lu. 6). In a chronic disorder manifest in a single Internal Organ, the point of choice is the Yuan-Source point.
- 11) The commonest clinical presentation is a deficiency of an Internal Organ together with an excess of its Coupled Organ, or an excess in its Mother Organ.
- 12) Energy must be so transferred in order that the deficiencies are first corrected. (Note:- Excesses must not be dispersed by sedation, but rather transferred to the deficient internal Organ by tonification of the deficient Internal Organ).
- 13) Where the deficiency and excess exist between two Coupled Organs the Luo-Connecting point of the Channel of the deficient Internal Organ is used. The technique of stimulation used is the tonification (bu) method
- 14) Where the deficiency and excess is distributed between two Yin (or two Yang organs) the following procedures may be used:-
 - a) When the Sheng cycle is used: The Channel pertaining to the deficient Organ is needed. The point selected is that Shu point (Five Element point) which corresponds to the excess Element. The technique of stimulation is tonification (bu).
 - b) Energy is transferred along the Ko cycle to an Internal Organ where there is an excess of energy. The incoming energy along the arm of the KO cycle neutralizes this

excess. The Channel of the receiving Internal Organ is needled. The point needled is that Element point which corresponds to the donor Internal Organ. The technique of stimulation is tonification (bu).

- 15) When treatment is carried out using the Five-Shu points (the Sixty Command Points or the Five Element points) the pulse need to be checked at every stage in order to ensure that the desired energy transfers are, in fact, taking place.
- 16) If a deficiency (or excess) is discovered only in a single Internal Organ, a “latent excess” (or a “latent deficiency”) exists in another Organ, frequently in the coupled Organ or the mother Organ. Often this assumption needs to be made when carrying out treatment.
- 17) The Horary point may be used in treating a Channel or an Internal Organ disorder at the relevant time, of the day, e.g. Jingqu (Lu. 8) at 3 a.m. Where there is excess, sedation is used. In insufficiency tonification is used. As the relevant time is inconvenient, the diametrically opposite time may be used on the point of the diametrically opposite channel of the Organ Clock (e.g., the water-Urinary Bladder Channel for Metal-Lung disorder) with the opposite technique of stimulation.
- 18) In checking the pulses for energy imbalances or their correction it is important to be aware of some of the common clinical pitfalls which may cause normal (physiological) or abnormal variations of the pulses such as:
 - a) Lack of sleep or a change of the diurnal rhythm e.g, jet-lag, night worker, long distance longhaul drivers.
 - b) Anxiety of the patient, emotional disturbances.
 - c) Full urinary bladder.
 - d) Hungry patient, over-eating, alcohol intake.
 - e) Immediately following sexual intercourse.
 - f) Acute illness, inflammatory disorder.
 - g) Severe pain due to any cause, shock, exposure to cold.

- h) Pregnancy.
 - i) Drugs.
 - j) Surgery or other trauma.
 - k) Anatomical abnormalities.
 - l) Endocrine disturbances.
 - m) Senility.
 - n) Climacteric.
 - o) Physical exercise and several others.
- 19) The Bu method is always preferable to Xie. The Sheng cycle transfers are preferable to Ko cycle transfers.
- 20) In transferring energy the Great Law of Bu-Xie has to be strictly adhered to at all times.

THE GREAT LAW OF BU-XIE

When needling is carried out, it is done in conformity with the Great Law of Bu-Xie.

- i) Bu is used in Xu disease.
- ii) Xie may be used in Shi Disease with acute symptoms Bu is the re-inforcing, or the tonification method. It is carried out by weak stimulation at the acupuncture point to increase the energy.

Xie is the reducing, dispersing or the sedation method. It is carried out by strong stimulation at the acupuncture point to decrease the energy.

Xu diseases are:-

Yin
Interior
Cold
Deficient
(Hypofunctional, Hypoactive,
disorders).

Shi diseases are:-

Yang Exterior
 Exterior
 Hot
 Excesses
 (Hyperfunctional, Hyperactive,
 painful disorders).

The Classical Procedures:

Bu	Xie
1) Using a gold needle.	1) Silver needle.
2) Insert during inspiration.	2) Expiration.
3) Along the direction of the energy flow.	3) Against the direction.
4) Rotating anti-clockwise.	4) Clockwise.
5) With little force.	5) Forcefully.
6) Retain long.	6) Short retention.
7) Remove slowly.	7) Rapidly.
8) Closing the hole.	8) Leaving the hole open.
9) Massage the hole.	9) No Massage.

These classical methods are not always strictly adhered to by the modern acupuncturists.

Note:

- A. The patient preference is Bu because it is a less uncomfortable procedure.
- B. The use of the Ko cycle can bring about many complications e.g. impotence following treatment of migraine, headaches after treatment of lung disorders, death following treatment of heart disorders and so on.

**ACUPUNCTURE
AND
RELATED
TECHNIQUES**

ACUPUNCTURE & RELATED TECHNIQUES

- I Ear Acupressure (Auriculotherapy)
- II Scalp Acupuncture.
- III Wrist & Ankle Acupuncture.
- IV Nose Acupuncture.
- V OTHER ANCILLARY TECHNIQUES OF ACUPUNCTURE
 - A. MECHANICAL METHODS
 - 1) Acupressure
 - 2) Massage
 - 3) Exercise Therapy
 - 4) Periosteal Acupuncture
 - 5) Surgical Suture Embedding
 - 6) Three-edged Needle Bleeding Therapy
 - 7) Plum-Blossom Therapy
 - 8) Embedding Needle Therapy
 - 9) Relaxation Therapy
 - 10) Foot-Therapy (Zonal Therapy)
 - 11) Penetration Puncture
 - 12) Strong Stimulation Technique
 - 13) Cupping
 - B. HYDROTHERAPY
 - Aquapuncture (Point Injection Therapy).
 - C. HEAT
 - 1) Hot Needle.
 - 2) Moxibustion.

- 3) Radiant Heat (Electrical Moxa).
 - 4) Akabane Method (A Diagnostic Procedure).
- D. COLD (Cryopuncture)
- E. LIGHT
Laser Beam Therapy,
- F. SOUND
Sonopuncture
- G. ELECTROTHERAPY
- 1) Electro-acupuncture, (Electro-anaesthesia)
 - (a) Low Frequency continuous
 - (b) High Frequency discontinuous
 - (c) Ultra High Frequency dense-disperse
 - 2) T,E.N.S. (Transcutaneous Electro-Neuro-Stimulation).
 - 3) Dorsal Column Stimulation.
 - 4) Vol Acupuncture (EAV) – Electro-Acupuncture according to Voll.
 - 5) Ryodoraku (Nakatani).
 - 6) Epidural puncture (Salim).
- H. MAGNETISM
Magnetotherapy
- I. ANCILLARY DRUGS
Ginseng

Note: Only important techniques will be discussed here, but the students of acupuncture should know about all these different methods and their application.

AURICULOTHERAPY

(Ear Acupuncture)

It is being used widely not only in the Orient but also it has gained wide popularity in the West. In France, the Nogier school of Ear Acupuncture is well known. In West Germany the Munich Auriculotherapy Association counts over 4000 members.

Auriculotherapy can be defined as that branch of acupuncture which makes use of the external ear to diagnose as well as to treat illness. According to the Yellow Emperor's Classic of Internal Medicine "the ear is the place where all the channels meet". The relationship between organs, channels and points were described clearly in several of the ancient classics.

At the Institute of Physiology in Shanghai, it has been demonstrated in animal experiments that when a lesion is caused in the stomach of an experimental rabbit, there is a fall of electrical resistance in the "stomach area" of both auricles. An artificial gastric ulcer can be created in an animal by injecting phenolphthalein under the submucosa. As the lesion heals the electrical resistance reverts to normal. This effect cannot be demonstrated if the auricle is completely denervated or local anaesthetic injected at the root of the auricle.

Since 1966 auriculotherapy is being widely used in all parts of the People's Republic of China both for therapy and anaesthesia. By and large it is a more effective form of acupuncture therapy than body acupuncture in internal organ disorders. There are many acupuncture institutions in the West, particularly in West Germany and France, where only auriculotherapy is carried out. Paul Nogier of France has done much work to elucidate the problems of auriculotherapy. Auriculotherapy may be combined with both Body acupuncture and Head-Needle Therapy where indicated.

The external ear has an external (or yang) surface and an internal (or yin) surface, also called the back of the auricle.

The distribution of auricular points on the yang surface simulates a foetus within the womb with a head presentation (i.e. in an upside

down position). The lobe represents the facial area, the anti-tragus the head and the antihelix the trunk as shown in the accompanying diagrams.

There are some 200 acupuncture points on the ear. The important points used frequently in therapy are described only.

THE ANATOMY OF THE EAR

The ear is skin covered fibro-cartilaginous plate moulded so that the concavities on its lateral aspect are convexities on its inner or cranial surface.

The anatomical parts of the external ear are as follows:-

A. The Lateral or Anterior surface (Yang):

1. **Helix**
The prominent rim of the auricle.
2. **Helix crus**
The interior end of the helix, a horizontal prominence.
3. **Auricular tubercle (Darwin's tubercle)**
A small tubercle at the posterior upper aspect of the helix.
4. **Helix cauda**
A small inferior end of the helix at the junction of the helix and the lobule.
5. **Antihelix**
A curved prominence opposite to the helix. Its upper part branches out into the superior and the inferior antihelix crus.
6. **Triangular fossa**
The depression between the two crura of the antihelix.
7. **Scapha (deltoid fossa or scaphoid fossa)**
The roughly triangular depression between the helix and the antihelix.

8. **Tragus**
A small curved flap in front of the auricle covering the meatus.
9. **Supratragic notch**
The depression between the helix crus and the upper border of the tragus.
10. **Antitragus**
A small tubercle opposite the tragus and inferior to the antihelix.
11. **Intertragic notch**
The depression between the tragus and the antitragus.
12. **Lobule**
The lower part of the auricle where the cartilage is absent.
13. **Cymba conchae**
The concha superior to the helix crus.
14. **Cavum conchae**
The concha inferior to the helix crus.
15. **Orifice of the external auditory meatus**
The opening in the cavum conchae is shielded by the tragus.

B. The medial or Posterior surface (Yin). The medial surface faces the mastoid area.

The lobe of the ear is without cartilage and may be freely hanging or attached to the side of the cheek, The helix or incurving margin curves down as the crus of the helix across the well of the concha, the rim of which is the anti-helix. The crus helix divides the concha into two forming the superior and the inferior crura; these two form the two boundaries of the triangular fossa. The helix forms the third side of the triangle. The tragus and the anti-tragus overhang the lower part of the concha, with the inter-tragic notch placed between them. The supratragic notch lies above the tragus. The groove between the helix and the antihelix is the scapha.

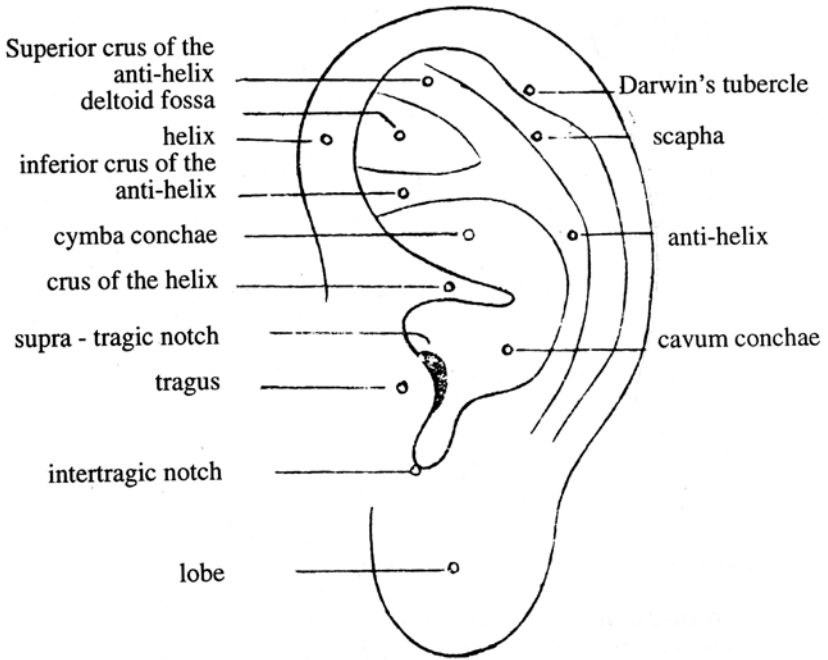


Figure 5-1: The lateral surface of the left external ear (Yang surface)

The Nerve supply of the Ear: The ear is supplied by the following nerves:

- Auriculo-temporal nerve.
- Lesser occipital nerve
- Great auricular nerve.
- Auricular branch of the vagus.
- Auriculo-temporal branch of the trigeminal nerve.
- Branches of the glosso-pharyngeal and facial nerve.
- Sympathetic and parasympathetic fibres.

The Blood Supply of the Ear:

- Branches of middle meningeal artery.
- Branch of the artery of the pterygoid canal.
- Anterior tympanic artery.
- Deep auricular artery.
- Stylomastoid branch of the posterior auricular artery.
- Auricular branches of the superficial temporal artery.

COMMONLY USED AURICULAR AREAS AND POINTS

THE OUTER SURFACE OF THE AURICLE (YANG SURFACE)

The Ear Lobe

The ear lobe represents the Face Area. The ear lobe can be divided with 3 horizontal lines and 2 vertical lines, into 9 areas.

AREA 1 and AREA 4: Anaesthetic points for tooth extraction and analgesic points for toothache. Area 1 represents the Teeth of the Upper Jaw and Area 4 represents the Teeth of the Lower Jaw.

AREA 2: The middle of this area represents the Tongue. The upper part of this area is the Hard Palate and the lower part the Soft Palate.

AREA 3: Represents the Jaws. In conformity with the position of the upside-down foetus, the position of the jaws are reversed, The upper border of Area 3 represents the Lower Jaw and the lower half of this area represents the Upper Jaw.

AREA 4: This area is in the middle of the ear lobe and represents the Eye. Also note that areas Eye I and II on both sides of the intertragic notch represents the eye. Eye I is especially effective for astigmatism and Eye II for glaucoma.

AREA 5: Represents the Inner Ear. It is useful in the treatment of inner ear disease; it can also be used in vertigo, dizziness, travel sickness, nausea and vomiting of pregnancy. A press needle in this area is very helpful in such disorders.

AREA 6 and AREA 9: Have no identifiable points.

AREA 7: Represents the Tonsils and Throat.

Facio-Mandibular

Facio-Mandibular Area: This is an oval area lying between the Area 5 and 6 extending a little beyond. This area is useful in the treatment of facial paralysis, trigeminal neuralgia and sinusitis.

The Tragus

Represents the Nose and P/4mj1nxAreas.

- a) **Lateral Aspect:** At the centre of the lateral aspect is the External Nose Area.
- b) **Medial Aspect:** Just opposite the centre of the external auditory meatus is the Pharynx Point. Below this point is the Internal Nose Area.
- c) **Border of the Tragus:** On the free border of tragus at the lowest part is the *Adrenol Point*. Between the adrenal point and the external nose area is the *Hunger Point*. This point is used for treating obesity.

The Anti-Tragus

Corresponds to the head regions.

- a) **Lateral aspect of anti-tragus:**
Forehead Area: Junction of Area 2 of lobe with anti-tragus, *Occiput Area:* Superior part of anti-tragus.
- b) **Free margin of anti-tragus:**
Point Dingchuan – (Dingchuan in Chinese means “Soothing

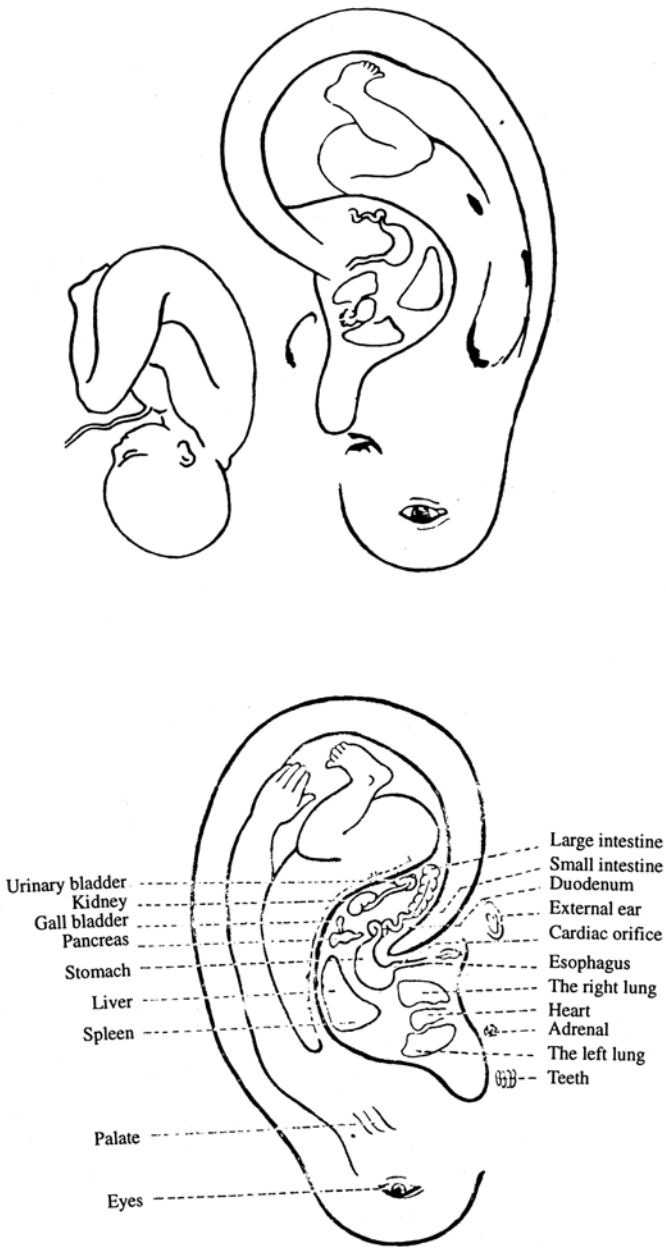


Figure 5-2.

Asthma^o). This point is at the apex of the anti-tragus and is for soothing asthma. Needling of this point is an acute bronchial asthmatic attack helps to control the asthmatic attack. A press needle in this position also helps to prevent attacks.

Brain Stem: Junction of the anti-tragus and anti-helix.

Brain Point: Midpoint between the point Dingchuan and point Brain Stem. This point is also known as the Encephalon point.

- c) **Medial aspect of Anti-tragus:** *Subcortex* is situated on the medial wall of the anti-tragus.

Testis or Ovary: Lower part of Subcortex Area. This area is adjacent to the *Endocrine Area* located in the inter-tragic notch.

The Anti-Helix

The anti-helix corresponds to the *Trunk*. At the posterior end of the junction of the anti-helix and anti-tragus is the Neck Area. The inferior crus of the anti-helix corresponds to the *Gulteal Region* and *Thigh*. The superior crus of the anti-helix corresponds to the lower extremity below the knee. In the anti-helix, the trunk and the leg are represented with the foetus facing posteriorly. Therefore the anterior margin of the anti-helix represents the *Spine Area* (with the cervical, dorsal, lumbar and sacro-coccygeal areas from below upwards).

The Inferior Crus and Superior Crus of Anti-Helix: The posterior half of the inferior crus represents the *Buttock Area* with the *Hip Joint Area* on the superior border adjacent to this Area. The anterior half represents the *Lumbo-Sacral Plexus* and the *Sciatic Nerve Area*. The middle one third of the upper groove of this area is the *Constipation Area*. At the division of the anti-helix into the superior and inferior crus is the *Knee Area*. The *Leg Area* is represented in the superior crus of the anti-helix with the *Toe Area* uppermost.

The Helix

The prominence on the helix at about the 2 O`Clock position (left ear) is called the Darwin's tubercle. It represents the *Zang-Fu Organs*. It may be used to treat internal organ disorders, as a tonification and a homeostatic point,

The Crus of the Helix

This represents the *Diaphragmatic Muscle*. The internal organs of the thorax are therefore represented inferior to the crus of the helix and the abdominal organs are represented superior to the crus of the helix in the concha. Similarly the level of the crus helix divides the anti-helix spine area into the *Cervical* and *Throacic Spine Area* below, and the *Lumbar* and *Sacro-Coccygeal Areas* above, in keeping with the representation of an upside down foetus. The posterior borders of these two areas correspond *respectively to the Thoracic Wall and Abdominal Wall Areas*.

The Scapha

The scapha represents the upper limb. Just above the point Neck is the *Clavicle Area*. From this area upwards on the scapha up to the level of the crus of the helix, represents the *Shoulder Joint Area* and *Shoulder Area* respectively in that order. At the level of the inferior end of the inferior crus of the anti-helix is the *Elbow Area*. At the level of the inferior end of the superior is crus is the *Wrist Area*. The superior-most area of the *Scapha* the *Fingers Area*. Between the Shoulder and Elbow area is the *Upper Arm Area*; between the Elbow and the Wrist is the *Forearm Area*; between the Wrist and the Fingers is the *Hand Area*. The line of the Scapha continued downwards between the lobe and the anti- tragus is known as "*The Line of Sound*". It represents auditory functions and is useful for treating deafness, tinnitus and Meniere's disease.

The Triangular Fossa (Deltoid Fossa)

This is a triangular area bounded on the 3 sides by side (1) the helix, side (2) superior crus of the anti-helix (inferior border) and side (3) inferior crus of the anti-helix (superior border). The most important and frequently used point in auriculotherapy is the *Point Ear Shenmen*, This point is located at the junction of the last 2 sides described above. This point has strong sedative and analgesic effects. It is the equivalent of Baihui (Du 20) of body acupuncture. In addition it has a wide-spectrum of physiological effects.

A line tangential to the same two sides which meets on the anti-helix is known as the *Hot Point*. The point is used in treating febrile illness. It is particularly effective and useful in treating fevers in toxic states of infants and children.

At the junction of side (1) and side (2) is the *Blood Pressure Lowering Point (Hypertension Point)*.

On the middle 1/3rd of side (3) of the triangular fossa is the Constipation Point. Immediately lateral (posterior) to this area is the *Hip Joint Area*.

At the junction of side (1) and side (3) is the *Sympathetic Point*.

The midpoint of a line between the Lowering of Blood Pressure Point and the Sympathetic Point is the *Uterus Point*. (In males this point represents the prostate gland and seminal vesical areas).

The Cavum Conchae

The deepest point of the cavum eonehae is the *Heart Area*. This is posterior to the external auditory meatus.

The posterior 1/2 of the line between the external auditory meatus and the heart area represents the *Trachea*. The *two Lung Areas* are superior and inferior to the heart area. The lower lung area represents the lung of the same side.

The area of the cavum conchae between the tragus and anti- tragus is divided into an upper half which is the area for the *Body Cavities (Sanjiao)* and a lower half the *Endocrine Area*.

The area at the lower rim of the external auditory meatus represents the *Upper Abdominal Wall Area*. The area at the upper rim of the external auditory meatus represents the *Lower Abdominal Wall Area*.

The Mouth Area lies immediately superior and posterior to the external auditory meatus. Between the Mouth Area and the lower border of the crus helix lies another Hunger Point (named alter Wou Wei-Ping of Taipei. This point is also used extensively in Western countries for the treatment of obesity).

The *Oesophagus Area* runs along the line from the mouth area to the Stomach Area just below the lower margin of the *Diaphragm*. Posterior to the area of the termination of the crus helix is the Stomach Area. Between the *Stomach Area* and the anti-helix is the *Spleen Area*.

The Cymba Conchae

The Stomach Area continues over into the cymba conchae above the upper border of the crus helix. The organs are represented from posterior to anterior in their usual order - *Duodenum*, *Small Intestine*, *Appendix* and *Large Intestine Area*. On the helix immediately next to (in front of) the Large Intestine Area is the *Rectum*. Just above the representation of the gastro-intestinal tract are represented in the cymba conchae the rest of the intra-abdominal organs in the following order: The *Liver*, *Gall Bladder*, *Pancreas*, *Kidney*, *Ureter* and *Urinary Bladder*. The *Urethra* is situated on the helix at the level of the Urinary Bladder. (Note: The pancreas is represented only on the left ear and the gall bladder in the right ear, in the same situation). The *External Genitals* are represented in the anti-helix just above the Urethra Area. Between the upper pole of the Kidney and the Small Intestine Areas is the *Ascites Point*. This point is used in oedema and ascites.

THE BACK OF THE AURICLE (YIN SURFACE)

There is a groove in the back of the ear (medial surface) corresponding to the scapha. This is the *Groove for Lowering Blood Pressure*. The rest of this area is indistinctly divided into 3 areas known as the *Upper*, the *Middle* and the *Lower portions of the Back*. These 3 areas correspond to the relevant areas of the back of the trunk and area used for treating spinal disorders of the respective areas.

The auricular points described are those which are frequently used at the Academy of Traditional Chinese Medicine, Peking.

The points of the French School of Auricular Therapy as described by Paul Nogier varies in some detail, especially in the deltoid fossa area.

THE EXAMINATION OF THE EAR

- 1) **Inspection** - All areas of the ear must be examined in a good light. Certain skin changes such as excoriation, vesicles, inflamed areas, may be seen. These are known as reaction points and often have some relation to the disorders of internal organs or regions represented by these areas.
- 2) **Tenderness (Palpation)** - Reaction points can be found by pressing the ear with the reverse end of an acupuncture needle or a matchstick.
- 3) **Electro-Exploratory Technique** - With a suitable electrical detector the entire ear must be explored in a set order. The skin resistance of an area may be lowered when there is dysfunction of the corresponding organ. Overall there is about 90-95% concordance between the auricular reaction to various disorders. It is most accurate in internal organ disorders. The Five-Element relationship also holds good in auricular diagnosis.

RULES FOR THE SELECTION OF POINTS IN AURICULO-THERAPY

- 1) Organ affected.
e.g. Lung Area for bronchial asthma. Stomach Area for gastritis.
- 2) Coupled Organ.
e.g. Large Intestine Area for bronchial asthma. Spleen Area for gastritis.
- 3) Functions affected.
e.g. Blood Pressure Lowering Point in hypertension. Hunger Points for obesity.

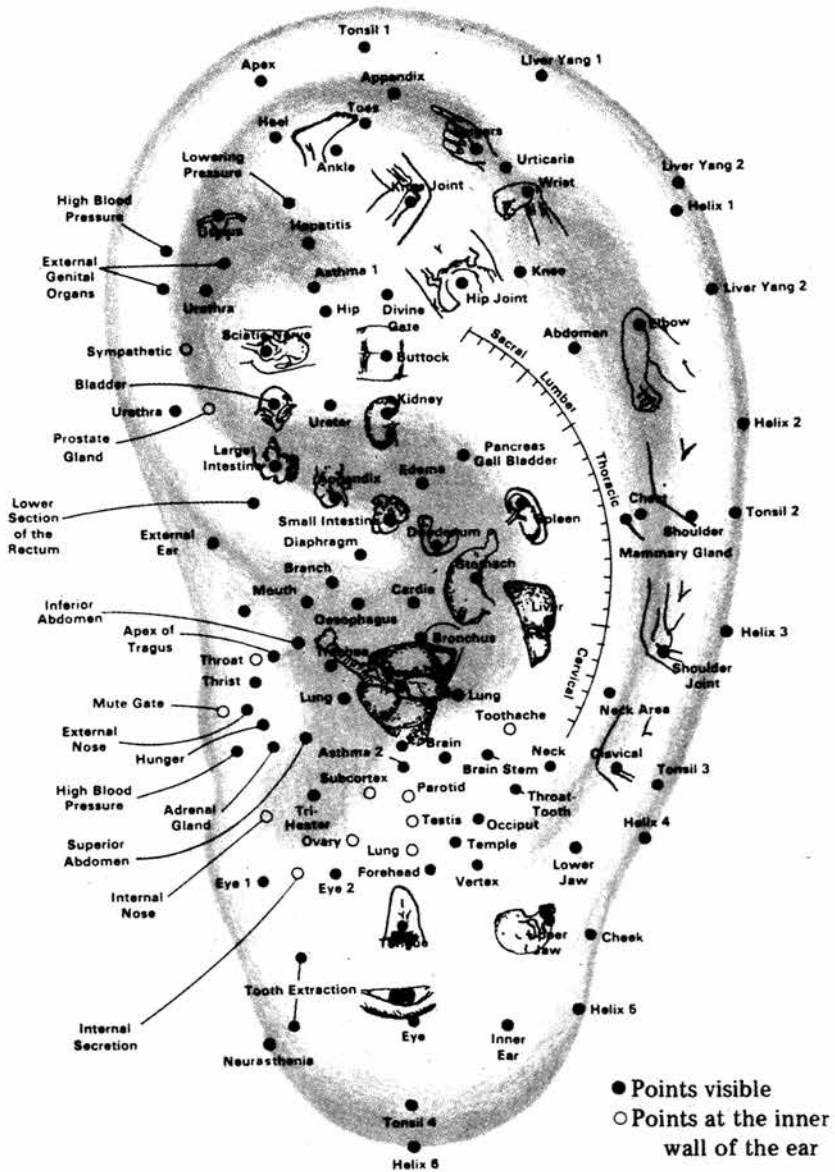


Figure 5-3: Distribution of ear Points (courtesy of Chan's Corporation, Alhambra, CA)

- 4) According to the Theory of traditional Chinese medicine relationships.
e.g. Liver Area in eye disease and musculo-tendinous disorders.
Lung Area in skin disease and rhinitis.
Kidney Area in ear disease, bone disease and alopecia.
- 5) According to the Theory of Five-Elements.
e.g. Kidney Point for acute bronchial asthma.
(Water is the son of metal)
Kidney Point for anxiety syndromes.
Water quenches the fire).
- 6) Specific points for a disorder.
e.g. Hot Point for fever.
Point Dingchuan for relieving asthma.
Ascites Point for oedema and ascites.
- 7) Points according to Western Medicine.
e.g. Point Pancreas for diabetes mellitus.
Endocrine point for endocrine disorders.
- 8) Points selected (reactive points) in an individual case by:-
 - a) Inspection
 - b) Palpation
 - c) Electrically reactive points.
- 9) Point Shenmen - This point has a broad-spectrum action. It is the best sedative and analgesic point of the ear and is therefore invariably combined with other points in most diseases.
- 10) Point Endocrine - This area is often very useful when the patient has been on medication for a long period before commencing acupuncture. The point is particularly helpful in overcoming the effects of prolonged steroid therapy and its withdrawal effects. The Tragus Point and the Zang-Fu are also very useful general points for the establishment of homeostasis in various disorders.

THERAPEUTICS

The commonest disorder treated with ear acupuncture is bronchial asthma. Points usually selected are Shenmen, Lung, Large Intestine, Dingchuan and Endocrine. The Sympathetic, Tragus or Adrenal points may also be useful. Author also uses Stomach point for weight reduction, and lung point for addiction.

Some of the points used in common diseases are outlined here:

Headache: Subcortex, Forehead, Occiput.

Hypertension: Groove for Lowering Blood Pressure, Heart, Ear-Shenmen.

Insomnia: Ear-Shenmen, Heart, Forehead or Occiput, Subcortex.

Hysteria: Heart, Subcortex.

Gastralgia: Stomach, Duodenum, Sympathetic Point, Abdomen.

Hiccough: Diaphragm.

Diarrhoea, constipation: Large Intestine, Lower Portion of Rectum, Spleen, Sympathetic Point.

Bronchial asthma: Dingchuan, Lung, Adrenal.

Tertian malaria: Adrenal, Subcortex, Endocrine.

Acute sprain or contusion: Auricular points corresponding to the affected area, Subcortex, Ear-Shenmen.

Sprained neck: Neck or Cervical Vertebrae, tender spots, reactive points. Shoulder and Clavicle.

Sciatica: Sciatic Nerve, Buttocks, Ear-Shemen or Subcortex.

Acute orchitis: Testis, External Genitalia, Liver.

Post-operative analgesic points: Subcortex, Ear-Shenmen, auricular points corresponding to the operated region.

Dysmenorrhoea: Uterus. Endocrine, Liver.

Enuresis, retention of urine: Urinary Bladder, Kidney, Urethra.

Herpes zoster: Auricular points corresponding to the affected areas, Adrenal.

Urticaria: Lung, liver. Spleen.

Acute conjunctivitis: Ear, Liver, Ear apex.

Hordeolum: Eye. Liver, Eye I, Eye 2.

Acute pharyngitis: Pharynx area.

Impaired hearing: Internal Ear, Kidney.

Note: For anaesthesia, ear acupuncture is also used, tubal ligation and during child birth it is quite useful.

THE PROCEDURE EAR NEEDLING

Remember:-

- 1) To clean well the ear before acupuncturing.
- 2) Not to penetrate the cartilage.
- 3) To use short needles which have been properly cleaned and sterilized.
- 4) Not to needle the inner (Yin) and outer (Yang) surfaces of the same ear, at the same sitting.

In the practice of Chinese auriculotherapy steel, single-spiral, filiform needles are used. In the French School of Acupuncture, steel, gold, silver and molybdenum needles are used. The order of placing the needles is generally immaterial in the former school, while the latter school lays great stress on the correct order of needle placing and their removal.

The needles may be inserted perpendicularly or obliquely. When inserted perpendicularly the needles should hang by the skin and should not penetrate the cartilage. The cartilage is relatively avascular and any injury or infection may have very serious consequences.

The needles after insertion are left for about 30 minutes in place. If stimulation is desired electro-manipulation is used. When there is distension or soreness felt at the site of the needle the therapeutic result is usually better.

The treatment is carried out daily or every other day for 15 days. Thereafter a 1(-)15 days rest period is given and the patient reviewed.

The results obtained with auriculotherapy are, by and large, better than with body acupuncture in internal organ disorders. It is often useful to combine both types of acupuncture if the response is inadequate.

Note: In many Western auriculotherapy societies the ear acupuncture points are numbered. Unfortunately there is much divergence between the numbering adopted by the German schools and the North American auriculotherapist. In order to preserve some unity in practice it is now considered more suitable to use that name of the regions and of the specific ear points.

SCALP ACUPUNCTURE

There are 15 stimulation areas in scalp acupuncture. Although they are called “areas”, they are in fact extremely narrow bands of varying length, and it is along these lines that the needles are inserted.

The locations of the 15 stimulation areas of scalp acupuncture and their therapeutic indications are as follows:

To perform scalp acupuncture (head needle therapy) effectively the acupuncturist should locate the treatment areas with a great deal of accuracy. For this purpose there are four important lines of reference which must first be outlined on the surface of the scalp. These are:

- 1) The *Antero-Posterior Midline* which is a line drawn in the sagittal plane, from the nasion (midpoint between the two eyebrows) to the lower edge of the external occipital* protuberance.
- 2) The *Supercilio-Occipital Line (Eyebrow-Occiput Line)* which is a line drawn obliquely downwards from the upper border of the midpoint of the eyebrow to the tip of the external occipital protuberance, on the lateral side of the head. There are therefore two of these lines, one on each side of the head.
- 3) The *Horizontal Line* on the back of the head at the level of the external occipital protuberance.
- 4) The *Anterior Hair Line* which is 3 cun above the eyebrows.

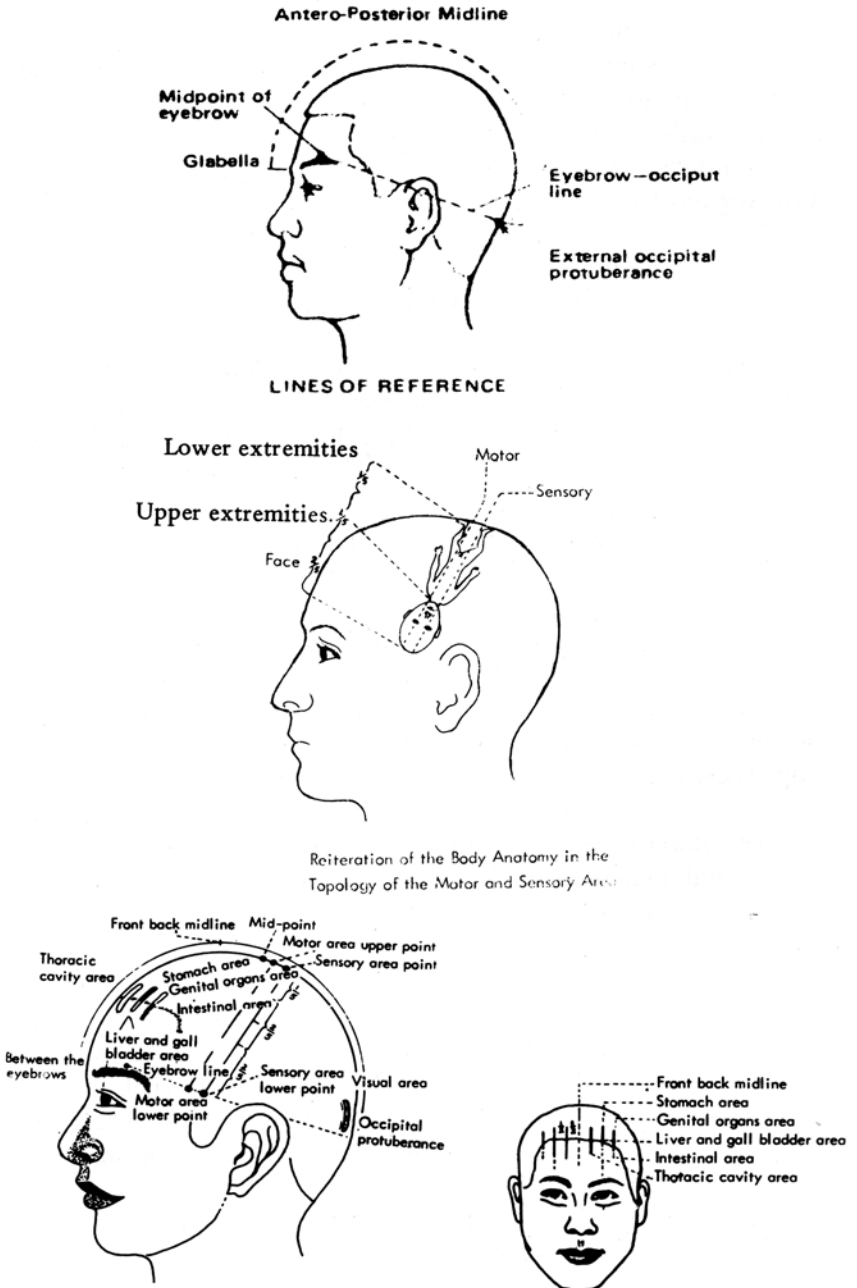


Figure 5-4: Localization of the Lateral and Anterior Stimulation Areas

	AREA	LOCATION	INDICATION
I	Motor Area	A line connecting 2 points called the upper and lower points of the Motor Area. The upper point is situated on the antero-posterior midline. 0.5 cun behind its midpoint. The lower point of the Motor Area is the point in the temporal region where the supercilio-occipital line intersects the anterior hairline	Motor paralysis of the contralateral side
I (a)	Lower limb and trunk area	Upper fifth of Motor Area	Paralysis of contralateral lower limb
I (b)	Upper limb Area	Second and third fifths of Motor Area	Paralysis of contralateral upper limb
I (c)	Facial area (also called 1 st Speech (Area)	Lower two fifths of Motor Area	Paralysis of face (opposite side), motor aphasia, dribbling saliva, impaired speech.
II	Sensory Area	A line parallel to and 1.5 cm posterior to the Motor Area	Sensory disorders of the contralateral side.
II (a)	Lower limb, head and trunk area	Upper fifth of Sensory Area	Low back pain (opposite side), numbness or paraesthesia in that area, occipital headache, stiff neck, vertigo
II (b)	Upper limb area	Second and third fifths of Sensory Area	Pain, numbness or other paraesthesia of contralateral upper limb.
II (c)	Facial area	Lower two fifths of Sensory Area	Migraine headache, trigeminal neuralgia, toothache (opposite side), arthritis of the temporomandibular joint
III	Choreo-Tremor Control Area	Parallel to and 1.5 cm anterior to Motor Area	Syndenham's parkinsonism, athetosis, tremors, palsy and related syndromes
IV	Vasomotor Area (also alled Vasoconstriction and Vasodilatation Area)	Parallel to and 1.5 cm anterior to Choreo-Tremor Control Area	Superficial oedema, hypertension

	AREA	LOCATION	INDICATION
V	Foot-Motor Sensory Area	A line 3 cm long and parallel to the antero-posterior midline, its midpoint 1 cm away from midpoint of antero-posterior midline	Paralysis, pain or numbness of contralateral lower limb, acute lower back sprain, nocturnal enuresis, prolapsed uterus
VI	Auditory Area (also called Vertigo-Auditory Area)	A horizontal line 4 cm long, its midpoint 1.5 cun above the apex of the ear	Deafness, tinnitus, vertigo, Meniere's syndrome
VII	2 nd Speech Area	A vertical line 3 cm long, parallel to the antero-posterior midline, its upper end 2 cm postero-inferior to the parietal tubercle	Nominal aphasia
VIII	3rd Speech Area	A horizontal line 4 cm long drawn posteriorly from the midpoint of the Auditory Area	Sensory (receptive) aphasia
IX	Area of Application (Usage Area)	At the parietal tubercle three needles are inserted inferiorly, anteriorly and posteriorly to a length of 3 cm with 40 degree angles between them	Apraxia
X	Visual Area B	A line 4 cm long drawn upwards and parallel to the antero-posterior midline from a point 1 cm lateral to the external occipital protuberance	Cortical (central) blindness
XI	Balance Area (Equilibrium Area)	A line 4 cm long drawn downwards and parallel to the antero-posterior midline from at point at the level of the external occipital protuberance 3.5 cm (1) lateral to the midline (1) 3 cm according to College of Traditional Medicine, Nanking.	Loss of balance due to cerebellar disorders Disorders of the upper abdomen and general malaise
XII	Stomach Area (Gastric Area)	A line 2 cm long drawn directly backwards and parallel to the antero-posterior midline from a	

AREA	LOCATION	INDICATION
	point on the anterior hairline vertically above the pupil of the eye	
XIII Thoracic Cavity Area	A line 4 cm long, parallel to the antero-posterior midline, with its midpoint at the anterior hairline, midway between the Stomach Area and the midline	Chest pain, palpitation, shortness of breath, bronchial asthma
XIV Reproduction Area (Genital Area)	A line~4 cm (2) long, parallel to the antero-posterior midline, drawn directly backwards from the anterior extremity of the Stomach Area at the same distance with separate the Stomach Area from the Thoracic Cavity Area (2) 2 cm, according to College of Traditional Medicine, Nanking.	Impotence. ejaculatio praecox, functional uterine haemorrhage also used for surgery for prolapsed uterus combined with Foot-Motor Sensory Area
XV Hepatocystic Area (Liver and Gall Bladder Area)	A line 2 cm long extending anteriorly from the Stomach Area	Pain or discomfort in the epigastrium and right hypochondrium, diseases of the liver and biliary system

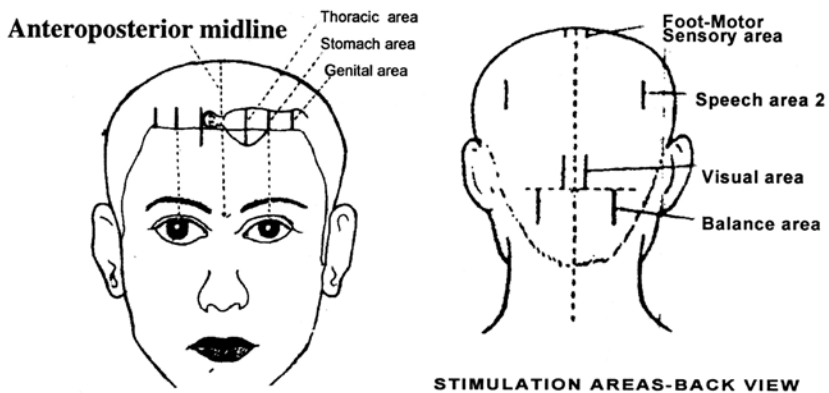


Figure 5-5: Reiteration of the Body Anatomy in the Topology on the Anterior Area

WRIST AND ANKLE ACUPUNCTURE (WAA)

Concept:

Wrist and ankle acupuncture is the latest advancement in the field of acupuncture. It was discovered in 1966 in Army Medical College Shanghai. (Author had his training in acupuncture in this hospital when he visited China second time), Certain points are selected on wrist or ankle which correspond to certain points of the body and disease of that particular area are treated. Wrist and Ankle acupuncture is used in common functional diseases, but some chronic diseases has also been treated. It is convenient to apply and there is less discomfort to the patient. There is no Teh-Chi (Deqi) Sensation. This method is still new and it is getting popular in many hospitals in China.

In Shanghai many neurophysicians first found that these points had useful properties. They put electrode on Nei-Kuan_ Wei-Kuan and San Yin Chiao points and cured diseases. Electrode were tied around wrist and each point correspond to same area on the body. When electrode was applied on ulnar side of the wrist then frontal headache was cured (that is first point) but other headaches were not cured. When the electrode was moved in the centre of the wrist i.e. Nei-Kuan side, then the temporal headache was cured. So after repeated experiments six areas were found on the wrist and similarly six points were found on the ankle. In 1972 the electrode were replaced with needles. They were applied vertical, obliquely and now finally they are inserted subcuticularly i.e. just under the skin in horizontal fashion.

Characteristics:

It is a simple method and easy to apply and easy to learn. It is convenient for the patients, they can do their jobs while needles are in situ. It is safe & there is no pain during needlings, and many patients prefer this method of acupuncture.

Therapeutic effects are good, especially in headaches, toothache, neuralgia, joint pains, lumbago, dysmenorrhoea, other diseases with pain syndromes, salivation, enuresis, pruritis, insomnia. asthma etc.

Wrist and ankle acupuncture has no long lasting effects. In some diseases it does not work, so further study and research is required in this field.

Areas of wrist and Ankle acupuncture:

The body is divided into two parts vertically then each part is further divided into six regions.

1st region:-

Head, neck, and tonsil. On the face it is the area between the two outer canthus of the eye, so it includes forehead, eyes, nose, mouth, tongue, pharynx, trachea, oesophagus, heart and central strip of the abdomen including organs lying under this area.

2nd region:-

This includes the area between the line drawn vertically from outer canthus of eye and temporal region. It includes cheeks, posterior teeth, lower jaw, mammary region, lungs and two sides of the abdomen i.e. flanks. First and second regions are the ones commonly used.

3rd region:-

It is small area, a narrow strip in front of ears, goes down along the anterior axillary line. Exact measurement of this region is not known, however it is a very small area and a few diseases are related to this region.

4th region:-

This strip connects anterior area with posterior area of the body, vertex, ear, midaxillary lines area is included in this region, it also include lateral side of the lower limb and front of the foot. This area may be chosen for treating ear diseases.

5th Region:-

It is just opposite to the second region i.e. laterally over the back extending upto medial border of the scapula. It includes a part of head and neck, whole scapular area, and back of the limbs. Like second region it is also commonly used.

6th region:-

It is between the two scapular medial margins extending up and down. It includes occiput, back of the neck, vertebral column including sacrum and perineum.

Method of divisions around wrists and ankles:

Distribution of these six areas in four limbs is simple. Extend the both arm facing palm anteriorly & join the ulnar sides together, and similarly join the heels together and medial side of the foot facing anteriorly. So area can be marked in this position.

Points on wrist and ankle represent the same diseases according to the distribution of the regions.

(a) WRIST POINTS:-

These points are located 2 cun i.e. three fingers breadth above the wrist crease. They are also known as upper points.

Wrist point No. 1.

It is situated on the ulnar side in the line of little finger 2 cun above the wrist fold, just anterior to the ulnar border.

Wrist point No. 2.

It is just over the Nei-Kuan point, i.e. middle of the forearm 2 cun above the wrist fold anteriorly.

Wrist point No. 3.

It is located lateral to radial artery

Wrist point No. 4.

It is situated over the lateral border of the Os radius in line of thumb.

WRIST & ANKLE ACUPUNCTURE

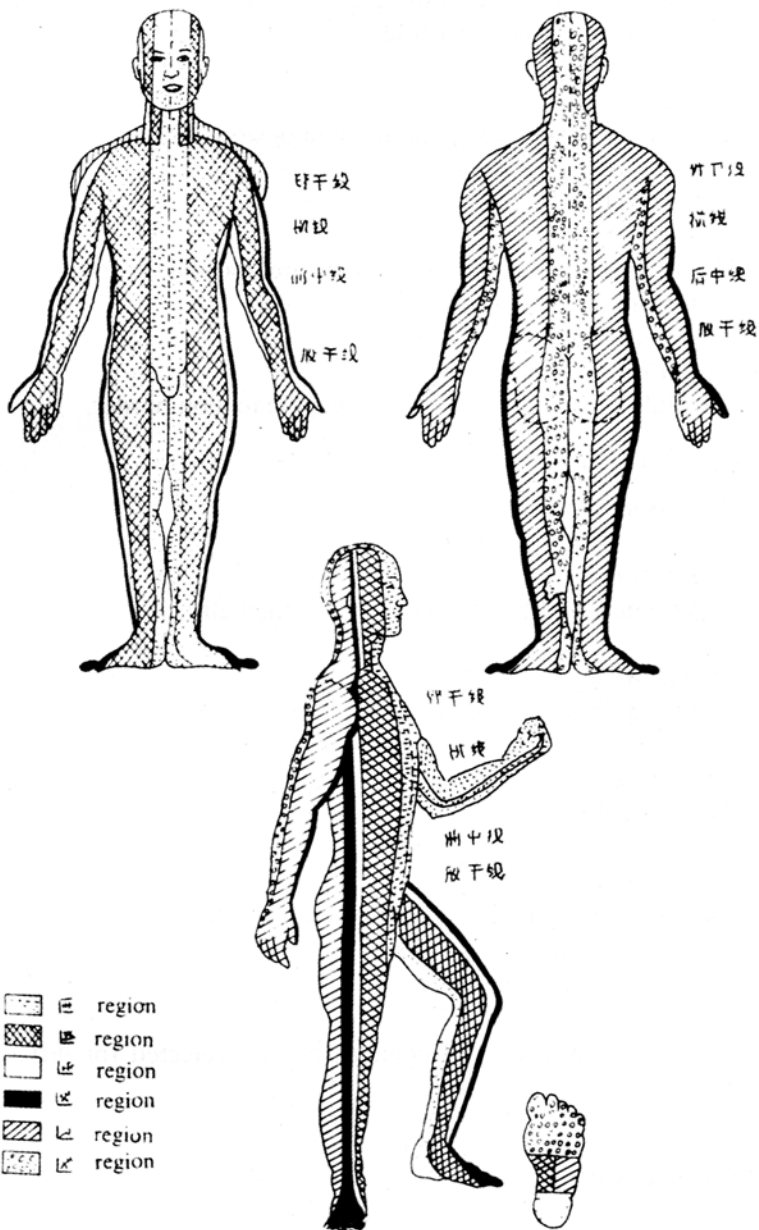


Figure 5-6.

Wrist point No. 5.

It is located over Wei-Kuan point i.e. middle of the back of the forearm 2 cun above the wrist fold.

Wrist point No. 6.

Opposite to first wrist point on ulna posteriorly.

(b) **ANKLE POINTS:-**

There are six ankle points, they are located 3 cun i.e. four fingers breadth above the malleolus.

Ankle point No. 1:

Medial to tendo Achilles just along the tendon border.

Ankle point No. 2:

Over San Yin Chiao i.e. SP-6.

Ankle point No. 3:

Over anterior of tibia just one finger medially.

Ankle point No. 4:

Between tibia and fibular border. Ankle point No 5:

Opposite SP-6. Ankle point No. 6:

Opposite to 1st point lateral to tendo Achilles.

Relation of points with diseases:-

On wrist and ankle, different points are selected for different diseases.

INDICATIONS:

For diseases of the upper part of the body wrist points are selected and for lower parts, Ankle points are selected. Puncture left or right side

or front and back according to the diseased area. Thoraco abdominal diaphragm is the dividing line of the body. Corresponding points are selected.

Wrist and Ankle point No. 1:-

It is selected for frontal headache, eye diseases, blocked nose, insomnia, toothache (incisors), glossitis, salivation, sore throat, trigeminal neuralgia, hiccough vomiting, bronchitis, fullness of chest, hypertension, tachycardia, dysmenorrhoea, gastritis, leucorrhoea, enuresis, retention of urine.

Wrist and Ankle point No. 2:-

Migraine, posterior toothache, cervical lymphadenitis, chest pain, asthma, mastitis, pain chest, to stop lactation in mothers.

Wrist and Ankle point No. 3:-

It is used in hypertension, pain medial side of the knee joint.

Wrist and Ankle point No, 4:-

Vertex headache. tinnitus, deafness, shoulder pain anteriorly paralysis of lower limbs,

Wrist and Ankle point No 5:-

Posterior headache, pain shoulders (laterally), restricted movements of the shoulder joint, lumbar pain etc.

Wrist and Ankle point No. 6:-

Occipital headache, stiff neck, hiccough, acute lumbar sprain sciatica.

Some times bilateral wrist point No.1 is selected when disease has no specific localization e.g., insomnia, pruritis, hypertension,

night sweats etc. In paralysis and chorea wrist point No.5 and ankle point No. 4 is selected bilaterally or unilaterally.

Needling Methods:

Thin and fine needle of 4 cun, length is selected. The direction of the tip of the needle depends on the site of the disease, tip is directed towards the affected area. Avoid vein or artery underneath. When point is located it is pricked up or downwards but not side to side. Hold the needle with three fingers and fix the point, and prick the point at 30 degree angle and rotate needle while pricking. Once the skin is punctured make 180° angle and push the needle just under the skin and leave 1 cun exposed as needle is pushed under the skin it is felt. Needle goes easily under the skin. There is no sensation of Teh-Chi (Deqi) (Soreness, distension, numbness and swelling). If patient feels pain it means needle is too deep then withdraw the needle slightly and push again with slight change of direction.

Retain the needle for 30 minutes. This procedure is done once a day for 15 days and press the point after withdrawal of the needle.

Therapeutic effects:

Acute lumbago may be cured with only one sitting in some cases. In other diseases symptoms may be reduced or subside gradually, such as in headaches, leucorrhoea, many courses are needed. Recurrence may occur, but after prolong treatment disease may get cured e.g. arthritis of shoulder joint etc. Repeated treatments may be required in hypertension for nocturnal enuresis in children etc.

So treatment with wrist and ankle acupuncture depends upon nature of the disease, for chronic cases alternate day and for acute cases daily treatment is required.

Main function of the Wrist and Ankle Acupuncture (WAA) is to relieve pain syndromes. It can not give complete cure to organic diseases but pain can definitely be reduced. Author uses WAA as an

additional methods to body acupuncture. WAA is still under research.

NOSE ACUPUNCTURE

Nose acupuncture is a new entity. It is simple and there is less needling response. Teh chi (Deqi) is slow, manipulation method is same. Points on nose are easy to remember. Human body is reflected on nose as shown in the figure. It is related to all the organs of the body. Needling of nose acupuncture point can cure diseases of the corresponding organs, and it can also be applied in anaesthesia. In 2nd Army Medical College Shanghai 212 cases were done, results were noted that Nasal acupuncture had better analgesic effect in surgery of head and neck.

Like body, ear, scalp, wrist and ankle this microacupuncture of nose is also becoming popular. Many authorities have described microacupuncture system in sole of foot, palm of the hand and other region of the body, better than other micro systems.

Point Selection: Since nose is the external orifice of the lungs so it is said to be related to all organs of the body. In selecting points the lung point is always included. For example for gastrectomy operation select point stomach and lung. Two or three points are selected according to the location of the operation or disease.

5 fen to 1 cun size needle is selected, manipulation is done gently and slowly. Electrical stimulation can also be applied. Needle is inserted 15 degree to 25 degree inclined with the skin. Frequency of stimulation is usually 200 cycle per minute to produce analgesia, and duration of manipulation is 30 minutes.

Point Distribution:- There are total 38 points of the nose, they are distributed along three vertical lines. Among 38 points 15 are bilateral.

Divisions of Areas of nose: Three lines are drawn as under:-

First Line:- The points are distributed from frontal sinus to the tip of the nose. Along this line there are 10 points.

Second Line:- It is parallel to the first line at zygomatic level, it ends at ala nasi on each side. There are five points on each side.

Third Line:- It starts from medial border of the eyebrow 1-2 cm lateral to the second line and ends at the nasal root. There are 9 points on each side.

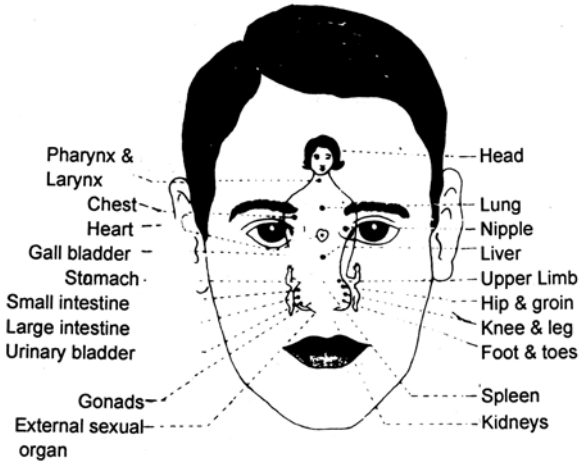


Figure 5-6: Nose Micro Acupuncture System

Points along First Line:

<i>Points</i>	<i>Location</i>
1. Head and Face	Centre of the forehead.
2. Throat	Just below the point head, midway lung & face.
3. Lung	Between two eyebrows.
4. Heart	Centre of the two eye canthus.
5. Liver	Centre of the cheek bone.
6. Spleen	Between heart and perineum point.
7. Kidney	Centre of spleen and perineum point.
8. Perineum	At nasal tip.
9. Ovary & Testis	On each side of the perineum.

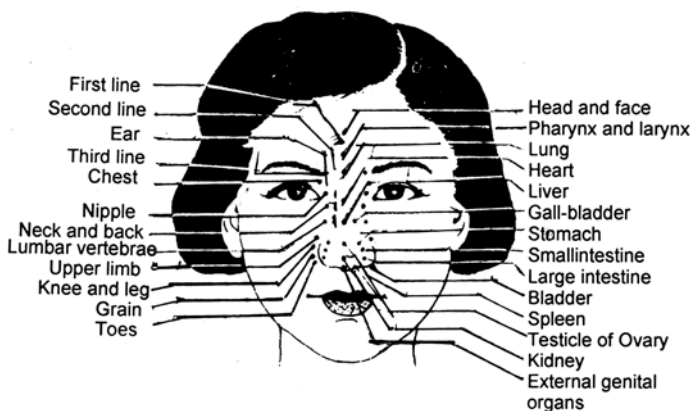


Figure 5-7: Point Distribution in the Nose Micro-Acupuncture System

Points along Second Line:

<i>Points</i>	<i>Location</i>
1. Gall Bladder	Lateral to point liver.
2. Stomach	Lateral to point spleen.
3. Small Intestine	1/3 rd upper ala nasi.
4. Large Intestine	Central of ala nasi.
5. Urinary Bladder	Base of ala nasi.

Points along Third Line:

<i>Points</i>	<i>Location</i>
1. Ear	Medial end of eyebrow.
2. Chest	Centre of breast and ear point.
3. Breast	Parallel to heart.
4. Back	Between breast and waist point.
5. Waist	Parallel to liver
6. Upper Limb	Parallel to spleen.
7. Hip	Parallel to upper 1/3 ala nasi.
8. Knee	Parallel to large intestine point.
9. Feet	Parallel to urinary bladder point.

OTHER ANCILLARY TECHNIQUES

A. MECHANICAL METHODS

1. Acupressure, 2. Remedial Massage and 3. Exercise Therapy:-

Acupressure is a very useful form of acupuncture therapy particularly in emergencies in the field, when needles are not available. It is the first line of treatment in acute emergencies accompanied by shock and collapse or unconsciousness. The procedure is to apply firm finger-pressure in an obliquely upward direction at the point Renzhong (Du. 26.) or other Jing-Well points. Acupressure at certain points may be used to carry out tooth extractions or other minor surgery such as an incision of an abscess or the suture of a superficial injury. It is quite useful in army field area and in play ground.

Acupressure forms the basis of the martial arts (karate, judo, etc.). Remedial massage was a recognized modality of treatment during the Han and Tang dynasties and was taught as a popular subject in the ancient medical schools. Later it declined in popularity but has now been revived again as an auxiliary method of therapy. There are two chief methods of massage — the An-mo consisting of ‘pressing and rubbing’ and the Tui-na method consisting of ‘thrusting and rolling?’

Exercise therapy usually follows massage. It is widely practised by the Chinese both in health and disease. The content and scope of the exercises are much wider and sophisticated than today’s modern physiotherapy regime prescribed for patients. The ancient Chinese traditional physician on account of his preventive outlook always prescribed exercises for his clients in order to keep them healthy. Tai-Chi is a special Chinese exercise routine recommended for everyone to stay healthy. Tai-Chi exercises bring the body into harmony with the universe. Detail is not possible in this book.

4. Periosteal Acupuncture

This is a technique where a filiform needle is inserted over a bone to touch the periosteum and then lifting and thrusting are carried out.

This procedure is also known as “periosteal pecking”. It is particularly effective in chronic arthritic disorders. The tip of the coracoid process is a very effective point to be pecked in a frozen shoulder. The small joints of the hands and feet in rheumatoid arthritis are relieved of morning stiffness and pain with this procedure. Periosteal acupuncture in low-backache at the Ah-Shi points where the bone is subcutaneous is also helpful. A fair degree of mobilization of the spine is also possible in ankylosing spondylitis using this procedure. The author does not recommend this, as bone infection is a dangerous complication.

5. Surgical Suture Embedding Therapy

The object of this treatment is to cure or alleviate diseases by producing prolonged stimulation at one or more acupuncture points. By embedding a length of sterile catgut or silk at these points. It has been found effective in resistant cases of bronchial asthma, gastric and duodenal ulcer, impotence, pain in the lumbo-sacral region, sacro-iliac strain, other chronic locomotor diseases and for the sequelae of anterior poliomyelitis and similar motor disabilities.

The best method of embedding is to use a lumbar-puncture needle through which a piece of catgut about 1 cm. long has been threaded. The needle is introduced through the skin. Then through the stylet, the catgut is pushed into the tissues and the needle is withdrawn. In an alternative method, the catgut is embedded in the deeper tissues after a surgical incision. The latter method is more invasive.

Points commonly selected for embedding therapy are:-

- a) For bronchial asthma: Shanzhong (Ren 17), Dingchuan (Ex. 17).
- b) For gastric and duodenal ulcers: Zhongwan (Ren. 12) through to Shangwan (Ren. 13), Weishu (U.B. 21) through to Pishu (U.B. 20).
- c) For impotence: Qugu (Ren. 21).
- d) For lumbar muscle strain: Yaoyangguan (Du 3), Shenshu (U.B. 23). Ah-Shi points.

- e) Lumbo-sacral pain: Yaoyangguan (Du. 3). Dachangshu (U.B. 25) through to Guanyuanshu (U.B. 26), and the interspace S 2/3.
- f) Sacro-iliac strain: Yaoyangguan (Du. 3). Dachangshu (U.B. 25.) through to Guanyuanshu (U.B. 26.) Chengfu (U.B. 36), and the interspace 2/3.

This therapy should not be carried out in little children, old and debilitated patients, and in diabetics. Scrupulous aspesis must be observed throughout the procedure.

6. Three-edged Needle Bleeding Therapy:-

The three-edged needle is a special type of needle having a triple cutting edge which is used to cause bleeding or to perform scarification at certain acupuncture points. Bleeding of such points may be used for the purpose of resuscitation in acute emergencies, or it may be used as a curative measure in certain diseases.

In emergencies and acute conditions like convulsions, coma, unconsciousness, shock and collapse, cardio-respiratory distress, drowning, high fever and other emergencies it is best to bleed the Jing-Well points of the extremities by the 'prompt pricking method. In this method, the pricking is done very swiftly to a depth of about 0.1 cun and a few drops of blood are squeezed out from the point. In the treatment of diseases like dyspepsia of malnutrition in children, tonsilitis, conjunctivitis and the chronic psoriatic type of skin disorders, another method called the 'slow pricking method' is employed. Slow pricking is usually done at points like Chizc (Lu, 5) and Weizhong (U.B. 40). for skin diseases. The procedure adopted is to make a superficial vein over the selected acupuncture point prominent by constricting it proximally; it is then pricked slowly. The needle is punctured through the wall of the vein. After withdrawing the needle slowly the tourniquet is released and the bleeding is arrested by applying firm pressure with a piece of sterile cotton wool at the site of the puncture. (In modern acupuncture usually a syringe and an intravenous needle are used for the same purpose).

7. Plum-blossom tapping:-

The plum-blossom needle is a very useful device especially when treating young children, who may not take kindly to the insertion of filiform needles, as well as very old and debilitated persons.

The plum-blossom needle is made up of a long 'stem' (handle) and an 'holder' to which are attached 5 or 7 fine needles. These are known as the five star or seven star needles respectively; These needles cover an area of about 1 square centimetre, The technique used is to tap the selected region with this instrument using the wrist movement only. The tapping should be done rapidly and precisely with the tip of the points striking the skin perpendicularly. According to the condition of the patient, the degree of force exerted in tapping may be light, medium, or heavy. In the case of children, debilitated, old, and nervous patients, only light tapping should be employed. Heavy tapping should be used only in cases where the skin sensation is dull or when the patient is suffering from a very painful condition. Medium tapping will do in most other cases.

The indications for plum-blossom needle tapping are certain types of skin conditions (such as alopecia areata, leucoderma, neurodermatitis and erysipelas), asthma, migraine, neuralgia, arthritis, hemiplegia, chronic gastritis and chronic gynaecological disorders. It is also a very useful procedure for "breaking up" areas of stiffness and tender subcutaneous nodules, which often appear in the musculo-skeletal and rheumatic disorders.

In skin diseases like alopecia and leucoderma, the affected areas should be tapped until slight, redness occurs: after several such treatments are administered it is common to see re-growth of hair and re-pigmentation, which are probably due to the stimulation of the dormant hair follicles and the dormant melanin layer, Injury to the skin should be avoided when tapping.

In small children suffering from bronchial asthma, good results are obtained by tapping along the course of the Lung Channel and on the front-Mu and Back-Shu Points of the Lung. In migraine, neuralgia

and arthritis, tapping should be performed over the painful areas and the affected joints. Likewise in hemiplegia, tapping should be done over the course of the channels of the paralysed area of muscles.

For diseases of the Internal Organs and the nervous system tapping should be performed at the corresponding Huatuoji (Ex. 21) point of the back. Alternatively, the Back-Shu Points on the Urinary Bladder Channel corresponding to the Organ concerned may be used. For example, in liver disorders, tapping should be done at the point Ganshu (U.B. 18), which is the Back-Shu Point of the Liver. The site of tapping may also be selected on the basis of the therapeutic properties possessed by various specific points. For instance the points Zusanli (St. 36) and Neiguan (P. 6) may be used for chronic gastric disorders, while the point Zhongdu (Liv. 6) may be used for disease of the Liver. Another principle is to use local points for the disease of local and adjacent areas. Thus, tapping may be carried out at the lumbosacral region for low backache, at the neck for stiff-neck and at the intercostal spaces for disease of the chest wall such as sprain or strain of the chest muscles and for intercostal neuralgia.

Contra-indications are trauma, acute inflammations, and the presence of varicose veins, cutaneous ulcers, severe oedema, burns, infections of the skin such as scabies. In diabetics and those suffering from polyneuropathy and poor peripheral circulation plum-blossom needling should be avoided.

8. **Embedding Needle Therapy (Dermal Embedding Needles)**

Also called the press needle, intradermal needle and implanted needle, they come in several shapes depending on their use.

After the needles are in place, intermittent stimulation may be carried out by pressing on the needle for a few minutes several times day by the patient himself; hence they are also called 'press needles'. The thumbtack and fishtail types should be removed after one week in temperate countries. In the tropics, where there is much sweating and the possibility of infection is greater, the removal should be earlier.

The spherical press needles are much safe and may be left in situ for a few weeks. Aseptic precautions must, however, be scrupulously observed in order to prevent perichondritis of the auricular cartilage which can be a very serious complication. Embedding of needles is indicated in the treatment of chronic conditions like bronchial asthma, drug addictions obesity, migraine, low backache, pain of malignant diseases and travel sickness. If there is the slightest discomfort with an embedding needle, it should be immediately removed and the ear examined carefully in a good light.

9. Relaxation Therapy:-

A special 'relaxation method' for spastic muscles has been recently discovered using electrical stimulation at points Jizhong (Du. 6). And Yaoqi (Ex. 20). In paraplegia, cerebralpalsy, transverse myelitis and other spastic states this is a very effective method. This method has also been used to obtain relaxation of muscles during abdominal surgery. In the People's Republic of China it has been shown that using these points muscular relaxation was obtained during abdominal surgery.

10. Foot-Therapy or Zonal Therapy:-

This is a form of combined acupressure and acumassage used on the foot acupuncture zones. The use of a suitable cream to reduce the friction makes this a very pleasant form of therapy. It is particularly helpful in little children and elderly people. When carried out properly it is a very acceptable form of therapy. In Europe and North America reflexotherapy and zonal therapy is carried out widely by para-medical practitioners as this is a non-invasive procedure. It is useful in chronic painful disorders such as low-backache, migraine, and dysmenorrhoea. Bronchial asthma in little children also responds very well to this form of therapy. The tenderness of the respective zones may be used to diagnose internal organ disorders.

Many designs of acupressure pegs made out of wooden, bamboo, jade, silver and other exotic materials are available in some countries.

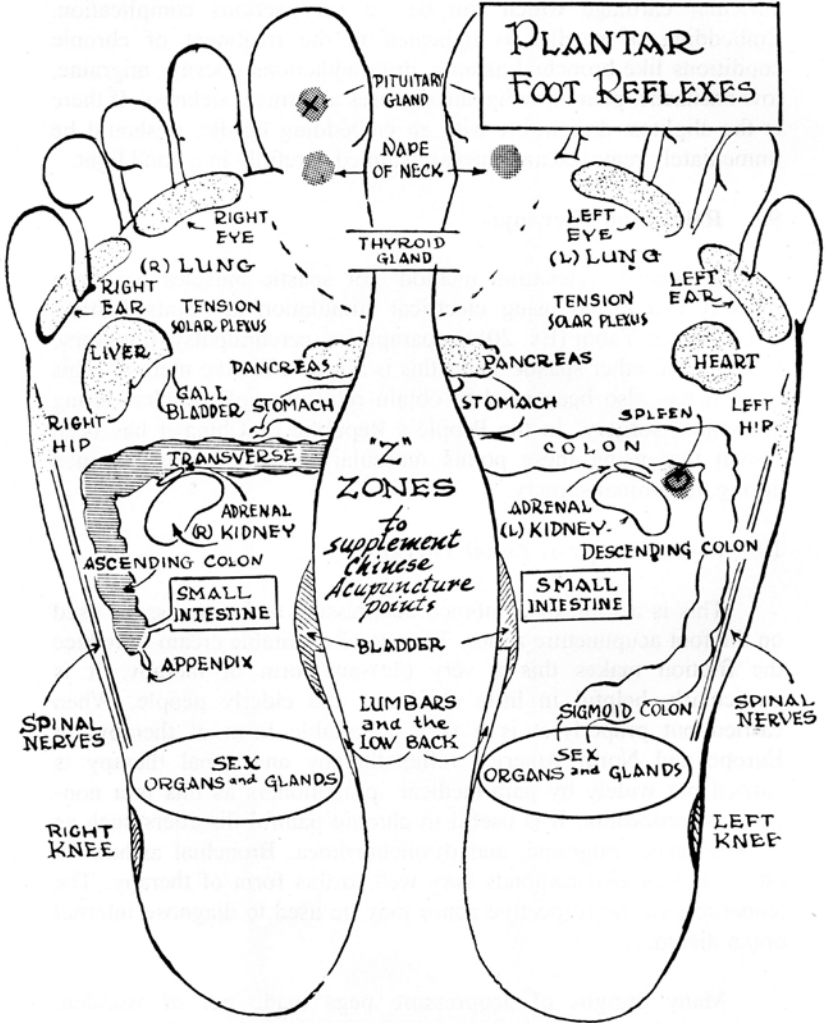


Figure 5-8.

11. Penetration Puncture:-

This is an old needle technique improved during the Cultural Revolution. The object of the method is to obtain maximal effect from two or more acupuncture points with a single needle insertion. It is named 'penetration puncture' or 'puncturing through technique' because the needle inserted at one acupuncture point is made to penetrate or puncture through another point or points in its path. For example the points Ermen (S.J. 21), Tinggong (S.I. 19), and Tinghui (G.B. 2) which are used in the treatment of many ear diseases, and may be punctured through with only one needle insertion made at Ermen (S.J.21.). Besides economising on tie and needles, this technique causes less inconvenience to the patient. And it is also believed to result in the potentiation by the combined effects of the points. Another example of penetration puncture is the practice of needling Dicang (St. 4) through to Jiache (St. 6) using a long needle. in cases of facial paralysis, facial hemispasm and trigeminal neuralgia.

Sometimes actual penetration of the second point is not carried out, but the needle is merely directed towards the latter location for some distance. An example of this is the puncturing of Neiguan (P. 6) through towards Waiguan (S.J. 5) as done in acupuncture anaesthesia.

Hegu (L.I. 4) towards Laogong (P. 8) and manipulation, is an important example of penetration acupuncture to relieve any acute pain.

12. The Strong Stimulation Technique:-

Strong stimulation is rapid manipulation of the needle by means of a combined manoeuvre involving simultaneous rotation, together with lifting and thrusting movements. This method is invaluable in the treatment of acutely painful conditions (and excess disorders), where immediate relief is desirable. This is also known as the 'sedation method orxie method.

To perform strong stimulation the needle should be inserted into the selected point with its tip embedded deep in underlying muscle.

Rotation ('twirling') of the needle at a rate of upto about 200 rotations per minute and with an arc of not more than 180 degrees is carried out. This may be combined with simultaneous lifting and thrusting movements of the needle at a rate of up to 200 per minute, the range of lift-trust being about 0.4-0.2 centimetres. The stimulation should be continued till the acupuncture sensation (deqi) is felt and repeated if necessary. Strong stimulation may also be carried out electrically using a voltage of about 10 volts and a frequency of over 200 pulses per second. In very severely painful disorders and during surgery frequency of up to 200 Hertz may be employed.

Relief of the pain by means of strong stimulation may be very dramatic in its effects on the patient, as well as on the on lookers. Acute pain as well as pain of long stranding durations, which has resisted all previous therapies could be effectively relieved by the use of this simple procedure.

Strong stimulation may also be carried out by inserting long thick needles along the channels. This particularly useful for paraplegia where such insertions are carried out along the course of the Stomach Channels or Urinary Bladder Channels.

Strong stimulation of acupuncture points, both for the relief of pain and for the improvement of motor function, is a significant advance in medical treatment for the rehabilitation of the pain ridden patient and those afflicted with crippling motor disorders. It has no doubt great therapeutic potential and is being extensively used in pain clinics, rehabilitation units and physio-therapy departments. Nerve can be exposed surgically and stimulated if necessary.

Cupping:-

Cupping is a method of stimulating the acupuncture points or areas by applying suction through a hollow vessel in which a partial vacuum has been artificially created. This procedure induces blood stasis or even blister formation at the site, thereby stimulating the acupuncture points.

In ancient times this method of treatment was called the 'horn method' (chio-fa). An animal horn with the tip cut off was inverted

over the selected site and suction applied through the hole at the top. After the air was sucked out, the hole was plugged with the finger and the horn kept in position for some time. Later on these horns were replaced by vessels made of bamboo, burnt clay, glass or ceramic. Today elegant spherical glass jars are used.

The method of cupping that is most commonly used today is to soak a cotton ball attached to a stick with alcohol, after which it is ignited, circled in the interior of the jar quickly and then withdrawn. Immediately after the jar is swiftly cupped over the skin surface. The partial vacuum so created helps the cup to get attached to the skin area by suction. It requires a swift technique to do this correctly and painlessly.

Cupping is an effective method of treating low backache, sprains and soft tissue injuries whenever the response to acupuncture and other forms of treatment is slow or inadequate. Cupping of the chest is also carried out to encourage the elimination of secretions from the lungs. Combined with postural drainage and deep breathing exercises, this procedure is very helpful. It is still popular in many Pakistani villages.

B. Hydrotherapy:-

Aquapuncture (Point-Injection Therapy):-

Point-injection therapy is a modern technique which combines traditional medicine and Western medicine. It consists of the injection of certain therapeutic drugs or distilled water into the acupuncture points, preferably at those points which exhibit pathological changes or manifestations of positive reaction to disease. The Back-Shu Points or Mu-Front Points, Alarm Points and the Ah-Shi Points are situations where such reactions are usually found, and they are commonly used for this form of therapy. When injected, a definite 'needle sensation' may be produced at these points due to the physical and chemical stimulation, and the protracted stimulation which results is said to increase the body resistance to disease thereby promoting curative effects. In the case of narcotics like morphine and pethidine and

tranquilizers like chlorpromazine, it has been found that a very much smaller dosage than usual may be used to produce sedation. This effect is often used in pre-medication before acupuncture anaesthesia in China. Fractional doses such as 1/12 gr. (5 mgm) of morphine are claimed to be sufficient for premedication when the method of point injection therapy is used.

The drugs used for injection should be easily absorbable and be free of side-effects and have certain stimulating properties. Those most commonly used are vitamins B1, B2, C and distilled water; Placental extracts antibiotics and certain herbal drugs are also used. In the case of drugs with allergic properties, sensitivity tests must be carried out before use. The treatments should be administered once daily or every other day. Seven to ten treatments usually comprise one course. The interval between two courses should be 5 to 7 days. Good results are reported in the locomotor disorders with acupuncture point corresponding to the motor points of the paralysed muscles.

1. Hot Needle Therapy:-

The method of hot needling was discovered several thousands of years ago. The present practice is to take a firm sharp Yuan-li needle, make it red hot in a flame, thrust it to the affected part and withdraw it very quickly. The disorders which may be successfully treated, include benign small adenoma of the thyroid, "ganglion" of the wrist. Baker's cysts, lipoma and other types of benign lumps. The procedure is very simple; the results are magnificent, but the methodology must be learnt in a clinic. In Saudi Arabia and other Middle East countries 'Qawi' is more or less same hot iron.

2. Moxibustion:-

Moxibustion has been widely used in China and in several other Eastern countries since pre-historic times. Moxibustion is the therapeutic method of treating diseases by burning 'moxa-wool' or generating similar forms of heat on or near specific acupuncture points. It is a very ancient form of treatment, perhaps even predating acupuncture. From pre-historic times acupuncture and moxibustion

have been practiced together as complementary forms of therapy, often on the same patient, hence the name “acupuncture-moxibustion” or Zhen-Jiu (or ‘acumoxy’) in Chinese. In moxibustion, the points used are anatomically the same as for acupuncture, but the therapeutic indications are somewhat different and there is also some divergence regarding the Forbidden Points in the two procedures. For example the umbilicus is commonly used for moxibustion, whereas it is absolutely forbidden for acupuncture. Moxibustion is generally indicated in chronic bronchitis, chronic bronchial asthma, chronic diarrhoea, arthritis, and whenever there has been inadequate response to acupuncture in all Yin (Xu) diseases.

The term ‘moxibustion’ is derived from the Japanese name ‘mogusa’ for the mugwort plant whose botanical name is *Artemisia Vulgaris*. Moxawool is made by grinding the sun dried leaves of the plant into a fine wool. Moxa leaves have a characteristic smell They are used as a cooking spice Moxa is an essential ingredient in the stuffing of the martinmas goose, a choice delicacy of the German cuisine.

Moxas may take various forms - balls, cones, cigars and sticks of different sizes, ranging from that of a chery seed to a Cuban cigar. Using these preparations, moxibustion can be carried out in many different ways:

i) **Direct Moxibustion:-**

In direct moxibustion a small ignited moxa-cone is placed directly on the skin surface at an acupuncture (moxibustion) point. There are two forms of this method:-

a) *Scarring Moxibustion:-*

The moxa is allowed to burn out completely on the skin. This results in the formation of a blister and is not used very much today for obvious reasons, although it is said to be very effective in certain chronic seasonal allergies. In the People’s

Republic of China, intractable cases of allergic bronchial asthma seem to respond very well to this form of therapy.

b) *Non-Scarring Moxibustion:-*

A cone is ignited at the top and placed on the point and removed no sooner a sensation of scorching with slight pain is felt. The procedure may be repeated several times until there is redness and congestion at the site. Usually 3 to 5 cones are applied during a single session, and this is repeated daily or every other day. If performed carefully this method is quite safe and there is no blistering or scarring.

ii) **Indirect moxibustion:-**

In indirect moxibustion a slice of ginger, a slice of garlic or a thin layer of salt is placed over the moxibustion before placing the ignited moxa at the point. Alternatively, an ignited moxa stick may be used to warm the point from a distance of about 3-5 cm. The lighted end of the stick may also be brought briefly into contact with the diseased area and immediately withdrawn. This movement is repeated at intervals of a few seconds. This is known as the "Sparrow pecking method" of moxibustion. Another method is to warm the head of an acupuncture needle inserted at the site, with a piece of lighted moxa stick firmly fixed to its handle. Sometime electrical methods of heating are employed, in which case it is called 'electrical moxibustion'. This is a modern innovation. In one design of an instrument manufactured in West Germany radiant heat emanates from an electrically heated sapphire head. The parameters of heat generated are similar to that of moxibustion.

Contra-indications of moxibustion:-

Moxibustion should not be applied to areas with much hair, near special sense organs, facial region, near large blood vessels, areas of sensory loss, poor circulation, scalp, or on mucous membranes and ulcerated areas. Points Fengu (Du 16) and Yamen (Du 16) on the neck are contra-indicated for moxibustion. Moxibustion

should not be used on little children, nervous, debilitated, diabetic and mentally deficient patients. Moxibustion is absolutely contra-indicated in Yang disorders and in deaf mutes.

3. Radiant Heat (Electrical moxa):-

Many different designs of electrical equipment are available where the generation of heat is similar to that of the burning moxa, is a convenient alternative to the traditional moxa therapy.

4. Akabane method (a diagnostic method):-

This is a method invented by Akabane of Japan at about the turn of the century in order to determine the imbalance of energy in the channels. The lighted end of a joss-stick is dipped quickly into the Jing-Well point until the threshold of heat is felt. With the advent of sensitive acupunctoscopes this method now largely remains historical.

D. COLD (CRYOACUPUNCTURE, CRYOPUNCTURE)

There are many new designs of electrical instruments where cold is applied to the acupuncture points. This is known as cold therapy, cryoacupuncture or cryopuncture. Good results have been reported on using this method in acute sprains, particularly at the Ah-Shi points.

E. LIGHT

Laser Beam Therapy:-

A laser is a beam of monochromatic coherent, monophasic, light energy. The word “laser” is an acronym for Light Amplification by Stimulated Emission of Radiation.

Entities capable of vibration, such as atoms or molecules may assume an energetically “excited” state. Many of these states have a “lifetime” considerably above the normal value of about 10 secs. If a light wave of a given wave length falls on an atom or molecule in the excited state, the system returns to the ground state and the radiation emitted reinforces the source of light.

Lasers are a new innovation on the scientific scene in medicine. The theory of laser was first suggested by Professor Albert Einstein in 1917. However until recently a laser could not be constructed until the correct equipment and technology was available. In fact, so many uses for lasers, had been invented before the equipment was built that lasers were cynically termed “the solutions chasing the problems!” In the late 1950s the practical possibility of an optical laser was demonstrated by two workers Schawlow and Townes. The first ruby laser was made by Theodore Kaiman of the Hughes Aircraft Company, U.S.A., in 1963. The heart of this first laser was a cube of a synthetic ruby. It is now possible to construct laser based on solids, gases or liquids as the emitting source. Helium-Neon (HeNe) lasers are the most widely used in acupuncture therapy to- day.

Technological research has developed many different laser- active media. The nature of the media determines the fundamental properties of a laser beam. One of the main distinguishing characteristics between the individual laser active media is the state of its aggregation. Among the gaseous lasers may be mentioned, the HeNe laser the argon and krypton lasers.

Lasers are primarily used in Western medicine for their thermal effect. In a laser, intensive electromagnetic energy can be concentrated within a very small area and thus a burning or cutting effect, which can be utilized for various surgical procedures can be produced.

Laser is being used today in medical technology for surgery, diagnosis and stimulation therapy (or acupuncture).

In surgery, the treatment of retinal detachment has long been an established practice. In addition to this, endoscopic surgery stands out as a future prospective domain of the laser beam. In addition to the treatment of internal haemorrhages, there is the treatment of small tumours and polyps. Favourable results are being reported in dermatological surgery and neurosurgery, and also for ear, nose, throat surgery and gynaecological surgery, especially in cases that permit a vaginal approach.

The wave length of the Helium-Neon laser is in the vicinity of 6320 Angstrom units, (the red part of the visible spectrum.) Red light of this frequency has known biological effects. It is generally found to have vitalizing effects on living tissue. For this reason, radiation with the red Helium-Neon laser may be used for a variety of therapeutic purposes such as promoting wound healing, encouraging healing of skin grafts, skin diseases, treatment of blood dyscrasias. In laboratory animals whose bone marrow has been destroyed, lasers encourage its reformation, In agronomy it has been shown that this kind of laser radiation may be used to energize seeds, thus making the sprouts grow faster.

According to some authorities in the U.S.S.R., the red laser acts on the biological plasma by a resonance effect, to strengthen the energetic state. It thus acts like a “light vitamin” at the bioenergetic level.

Some of the action of laser beams on the living tissue may also be observed on inanimate material. The properties on materials irradiated may be described on an increasing physical scale as follows:-

- a) absorption,
- b) dispersion (scattering),
- c) local warming of the tissues,
- d) dehydration or withering of the tissues,
- e) denaturation of protein, i.e. coagulation,
- f) thermolysis (carbonization) and
- g) evaporation.

The magnitude of the effect on irradiated tissues will depend on two factors, namely:

the duration of the irradiation, and

the laser power used.

In acupuncture we deal on the bioenergetic system of the acupuncture channels and points. The traditional system of acupuncture is being utilized in combination with the new bioenergetic technique of laser therapy. The research in Alma Alta has shown that the acupuncture points are specific points of energy exchange between the living

organism and the surrounding environment, and that the application of laser therapy to acupuncture points has specific advantages whereby significant results may be obtained in a variety of diseases. Biophysical experiments have demonstrated that the bioenergy provided by laser radiation of acupuncture points is conducted along the bioenergetic channels similar to the existing traditional acupuncture channels, thus providing new evidence both for the physiological significance of the acupuncture points and the channels.

The acupuncture points are specific points in the bioenergetic sense as indicated by the experimental findings that the conductance of various forms of energy, like heat, light, sound and electricity is greater in the area of the point than in surrounding areas of the skin. The acupuncture system is apparently not only a bioelectrical system, but also a photobiological system as well, where biological (cosmic) energy and information are being transferred in the form of electromagnetic radiation. As with the bioelectrical properties of this system, its photobiological properties as well, may be utilized both for therapeutic and diagnostic purposes.

For medical therapy in Alma Ata, a Helium-Neon laser is used with a output of 25 milliwatts. Brief radiation of acupuncture points for a few seconds is used for stimulating, while longer radiation exposure of 30-120 seconds is used for sedation. The penetration depth of the Alma Ata laser in human tissues is about 5 mm. The treatment is given in dark rooms and the patient is kept in darkness for some time after the treatment to reduce the counteracting effects of other frequencies of light. Local radiation of the affected areas is used for local disorders.

The advent of laser acupuncture opens very promising new vistas for acupuncture as a bioenergetic medicine.

Only a few points are treated at a session. The points usually selected are the Distal points, especially the end points of the Channels at the extremities, i.e. the Jing-Well points which are treated bilaterally. Proximal points may also be used except those near the eyes. Baihui (Du 20.) is generally not used. The intensity of the laser-beam is very low so that there is no danger of damage to the skin or the underlying tissues or the patient's eyes.

In using laser-beam therapy the indications are generally the same as in conventional acupuncture. It is claimed that even “deqi” is occasionally elicited and when this happens a fast response may be expected. Particular success has been reported in the treatment of chronic ulcers and non-healing wounds. Good results are also said to be obtained in diseases associated with symptoms of the Yin type of disorders. Neuralgias on the other hand show a positive reaction when the ear points are treated.

Although this technique seems to be a fruitful development much of the work still has to be done to clarify its theoretical background so that its full potential may be understood and used.

F. SOUND THERAPY

Sonopuncture:-

It is a technique of stimulating acupuncture points by means of supersonic waves (waves travelling faster than the speed of sound) and ultrasonic waves. Many advantages are claimed for this new form of therapy and sonic stimulators have already made their appearance in the North American market. While this “non-invasive procedure” may turn out to be a useful development, the possibility of some damage at the cellular level exists from “breaking the sound barrier”. Much research is being done in the U.S.S.R., as well on sonopuncture. However more work needs to be done to evaluate this method.

G. ELECTROTHERAPY

1. Electro-acupuncture, Electro-anaesthesia,

- a) Low Frequency
- b) High Frequency
- c) Ultra High Frequency

Stimulation with the needle using electricity is a modern innovation in acupuncture. Although manual stimulation is superior to electrical stimulation the latter has certain advantages such as

convenience, saving of time and a less traumatizing effect on the tissues; It is also preferred by children.

Electro-acupuncture is preferable to hand stimulation in acupuncture anaesthesia. Electrical stimulation of the points may be carried out without the insertion of needles in patients who are hypersensitive to the needles, by using an electrode tip soaked in saline solution.

The electrical apparatus used in acupuncture practice is of three types:

- 1) Electrical pulse stimulation for administering therapy.
- 2) Acupuncture point detectors which locate the acupuncture points electrically by making use of fact that these are points of lowered electrical resistance on the skin.
- 3) Dual-purpose instruments which combine the above two types. Electrical pulse stimulation are used to stimulate the acupuncture points by feeding them with a special type of electrical flux.

Direct currents (D.C.) Galvanic and Faradic stimulation cannot be used for this purpose as there is tendency to cause iontophoresis and cauterization of the tissues at the point of contact when these forms of electricity are used. Alternating current (A.C.) is also not suitable as it causes much discomfort to the patient. It has been found that the best form of stimulation is to use a pulsatile (or 'pulsed') current generated by means of a transistorized or printed electronic circuit. Pulsed current can have many different wave-forms such as biphasic, square, biphasic spike, and sinusoidal, but the form which is most widely used in electro-acupuncture is the biphasic spike. Stimulation with this wave-form can be delivered to the patient as either continuous, intermittent, or dense-disperse. The dense-disperse form is the most commonly used as the patient exhibits the least amount of sensory adaptation with this type of stimulation.

Many makes and models of electrical pulse stimulators are available, but they are all constructed on a common plan. The object is to deliver a minute pulsed current to the acupuncture points, and this current has to be adjustable in respect of three parameters namely voltage, frequency and intensity (current strength).

2. T.E.N.S.—Transcutaneous Electro—Neuro-Stimulation

Transcutaneous Electrical Nerve Stimulation (TENS) is a method of electro-analgesia which has been developed in North America following the observations by Wall and Sweet (1967) and Sweet and Wepsic (1968) that relief of pain could be obtained by electrical stimulation of the peripheral nerves. These developments were inspired by the technical advances in electro-acupuncture. As in dorsal column stimulation, it is presumed that sensory gate closure from stimulation of the large diameter, fast conducting afferents occurs with this method. It is a modified name of electro- acupuncture.

Stimulation is applied by means of electrodes placed over the skin at certain points which lie on the course of the peripheral nerves. No acupuncture needles are inserted at these points which, by and large, correspond to classical acupuncture points.

In author's experience, needle insertion followed by correct hand manipulation is still the best method of administering acupuncture therapy, the manipulation being done where there is a positive indication to do so. In a busy clinic, however many patients have to be put on the electro-stimulator as hand manipulation is time consuming. TENS is useful in children, nervous patients and very senior officials who are often afraid of needles.

3. Dorsal Column Stimulation:-

This is a method of electro-analgesia which was developed by Norman Shealey and his co-workers at the Pain Rehabilitation Center, La Crosse, Wisconsin, U.S.A. Details of the method are described by Shealey in his paper "Dorsal Column Electro- analgesia" (Headache 9 1 99-102 1969). The rationale for this

technique is to bring about pain relief by direct stimulation of the dorsal column of the spinal cord (i.e. the tracts of Goll and Burdach), which consist almost entirely of large diameter, fast conducting afferents. Stimulation applied to these fibres will result (according to the multiple gate-control theory) in closure of the sensory gates at the brain-stem and thalamic level, thereby preventing the pain impulses from reaching conscious awareness. Electrodes are placed surgically. It is a lengthy and cumbersome procedure.

The author has obtained equally good results, by the insertion of acupuncture needles paravertebrally. The acupuncture method is by far simpler, safer, economical and more effective than dorsal column stimulation.

4. Electro-Acupuncture According to Voll (EAV):-

This is a method of electro-acupuncture with an apparatus called the EAV. Dermatron developed by R. Voll of West Germany. It is used diagnostically as well as therapeutically. This method is based on the known fact that an acupuncture point has a higher electrical conductivity relative to the immediate surrounding skin area, and that in conditions of disease there is usually a further decrease in the skin resistance of that point. In EAV, the normal range of skin resistance at each acupuncture point (referred to as its “energetic potential”) is noted and taken as a reference base. Where the electrical conductivity of the skin has undergone a change, it is possible to detect it very accurately using the Dermatron. This is recognised as a pathological state indicating the disease or dysfunction of the Organ pertaining to that particular acupuncture point and therefore of the disequilibrium of the flow of vital energy in the related Channel. The equilibrium is restored by stimulating the specific acupuncture point or points using the Dermatron in a separate function. This main feature of the system therefore derives from the extreme sensitivity of this instrument in detecting changes in electrical conductivity of the acupuncture points, thus providing an extension of the traditional methods of diagnosis.

It is claimed that by using this system it would even be possible to indicate which part of an Organ and how much of it is affected.

e.g., the exact location and size of a gastric ulcer. It is also claimed that the technique “can differentiate between acute, subacute and chronic inflammation, between initial, progressed or final degeneration stages and between simultaneous occurrence of inflammatory and degenerative organ processes.”

EAV uses a specially designed electronic apparatus which allows the measurement of the minutest energetic reactions and the momentary potential of a pertaining organ as shown at the acupuncture points. It is therefore possible, not only to diagnose an illness, but also to detect at the very inception of an illness, the energetic alteration of organ before they develop into clinically manifest symptoms. The precise measurements in EAV are capable, for example, of determining the day and even the side of ovulation in women, or the changed pH values of the stomach after a meal. The accurate diagnosis that is possible with EAV therefore permits a greater emphasis on preventive medicine.

The EAV meter is calibrated from 0 to 100 and such that the position 50 (the central position) would indicate that organ pertaining to the related acupuncture point is free of any pathology.

The diagnosis claimed for EAV over conventional acupuncture may be summarized as follows;-

- a) Early diagnosis (as the electrical conductivity at acupuncture points registers a change at the initial stages of a disease even before it is externally manifested).
- b) Accurate indication of the Organ involved,
- c) Indication of the stage to which any degeneration has occurred.
- d) Painless and aseptic method of treatment as the electrodes do not penetrate the skin.

5. **Ryodoraku (Nakatani):-**

Ryodoraku is a Japanese variant of electro-acupuncture therapy. The measurements are carried out using a special electro-acupunctoscope. It is a diagnostic as well as a therapeutic method.

6. Epidural Puncture:-

The author (Salim) has treated many patients by placing acupuncture needles in epidural space. Epidural space is just outside the dura matter which extends from foramen magnum to sacral hiatus. It has negative pressure. This negative pressure is the indicator that one is in the epidural space. Usually Tuohy' needle is used for this purpose and "loss of resistance" technique is used. Anaesthesiologist can easily locate the space. With practice acupuncture needle can be placed in appropriate space, needles can be bent at right angle after placing in-situ. It is useful technique for abdominal operations as well as relieving intractable pain. Needles are stimulated as usual.

Drugs like lignocaine, morphine, pethidine other analgesic can also be administered in epidural space in very small doses. Pain can often be relieved immediately for weeks together. For example 1-2 mg morphine with saline may relieve pain of cancer bladder for 1-3 weeks.

H. MAGNETISM (MAGNETOTHERAPY)

There are many designs of equipment where polarised magnetism is being used in the treatment of a variety of disorders. This method is still experimental. It is said to be particularly useful in treatment of locomotor disorders, and internal disorders like migraine and peptic ulcer.

I. ANCILLARY DRUGS

Ginseng:- (Cure — all) Of the multitude of herbal medicines known to man, ginseng is certainly the most fascinating. It is the only plant which for thousands of years has been consistently regarded as a panacea or "cure-all". No other plant is used so widely in the Orient for such a variety of disorders. It is also the herbal medicine most often combined with acupuncture therapy.

The scientific name of the Oriental ginseng plant is *Panax ginseng*. Meyer, who was a Russian, named the plant in 1843. *Panax* is from Latin and *pan* denotes all, *axos* means cure, therefore *Panax* denotes “cure all”. and the word “ginseng” originated from the Chinese name for this plant. (Ginseng means “man-root” in Chinese on account of its remarkable human appearance).

Its geographical distribution is limited mostly from 30th degree to 48th degree north latitude, in East Asia.

The appearance of the *Panax ginseng* plant is quite unimpressive. The mature cultivated plant grows to about half a meter high, and has tiny purplish flowers which turn into clusters of bright red berries, each surrounded by five neatly serrated leaves. The real heart of the plant is its greyish-white fleshy root. In the mature plant, the root grows to a length of about ten to fifteen centimeters and weighs on an average about 200 grams; and has usually two branching “thighs” that led early Chinese observers to call it the ginseng or “the man-root”. The human-like form of its root has also earned it a veritable reputation of being an effective aphrodisiac.

Ancient Chinese medical texts describe its efficacy against fevers, impotence, malaria, gastritis, worms migraine, arthritis, insomnia, mental depression, loss of memory, the common cold and countless other disorders. Chinese soldiers used it in battle for quick energy and to alleviate the effects of injuries. Chinese Emperors took it to prolong their life-span.

Ginseng was listed as an official drug in the United States Pharmacopoeia from 1840 to 1880 but thereafter this drug was deleted. At present, ginseng is only mentioned as an unofficial herbal plant in Bulletin Number 89 of the US. Department of Agriculture Bureau of Plant Industry The US. Food and Drug Administration now classifies it as a food additive for tea. Ginseng is not listed in most official Western Pharmacopoeias and many Western countries do not allow sellers to make any medicinal claims for it.

but little panaxadiol; Himalayan ginseng leaves contain more panaxadiol than the other two types of saponins. Ginseng leaves may be a convenient and cheap source of ginseng saponins rather than the root. However, synthesis of these pharmacologically active and chemically defined constituents may likely become the active ginseng research of the future. Continued research may turn the ancient herbal medicine into a miracle medicine of the future.

For centuries, the ancient Orientals pondered on the nature of ginseng that the plant was born on August night in the cedar forests when lightning struck a mountain stream, which disappeared and became transformed into this root. In other words, all the five elements of creation, namely fire, earth, metal, water and wood are well balanced in the ginseng root making it a veritable panacea for all illnesses. This legend perhaps best sums up the exotic mystery of the ancient cure-all known as the ginseng.

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ACUPUNCTURE, ACUPRESSURE & T.E.N.S.

Dr. Tanveer A. Malik

a. Acupuncture, A Brief Introduction

Today in most western cultures it is considered as “new alternative” medicine. In reality Acupuncture (and its related Moxibustion) are practised medical treatments that are over 5,000 years old. Very basically, Acupuncture is the insertion of very fine needles, (sometimes in conjunction with electrical stimulus), on the body’s surface, in order to influence physiological functioning of the body.

Acupuncture can also be used in connection with heat produced by burning specific herbs, this is called Moxibustion. In addition, a non-invasive method of massage therapy, called Acupuncture, can also be effective.

The first record of Acupuncture is found in the 4,700 year old Huang Di Nei Jing (Yellow Emperor’s Classic of Internal Medicine). This is said to be the oldest medical textbook in the world. It is said to have been written down from even earlier theories by Shen Nung, the father of Chinese Medicine. Shen Nung documented theories about circulation, pulse, and the heart over 4,000 years before European medicine had any concept about them.

As the basis of Acupuncture, Shen Nung theorised that the body had an energy force running throughout it. This energy force is known as Qi (roughly pronounced Chee). The Qi consists of all essential life activities which include the spiritual, emotional, mental and the physical aspects of life. A person’s health is influenced by the flow of Qi in the body, in combination with the universal forces of Yin and Yang. (I will discuss Yin and Yang a little later). If the flow of Qi is insufficient, unbalanced or interrupted, Yin and Yang become unbalanced, and

illness may occur. Qi travels throughout the body along “Meridians” or special pathways. The Meridians, (or Channels), are the same on both sides of the body (paired). There are fourteen main meridians running vertically up and down the surface of the body. Out of these, there are twelve organ Meridians in each half of the body (remember they are in pairs). There are also two unpaired midline Meridians. The acupuncture points are specific locations where the Meridians come to the surface of the skin, and are easily accessible by “needling”, Moxibustion, and Acupressure. The connections between them ensure that there is an even circulation of Qi, a balance between Yin and Yang.

Energy constantly flows up and down these pathways. When pathways become obstructed, deficient, excessive, or just unbalanced, Yin and Yang are said to be thrown out of balance. This causes illness. Acupuncture is said to restore the balance.

Yin and Yang is an important theory in the discussion of Acupuncture treatment, in relation to the Chinese theory of body systems. As stated earlier Qi is an energy force that runs throughout the body. In addition, Qi is also prevalent throughout nature as well. Qi is comprised of two parts, Yin and Yang. Yin and Yang are opposite forces, that when balanced, work together. Any upset in the balance will result in natural calamities, in nature; and disease in human Yin is signified by female attributes, passive, dark, cold, moist that which move laterally, and deficient of Yang. Yang is signified by male attributes, light, active, warm, dry, that which moves laterally, and deficient of Yin. Nothing is completely Yin or Yang. The most striking example of this is man himself. A man is the combination of his mother (Yin) and his father (Yang). He contains qualities of both: This is the universal symbol describing the constant flow of yin and yang forces. You’ll notice that within Yin, there is Yang, and within Yang, there is the genesis of Yin. Whether or not you believe in Taoist philosophy, (which all this is based on), one thing is indisputable: Acupuncture works.

Acupuncturists can use as many as nine types of Acupuncture needles, though only six are commonly used today. These needles vary in length, width of shaft, and shape of head. Today, most needles are disposable. They are used once and discarded in accordance with

medical biohazard regulations and guidelines. There are a few different precise methods by which Acupuncturists insert needles. Points can be needled anywhere in the range of 15 degrees to 90 degrees relative to the skin surface, depending on the treatment called for. In most cases, a sensation, felt by the patient, is desired. This sensation, which is not pain, is called *deqi* (pronounced dah-chee). The following techniques are some which may be used by an Acupuncturist immediately following insertion: Raising and Thrusting, Twirling or Rotation, Combination of Raising/Thrusting and Rotation, Plucking, Scraping (vibrations sent through the needle), and Trembling (another vibration technique). Once again, techniques are carefully chosen based on the ailment.

There are a few related procedures that fall into the range of Acupuncture treatments. The first is Electro-Acupuncture. This is the using of very small electrical impulses through the Acupuncture needles. This method is generally used for analgesia (pain relief or prevention). The amount of power used is only a few micro amperes, but the frequency of the current can vary from 5 to 2,000 Hz. The higher frequencies are generally used for surgery (usually abdominal), and the lower frequencies for a tonsillectomy. Today, it is a common method of surgical analgesia used in China. Other methods for stimulating Acupuncture points are Lasers and sound waves (Sonopuncture). A very commonly used treatment in the United States is Auriculotherapy or Ear Acupuncture. The theory is that since the ear has a rich nerve and blood supply, it would have connections all over the body. For this reason, the ear has many Acupuncture points which correspond to many parts and organs of the body. Auricular Acupuncture has been successful in treating problems ranging from obesity to alcoholism, to drug addiction. There are numerous studies either completed, or currently going on which affirms Auricular Acupuncture's effectiveness.

Another popular treatment method is Moxibustion, which is the treatment of diseases by applying heat to Acupuncture points. Acupuncture and Moxibustion are considered complimentary forms of treatment, and are commonly used together. Moxibustion is used for ailments such as bronchial asthma, bronchitis, certain types of paralysis, and arthritic disorders.

Cupping is another type of treatment. This is a method of stimulating Acupuncture points by applying suction through a metal, wood or glass jar, in which a partial vacuum has been created. This technique produces blood congestion at the site, and therefore stimulates it. Cupping is used for low backache, sprains, soft tissue injuries, and helping release fluid from the lungs in chronic bronchitis.

One of the most popular alternatives to Acupuncture is Acupressure. This is simply Acupuncture without needles. Stimulation of the Acupuncture points is performed with the fingers or an instrument with a hard ball shaped head. Another variation of Acupressure is Reflexology (also called Zone Therapy). This is where the soles of the feet and the posterior-inferior regions of the ankle joints are stimulated. Many diseases of the internal organs can be treated in this manner.

The question arises, how does Acupuncture work? Scientists have no real answer to this; as you know many of the workings of the body are still a mystery. There are a few prevailing theories.

1. By some unknown process, acupuncture raises levels of triglycerides, specific hormones, prostaglandin's, white blood counts, gamma globulin's, opsonins, and overall antibody levels. This is called the "Augmentation of Immunity" Theory
2. The "Endorphin" Theory states that Acupuncture stimulates* the secretions of endorphins in the body (specifically Enkephalins).
3. The "Neurotransmitter" Theory states that certain neurotransmitter levels (such as Serotonin and Noradrenaline) are affected by Acupuncture.
4. "Circulatory" Theory: this states that Acupuncture has the effect of constricting or dilating blood vessels. This may be caused by the body's release of Vasodilators (such as Histamine), in response to Acupuncture.
5. One of the most popular theories is the "Gate Control" Theory. According to this theory, the perception of pain is controlled by a part of the nervous system which regulates

the impulse, which will later be interpreted as pain. This part of the nervous system is called the “Gate”. If the gate is hit with too many impulses, it becomes overwhelmed, and it closes. This prevents some of the impulses from getting through. The first gates to close would be the ones that are the smallest. The nerve fibers that carry the impulses of pain are rather small nerve fibers called “C” fibers. These are the gates that close during Acupuncture.

In the related “Motor Gate” Theory, some forms of paralysis can be overcome by Acupuncture. This is done by reopening a “stuck” gate, which is connected to an Anterior Horn cell. The gate, when closed by a disease, stops motor impulses from reaching muscles. This theory was first stated by Professor Jayasuriya in 1977. In it he goes on to say:

“... one of the factors contributing to motor recovery is ~ almost certainly the activation of spindle cells. They are stimulated by Gamma motor neurons. If Acupuncture stimulates the Gamma motor neurons, the discharge causes the contraction of Intrafusal Muscle fibers. This activates the Spindle cells, in the same way as muscle stretching. This will bring about muscle contraction.”

There are many diseases that can be treated successfully by Acupuncture or its related treatment. The most common ailments currently being treated are: low backache, Cervical Spondylosis, Condylitis, Arthritic Conditions, Headaches of all kinds (including migraine), Allergic Reactions, general and specific use for Analgesia (including surgery), and relief of muscle spasms. There have also been clinical trials in the use of Acupuncture in treating anxiety disorders and depression. Likewise, very high success rates have been found in treating addictions to alcohol, tobacco (nicotine) and “hard” drugs. Acupuncture can rid the body of the physical dependence, but can not rid the mind of the habit (psychological dependence). For this reason, Acupuncture treatment of addictions has not been fully successful.

b. How Does Acupuncture Work?

Acupuncture is a method of encouraging the body to promote natural healing and to improve functioning. This is done by inserting needles and applying heat or electrical stimulation at very precise acupuncture points.

The classical Chinese explanation is that channels of energy run in regular patterns through the body and over its surface. These channels, called meridians, are like rivers flowing through the body to irrigate and nourish the tissues, blood flow and nervous impulses also follow meridians to run through the body to various parts, structures and organs. An obstruction in the movement of these energy rivers is like a dam that backs up the flow in one part of the body and restricts it in others. Any obstruction and blockages or deficiencies of energy, blood and nervous impulses would eventually lead to disease.

The meridians can be influenced by needling the acupuncture points: the acupuncture needles unblock the obstruction at the dams, and re-establish the regular flow through the meridians. Acupuncture treatments can therefore help the body's internal organs to correct imbalances in their digestion, absorption, and energy production activities, and in the circulation of their energy through the meridians.

The modern science explains the functions of acupuncture in 2 major ways:

1. Needling the acupuncture points stimulates the nervous system to release chemicals in the muscles, spinal cord, and brain. These chemicals will either change the experience of pain, or they will trigger the release of other chemicals and hormones which influence the body's own internal regulating system.
2. In traditional Chinese medicine YIN represents “-” (negative) and YANG represents “+” (positive). The main principle of Chinese medicine is to keep the YIN and YANG balance or

bring YIN and YANG back to balance. YIN YANG balance is the healthy state of the body. Modern science reveals that the very basic unit of the body is cell. Cell's movement follow the movement of electrons. The electrons inside cells act according to its own regular patterns. We call all these electrons in a living body bioelectrons.

Energy flow in the meridians is the direct or indirect transportation of bioelectrons. Meridians are the pathways where bioelectrons move more frequently than other parts of the body. When positive and negative charges in the bioelectronic movements are not balanced, the cells would act abnormally-this is YIN and YANG imbalance. In Chinese medicine it is defined as "disease". It is the beginning stage of the physiological cells electrons movement. Only radical change of the cells electrons movement is admitted by Western medicine, a "disease".

All the external factors, such as mechanical, physical, chemical, biological and internal factors such as mental, hereditary, constitutional can cause and force the body's bioelectrical movement tum to imbalance would lead to disease.

c. Acupressure / Reflexology

Since the publication in 1989 of the 4th edition of acupuncture treatment and anaesthesia, the author (Salim) received hundred of letters from people all over the world who have discovered the great healing power of acupuncture using the simple technique of acupuncture described in the book, these people have found a cure for many types of ailment and their life styles have change dramatically. They have more vitality and stamina, are less depressed, and more self-confident.

The body has an amazing capacity to heal itself The acupuncture points described in the book can be approached by needles as shown in diagrams. One can use acupressure which is also known as "Body Reflexology." Infact massaging trigger points or acupuncture points bring relief from pain and other health problems.

There are some areas of body where needling is painful e.g. sole of foot, palm of hand, sensitive individual will not tolerate needles on face etc. So these areas, infact the “acu-points” can be stimulated by massage, acupressure or by TENS (Transcutaneous Electrical Nerve Stimulation).

A tender spot at any place on your body indicates a point of congestion in energy lines. The author (Salim) calls it “trigger points” which in tum means trouble in some area that may be remote from the tender point. See trigger point diagrams on following pages. These points are needled or infiltrated with local anaesthetics or you may apply acupressure.

How it works

Ever since acupuncture was introduced to the western world, interested doctors have sought to find scientific proof that stimulation of certain points in the body stops pain and helps heal illness. (By scientific proof we mean that which is obtained under controlled laboratory conditions.) Recent researches in France, Israel, Great Britain, Scotland, Canada, United States and other Western countries have produced a number of discoveries that throw light on the way Reflexology as well as acupuncture may work.

Dr. Ruger Dalet, a specialist at Beaujon Hospital in Paris, tells us in his book “How to give relief from pain by a simple pressure of a finger”, that stimulates of certain acupuncture point causes the blood to become enricher with endogenous hormones e.g. endorphin, enephalin etc. which are similar to morphine.

Dr. Becker and his colleagues have been experimenting and testing with electrodes and have come up with scientific proof that electrical current passes most readily along the body’s meridian lines. This proves that there are specific electrical properties at the reflex point. There is low electrical resistance at acupuncture point. Now equipment is available which detects the points and one can accurately locate the trigger point. The author (Salim) invariably uses it for patients who cannot exactly locate these tender spots due to diffuse sort of pain.

Technique for Acupressure/Reflexology

In describing how to use Acupressure all over the body, it is best to start with those points found in the hands and feet (See diagrams).

Place your thumb in the center of the palm or center of the sole, with rotatory motion, press and role the thumb on it as if you were trying to break up lumpy sugar. Do this about five times, then move to another spot. You can tell which reflex you are massaging by studying diagrams. You are “not to rub the skin” but the reflexes under the skin. Search for tender trigger in point by tips of your finger or pencil head. You may use equipment if it is available with you. You will be amazed at “ouch” spot you will discover in these areas. Hold a steady, firm pressure for a slow count of seven and then release for a count of seven of there. Do this three times or more on the legs for about 15 minutes to relieve pain.

It is said that the palm of a right hand is positive and stimulates energy, which has a stretching effect. The palm of the left hand is negative and has a sedating, sorting and cleaning effect. The use of both hands will give the combined effect of both energy.

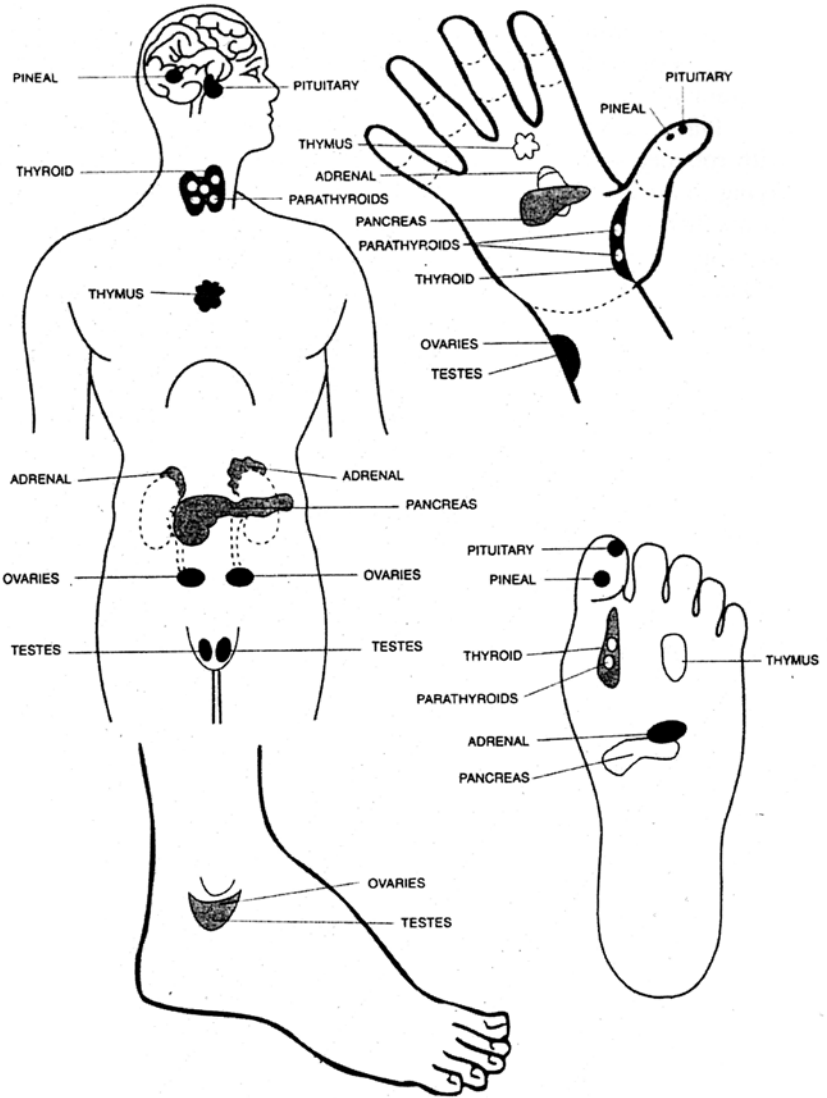
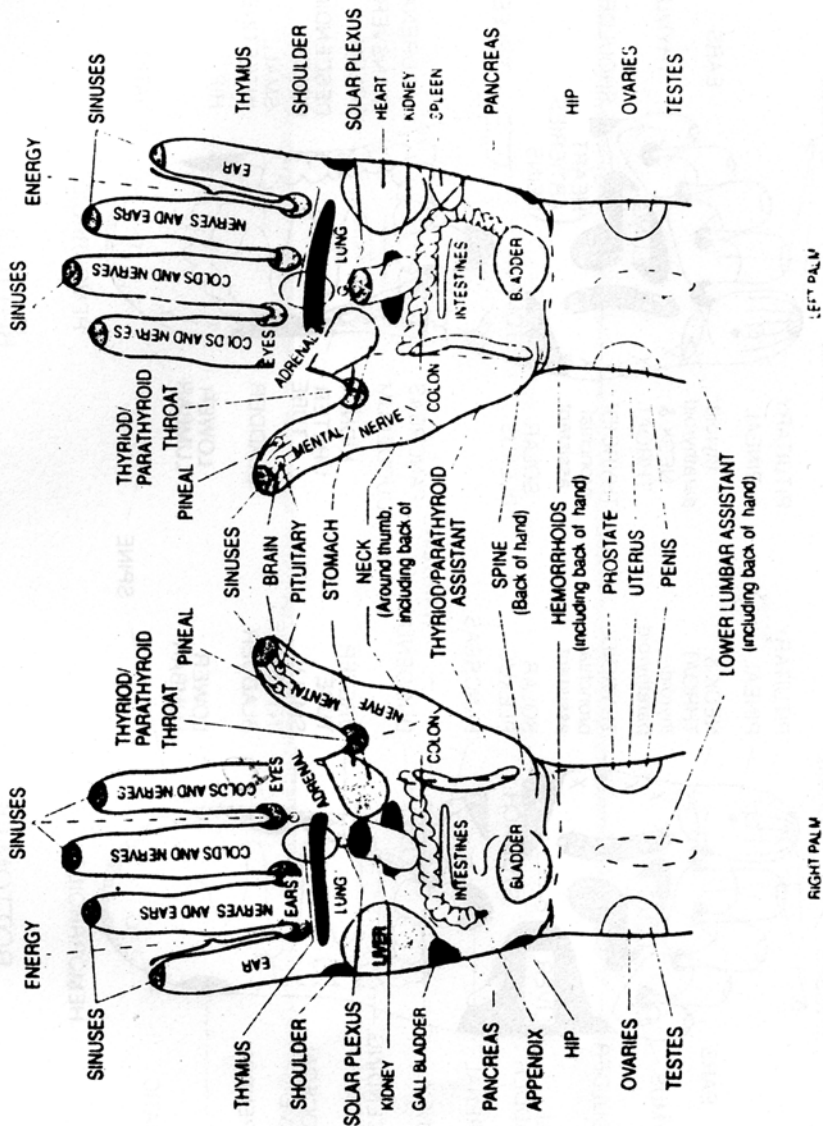


Diagram 2



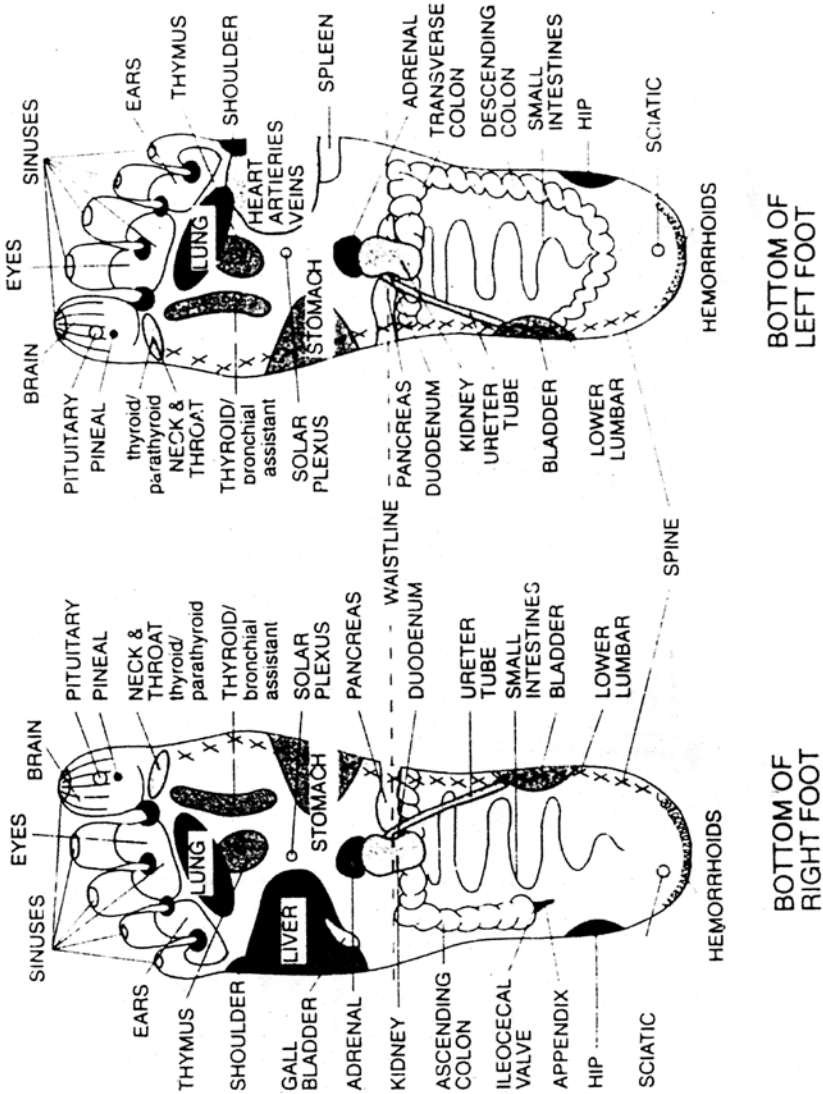


Diagram 3

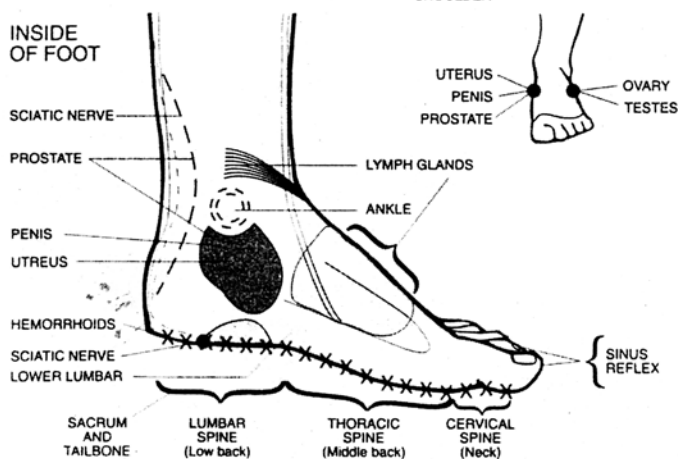
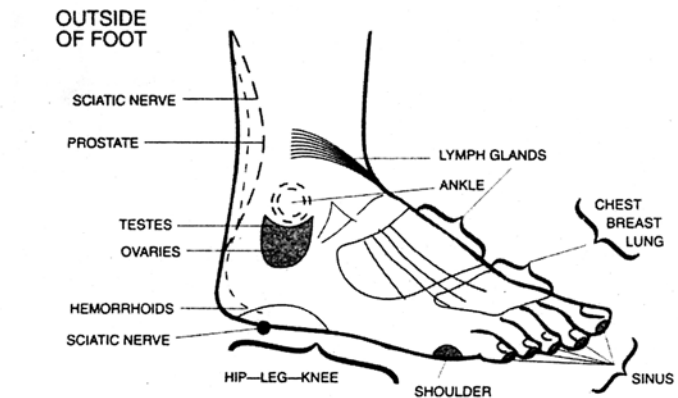
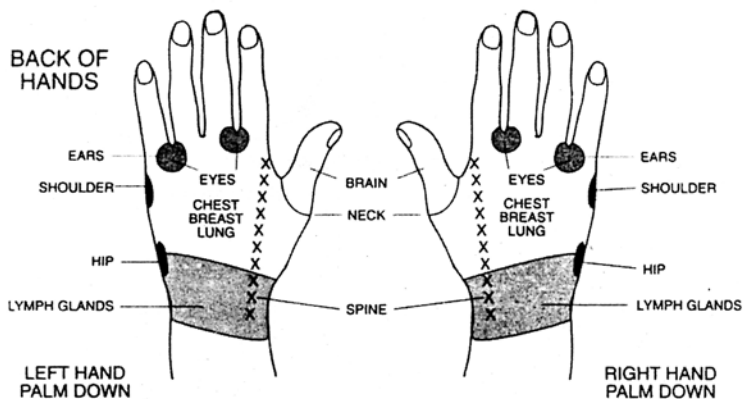
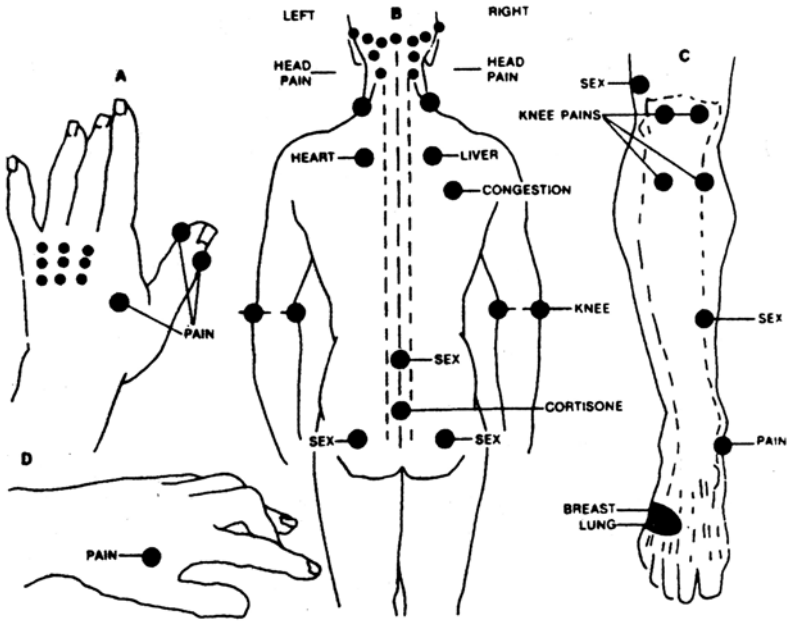


Diagram 6



This diagram shows several pain control reflex buttons that are stimulated by pressure that causes them to release natural pain-inhibiting chemicals in the brain called "endorphins." Also shown are energy-stimulating reflex buttons in various locations

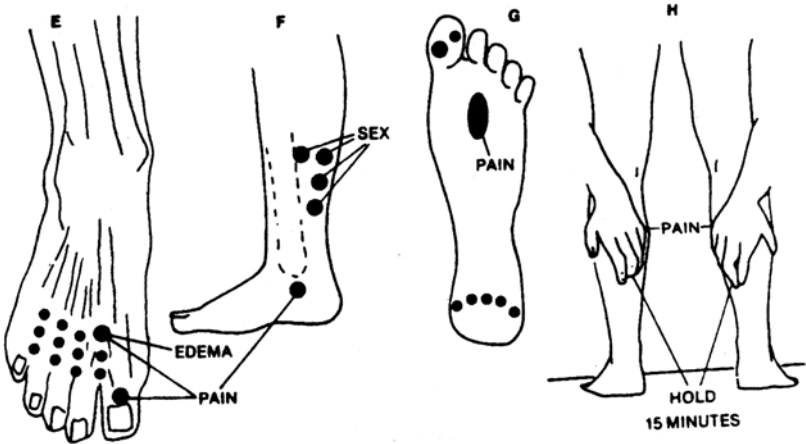


Diagram 4

- d. Transcutaneous Electrical Nerve Stimulation (Tens) for the relief of pain

Background: Electrical stimulation of the human body for therapeutic purposes (electrotherapy) has been employed in various forms since early times. It has been shown that pain, and in particular chronic pain, can be relieved by electrical stimulation of appropriate peripheral nerves or selected areas of spinal cord or brain (Electroanalgesia).

Some milestones electroanalgesia

2500 B.C.	Egyptian Fifth Dynasty	Stone carvings show electric fish <i>Malapterurus electricus</i> used to treat painful conditions
400 B.C.	Hippocrates	Used Electric fish to treat headache and arthritis
46 AD.	Scribonius Largus	Treated gout with electrical ray fish (<i>Torpedo marmorata</i>)
1756	Richard Lovett	<i>Subtil Medium Proved</i> : First textbook on medical electricity in English language.
1759	Dr. John Wesley	In <i>Electricity made plain and useful by a lover of mankind and of common sense</i> described treatment of sciatica, headache, gout kidney stone. etc.
1772	John Birch	English surgeon who used electrotherapy extensively.
1800+	Sarlandiere	Applied electric discharge from Leyden bottles to tissues via acupuncture needles.
1850s	W.J. Oliver	Electrical stimulation of muscle used to produce surgical and obstetric analgesia.
1875	Rockwell et al.	<i>A practical treatise on the medical and surgical uses of electricity</i> . 2 nd edn.
c. 1900		‘Electreat’ apparatus sold direct to public with claims to cure many diseases including cancer. Banned by FDA in early 1950s.
1965	R. Melzack & P. Wall	Proposed the Gate Control Theory of Pain.
1967	P. Wall & W. Sweet	Reported use of High-frequency (50-100 HZ) <i>percutaneous</i> electrical nerve stimulation for relief of chronic neurogenic (neuropathic) pain.
1967	C.N. Shealy et al.	Reported use of Dorsal Column Stimulation (DCS) of spinal cord.
1969	D.V. Reynolds	Discovered that stimulation of periaqueductal grey (PAG) in the midbrain produces surgical anaesthesia.
1973-74	D.M. Long & C.N. Shealy	Reported results of <i>transcutaneous</i> electrical nerve stimulation (TENS)
1977	Augustinsson et al.	Obstetric analgesia with TENS.
1979	M.B.E. Eriksson & B. Sjölund	Reported increased analgesic efficacy of Acupuncture-like TENS compared with continuous TENS.

Transcutaneous electrical nerve stimulation (TENS) is a simple method by which a patient can utilise the analgesic properties of electricity. TENS is applied to the skin via a pair of stimulating electrodes which are connected to a portable battery-operated stimulator. TENS has been used for many different types of pain, including those associated with peripheral nerve damage, sciatica, arthritis, cancer, amputation, surgical operations and dental problems.

EQUIPMENT FOR TENS CONSISTS OF THREE PARTS: stimulator, leads and electrodes.

- (1) **STIMULATOR:** This is a transistorised battery operated pulse generator.

Controls:

- (a) combined on/off switch / amplitude (intensity) control
 - (b) frequency control [low (2 - 5 Hz) to high (100 - 250 Hz)]
 - (c) continuous / pulsed (burst) / ramped / random mode selector switch
 - (d) width control [220 - 500 microseconds (μsec)]
 - (e) on multi-channel instruments an amplitude (intensity) control is provided for each channel
- (2) **LEADS:** a pair of insulated wires that connect the stimulator to the electrodes. On one end of the lead is a miniature jack plug for connection to the stimulator. The other end contains two individual plugs which connect to the electrodes.

Important: the leads are the weakest component in TENS, especially at the junction between the stimulator plug and the cable and also between the cable and the plugs for the electrodes. Wherever possible the most supple leads should be used because the wires inside the cable are less likely to fracture and also because supple leads are much more comfortable for the patient.

(3) **ELECTRODES** (Two main types: reusable and disposable)

(i) **Reusable:**

- (a) Conducting rubber pads with electrode jelly and tape. Common sizes (mm): 40 x 40 (small), 93 x 42 (large), 210 x 40 (post-operative), 28 or 50 circular (for face).
- (b) Self-adhesive conductive polymer pads: (i.e. do not require jelly or tape). Available in same range of sizes as (i)(a). The anticipated life of these electrodes varies with manufacturers but is usually about 10-14 days. However, in practice and with care, the useful life can be substantially longer.

(ii) **Disposable:**

These are self-adhesive conductive polymer pads available in the same range of sizes as for conducting rubber pads, but each electrode has an anticipated life of about 2-4 days.

It should be noted that: (i) conducting rubber pads can be converted into self-adhesive electrodes by the use of Karaya pads (double sided sticky) and thereby eliminate the need for jelly and tape, (ii) Some disposable electrodes are now available using pre-gelled silver/silver chloride construction in order to avoid polarisation. However, with stimulators of modern design the latter is not usually a problem (iii) Other uncommon types of electrodes are available such as cotton pads and stainless steel but these are rarely used.

USE OF THE EQUIPMENT: The following procedure should be employed:

- (i) **Positioning the Electrodes:** First, decide where the electrodes should be positioned. Stimulating electrodes are used in pairs. Electrodes are positioned so that their edges are never less than 1cm apart to avoid direct conduction (i.e. short circuiting between the electrodes). Electrodes should be positioned so that they lie along the general direction of the nerves in the part of the body to be treated. For example, in the limbs the electrodes should be placed longitudinally (rather than transversely). On the trunk the electrodes should be placed along the course of the nerves or dermatomes.

TENS - REPRESENTATIVE ELECTRODE POSITIONS

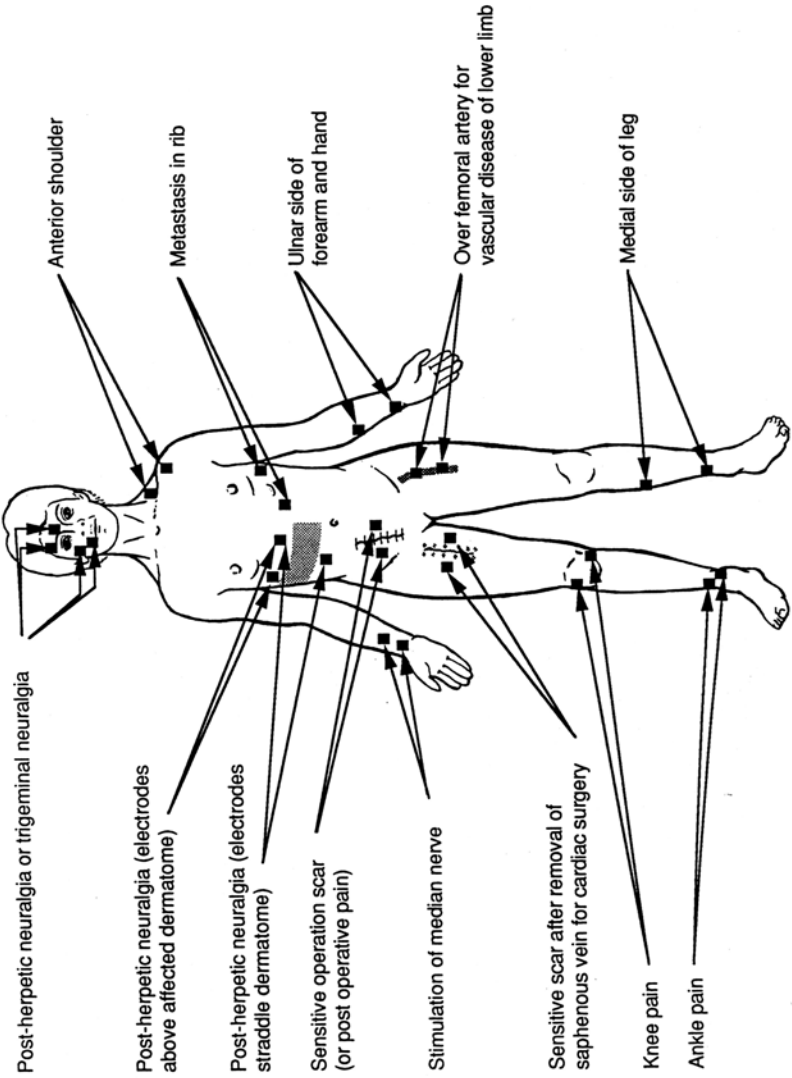


Figure 1a: Drawing of electrode positions commonly used for TENS (anterior aspect)

TENS – REPRESENTATIVE ELECTRODE POSITIONS

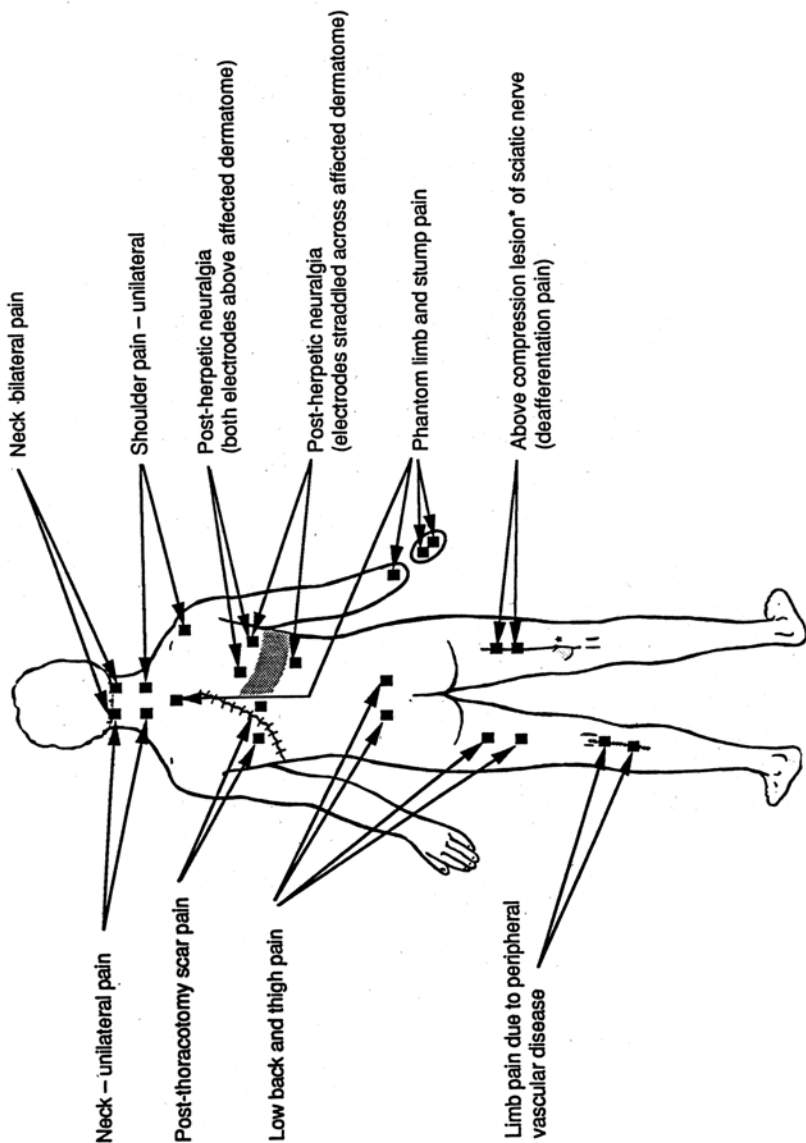


Figure 1b: Drawing of electrode positions commonly used for TENS (posterior aspect)

- (ii) Applying the Electrodes: apply the electrodes to the selected site as follows;
 - (a) Carbon-rubber: These are applied to the skin using conductive saline jelly and tape for fixation. The use of saline jelly is essential in order to achieve adequate electrical contact between the electrode and the skin. For this reason the jelly must be applied evenly over the whole of the surface of the electrode. Use only jelly designed for use with TENS; this normally contains 2% sodium chloride (and a bactericide); never use ECG jelly which often contains much higher concentrations of sodium chloride which will irritate the skin. The most satisfactory tape is *Micropore* because it is thin, flexible, easy to cut or tear into strips and does not usually irritate the skin. Alternatively, specially shaped pieces of tape designed to Et over an electrode can be used but are more expensive.
 - (b) Self-adhesive: When not in use these are stored stuck to a piece of waxed paper. To use, peel the electrode off the wax backing and apply to the skin. To remove, pick up one corner of the electrode and peel it off the skin. Immediately re-apply to the waxed paper.
- (i) connect the electrodes to the stimulator by means of the leads (having first ensured that the stimulator is switched OFF).
- (ii) switch on and adjust the stimulator according to the procedure set out below:

IMPORTANT: (1) Before applying electrodes, always ensure that the skin is clean, dry and healthy and is also free from grease and powder.

(2) Electrodes of all types must be removed from the skin every 24 hours. The same area of skin should not be used for the next 24 hours, but instead use an unused adjacent area.

TYPES OF TENS

Three types of TENS are in common use. (For details see also table below)

- (1) **CONTINUOUS** (conventional) high frequency/low intensity
- (2) **PULSED** (Burst) low frequency/low intensity
- (3) **ACUPUNCTURE-LIKE** (Acu-TENS) low frequency/high intensity.

TYPE With synonyms	PULSE Pattern	Frequency	Amplitude	EFFECTS
1. CONTINUOUS Conventional High-frequency/ low-intensity	Continuous	High 40-150 Hz	Low 10-30 mA	Non-painful paraesthesiae directed into area supplied by stimulated nerve(s).
2. PULSED Burst Low-frequency/ low-intensity	Bursts 100 Hz at 1-2 Hz	Low Bursts of	Low 10-30 mA	As for 1, but felt in bursts.
3. ACUPUNCTURE-LIKE Acu-TENS Low-frequency intensity	Bursts 100 Hz	Low Bursts of At 1-2 Hz	High 15-50 mA	As for 1, but accompanied by non-painful phasic twitching of muscles in those myotomes which are stimulated

- Note: (i) On some stimulators, modulated outputs are available. Frequency modulation: the frequency of the continuous output is varied between present limits in a regular pattern, for example, between 90-55 Hz over 90 msec, 1.3 times second. Amplitude modulation: the amplitudes of each group of shocks which make up each pulse or burst are unequal and form a rising staircase of increasing amplitude. This pattern of amplitude modulation produces a stroking sensation under the electrodes which is more comfortable for the patient.
- (ii) On some stimulators a randomised continuous output is available, the purpose of which is to reduce the development of tolerance to TENS which may occur more readily with a regular pattern of stimulation due to habituation of the nervous system.
- (iii) Stimulators are now available that produce complex wave forms designed to operate with a single pair of electrodes (LIKON) or multiple electrodes activated randomly (CODETRON), and it is to be hoped that their role in TENS therapy, especially for palliative care, will soon become clear [see later section headed 'Other types of transcutaneous electrical stimulation (TENS)'].

GENERAL POINTS:

- (a) the stimulus sensation should be directed into the painful area
- (b) the sensation produced by TENS should be “strong but comfortable” and not just tolerable
- (c) neither CONTINUOUS (conventional) TENS nor PULSED (burst) TENS should be permitted to produce muscle twitching or spasm
- (d) by contrast, ACUPUNCTURE-LIKE TENS (Acu-TENS) is deliberately adjusted to a strength that evokes muscle twitching.
- (e) To treat large areas of pain, dual (or multiple) pairs of electrodes may be needed (use double adaptor lead with single channel stimulator OR dual channel stimulator).

THE TENS TRIAL: The purpose of this is three-fold:

- (a) to familiarise the patient with the use of TENS
- (b) to ensure that the pain condition is not aggravated by TENS
- (c) it may also indicate whether the patient obtains pain relief within the trial period. But if pain relief is not achieved within this time, the patient may well achieve pain relief with longer periods of stimulation. Hence the importance of ensuring that the patient has a trial period of TENS over a period of at least a fortnight.

IMPORTANT: It is essential that in a TENS trial, stimulation should be carried out for a minimum of 1 hour. If this is not done, then a patient whose response to TENS takes more than an hour will be deemed mistakenly to be non-responsive to TENS!

TRIAL SESSION - SETTING OF CONTROLS**I. CONTINUOUS stimulation**

1. Set all controls to **ZERO** (or minimal setting); and set mode switch to ‘CONTINUOUS’ position.
2. Increase pulse **AMPLITUDE** slowly to maximum comfortable level i.e. ‘strong but comfortable’.

N.B. This is usually a distinct end-point.

3. Increase pulse FREQUENCY to maximum comfortable level.

N.B. This is usually a distinct end-point.

4. Where available increase pulse WIDTH to comfortable level.

II PULSED (Burst) stimulation

1. Set all controls to ZERO (or minimal setting); and set mode switch to PULSED position.

Then proceed with steps 2-4 as for CONTINUOUS stimulation (see above).

III ACUPUNCTURE-LIKE stimulation (ACU-TENS)

Proceed as for PULSED TENS (see II above) but in step 2 adjust pulse AMPLITUDE so that muscles underlying the electrodes twitch visibly but not painfully.

WHICH TYPES OF TENS SHOULD BE USED?

The form of TENS that is optimum for a particular pain must be discovered by trial and error BOTH CONTINUOUS and PULSED TENS should be tried for every new pain treated.

TREATMENT PLAN

As for all other forms of treatment it is important that the diagnosis should be established first. Even when a precise diagnosis cannot be made it is essential to establish that TENS is an appropriate treatment for a particular pain i.e. that other, possibly more radical treatment, for example surgery, is not required. Once the decision to use TENS has been made the following procedure is adopted.

1. **Trial session** (see above under Trial Session - Setting of Controls).
2. **Instruct patient in the use of equipment.**

3. **Directions:** 'begin with a minimum of one hour three times a day'
'adjust according to need'
'use as much as you like'
'you may get a bonus of a period of post-stimulation pain relief'
4. **Review:** 1 month)
3 months) after treatment started
6 months)
12 months)
Thereafter according to need.

COMPLICATIONS OF TENS:

1. **SKIN IRRITATION:** 30% - usually due to use of improper technique by patient. The commonest cause is failure to clean carbon-rubber electrodes after use; these must always be washed with soap, rinsed and dried after use. Electrodes of all types must be removed from the skin at least once every 24 hours. Electrodes should not be applied to the same area of skin every day. Instead the electrodes should be applied to an adjacent area of fresh skin each day, thus 'ringing the changes'.
2. **ALLERGIC REACTION:** (uncommon) (a) to electrode (b) to jelly (c) to fixative e.g. tape, gum etc. When this occurs the type of electrode, jelly or tape should be changed. Thus, carbon-rubber electrodes can be replaced by self- adhesive electrodes; TENS saline jelly can be replaced by KY jelly (theoretically KY jelly is not conductive, but in practice it works!); *Micropore* tape can be replaced by some other suitable tape.
3. **ELECTRICAL SKIN BURN** - excessive electrical current applied to denervated or poorly innervated areas of skin. Before using TENS always check that there is normal sensation in the skin to which the electrodes are to be applied.
4. **EQUIPMENT FAILURE** - leads, battery, stimulator, charger (when rechargeable batteries are used). The leads are the most vulnerable part of the system and the wires may fracture where these

are connected to the plugs. Also check that the plugs connected to the electrodes are not dirty, corroded or heavily oxidised. Always check the battery and replace with a new one if in doubt.

5. DEVELOPMENT OF TOLERANCE TO ANALGESIC EFFECT: First check that stimulator is working normally and is being used correctly. Apparent tolerance may be due to worsening of the pain problem. Nevertheless in about 30% of patients tolerance develops slowly with the passage of time and when this occurs consider (a) change pulse pattern i.e. from continuous to pulsed or random (if available) and/or (b) temporarily- withdraw TENS to permit reversal of tolerance.

CONTRAINDICATIONS:

DO NOT stimulate over the anterior part of the neck (carotid sinus, laryngeal muscles). stimulate over a pregnant uterus (Exception: TENS for labour pains).

use stimulator in the presence of a cardiac pacemaker (N.B.) it is not uncommon to use TENS in the presence of a fixed-rate pacemaker but only after agreement with the cardiologist in charge of the patient. Use for non-compliant patient, low I.Q senile, etc.

RESULTS OF TENS THERAPY: Results of a number of controlled studies indicate that there is a significant and therapeutically useful analgesic response to TENS although others do not support this conclusion. As with medication, there is a placebo response to TENS and this factor contributes to the initial but transient analgesic effect in response to electrical stimulation seen with some patients. Thus the response of a group of patients to TENS may be as high as 70-80% during the first week but falls to about 40% at the end of the first month and to about 35% at the end of the first year Nevertheless, there is a hard core of patients for whom TENS offers significant and continued pain relief and where medication has often failed to help or where there are no alternatives with the possible exception of ablative procedures.

OTHER TYPES OF TRANSCUTANEOUS ELECTRICAL STIMULATION (TENS)

Since TENS was first introduced, sustained efforts have been made to improve every aspect of this method of electroanalgesia, especially its efficacy. Some of these are listed below:-

TYPE	DESCRIPTION	COMMENTS
Acupuncture-like TENS	High-intensity/low frequency TENS	Increases efficacy some patients who fail to respond to continuous stimulation will respond to this form.
<i>Codeatron stimulator</i>	Uses multiple electrodes which are excited randomly	Claimed to increase efficacy and to reduce onset of tolerance.
<i>Likon stimulator</i>	Shocks delivered on a complex high frequency carrier wave	Claimed to increase efficacy by achieving deeper penetration of the tissues by electrical stimulation.
H-wave stimulator	Biphasic wave with exponential decay	Claimed to increase efficacy and to be a more comfortable form of electrical stimulation.
Micro-current TENS	Very low current [μA] delivered at very high frequency	No sensation of stimulation produced. Unknown mechanism of action. Claimed to be more effective than ordinary TENS.
Transcutaneous Spinal Electroanalgesia (TSE)	High frequency stimulation (2000 Hz) with very short pulses (4 μsec) each with a charge of <0.8 μc into a 1000 Ω load	Stimulation applied via surface electrodes placed over the spinal cord in one of two locations. Little or no sensation of stimulation. Unknown and novel mechanism of action. Cumulative effect with repeated treatment which can produce analgesia lasting months.

MECHANISM OF ACTION OF TENS AND ACUPUNCTURE

The precise way in which TENS and acupuncture produce analgesia is still not completely clear. However on the basis of a considerable body of evidence now available it appears that peripheral and central neuroanatomical and neuropharmacological mechanisms are involved.

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**SELECTION OF
ACUPUNCTURE
POINTS**

SELECTION OF ACUPUNCTURE POINTS

The following principles are used in the selection of points:-

- 1. All acupuncture points of a Channel treat diseases occurring along that Channel, and also diseases of the corresponding Internal Organ, related tissues and of the connected special sense organ.**

This is the most important principle. For example, the point Lieque (Lu, 7) treats arthritis of the wrist, bronchial asthma, rhinitis and skin disorders. As a corollary, the acupuncture points of a Channel also treat disorders of the interior-exterior related (Coupled) Channel and its pertaining Organ. The point Lieque (Lu, 7) and Taiyuan (Lu, 9) may, therefore, be used in treating disorders of the -Large Intestine as well as the Lung.

- 2. All acupuncture points treat diseases of the local and adjacent areas.**

An acupuncture point has an effect on the area immediately surrounding it, generally an area of about 2-3 centimeters around the points in the limbs, and about half this diameter in the head, neck and trunk. The use of acupuncture points to treat diseases, of local and adjacent areas is one of the key principles in the practice of acupuncture therapy. It is the first consideration that should govern the selection of the points for any regional disease. For example, in treating osteoarthritis of the knee, the local points to be selected are those in the immediate vicinity of the knee-joint, i.e. Dubi (St. 35.), Medial-Xiyan (Ex. 32.) and Hedong (Ex. 31.).

The local points are, by and large, the most effective points in treating a majority of disorders.

3. Points distal to the elbow and distal to the knee treat proximal disorders.

The distal areas of the limbs have a much rich innervation and a more complicated network of nerves, than the proximal areas of the limb. This perhaps, explains why the Distal points are generally very effective. Still, it is a curious fact that a point located in the hand, like Hegu (L.I. 4), should have distant effects on the face. This is not difficult to understand, however, if one remembers that the hand and face are represented very close to each other in the cerebral cortex.

There are six important frequently used Distal points, three in the upper limb, and three in the lower limb:-

Distal Point	Proximal Area Affected
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UPPER LIMB

Hegu (L.I. 4).	Face and special sense organs front of head and neck.
Lieque (Lu. 7).	Back of head and neck, back of chest, and lungs.
Neiguan (P. 6).	Front of chest and upper half of anterior abdominal wall; internal organs of chest, diaphragm, and the internal organs in the upper half of the abdomen.

LOWER LIMB

Zusanli (St. 36).	Internal organs of the abdomen.
Weizhong (U.B. 40).	Low back, urogenital organs.
Sanyinjiao (Sp. 6)	Perineum, pelvic organs and external genitalia.

4. Needling has specific physiological and psychological effects.

Modern clinical and laboratory studies have confirmed that the insertion of acupuncture needles into any part of the body produces the following effects:-

- a) Analgesia.
- b) Sedation.
- c) Homeostasis.
- d) Improvement of the immune mechanisms. Anti-inflammatory effects.
- e) Motor effects.
- f) Psychological effects.

The insertion of needles into the acupuncture points, themselves, enhances the above effects to a considerably greater degree. At certain acupuncture points these effects are more pronounced than at other points. (However, there are many divergent views today, differing from the traditional belief that there is specificity of action at the acupuncture points).

a) *Analgesia:*

Recent research has shown that analgesia occurs with needling due to the raising of the pain threshold. Pain is a symptom of many disorders, and the first aim is to treat the underlying condition. The next step, of course, is to relieve the pain. However, in some instances such as in trigeminal neuralgia, herpes zoster and phantom limb pain the symptom of pain itself, is the disease. Some types of pain, like the exquisite pain of childbirth, do not seem to serve any particular purpose.

Acupuncture is the method par excellence for the relief of pain and it has limited uses as an anaesthetic agent in surgery. In acupuncture therapy the most effective analgesic points are:

Hegu (L.I. 4).

Xiangu (St. 43), or Neiting (St. 44).

The point Hegu (L.I. 4), in fact, exhibits all the effects of acupuncture very well. Hegu in Chinese ‘means “the Great Eliminator”. It has been given this name because it helps to eliminate a wide spectrum of diseases.

Modern acupuncturists prefer Xianggu (St. 43), to Neiting (St. 44.), as it ‘is a better site for stimulation with a needle.

b) *Sedation:*

Disease causes anxiety. The treatment of any disease, therefore, includes the taking of steps to relieve the patient of anxiety. The following specific points have powerful sedative effects:-

Baihui (Du. 20).

Shenmen (H. 7).

Shenmai (U.B. 62).

These points are, in fact, a particularly useful combination when treating insomnia and psychosomatic disorders.

The point Baihu (Du. 20) is the governing point of the Du Channel, which in turn governs all other Channels and points. Author call it a “Diazepam” point.

c) *Homeostasis:*

Homeostasis is the internal environment of the body in balance. The regulation of such functions as the heart beat, rate of respiration, body temperature, sleep, appetite, muscle tone, acid-base balance of the blood, gastro-intestinal motility, endocrine balance and many other vital parameters are all geared to delicately balanced homeostatic mechanisms, mediated either through the nervous system or by chemical transmitters. The autonomic nervous system is a good example of a homeostatic mechanism.

Homeostasis has been found to be one of the most important therapeutic effects of acupuncture needling. With numerous animal experiments performed in the People’s Republic of China and in other countries, it has been established that acupuncture needling, effects complicated nervous mechanisms and is also associated with the

liberation of chemical substances such as acetylcholine, adrenaline, serotonin, endorphins, enkephalins and many others, which could mediate, homeostatic and other effects.

The best homeostatic points in clinical practice are as follows:

Quchi (L.I. 11).

Zusanli (St. 36).

Sanyinjiao (Sp. 6).

d) *Improvement of the Immune Mechanisms:*

For many years the Chinese have used acupuncture to combat infective disorders. Modern research has shown that certain acupuncture points have the specific effect of stimulating the defence mechanisms of the body, the most powerful of which are:

Dazhui (Du. 14).

Quchi (L.I. 11).

Zusanli (St. 36).

Sanyinjiao (Sp. 6).

Today, modern antibiotics are the treatment of choice in infections. However, in cases where there is allergy, intolerance or resistance to these drugs, acupuncture may be employed. In chronic infections, where the antibiotics have failed, acupuncture may be useful. In fact there is leucocytosis after acupuncture in some cases.

e) *Motor effects:*

Clinically acupuncture is an effective method of treating paralytic disorders. The acupuncture points situated over the motor points are particularly useful in this respect.

5. Certain points on the body surface become tender or act as “trigger points” during disease. They are called “Ah-Shi” points.

Some areas of the body become tender particularly in the locomotor disorders, the rheumatic group of diseases and in degenerative conditions like osteoarthritis. These tender points,

which are called “Ah-Shi” points in acupuncture, should be needled whenever present. “Ah-Shi” in Chinese means “Oh-Yes”, this being the verbal reaction of the patient, when the point of tenderness is palpated by the acupuncturist.

There is also another group of points called the “trigger points” that are found in disorders like trigeminal neuralgia. Unlike tender points which give rise only to localized pain, trigger points can spark off pain, which is felt elsewhere. Trigger points are also regarded as Ah-Shi points and should be needled. Similarly, the fibrocytic nodules which are often found in locomotor disorders are also considered “Ah-Shi” point. The depth of needling of all these points depends on the depth at which the pain is felt. However, when needling Ah-Shi points the anatomy of the area must be considered, to prevent injury to vulnerable structures in that area.

6. Certain acupuncture points become painful or exhibit tenderness on palpation when there is disease of the “related Organ”. They are called “Alarm Points”.

Alarm points are specific acupuncture points, which become tender in diseases of the related Organ. They are termed Alarm points because they give warning of the presence of, or the impending appearance of disease, of the related Organ. When the disease condition improves, the Alarm points becomes less tender.

These points are therefore used for diagnosis and prognosis, as well as for therapy.

On the anterior aspect of the trunk there are twelve Alarm points corresponding to the twelve Internal Organs. Likewise, there are twelve points on the trunk. The points in front are called “Mu-Front” points, while the points at the back are called “Back-Shu” points.* It is interesting to note that each of the Back-Shu points is situated almost precisely over the specific paravertebral sympathetic ganglion that is connected with its related Organ; hence it is likely that the functional

and anatomical relationship between these points and their related Organ is mediated through the autonomic ganglia of the sympathetic chain.

In therapy these points may be used singly, or in the combination of the Mu-Front and Back-Shu points of the affected Organ, without using the Distal points.

The following table is a list of the Mu-Front and the Back-Shu Alarm points:

Mu-Front Point	Internal Organ	Back-Shu Point
Zhongfu (Lu. 1).	Lung	Feishu (U.B. 13).
Shanzhong (Ren 17).	Paricardium	Jueyinshu (U.B. 14).
Jujue (Ren 14).	Heart	Xinshu (U.b_ 15).
Qimen (Liv. 14).	Liver	Ganshu (U.B. 18).
Riyue (G.B. 24).	Gall Bladder	Danshu (U.B. 19).
Zhangmen (Liv. 13).	Spleen	Pishu (U.B. 20).
Zhongwan (Ren 12),	Stomach	Weishu (U.B. 21).
Shimen (Ren 5).	Sanjiao	Sanjiaoshu (U.B. 22).
Jingmen (GB. 25).	Kidney	Shenshu (U.B. 23).
Tianshu (St. 25).	Large Intcstine	Dachangshu (U.B. 25)
Guanyuan (Ren 4).	Small Intestine	Xianchangshu (U.B. 27).
Zhongji (Ren 3).	Urinary Bladder	Panguangshu (U.B. 28).

All “Back-Shu” points are located in the Urinary Bladder Channel.

In addition to the above, there are four Special Alarm points:

- | | |
|---------------------|--------------------|
| Liver: | Zhongdu (Liv. 6). |
| Gall Bladder: | Jianjing (G.B. 21) |
| | Dannang (Ex. 35). |
| Vermiform Appendix: | Lanwei (Ex. 33). |

7. **There are eight specific acupuncture points called the Eight Influential points which are used to treat diseases of specific tissues.**

The following eight acupuncture points, in addition to their other effects, treat diseases of certain specific tissues:

Influential Point	Tissue
Shanzhong (Ren 17).	Respiratory tissue.
Dashu (U.B. 11).	Bone and cartilage.
Geshu (U.B. 17).	Blood.
Zhongwan (Ren 12).	Fu ("hollow") Organs.
Zhangmen (Liv. 13).	Zang ("solid") Organs
Taiyuan (Lu 9).	Vascular system.
Yanglingquan (G.B. 34).	Muscle and tendon.
Xuanzhong (G.B. 39).	Marrow.

8. **Each of the Twelve Paired Channels has an acupuncture point called the Xi-Cleft point, which treats acute diseases of the Channel and the pertaining Internal Organs.**

Channel	Xi-Cleft Point
Lung	Kongzui (Lu. 6).
Large Intestine	Wenliu (L.I. 7)
Stomach	Liangqiu (St. 34).
Spleen	Diji (Sp. 8)
Heart	Yinxi (H. 6).
Small Intestine	Yanglao (S.I. 6).
Urinary Bladder	Jinmcn (U.B. 63)
Kidney	Shuiquan (K. 5).
Pericardium	Ximcn (P. 4).
Sanjiao	Huizong (S.J. 7).
Gall Bladder	Waiqiu (G.B. 36).
Liver	Zhongdu (Liv. 6).*

To relieve acute disorders very strong manual stimulation is carried out at the Xi-Cleft points. These points are termed “first-aid points” by some Western acupuncturists.

9. Each of the Twelve Paired Channels has a point called the Yuan-Source point, which treats subacute and chronic disorders of the pertaining Organ.

The Yuan-Source point is the maximum concentration of the vital energy of the Internal Organ on the Channel. This point may be looked upon as the main sluice gate of an irrigation channel, the Internal Organ being the reservoir.

The Yuan-Source point is connected directly to the Internal Organ by a deep connection. It is also connected to the Coupled Channel at the Luo-Connecting point.

All Yuan-Source points situated near the wrists or the ankles.

Channel	Yuan-Source Point
Lung	Taiyuan (Lu. 9).
Large Intestine	Hegu (L.I. 4)
Stomach	Chongyang (St. 42.).
Spleen	Taibai (Sp. 3)
Heart	Shenmen (H. 7).
Small Intestine	Hand-Wangu (S.I. 4).
Urinary Bladder	Jinggu (U.B. 64)
Kidney	Taixi (K. 3).
Pericardium	Daling (P. 7).
Sanjiao	Yangchi (S.J. 4).
Gall Bladder	Qiuxu (G.B. 40).
Liver	Taichong (Liv. 3).*

10. There are fifteen named acupuncture points called Luo-Connecting points in the Fourteen Channels (the Spleen Channel has two). These points connect the interior- exterior Channels to each other.

A Luo-Connecting point is a point of entrance of vital energy to and from the Coupled Channels. These points also called ‘junction points” by some Western practitioners.

According to traditional Chinese Medicine, Luo-Connecting points are placed where a communication exists between a pair of Yin and Yang Channels, which have what is called an “interior- exterior relationship”. By puncturing at these points of communication it is believed that energy imbalance in the pair of Coupled Channels can be restored to normal or optimal levels.

The collateral Luo-Connecting Channels connect the Coupled Channels from the Luo-Connecting point of one Channel to the Yuan-Source point of the other Channel. Therefore, it is common practice to use the combination of the two Yuan-Source and the two connecting points of a pair of channels in diseases involving the Coupled Channels or Coupled Organs. Thus, whenever there is reason to believe that the disease requiring treatment involves both the interior and exterior related Channels or Organs, the Luo-Connecting points may be used in combination with the Yuan- Source points (e.g. an asthmatic who has severe constipation).

The 15 Luo-Connecting Points (Luo means door)

Yang (Exterior) Channel	Luo-Connecting Points	Yin (Interior) Channel	Luo-Connecting Points
Large Intestine	Pianli (Lu. 6)	Lung	Lieque (Lu. 7).
Sanjiao	Waiguan (S.J. 5)	Pericardium	Neiguan (P. 6).
Small Intestine	Zhizheng (S.T. 7)	Heart	Tongli (H. 5).
Stomach	Fenglong (St. 40)	Spleen	Gongsun (Sp. 4) Dabao (Sp. 21). the Major Luo point).
Gall Bladder	Guangming (G.B. 37).	Liver	Ligou (Liv. 5).
Urinary Bladder	Feiyang (G.B. 58)	Kidney	Dazhong (K. 4).
Du	Changqiang (Du. 1).	Ren	Jiuwei (Ren 15).

11. Symptomatic points - Combinations of specific points alleviate symptoms of certain diseases.

There are combination of points some of which have been used from ancient times to treat common disorders. Some of the frequently used points are listed below:

Symptoms	Points Used for Treatment
Asthmatic attack	Tiantu (Ren. 22); Kongzui (Lu. 6).
Abdominal distension	Tianshu (St. 25); Zusanli (St. 36).
Cough	Tiantu (Ren. 22); Lieque (Lu. 7).
Constipation	Tianshu (St. 25); Zhigou (S.J. 6).
Convulsions	Renzhong (Du. 26).
Diarrhoea	Gongsun (Sp. 4); Zusanli (St. 36). Qihai (Ren 6); Sanyinjiao (Sp. 6)
Fever	Dazhui (Du 14); Quchi (L.I. 11); Hegu (L.I. 4).
Hiccough	Neiguan (P. 6); Geshu (U.B. 17); Zusanli (ST. 36).
Incontinence (urinary)	Qugu (Ren 2); Sanyinjiao (Sp. 6).
Incontinence (rectal)	Changqiang (Du. 1); Chengshan (U.B. 57).
Insomnia	Baihui (Du 20); Shenmen (H. 7); Anmian I & II (Ex. 8 & Ex. 9).
Oedema	Shimen (Ren 5); Shuifen (Ren 9). Yinlingquan (Sp. 9); Pishu (U.B. 20).
Pain in the chest	Shangzhong (Ren 17); Neiguan (P. 6).
Phlegm, (excessive)	Fenglong (St. 40) sputum.
Pruritus (allergic)	Dushu (U.B. 16); Xuehai (Sp. 10).
Sweating (Excessive)	Yintang (Ex. 1); Yingxiang (L.I. 20).
Sneezing	Yinxi (H. 6). Fulu (K. 7); Hegu (L.I. 4).
Vomiting, nausea	Neiguan (P. 6); Zusanli (St. 36).

When acute symptoms are exhibited, it is necessary to treat the patient first symptomatically, before a pulse diagnosis is carried out.

12. A disease of one side of the body may be treated by acupuncture points of either side.

The Channels on the two sides of the body are connected to each other by the Du, Ren, the extra Channels and the Collaterals. According to neurology, the activities of both sides of the body are coordinated by the corpus callosum, and at every level below this, in

the brain stem and in the spinal cord there are segmental connections. This principle is useful if a particular limb cannot be punctured due to the presence of skin disease, ulceration, swelling, Buerger's disease and varicosity. In such cases, the opposite (contralateral) limb may be used.

If the action of acupuncture is due to humoral mechanisms, such as endorphins, enkephalin, serotonin etc., then too, it is understandable that the side of therapy does not matter.

Some acupuncture believe however, that when distal points are employed the contralateral side is more effective. It is hypothesized that the representation of the homunculus in the thalamus, in a globular foetal position explains this. The action of the Confluent points is also explained on this basis. This is known as the Thalamic Neurone Theory of Acupuncture.

13. The Confluent point of the Eight Extraordinary Channels may be used to treat diseases with mixed symptomatology (complex syndromes).

Since the Eight Extraordinary Channels interconnect the Twelve Paired Channels, their symptomatology too should be taken into account in therapy. There are eight points belonging to the twelve Paired Channels situated in the limbs (four in the upper and four in the lower limb) called the Confluent points, the stimulation of which treat diseases related to the Twelve Channels as well as the Extraordinary Channels. Usually disease or syndromes exhibiting mixed, complex symptomatology are treated by (the experienced acupuncturist) using these points.

The table below illustrates these relationships:

Confluent Point	Regular Channel	Extra Channel	Indications (area of the body)
Neiguan (P. 6.)	Pericardium	Yinwei	Heart, Chest,
Gonsun (Sp. 4.)	Spleen	Chang	Stomach
Houxu (S.I. 3.)	Small Intestine	Du	Neck, shoulder
Shenmai (U.B. 62.)	Urinary Bladder	Yunggiao	Back, inner canthus
Waiguan (S.J. 5.)	Sanjiao	Yangwei	Retroauricular area cheek, Outer canthus
Foot-Linqi (G.B. 41.)	Gall Bladder	Dai	
Lieque (Lu. 7.)	Lung	Ren	Pharynx, chest,
Zhoahai (K. 6.)			Lung

Points of the upper extremities may be combined with those of the lower extremities for better therapeutic results. For example. Neiguan (P. 6) combined with Gongsun (Sp. 4) is indicated in diseases of the heart, chest and epigastric region. Houxi (S.I. 3) combined with Shenmai (U.B. 62) is indicated in diseases of the neck, shoulder, back and inner canthus; Waiguan (S.J. 5) combined with Foot-Linqi (G.B. 41) is indicated in disorders of the mastoid region, cheek and outer canthus; while Lieque (Lu. 7). and Zhaohai (K. 6) in combination, are indicated in disorders of the pharynx, chest and lungs.

The Eight Confluent Points

EXTRAORDINARY CHANNEL AND ITS SYMPTOMATOLOGY	CON-FLUENT POINT	REGULAR CHANNEL
1. DU (The Back Midline Channel). Ano-rectal disorders, Low back-ache, immune and infective disorders, mental and neurological disorders, oral disorders.	Houxi (S.I. 3)	Small Intestine
2. REN (The front Midline Channel). Genito-urinary and gastro-intestinal disorders, heart and disorders, speech disorders, facial paralysis.	Lieque (Lu. 7)	Lung Lung
3. CHONG (The Vital Channel) Gastro-intestinal and gynaecological disorders.	Gongsun (Sp. 4)	Spleen
4. DAI (The Belt Channel). Abdominal distension, weakness and motor impairment in lumbar region.	Foot-Linqi (G.B. 41)	Gall Bladder
5. YANGCHIAO (The Yang Motility Channel). Insomnia, paralysis, numbness or muscular atrophy in the limbs.	Shenmai (U.B. 62.)	Urinary Bladder

6. YINCHIAO (The Yin Motility Channel). Hypersomnia, paralysis, numbness or muscular atrophy of the lower limbs.	Zhaohai (K. 6.)	Kidney
7. YANGWEI (The Yang Regulating Channel). Chills and fever.	Waiguan (S.J. 5.)	Sanjiao
8. YINWEI (The Yin Regulating Channel). Upper abdominal and cardiac pain	Neiguan (P. 6.)	Pcricardium

14. In each of the Twelve Channels there are five points known as the Five Shu Points which correspond to the Five Elements.

These are known as the Sixty Command Points, and are used principally to bring about energy equilibrium in the Channels. The fundamental concept of traditional Chinese Medicine is that disease arise from extrinsic and intrinsic factors causing the normal flow of vital energy to be disrupted. The object of acupuncture is to restore the normal energy flow and thereby bring the organism to a state of health.

If for example, the energy is deficient in the Organ Liver (Element: Wood) and the concomitant excess is in the Organ Kidney (Element: Water) then the disequilibrium may be corrected by puncturing the Water point of the Liver Channel. This allows the excess energy to flow through from the Kidney to the Liver in the Generative or Sheng cycle according to the Mother-Son Law. Similarly, if the excess is discovered in the Lung (Element: Metal), then a puncture would have to be effected on the Metal point of the Kidney Channel alter puncturing the water point of the Liver Channel. However, if the excess is in the Large Intestine, the Metal point of the Liver Channel is punctured, as the energy would then flow in the Ko cycle directly to the Liver. This is because of the principle that the energy flow in the Ko or destructive cycle changes from Yang to Yin or from Yin to Yang as it reaches the target Organ, thus resulting in its “destructive” activity. (If, on the other hand, the excess is in the Gall Bladder, since this is within the same

Element, equilibrium may be brought about by puncturing the Luo-Connecting point of the Liver. The Five Shu points are not involved in this transfer).

It will be observed that in the example given here, it is the Channel which is deficient in energy that is first punctured. The principle follows the ancient maxim that energy should not be wasted; the energy must be gently “drawn” by the deficient Channel, from the Channel having the excess, “as an infant sucks, milk from its Mother”. The technique of puncturing in all these examples is, therefore, the tonification or “bu” or re-enforcing methods.

The Sixty Command Points are all located distal to the elbow and distal to the knee.

The technique of Chinese pulse diagnosis, as a method of detecting energy disequilibrium, is most profitably used in the chronic stages of disease. In the acute stage, the presenting symptoms are treated by specific points or combinations of points which are traditionally prescribed. Strong stimulation, i.e., the “Xie” or reducing method is often used at the main points. For example, for fever the points Dazhui (Du. 14), Quchi (L.I. 11) and Hegu (L.I. 4) are used with strong hand stimulation at the first and third points; for cardiac pain Shanzhong (Ren. 17) and Neiguan (P. 6) are used with strong hand stimulation at the latter point; for very acute diarrhoea (as in cholera) the point Gongsun (Sp. 4) is strongly stimulated.

The presence of acute symptoms, in fact, usually masks the indication of the fundamental energy imbalances in the radial pulses. The traditional Chinese physician, therefore, first treats the acute symptoms and it is only after these have subsided that he makes a careful examination of the pulses. It is then possible, for the expert, to make a fairly accurate assessment of the energy disequilibrium, select the indicated point or points out of the Five Shu points (60 Command points) and carry out puncture so that the energy imbalances are restored.

Discussed below are the Five Shu points of each of the Twelve channels and their general indications.

I) *Jing-Well point* :

This is always the distal-most point-the first of the Yang or the last point of the Yin Channels of Hand, or the first point of the Yin of the last point of the Yang Channels of foot. All the Jing-Well points are situated near the nails of the fingers or toes, except Yongquan (K. 1) which is situated on the sole of the foot.

The Jing-Well points treat acute emergencies such as fainting, coma, epilepsy, convulsions, cardiac arrest and respiratory arrest. These points may be pressed or pricked to bleed. The forefinger nail of the acupuncturist is usually adequate in treating at Jing-Well points, when needles are not at hand. If a needle is available, Yongquan (K. 1) gives the best results.

The Jing-Well points are situated in the areas where there is a close network of sensory nerves. Stimulation causes a heavy barrage of afferent impulses to be generated, thereby resuscitating the patient in the emergency state. The Jing-Well points, therefore, are also known as "Resuscitation points".

The point Renzhong (Du. 26₁), which is the end point on the skin of the Du Channel, is also very useful in acute emergencies, as acupressure on this point is usually sufficient to revive the patient. The total number of Jing-Well points is, therefore, twenty five.

In using laser-beam therapy, it is common practice to treat at the Jing-Well points of the respective Channels. Jing-Well points lying at the distal-most locations are believed to be the most superficially located points; therefore, this is the situation of choice to introduce external energy such as a laser-beam energy into the body. This is, however, still an experimental, but promising form of therapy.

II) *Yung-Spring point:- (Rong-Spring)*

This is always the point just proximal to the Jing-Well point; the penultimate point at the extremities.

Yung-Spring points are commonly used to treat febrile diseases and other acute disorders.

III) *Shu-Stream point:*

This point is the third or antepenultimate point, located next to the Yung-Spring point, except in the case of the Gall Bladder Channel, where it is the fourth point removed from the Jing-Well point.

Shu-Stream points are used mainly in rheumatic disorders, particularly involving the small joints of the hands and feet. Sub-acute and chronic disorders are treated using these points.

IV) *Jing-River points:*

This point is always located just proximal to the wrist or ankle.

The Jing-River points are indicated in disorders of the Zang Organs.

V) *He-Sea point:*

This point lies at or just distal to, the elbow or knee He-sea points treat a variety of Organ disorders.

Each of the Five Shu points in a Channel is related to one of the Five Elements and follows the generative Sheng cycle from the Jing-Well point to the He-sea points. The Jing-Well point of the Yin-Channels always corresponds to the Element Wood. (Therefore, in the Yin Channels the Yung-Spring point corresponds to Fire, the Shu-Stream point corresponds to Earth, the Jing-River point corresponds to Metal, and the He-Sea point corresponds to water). The Jing-Well points of the Yang Channels always correspond to the Element Metal. And in the Yang Channels the Yung-Spring points correspond to water, the Shu-Stream points correspond to Fire and the He-Sea points correspond to Earth.

The following table summarizes these relationships:

The Sixty Command Points of the 12 Channels or the Five Shu Points

The Yang Element at each level destroys the Yin element at the same Shu-point level, as exemplified in the destructive Ko Cycle of the Five Elements.

An extra set of He-Sea points related to the six Fu Organs:-

“The Yang channels have an extra set of the-Sea points known as the Lower He-Sea points. The Lower He-Sea Points of the fu organs usually give satisfactory results in treating diseases of the six fu organs, the reason being that the fu organs i.e. stomach, large intestine, small intestine, gall bladder, urinary bladder and sanjiao are closely related with the three Yang channels of foot, and each has a Lower He-Sea Point. At the same time the three Yang channels of foot communicate with the three Yang channels of hand. In treating diseases of the six fu organs, the main points selected are the Lower He-Sea Points. For gastric pain and acidity, Zusanli (St. 36), is selected; for dysentery appendicitis. Shangiuxu (St. 37) is used; Yanglingquan (G.B. 34) is for pain in the gall bladder, vomiting, etc.”

The Lower He-Sea Points of the Six Fu Organs

Yang Channel of the	Fu-Organ	Lower He-Sea Point
Foot-Yangming	Stomach Large Intestine Small Intestine Gall Bladder	Zusanli (St. 36). Shangjuxu (St. 37). Xiajuxu (St. 39). Yanglingquan (G.B. 3-4)
Foot-Shaoyang	Urinary Bladder	Weizhong (U.B. 40).
Foot-Taiyang	Sanjiao	Weiyang (U.B. 39).

15. The “Mother” and “Son” points of a Channel may be used for tonifying and sedating respectively, the Channel or the pertaining Internal Organs.

The “mother point” of a channel has tonifying effect and is indicated in xu syndrome of its related channel, while the “son point” has a reducing effect and is indicated in the shi syndrome of its related channel. Hence the maxim; “Reinforce the ‘mother’ for xu syndrome; reduce the ‘son’ for shi syndrome.” For example; when the Lung Channel is involved in xu syndrome with symptoms of chronic cough, shortness of breath, low voice, sweating and thready weak pulse, then the reinforcing method on Taiyuan (Lu. 9). may be prescribed. On the other hand, if the Lung Channel is involved in shi syndrome with abrupt onset of cough, dyspnea, hoarse voice, stifling sensation in chest with inability to lie flat and a superficial and forceful pulse, may be present. Chize (Lu. 5) with the reducing method may then be prescribed.

16. Horary points. (These have been discussed earlier).

17. “Mother” and “Son” Points for Reinforcing and Reducing

Channel	Mother point Bu (Reinforcing) (Tonifying)	Son point Xie (Reducing) (Sedating)
Lung Channel of Hand-Taiyin	Taiyuan (Lu. 9).	Chize (Lu. 6).
Large Intestine Channel of Hand-Yangming	Quchi (L.I. 11).	Erjian (Li. 2).
Stomach Channel of Foot-Yangming	Jiexi (St. 41).	Lidui (St. 45).
Spleen Channel of Foot-Taiyang	Dedu (Sp. 2).	Shangqiu (Sp. 5)
Heart Channel of Hand-Shaoyin	Shaochong	Shenmen (H. 7). (H. 9).
Small Intestine Channel of Hand-Taiyang	Houxi (S.I. 3).	Xiaohai (S.I. 8).
Urinary Bladder Channel of Foot-Taiyang	Zhiyin (U.B. 67).	Shugu (U.B. 65)
Kidney Channel of Foot-Shaoyin	Fuliu (K. 7).	Yongquan (K. 1)

Pericardium Channel of Hand-Jueyin	Zhongchong (P. 9)	Daling (P. 7)
Sanjiao Channel of Hand-Shaoyang	Hand-Zhongzhu (S.J. 3)	Tianjing (S.J. 10).
Gall Bladder Channel of Foot Shaoyang	Xiashi (G.B. 43).	Yangfu (G.B. 38).
Liver Channel of Foot-Jueyin	Ququan (Liv. 8).	Xingjian (Liv. 2).

18. Points according to Innervation.

Points according to innervation are (a) the same dermatome, (b) the same myotome, (c) the pathway of a nerve (e.g., in sciatica), may be selected in segmental, neurological disorders, e.g., trigeminal neuralgia, herpes zoster, cervical spondylosis, sciatic pain and intercostal neuralgia.

For diseases of the head, trunk, upper and lower limbs, and internal organs, selection points may be made in areas supplied by the spinal nerves, nerve plexus or appropriate nerve trunk.

THE PRINCIPLES OF ACUPUNCTURE POINT SELECTION

A. Below is a summary of the combinations of points which may be used for selecting points to treat illness based on the principles described. The particular combination which is eventually selected depends on the nature of the disease, the symptomatology presented, the condition of the patient and, of course, on the experience of the acupuncturist.

- 1) Painful points:
 - a) Ah-Shi points.
 - b) Alarm points.
- 2) Points having specific physiological and psychological effects, e.g., those points having specific analgesic sedative, homoeostatic and immune enhancing properties.

- 3) Points according to the presenting symptoms.
- 4) Jing-Well points (Resuscitation Points).
- 5) Combination of Local points and relevant. Distal (Remote) points.
- 6) Combination of Back-Shu and Mu-Front points.
- 7) Points along the affected Channel.
- 8) Points according to the nerve supply of the diseased area.
- 9) Influential points (Correspondence points).
- 10) Yuan-Source points (Source points) in chronic disorders of the Internal Organs.
- 11) Luo-Connecting points (Junction points) used in imbalances of the coupled Channels or coupled Internal Organs.
- 12) Combination of Yuan-Source and Luo-Connecting points.
- 13) Xi-Cleft points (First-Aid points).
- 14) Confluent points of the Eight Extraordinary Channels.
- 15) Tonification and Sedation points (Mother and Son Points).
- 16) Points according to the Four Laws of traditional medicine:
 - a) Mother-Son Law.
 - b) Husband-Wife Law used together with pulse diagnosis,
 - c) Noon-Midnight Law.
 - d) The Theory of the Five Elements (Five Shu points, Command points – points selected by pulse diagnosis).
- 17) Auriculotherapy (ear acupuncture).
- 18) Head needle therapy (scalp acupuncture).

- 19) Other Microsystem acupuncture points.
 - a) Face-Nose acupuncture.
 - b) Hand acupuncture.
 - c) Foot acupuncture.
 - d) Wrist-ankle acupuncture.

- 20) Ancillary methods.
 - a) Plum Blossom needle therapy.
 - b) Moxibustion.
 - c) Laser beam therapy.
 - d) Electro-acupuncture. According to Voll (EAV).
 - e) Ryodoraku.
 - f) Shiatsu.
 - g) Reflexotherapy.
 - h) Sonotherapy
 - i) Magnetotherapy
 - j) Cryotherapy.
 - k) T.E.N.S.
 - l) Moratherapy, Biotron therapy.

- 21) Points selected using electro-diagnostic methods.

- 22) The experience points of each school of acupuncture.

- 23) Acu-massage (micromassage) points.

- 24) Periosteal-puncture points.

- 25) Secret points, strange points, extraordinary points.

- 26) HOMOEOPUNCTURE: The use of the homoeopathic drugs on the needle.

These different groupings may be used singly or in combination. It must be remembered that Yin and Yang Distal points in close proximity are not used together except when using the Yuan-Source and the Luo-Connecting points in the Coupled Channels.

If the results are inadequate with body acupuncture ear acupuncture and head needle therapy may be used. Head, ear and body points may be combined in the same patient, when indications exist. The body acupuncture is more effective in locomotor disorders, ear acupuncture in disorders of the internal organs such as peptic ulcer and intestinal disorders, and head needle therapy in neurological disorders. However, in all cases, it is best to start with body acupuncture.

B. THE PRINCIPLES OF ACUPUNCTURE THERAPY

In order to obtain the best results, the practitioner of acupuncture must pay careful attention to the following:-

- a) Accurate diagnosis, using all the methods available.
- b) Selection of the most effective acupuncture points following the rules for the selection of points.
- c) Accurate location of the acupuncture points.
- d) Observance of the contra-indications.
- e) The use of the correct techniques of insertion and manipulation.
- f) Due care at Dangerous points.
- g) Observance of proper aseptic procedures.
- h) Use of good quality needles of suitable gauge and length.
- i) Good rapport with the patient. This is the most important step of obtaining a satisfactory result. Acupuncture is a great subjective art, and the treatment should always be correctly tailored to suit the needs of each individual patient.
- j) Discontinuance of drug therapy e.g. steroids withdrawal.

The acupuncture points to be used may be selected on the basis of one or more of the following different clinical methods:-

- 1) The formula method.
- 2) The theories of traditional Chinese medicine.
- 3) Modern medicine.
- 4) Newly discovered points.
- 5) Electrically reactive points.
- 6) The barefoot doctor method.

The first two methods encompass the whole of traditional Chinese acupuncture.

The first, the form method, means the selection of specific points or combination of points which, through the observations of successive generation of physicians, are known to be effective against particular disorders. This includes:-

- i) Local and Distal points, e.g., Touwei (St. 8) and Neiting (St. 44). for headache; Tianrong (S.I. 17) and Hegu (L.I. 4). for tonsillitis.
- ii) Points according to symptoms, e.g., Ranzhong (Du. 26) for shock.
- iii) Specific points, e.g., Xuehai (Sp. 10) for allergy.

This method was regarded therefore, as an effective means of treatment once the presenting symptoms of an illness have appeared.

As opposed to the first method, the selection of points according to the traditional theories is essentially a matter of the precise regulation of the vital energy ("Qi") circulating in the Channels ("Jing-Luo"). Central to this method is the examination of the pulse which reveals the disequilibrium of energy. Point selection is then made using the theory of the Five elements and the Yin-Yang theory. Although other diagnostic procedures such as palpation and observance of external signs were also used pulse diagnosis was considered the most important. With this method and experience practitioner was said to be able to detect the onset of an illness long before it manifested itself, and it was -primarily for this reason that Medicine in ancient China was orientated towards prevention. Unfortunately pulse diagnosis is a difficult subjective art and there are only a few practitioners today who are fully conversant in this modality.* With the dawn of "scientific acupuncture", pulse diagnosis is not often used in modern China. The many pitfalls of pulse diagnosis make it an unsuitable method to be used in routine diagnosis. In complicated illnesses, not responding to simpler measures, pulse diagnosis has been a useful method in the hands of the expert.

The third method, the selection of points according to modern medicine, means (a) those points whose analgesic sedative, immune-enhancing and psychological effects have been confirmed by modern clinical and laboratory studies, e.g., Dazhui (Du. 14) in chronic infections Hegu (L.I. 4) in pain relief; (b) selection of points on a segmental basis.

Fourthly, there are newly discovered points which have been shown to possess specific effects, e.g., Neima and Weima (Unnumbered Extra points) used to obtain analgesia in perineal and abdominal surgery.

The fifth method, the selection of electrically reactive points, is based on the fact that an acupuncture point is an area of lowered electrical resistance of the skin. When a disorder occurs, the electrical resistance at the related point would be found to be still lower. It is thus easy, with the appropriate apparatus, not only to locate the required point but also to monitor the progress of the therapy as the skin resistance of the point would be seen to return to its normal levels as the therapy takes effect. This method is more conveniently carried out in ear acupuncture.

A wide spectrum of common illnesses are described in the section on traditional therapy. The descriptive terminology used here is also that of Western medicine. However, it must be borne in mind that the treatment of disease by acupuncture is not based on the aetiological approach of scientific medicine, which are totally different. The Western trained physician will, therefore, have to make the necessary mental adjustments when employing acupuncture. With experience, it will be realised, that the results obtained with acupuncture are not in any way inferior to drug therapy and in most cases often superior.

The point Baihui (Du. 20) is generally employed in all prescriptions, as this point controls and co-ordinates all other points and Channels. It is also an excellent tranquilizer and would therefore be indicated in so far as in all disease conditions where there is a psychosomatic overlay, to a greater or lesser extent.

During a course of treatment the patient is needled daily, every other day, or at close intervals for 7 to 10 days, At the end of each course, the patient is given about a week's rest (during which period further improvement may occur). At the end of each rest period, the progress should be reviewed and if the improvement exhibited is insufficient, further courses may be administered. During a course or with each new course of treatment the points may be changed, new points, added or stimulation carried out, depending on the varying symptomatology, exhibited by each case.

Generally, at the first few sittings, not more than 2 or 3 needles should be inserted; therefore points may be added, but no more than 12 to 15 should usually be used at the same time. An average of about 6 to 8 needles may be regarded as optimal.

In the majority of disorders the needle is inserted and left in place for 15 to 30 minutes. In chronic 'intractable painful conditions like trigeminal neuralgia, the pain of secondary cancer, severe migraine, phantom limb pain, the pain of herpes zoster, each session may be extended up to 45 minutes or one hour, with possibly more than the normal number of needles, and the employment of strong stimulation.

In acute conditions like diarrhoea, common cold, fever an attack of migraine, sore throat, and tonsillitis, the session may be short, but repeated several times a day.

In children, very old people and in people very sensitive to needling the non-retention method of needling or acupressure may be employed.

In carrying out therapy it is most important to advise the patient regarding all other important matter such as rest, diet, exercise, physical therapy, rehabilitation, proper habits and other specific advice relevant to each illness. Acupuncture therapy is not an isolated discipline. It is part of an holistic approach of treating the entire individual. The acupuncturist must never fail to remember that he is treating the person and not the disease. Above all, what makes acupuncture therapy gain maximum patient acceptance is the correct art of needle insertion.

SYSTEMATIC TREATMENT

SYSTEMATIC TREATMENT

In Pakistan 90% patients who report for acupuncture treatment have already tried all sort of Western drugs, homoeopathic medicine and other measures to relief their ailments. Most of the patients who come to our “Acupuncture Centre and Pain Clinic” are on variety of analgesics, NSAID’s, steroids etc., which are prescribed by different medical practitioners. Some of them are non qualified practitioners like quacks, hakims, dispensers etc. Acupuncture treatment should be given only by medical doctors with minimum M.B.B.S. qualification. In Pakistan A.P.A. (Association for Promotion of Acupuncture) rightly recommends this approach.

Author wishes that patients should report to their doctor at right time to have effective acupuncture treatment. Then in order to obtain the best results, the practitioner of acupuncture must pay careful attention to the following requirements:

- a) An accurate diagnosis, using all the methods available.
- b) Selection of the most effective acupuncture points.
- c) Accurate location of acupuncture points.
- d) Observance of proper aseptic procedures.
- e) Use of good quality needles.
- f) Good rapport with the patient. This is the most important step in obtaining a satisfactory result. Acupuncture is foremost a subjective art, and the treatment should be tailored to suit the needs of each individual patient.

The acupuncture points to be used may be selected on the basis of one or more of the following different clinical methods:-

- 1) The formulary method.
- 2) The theories of traditional Chinese medicine.

- 3) Modern medicine.
- 4) Newly discovered points.
- 5) Electrically reactive points.

The first method: means the selection of specific points or combination of points which through the observations of successive generations of physicians are known to be effective against particular disorders. This includes:-

- i) Local and Distal points e.g., Touwei (St. 8) and Neiting (St. 44) for headache; Tianrong (S.I. 17) and Hegu (L.I. 4) for tonsillitis.
- ii) Points according to symptoms e.g., Renzhong (Du 26) for shock.
- iii) Specific points e.g., Xuehai (Sp. 10) for allergy.

The second method:- point selection is made using the theory of the Five Elements and the Yin-Yang theory. Although other diagnostic procedures such as palpation and observance of external signs were also used, pulse diagnosis was considered the most important. With this method an experienced practitioner was said to be able to detect the onset of an illness long before it manifested itself, and it was primarily for this reason that medicine in ancient China was oriented towards prevention. Unfortunately, pulse diagnosis is a difficult and subjective art and there are only a few practitioners today who are fully conversant in this modality.

The third method:- the selection of points according to modern medicine, means using those points whose analgesic, sedative, immune enhancing and psychological effects have been confirmed by modern clinical and laboratory studies, e.g., Dazhui (Du 14.) in chronic infections, or Hegu (L.I. 4) in pain relief.

The fourth method:- newly discovered points which have been shown to possess specific effects e.g., Neima and Weima (Unnumbered Extra points) which are used to obtain analgesia in perineal and abdominal surgery.

The fifth method: the selection of electrically reactive points, is based on the fact that an acupuncture point is an area of lowered electrical resistance on the skin. When a disorder occurs, the electrical resistance at the related point will be found to be still lower. It is thus easy, with the appropriate apparatus, not only to locate the required point but also to monitor the progress of the therapy as the skin resistance of the point returns to its normal level, as the therapy takes effect. This method is more conveniently carried out in ear acupuncture.

The point Baihui (Du 20) is generally employed in all prescriptions, as this point controls and co-ordinates all other points and Channels. It is also an excellent tranquilizer and would therefore be indicated in all disease conditions where there is a psychosomatic overlay to a greater or lesser extent.

Procedure:-

During a course of treatment the patient is needled daily, every other day, or at close intervals for 7 to 10 days, At the end of each course the patient is given about a week's rest (during which period further improvement may occur). At the end of each rest period the progress should be reviewed and if the improvement exhibited is insufficient, further course may be administered. During a course, or with each new course of treatment the points may be changed, and new points added or stimulation carried out, depending on the varying symptomatology of each case.

Generally at the first few sittings not more than 2 or 3 needles should be inserted; thereafter, points may be added but no more than 6 to 10 should usually be used. An average of about 4 to 6 needles may be regarded as optimal.

In the majority of disorders the needle is inserted and left in situ for 30 minutes. In chronic intractable painful conditions like trigeminal neuralgia, pain of secondary cancer, or severe migraine, the length of treatment may be prolonged up to 45 minutes or one hour at each sitting.

In acute conditions like diarrhoea, common cold, fever, attack of migraine, sore throat and tonsillitis, the length of each treatment may be short, but it may be carried out several times a day.

In carrying out therapy it is most important to advise the patient regarding all other important matters such as rest, diet, exercise, physical therapy, rehabilitation, proper habits and other specific advice relevant to each illness. Acupuncture therapy is not an isolated discipline. It is part of an holistic approach of treating the entire individual. The acupuncturist must remember that he is treating the person and not the disease.

For students of acupuncture author advises to organise a fixed routine for their patients, i.e. 15 days to month course with half an hour daily sitting. The rest period should be 10 to 15 days. Association for promotion of Acupuncture in Pakistan also approves this procedure.

THE NERVOUS SYSTEM

Principles of treatment:-

Diseases of the nervous system form one of the largest group of disorders seen in general practice. Their symptomatology is very complex and may range from pain, paralysis and paraesthesia to involuntary movements of various kinds, specific sensory loss, and symptoms of autonomic imbalance.

No specific treatment is available in Western medicine in the majority of these diseases and the management consists largely of supportive measures like physiotherapy, administration of vitamins, together with narcotic drugs and analeptics, where necessary. Acupuncture, however, is an extremely helpful modality in the treatment of these diseases. Owing to the powerful analgesic effects of acupuncture it is particularly helpful in allaying pain, a problem which causes much distress in the majority of these patients. In addition, it is possible to obtain a recovery of motor function to a degree which is not attainable with any other form of treatment. Subsidiary complaints like speech disorders, sensory loss and autonomic disturbances are also found to respond very favourably to treatment with acupuncture. The analysis of a neurological disorder entails the elucidation of

the anatomical localization and the consequent physiopathological disturbance which result.

EPILEPSY:

The group of disorders is characterised by fits or seizures which are often sudden, usually resulting in loss of consciousness.

Essentials of Diagnosis

- Abrupt onset of paroxysmal, transitory, recurrent alterations of brain function, usually accompanied by alterations in consciousness.
- Signs may vary from behavioural abnormalities to continuous prolonged motor convulsions.
- Primary brain disorder may be present,
- Family history of epilepsy may be present.

a) *Petit Mal:*

The only symptom here is a fleeting loss of consciousness, where the patient (usually a child) may be seen to stare straight ahead into space.

Specific points that may be used in the interim periods for the routine therapy are:-

Baihui (Du 20), Neiguan (P. 6), Yintang (Ex. 1), Shenmen (H. 7), Renzhong (Du 26), Shenmai (U.B. 62).

b) *Grand Mal:*

This is the more common type of fit. It is characterised by an aura, loss of consciousness with generalised convulsions and post epileptic phenomena. Prodromal symptoms are sometimes present and loss of consciousness is often preceded by a sharp scream. Acute fits can be brought under control by acupuncture at Renzhong (Du 26) and, if necessary, needling at Yongquan (K. 1).

Where the patient develops repeated seizures and does not regain consciousness between attacks, the condition is known as “status epilepticus”. In such points selected from the following may be used:-

Baihui (Du 20), and/or Sishencong (Ex. 6) Yintang (Ex, 1), Xinshu (U.B. 15), Anmian I (Ex. 8), Neiguan (P.6), Anmian II (Ex. 9), Shenmai (H. 7), Jizhong (Du 6), Hegu (L.I. 4), Yaoqi (Ex. 20), Shenmai (U.B. 62), Fenglong (St. 40), Yanglingquan (G.B. 34).

c) *Jacksonian Fits (Focal Epilepsy):*

Here the seizure begins in one part of the body and may spread to the other muscle groups (sometimes culminating in a grand mal attack). The symptoms sometimes are restricted to an abnormal feeling in a part of the body which may spread to other parts (the so-called sensory epilepsy).

If the patient is seen during a fit, it may be necessary in addition to Renzhong (Du 26) and Yongquan (K. 1), to add suitable points lying in the direction of the spread and then stimulating them strongly, in order to stop the fit.

The patient is treated on the following points, daily or every other day for a few months as routine therapy:-

Baihui (Du 20), and/or Sishencong (Ex. 6), Yintang (Ex. 1), Neiguan (P. 6), Renzhong (Du 26), Shenmen (H. 7), Fenglong (St. 40), Shenmai (U.B. 62).

Some of the following points may also be added in resistant cases:-

Ximen (P. 4), Quchi (L.I. 11), Sanyinjiao (Sp. 6), Taichong (Liv. 3), Xinshu (U.B. 15), Anmian I & II (Ex, 8 and Ex. 9).

In sensory epilepsy, in addition to Baihui (Du 20.), and Sishencong (Ex. 6), local points on the scalp, corresponding to the site of the suspected lesion may be used. Local body points corresponding to the region of the sensory disturbance could be added.

d) *Psychomotor (Temporal Lobe) Epilepsy:*

Here the fits are not as severe as in grand mal. Fits may be preceded by an aura of unreality and hallucinations. The following points may be used:-

Baihui (Du 20), and/or Sishencong (Ex. 6.), Shuaigu (G.B. 8.), Shenmen (H. 7.), Yangbai (G. B. 14.), Neiguan (P. 6.), Touwei (St. 8.), Shenmai (U.B. 62.).

A press needle, placed at the ear point Shenmen, is useful for maintaining continuous stimulation between treatment sessions.

Results obtained with acupuncture in epileptic patients are very promising. In most cases of petit mal the symptoms may be expected to disappear with 10 to 15 treatments. The results are almost equally good in sensory epilepsy and temporal lobe epilepsy. For grand mal, however, 30 or more treatments may be required with weekly reinforcement for about 3 or 4 months or longer.

International classification of epileptic seizures

- I. Partial seizures (seizures beginning locally):
 - A. Partial seizures with elementary symptomatology (generally without impairment of consciousness):
 1. With motor symptoms (includes jacksonian seizures).
 2. With special sensory or somatosensory symptoms.
 3. With autonomic symptoms.
 4. Compound forms.
 - B. Partial seizures with complex symptomatology (generally with impairment of consciousness) temporal lobe or psychomotor seizures:
 1. With impairment of consciousness only.
 2. With cognitive symptomatology.
 3. With affective symptomatology.
 4. With "psychosensory" symptomatology.
 5. With "psychomotor" symptomatology (automatisms).
 6. Compound forms.
 - C. Partial seizures secondarily generalized.
- II. Generalized seizures (bilaterally symmetric and without local onset):

1. Absences (petit mal).
2. Bilateral massive epileptic myoclonus.
3. Infantile spasms.
4. Clonic seizures.
5. Tonic seizures.
6. Tonic-clonic seizures (grand mal).
7. Atonic seizures.
8. Akinetic seizures.

III. Unilateral seizures (or predominantly).

IV. Unclassified epileptic seizures (due to incomplete date).

ANTI-EPILEPTIC (Long term therapy),

Drugs	Optimum effectiveness	Adult dosage range (Therapeutic Range)	Unwanted effects (I)
Carbamazepine	Partial and generalised convulsive seizures	400-800 mg (X 2) (25-50 μ mol/L)	Initial drowsiness. Rash, rarely bone marrow depression
Clonazepam	Myoclonic seizures	2-6 mg ?	Drowsiness, lethargy
Ethosuximide	Absence seizures	15-30 mg/kg (300-700 μ mol/L)	Rash, gastrointestinal upset
Phenytoin	Partial and generalised convulsive seizures	300-400 mg (40-80 μ mol/L)	Hirsutism, gingival hyperplasia, coarsened features, rashes, osteomalacia, rarely immunological disturbances and bone marrow depression
Phenobarbitone Methylphenobarbitone seizures	Partial and generalised convulsive	60-200 mg (45. \geq 110 μ mol/L)	Physical and mental slowing aggression in children, rarely bone marrow depression
Primidone		750-1500 (45. \geq 110	

		μ Mol/L) Phenobarbitone)	
Sodium valproate	All generalised seizures	400-800 mg (x 2) (350 700 μ mol/L)	Gastrointestinal upset, Weight gain, tremor, transient hair loss, and rarely, pancreatitis, hepatotoxicity prolonged bleeding times
1. All anticonvulsants can cause dose-dependent neurological, effects, e.g. ataxia, nystagmus, diplopia; these are most common with phenytoin and least likely with sodium valproate.			

PARKINSONISM

(Paralysis Agitans)

Essentials of diagnosis

- “Pill-rolling” tremor maximal at rest, with fixed facial expression.
- Slow, shuffling, often fascinating gait.
- Diminished motor power, rigidity of limb muscles upon passive motion (lead pipe or cogwheel).
- Insidious onset in 50s and 60s, with slow progression.

The commonest form of parkinsonism is Parkinson’s disease. There are however, many forms of this disease, which generally affects elderly people. It is mainly a disturbance of voluntary movement caused by the degeneration of the inhibitory nerve fibres in the basal ganglia of the brain. Mental faculties are affected. The disease may be identified by a weakness and spasticity of the face muscles (causing the characteristic mask-like expression), a coarse tremor when at rest (particularly in the hands), a tendency for the mouth to stay open with excessive salivation, rigidity of limbs and the characteristic shuffling gait.

The following points may be used:-

Baihui (Du. 20), and/or Sishencong (Ex. 6), Quchi (L.I. 11), Zusanli (St. 36), Waiguan (S.J. 5), Yanglingquan (G.B. 34), Shenmen (H. 7), Jiexi (St. 41), Hegu (L.I. 4), Neiting (St. 44).

Where there is increased salivation, the following points may be added:-

Dicang (St. 4), Yinlingquan (Sp. 9), Chengjiang (Ren 24), Jiachengjiang (Ex. 5), Lianquan (Ren 23), Fenglong (St. 40).

Usually improvement is slow, and 60 or more treatment may be necessary for improvement to commence. A success rate of about 75 per cent may be expected with combined body and ear acupuncture. Some patients may need a minimal dose of drugs, in combination with acupuncture. Embedding a press needle helps to alleviate the symptoms.

ANTI-PARKINSONISM DRUGS

Drug	Dosage	Precautions and Remarks
Trihexyphenidyl (artane)	105 mg 3 times daily, starting at low dosage and slowly increasing. For oculogyric crisis use 10 mg 3 times daily	May precipitate acute glaucoma in elderly persons and are contraindicated in patients with glaucoma. Blurred vision, dryness of mouth, vertigo, and tachycardia are early toxic symptoms; late symptoms are vomiting, dizziness, mental confusions, and hallucinations. The synthetic drugs are apt to cause more dizziness than the natural alkaloids and are somewhat less potent parasympatholytics.
Biperiden (Akineton)	2 mg 3-4 times daily.	
Procyclidine (Kemadrin)	2.5-5 mg 3-4 times daily after meals.	
Cycrimine (Pagitane)	1.25 -5mg 3 -4 time daily. Dosage may be gradually increased upto the limits of tolerance.	Useful when effects of trihexyphenidyl Wear off. Other remarks as for trihexyphenidyl.
Benztropine Mesylate (Cogentin)	0.5 mg 1- 2 time daily, increasing by 0.5 mg at intervals os several days to 5 mg daily or toxicity Olien most effective as single dose at bedtime.	Side-effects similar to those of trihexyphenidyl. Best effect by combining with trihexyphenidyl or dextroam- phetamine.
Diphenhydramine (Benadryl)	50 mg 2 -4 times daily,	Reduce dosage if transient drowsiness occurs.
Orphenadrine (Disipal)	50 mg 3-5 times daily,	

Chlorpenoxamine (Phenoxene)	50 mg 3-4 times daily,	Valuable adjunct to other dugs.
Ethopropazine (Lysovane, Parsdol)	25-30 mg 4 times daily	May be used in conjunction with other antispasmodic drugs is related to chlorpromaxine; precautions as for this clam of drugs
Dextroamphetamine (Dexedrine)	5 mg morning or noon.	CNS stimulant to be used with caution in cardiac patients.
Levodopa (Dopar, Larodopa, etc)	250 mg 3 times daily, Increase to tolerance (4-8 g daily).	Nausea, vomiting, postural hypotension, choreiform movements.
Levodopa & carbidopa (Sinemet)	3-6 tablets daily of Sinemet 25/250/	Nausea, vomiting, postural hypotension, dyskiesias.
Amantadine (Symmetrel)	(100 mg twice daily	Jitteriness, insomnia, depression, confusion, hallucinations, livedo reticularis

SPASTIC PARALYSIS, CHOREA, TICS:-

Spastic paralysis is caused by damage to certain brain areas and centres, resulting in the impairment of voluntary movements and presence of muscle spasm.

Chorea is characterised by uncontrolled jerky movements, involving any part of the body. Sydenham's chorea (rheumatic chorea, St. Vitus'dance) is a childhood disorder associated with rheumatic fever. Adults exhibit chorea in a rare hereditary condition known as huntington's chorea where, in addition to uncontrolled movement, there is progressive mental degeneration.

Habit spasm or tic is an involuntary purposeless movement e.g., shrugging of shoulder, which may earlier have been purposive.

Select from the following points:-

Baihui (Du. 20), and/or Sishencong (Ex. 6), Quchi (L.I. 11), Yanglingquan (G.B. 34), Waiguan (S.J. 5), Zusanli (St. 36), Shenmen (H. 7), Shenmai (U.B. 62), Hegu (L.I. 4), Neiting (St. 44).

In spasmodic torticollis the points in the local area may be combined with:-

Lieque (Lu. 7), Houxi (S.I. 3), or Yanglao (S.I. 6), Yanglinquan (G.B. 34).

HEADACHES:

The principle of treatment is to use Local points and Distal points, along the course of the relevant Channels. It should be noted that in all types of headaches the points Baihui (Du. 20), and/or Sishencong (Ex. 6), together with Hegu (L.I. 4), as a distal analgesic point, should be used. If Ah-Shi points are present, they should be precisely needed.

a) *Frontal headache:-*

Baihui (Du 20), and/or Sishencong (Ex. 6),

Local Points:-

Ah-Shi points, Shangxing (Du. 23), Touwei (St. 8), Yangbai (G.B. 14), Yintang (Ex. 1), Taiyang (Ex. 2),

Distal Points:-

Hegu (L.I. 4), Neiting (St. 44), Yanglinquan (G.B. 34),

b) *Temporal headache:-*

Baihui (Du 20), and/or Sishencong (Ex. 6).

Local Points:-

Ah-Shi points, Touwei (St. 8), Shuaigu (G.B. 8), Sizhukong (S.I. 23).

Distal Points:-

Neiting (St. 44), Foot-Linqi (G.B. 41), Waiguan (S.J. 5) Hegu (L.I. 4), Yanglinquan (G.B. 34).

c) *Parietal headache:-*

Baihui (Du. 20), and/or Sishencong (Ex. 6).

Local Points:-

Ah-Shi points, Touwei (St. 8), Shuaigu (G.B. 8).

Distal Points:

Hegu (L.I. 4), Zhongshu (S.J. 3).

d) *Occipital headache:-*

Baihui (Du. 20), and/or Sishencong (Ex. 6).

Local Points:

Ah-Shi points, Fengchi (G.B. 20).

Distal Points:

Lieque (Lu. 7). Kunlun (U.B. 60).

e) *Vertical headache:-*

Baihui (Du 20), and/or Sishencong (Ex. 6).

Ah-Shi points.

Distal Points:

Kunlun (U.B. 60), Xingjian (Liv. 2), Yaoshu (Du. 2).

INSOMNIA

Baihui (Du 20), and/or Sishencong (Ex. 6), Anmian I (Ex. 8) Neiguan (P. 6), Anmian II (Ex. 9), Shenmen (H. 7), Shenmai (U.B. 62)

The following additional points may also be used:-

Shenting (Du 24), Taixi (K. 3).

Where sleep is disturbed by dreams, the following points may be added:-

Xinshu (U.B. 15), Shendao (Du 11).

A press needle at Ear Shenmen is helpful.

BELL'S PALSY (Peripheral Facial Paralysis)

Bell's palsy is a paralysis of the muscles of one side of the face, sometimes precipitated by exposure, chill, or trauma. It may occur at any age but is slightly more common in the age group from 20 to 50.

The patient can be assured that recovery usually occurs in 2-8 weeks (or up to 1-2 years in older patients). Keep the face warm and avoid further exposure, especially to wind and dust. Protect the eye with a patch if necessary. Support the face with tape or wire anchored at the angle of the mouth and looped about the ear. Electric stimulation (every other day after the 14th day) may be used to help prevent muscle atrophy. Gentle upward massage of the involved muscles for 5-10 minutes, 2-3 times daily may help to maintain muscle tone. Heat from an infrared lamp may hasten recovery.

Prednisone therapy (40 mg daily for 4 days and tapering to 8 mg in 8 days) has been reported to be effective.

In the vast majority of cases, partial or complete recovery occurs. When recovery is partial, contractures may develop on the paralysed side. Recurrence on the same or the opposite side is occasionally reported.

Baihui (Du 20), and/or Sishencong (Ex. 6).

Local points (select from affected area of the face):

Yangbai (G.B 14), Taiyang (Ex. 2), Sibai (St. 2), Juliao (St. 3) Dicang (St. 4), Daying (St. 5), Xiaguan (St. 7), Quanliao (S.I. 18), Jiachenjiang (Ex. 5).

Distal point:-

Hegu (L.I. 4).

Influential Points:

Yanglingquan (G.B. 34).

Natural recovery occurs rapidly in many cases. In early cases of Bell's palsy recovery may be expected within 6 to 10 sessions of treatment.

In long standing paralysis, the "puncture-through" technique may be tried with the use of long needles:-

Dicang (St. 4), to Jaiache (St. 6), Yangbai (G.B. 14), to Yuyao (Ex. 3), Tongziliao (G.B. 1), to Dicang (St. 4).

Low frequency electrical stimulation, about 310 Hertz, is applied at points such as Yangbai (G.B. 14) and Dicang (St. 4) High frequency stimulation at 1000 - 2000 Hertz (dense-disperse) is always used in intractable cases.

TRIGEMINAL NEURALGIA:

The trigeminal nerve (5th cranial nerve) contains mainly sensory fibres which are in three groups (hence "trigeminal"):

- 1) the ophthalmic nerve (supplying the upper part of the face);
- 2) the maxillary nerve (supplying the upper jaw area); and
- 3) the mandibular nerve (supplying the lower jaw area).

In trigeminal neuralgia the patient suffers severe pain in the distribution of one or more branches of the trigeminal nerve. When it is spasmodic, it is associated with a twitching of the facial muscles and is then referred to as "*tic dloreux*".

Trigeminal neuralgia has certain *characteristic clinical features*:

Pain is limited to some part of the distribution of the trigeminal nerve (rarely glossopharyngeal or nervus intermedius).

Pain is paroxysmal, unilateral superficial, brief and intense, sudden in onset and termination, with painfree intervals.

Frequency and severity of episodes tends to increase with age.

No neurological deficit is detectable (or minimal sensory loss).

Trigger points for nonnociceptive stimuli are present at some time, commonly perioral.

Fewer than 5 per cent start in the ophthalmic division; 3 per cent are ultimately bilateral.

Onset usually occurs after age 40, and it is more common in women.

Mechanical factors involving root or ganglion may produce a similar syndrome.

Sensory rhizotomy produces relief (at least temporary).

Decompression or compression procedures on trigeminal ganglion produces relief.

Trigeminal evoked averaged cortical potentials may be abnormal in patients with trigeminal neuralgia.

These features provide some evidence to support a peripheral etiology. Two additional theories emphasize a peripheral origin. Exaggerated trigeminal dorsal root reflexes or additional action potentials arising at sites of altered myelination may contribute to, or cause trigeminal neuralgia.

Compression of the trigeminal ganglion or nerves by adjacent arteries has also been proposed. A recent study of normal anatomy in 50 patients without trigeminal neuralgia demonstrated that superior or anterior inferior cerebellar arteries made contact with 29 nerves or ganglia. A conclusion could be drawn that such neurovascular contacts were coincidental.

Management of tic douloureux has been reviewed by Loeser. Medical therapy relies on carbamazepin and phenytoin. These anticonvulsants produce significant improvement in symptoms (of 7-0% and 20%, respectively).

There may be some improvement with mephenesin or chlorphenesin. Mechanisms of action are unknown. It is tempting to suggest that they might act by suppressing a central reverberation (seizure) in the trigeminal system.

Surgical therapy may be needed if medical management does not control the symptoms. Coagulation of part of trigeminal ganglion (percutaneous radiofrequency trigeminal neurolysis) is a safe and effective method. Improvement has been reported as 80 per cent at 1 year. It should be carried out with intermittent general anaesthesia to avoid corneal anaesthesia. The patient is allowed to wake between each incremental application of radio-frequency heating to report changes in sensation. Patients considering this operation should first have local anaesthetic block of the trigeminal nerve, both for diagnosis and to allow them to experience facial anaesthesia.

Suboccipital craniectomy and release of putative pressure on trigeminal ganglion has an indeterminate place in management of tic douloureux. Trigeminal tractotomy is also a major surgical endeavour, whose place is unknown.

Anaesthesia dolorosa is pain in the distribution of an interrupted nerve. It occurs in a small number of patients who have undergone gangliolysis. It has some of the features of phantom limb pain and also of causalgia. Its cause is not known and treatment is unrewarding at present.

Treatment is based on the principle of combining Ah-Shi Local and Distal points. The selection of Local points depends on the affected part of the trigeminal nerve:-

I) Ophthalmic branch: Baihui (Du 20).

Local points:-

Ah-Shi points, Yangbai (G.B. 14), Zanzhu (U.B. 2), Taiyang (Ex. 2).

Distal points:-

Hegu (I.I. 4), Neiting (St. 44).

II) Maxillary branch: Baihui (Du 20).

Local points:-

Ah-Shi points, Sibai (St. 2), Juliao (St. 3), Renzhong (Du 26), Xiaguan (St. 7), Quanliao (S.I. 18), Yingxiang (L.I. 20).

Distal points:

Hegu (L.I. 4), Neiting (St. 44).

III) Mandibular branch: Baihui (Du 20).

Local points:-

Ah-Shi points, Yifcngjiang (Ex. 5), Dicang (St. 4), through to Jiache (St. 6).

Distal points:-

Hegu (L.I. 4).

When the pain spreads to the area of the external ear, points such as Waiguan (S.J. 5), may be added.

In the treatment of trigeminal neuralgia it is desirable to use a large number of points on the face and to carry out the treatment daily. When acute pain is present, strong manual stimulation at Hegu (L.I. 4) should be carried out. The needles on the face may also be gently manipulated every 5 to 10 minutes. In resistant cases the duration of the sittings may be increased from the usual half an hour to forty five minutes or even one hour. Additional body points like Xiangu (St. 43) may also be introduced for reinforcement. Embedding of press needles in the ear (Facio-Mandibular area) and at one or more local Ah-Shi points will help to control pain between treatments. Where the patient docs not permit the affected side of the face to be needled on account of the severity of the pain, the opposite side of the face may be needled (on the principle that the side of the therapy does not matter).

Acupuncture therapy has been found to be extremely satisfactory. The relief of pain occurs within a few treatments, in most cases. A little

paraesthesia may be found as a residual disability. In order to obtain complete recovery the patient may have to be treated for a few months, including self treatment by the patient with electro-stimulation without needles, at home.

HEMIPLEGIA, HEMIPARESIS:

This paralysis of one side of the body caused usually by a cerebro-vascular accident (a stroke on the opposite side of the brain). It is important to find out the underlying cause and to eliminate the existence of any space occupying lesion.

In patients who have suffered a stroke the following clinical features may be observed:

- a) mental symptoms, e.g., loss of memory, confusion, personality changes;
- b) paralysis of the lower two-thirds of the face on the contralateral side;
- c) difficulty of speech (aphasia) and of swallowing;
- d) paralysis of the contralateral upper limb;
- e) paralysis of the contralateral lower limb;
- f) spasticity of the affected muscles; => d)
- g) loss of sensation in paralysed areas;
- h) bed sores, oedema of dependant parts;
- i) bladder and bowel symptoms;
- j) associated disorders (commonly high blood pressure, diabetes).

The points used depend on the above features. Treatment should be carried out daily or every other day. It should be noted that in all cases of Baihui” (Du. 20). and/or Sishencong (Ex. 6), with Yanglingquan (G.B. 34), as the Influential point, are used.

- a) *Face:*

Baihui (Du 20) and /or Sishencong (Ex. 6).

Local Points:

(select from):- Dicang (St. 4), Xiaguan (St. 7), Jiache (St 6), Daying (St. 5), Quanliao (S.I. 18), Iiachengjiang (Ex. 5).

Distal point:

Hegu (L.I. 4), Influential point- Yanglingquan (G.B. 34).

*In case of aphasia, add:**Local Points:*

Lianquan (Ren 23), Tianrong (S.I. 17).

Distal points:

Tongli (H. 5), Specific point: Hegu (L.I. 4), Influential point: Yanglingquan (G.B. 34).

b) *Upper limb:*

Baihui (Du 20) and/or Sishencong (Ex. 6), Local points (Select from Large Intestine and Sanjiao Channels):-

Jiangu (L.I. 15), Quchi (L.I. 11), Hegu (L.I. 4), Baxie (Ex. 28), (for paralysis of the fingers).

Jianliao (S.J. 14), Waiguan (S.J. 5), Zhongzhu (S.J. 3), Influential points- Yanglingquan (G.B. 34).

c) *Lower limb:*

Baihui (Du 20), and/or Sishencong (Ex. 6), Local points (select mainly from Stomach and Gall Bladder Channels):

Biguan (St. 31), Femur-Futu (St. 32), Zusanli (St. 36), Shangjuxu (St. 37), Xiajuxu (St. 39), Jiexi (St. 41), Neiting (St. 44), Bafeng (Ex. 36), (for paralysis of the toes).

Huantiao (G.B. 30), Guangming (G.B. 37), Qiuxu (G.B. 40).

Influential points: Yanglingquan (G.B. 34).

With the patient in prone position, suitable regional Huatuojiayi (Ex 21) points and points from the lower limb in the Urinary Bladder Channels may also be used.

In cases of *dependant oedema* of legs and feet, select from the following points:-

Local points:- Sanyinjiao (Sp 6), Zhaohai (K. 6).

Specific points:- Shuifen (Ren 9), Shimen (Ren 5), Pishu (U.B. 20), Yinlinquan (Sp 9).

Strong stimulation and the obtaining of “deqi” at the following points expedites the recovery:-

Hegu (L.I. 4), Quchi (L.I. 11), Zusanli (St. 36). and at other motor points.

Low frequency electrical pulse stimulation also helps to expedite recovery. With 10 to 20 treatments, significant improvement occurs in the majority of cases. The treatment may be combined with moderate exercise therapy. The fitting of orthopaedic appliances, such as foot-drop splints, must be discouraged until the maximum improvement is obtained.

In author's experience, acupuncture in the treatment of hemiplegia is more efficacious than drug treatment and physiotherapy. While drugs and physiotherapy do not hasten recovery beyond what could be expected from natural remission, acupuncture treatment often results in dramatic improvement in motor functions, even in neglected cases of several years' duration.

BULBAR PALSY:

This is a paralysis involving the tongue and the throat muscles and is a common complication of a stroke. Bulbar palsy may also arise as a result of a vascular accident in the brain stem area. Chronic bulbar palsy occurs as a result of motor neuron disease involving the brain

stem nuclei, in which event, the prognosis is much less favourable. Acupuncture helps to arrest the progress of this disease.

a) *Swallowing difficulties:-*

Baihui (Du 20).

Local points:

Lianquan (Ren 23), Chengjiang (Ren 24), Renxiong (Du 26), Tianrong (S.I. 17), Shanzhong (Ren 17), Neck-Futu (L.I. 18).

Distal points:-

Neiguan (P. 6), Hegu (L.I. 4).

Influential point Yanglingquan (G.B. 34).

b) *Excessive salivation* Baihui (Du 20),

Local points:

Dicang (St. 21), Chengjiang (Ren 24), Lianquan (Ren 23).

Distal points:-

Hegu (L.I. 4).

Specific points:

Fenglong (St. 40), Yinlingquan (Sp. 9).

c) *Speech difficulties* (aphasia, lispings, stammering, stuttering, slurring and hoarseness):-

Baihui (Du 20).

Local points:

Lianquan (Ren 23), Dicang (St. 4), Chengjiang (Ren 24).

Distal points:

Tongli (H. 5).

Influential point:- Yanglingquan (G.B. 34).

PARAPLEGIA, PARAPARESIS:

Paraplegia is paralysis: of the lower limbs and the lower half of the trunk caused usually by trauma, inflammation or tumour involving the spinal cord. Partial or total sensory loss in both lower extremities occurs, accompanied by urinary and rectal incontinence or retention.

Features typically seen in a paraplegic are:-

- a) weakness of the trunk below the site of the lesion;
- b) weakness or paralysis of the lower limbs;
- c) bladder and bowel symptoms;
- d) impotence;
- e) loss of sensation, paraesthesia;
- f) bedsores;
- g) oedema of the legs.

In treating paraplegics it is best to use alternatively front and back points on the trunk, and points on the Stomach, Gall Bladder and Urinary Bladder Channels on the lower limbs:-

	Front	Back
<i>Trunk:</i>	Qihai (Ren 6).	Alarm points on U.B. Channel
	Guanyuan (Ren 4).	Huatuojiaji (Ex. 21) points.
	Zhongji (Ren 3).	Yaoyangguan (Du 3).

Legs (select from):

Biguan (St. 32).	Huantiao (G.B. 30).
Femur-Futu (St. 31).	Fengshi (G.B. 31).
Zusanli (St. 36).	Chengfu (U.B. 36).
Shangjuxu (St. 37).	Weizhong (U. B. 40).
Xiajuxu (St. 39).	Kunlun (U.B. 60).
Jiexi (St. 41).	
Xiangu (St. 43).	Chengshan (U.B. 57).
Neiting (St. 44).	

Where there is urinary or rectal incontinence, the points specific for these symptoms are used:-

Urinary incontinence:-

Local points:- Qugu (Ren 2), and other Ren channel points.

Distal points:- Sanyinjiao (Sp. 6), Taixi (K, 3)

Rectal incontinence:-

Local points:- Changqian (Du 1), Huiyin (Ren 1).

Distal points:- Chengshan (U.B. 57_), Sanyinjiao (Sp.6.), Zusanli (St. 36.).

POLIOMYELITIS

Poliomyelitis is caused by a virus infection which affects the anterior horn cells of the spinal cord and of the brain stem. The virus enters through the gastro-intestinal tract. Paresis or paralysis of the muscles ensues. There is no sensory loss.

In the acute stage of the disease, points are selected according to symptoms:-

Diarrhoea:- Tianshu (St. 25), Zusanli (St. 36.).

Sore throat:- Tianrong (S.I. 17), Neck-Futu (L.I. 18).

Headache:- Hegu (L.I. 4).

Vomiting:- Neiguan (P. 6).

Fever:- Dazhui (Du 14), Quchi (L.I. 11).

Note: No stimulation should be carried out in the acute stage as it may cause further paralysis.

After the acute stage is over and paralysis sets in, points on the paralysed aspect of the body are used with the Influential point Yanglingquan (G.B. 34):-

Paralysis of the diaphragm:- Geshu (U.B. 17), Qimen (Liv. 14).

Paralysis of abdominal muscle:- Liangmen (St. 21), Tianshu (St. 25), Guilai (St. 29), Pishu (U.B. 20), Weishu (U.B. 21).

Paralysis of upper limbs:- Jianyu (L.I. 15), Quchi (L.I. 11), Waiguan (S.J. 5).

Wrist drop:- Yanglao (S.I. 6.), Hegu (L.I. 4.).

Paralysis of lower limbs:- Huatuojiayi (Ex. 21) points (L. 2 to S. 3), Huantiao (G.B. 30), Yanglingquan (G.B. 34), Zusanli (St. 36), Shangjuxu (St. 37).

Foot-drop:- Jiexi (St. 41), Kunlun (U.B. 60).

In chronic poliomyelitis quicker results may be obtained with the use of electrical stimulation. Graduated exercise therapy should also be recommended.

MUSCULAR DYSTROPHIES

There are various types of muscular dystrophy, all of which feature weakness and wasting of certain voluntary muscles. These disorders, many of which are heredofamilial, are not very common.

There is not specific treatment available apart from general supportive measures. In many cases the prognosis is poor. However, a very fair clinical improvement has been noted in some cases with acupuncture treatment (especially where treatment has commenced early), and arrest of the disease process has been obtained in others. However, there is need for further study and research.

The points used are the Local points, i.e. points on Channels passing over the affected muscles, 'with Yanglingquan (G.B. 34) as Influential point, and Quchi (L.I. 11) to obtain homeostasis.

The most common of the muscular diseases is progressive muscular dystrophy. Three principal types are recognized, depending

upon the site of initial muscular involvement and the distribution of apparent hypertrophy and atrophy. In the pseudohypertrophic type (Duchenne), there is enlargement of the calves and sometimes the thighs. In the facioscapulohumeral type (Landouzy-Dejerine), the face and shoulder girdle are involved early. In the limb-girdle type (Erb), the shoulder and pelvic girdle are involved.

The cause is not known. A heredofamilial trend is usually noted. Various types of inheritance may occur: simple dominant, simple recessive, or X-linked recessive.

RESPIRATORY SYSTEM

Principles of treatment:-

The commonly used points for respiratory diseases are contained in the Lung, Ren and Large Intestine Channels.

In the treatment of this group of disorders, whenever infection is present the points Dazhui (Du 14), Quchi (L.I. 11) and Sanyinjiao (Sp. 6) may be used, in addition to other specific points which may be indicated according to the symptoms present. Bleeding at a Jing-Well point, e.g., Shaoshang (Lu. 11), is indicated if there is very high fever due to the infection.

THE COMMON COLD:

This is believed to be a virus infection of the mucous membrane of the nose and pharynx. Clinical manifestations are sneezing, running eyes and nose, cough, headache and general malaise. Timely treatment with acupuncture could be useful in avoiding complications like superadded bacterial infection of the mucous membrane, which may lead to bronchitis. The main benefit of acupuncture of course is that it relieves the symptoms. The following points may be used:-

Baihui (Du 20), Dazhui (Du 14), Fengchi (G.B. 20).

Distal points: Hegu (L.I. 4).

Further points may be added according to the symptoms present:-

Headache:- Taiyang (Ex. 2), Touwei (St. 8).

Blocked nose:- Nose-Heliao (L.I. 19).

Nasal discharge:- Yintang (Ex. 1) Yingxiang (L.I. 20).

Sore throat:- Shaoshang (Lu. 11).

Fever:- Dazhui (Du 14), Quchi (L.I. 11).

Cough:- Lieque (Lu. 7).

When the cold is relieved, the following general tonification points may be needed for a few days to expedite the convalescence:-

Qihai (Ren 6), Zusanli (St. 36), Sanyinjiao (Sp. 6).

Drug used are antihistaminics viz Incidal, Teldane and nasal-decongestants viz vasylox plus nasal drops etc.

ALLERGIC RHINITIS

This is a common allergic disorder characterised by an acute inflammation of the mucous lining of the nose, which may spread to the throat and conjunctiva This is followed by sneezing and excessive lacrimation. In chronic cases a blocked nose usually occurs. Drugs used are antihistamines, nasal decongestants and steroids.

Local points:- Yintang (Ex. 1), Yingxiang (L.I. 20).

Distal points:- Hegu (L.I. 4), Lieque (Lu. 7).

Specific point for allergy:- Xuehai (Sp. 10).

When puncturing Yintang (Ex 1), the needle should be directed horizontally downwards so that the deqi radiates through to the nose. The points Hegu (L.I. 4) and Lieque (Lu 7) should not be needled together on the same side.

Sneezing may be controlled with these Local points, and with strong stimulation of Hegu (L.I. 4).

The following additional points may be used according to the symptoms:

a) *Blocked nose:*

Nose-Heliao (L.I. 19) or Juliao (St 3) through to Yingxiang (L.I. 20) and Shangxing (Du 23) with the needle directed downwards.

b) *Nose bleeding (epistaxis):*

Nose-Heliao (L.I. 19), Shangxing (Du 23), Suliao (Du 25.), Renzhong (Du 26).

Influential point for the vascular system: Taiyuan (Lu. 9).

Xi-Cleft point of the Lung Channel: Kongzui (Lu. 6).

SINUSITIS:

This is the inflammation of the mucous membranes of the sinuses of the skull. This is caused by the spread of infection from the nose, inclement weather, and sometimes by allergic states. If left untreated, the condition may become chronic.

Local points: Yangbai (G.B. 14), through to Yuyao (Ex. 3), Quanliao (S.I. 18).

Distal points: Hegu (L.I. 4).

Specific points for injection: Dazhui (Du 14), Quchi (L.I. 11), Sanyinjiao (Sp. 6).

Specific point for allergy: Xuehai (Sp. 10).

PHARYNGITIS (SORE THROAT):

Pharyngitis or inflammation of the pharynx, may be caused by viral or bacterial infection. Although, usually, the problem resolves on its own, active treatment must be undertaken to prevent the spread of the infection to the surrounding soft tissues or down the respiratory passages, which may cause complications.”

Local points: Tianrong (S.I. 17), Lianquan (Ren 23).

Distal point: Hegu (L.I. 4).

Specific points for infection:- Dazhui (Du 14), Quchi (L.I. 11), Sanyinjiao (Sp. 6).

The use of Taixi (K. 3) is also helpful. The Kidney Channel is connected internally to the throat.

HOARSE VOICE:

This is usually due to damage of the vocal cords caused by overuse of the voice. Those in the speaking trades such as politicians, teachers, lawyers are specially prone to this disorder.

Local points:- Lianquan (Ren 23), Neck-Futu (L.I. 18), Tianrong (S.I. 17), Dazhui (Du 14.).

Distal points:- Tongli (H. 5), Hegu (L.I. 4).

If the hoarseness persists, the possibility of the presence of a neoplasm must be investigated by laryngoscopy, vocal cord nodules should be removed surgically.

BRONCHITIS:

The commonest cause of this condition is the downward spread of infection from the nose and the pharynx. The inflammation of the bronchi which results, causes a rapid secretion of mucus from the lining of the bronchi, giving rise to cough. Superadded infection of the

bronchi may also occur following bronchitis due to irritants such as dust, tobacco, industrial gases and smoke. Certain infectious diseases, such as whooping cough, may also cause bronchitis as a complication. Antibiotics in acute cases are used:-

Local points:- Zhongfu (L.U. 1), Feshu (U.B. 13), Dazhui (Du 14).

The following further points may be added according to the specific symptoms exhibited in each case.

Fever:- Hegu (L.I. 4), Dazhui (Du 14), Quchi (L.I. 11), Sanyinjiao (Sp. 6).

Sore throat:- Tianrong (S.I. 17).

Chest pain:- Kongzui (L.U. 6), with manual stimulation.

Excessive sputum:- Fenglong (St. 40).

Seasonal attacks of bronchitis are probably caused by an allergen and preventive treatment may be carried out, before its onset, by using such points such as:-

Xuehai (Sp. 10), Dazhui (Du 14.), Qihai (Ren 6), Zusanli (St. 36), Sanyinjiao (Sp. 6).

Moxibustion at these points is also helpful.

COUGH

Local points:- Shanzhong (Ren 17), Zhongfu (Lu. 1), Feishu (U.B. 13).

Distal points:- Lieque (Lu 7), Fenglong (St. 40), (for excessive sputum).

The cause of a chronic cough must always be investigated before treatment is commenced, in order to exclude the possibility of neoplasms, etc.

BRONCHIAL ASTHMA:

This is caused by spasm of the air passages of the lungs, and may arise from allergy, infection or emotional factors.

In the treatment of this disorder, with acupuncture, a rapid improvement may be expected in the majority of cases. However in the first few days of treatment the response may be uneven, and the patient should be warned about this and reassured. In some cases the patient may have an aggravation, due to the withdrawal of drugs. The necessity of completing at least two or more courses of treatment should be stressed, as some cases are slow to respond.

Difficulty may be encountered with asthmatics who have become dependent on steroids and other drugs. Early, if not immediate, discontinuance of such medications should be encouraged unless it appears that the degree of dependence is very high, in which case, the dosage may be gradually tailed off. The exacerbations of the bronchial asthma during the first few days therapy are generally due to the withdrawal effects of the medications and should cause no undue alarm. Reassurance is very important to allay the anxiety of the patient.

a) *Acute attack:*

Insert a needle at the point Tiantu (Ren 22), This gives the best relief in an acute attack, but it must be borne in mind that this is one of the dangerous points and care must be taken to make the insertion precisely. It is not advisable to stimulate this point. Usually, relief is obtained within five to ten minutes of the insertion.

In some cases it may not be easy to use Tiantu (Ren 22) during an acute attack. A good alternative is the stimulation of the point Shanzhong (Ren 17) or the Xi-Cleft point Kongzui (Lu. 6). In intractable cases Yanglao (S.I. 6) may be added. Good results may also be obtained by the stimulation of Fuliu (K. 7) (on the Theory of the Five Elements that Water is the son of Metal).

(b) *Status asthmaticus:-*

In most cases stimulation of Shanzhong (Ren 17) together with Kongzui (Lu. 6), may give quick relief. In resistant cases it may be necessary to needle two or three times a day, using electrical or hand stimulation. In severe intractable cases embedding of catgut at Shanzhong (Ren 17) or at Dingchuan (Ex. 17) may be considered. (“Dingchuan”) in Chinese means “soothing asthma” and this point has always been used as specific for bronchial asthma).

c) *Treatment between attacks:-*

It is best to commence treatment with a small group of points chosen on the basic principle of combining Local and Distal points:- Baihui (Du 20.).

Local point:- Shanzhong (Ren 17).

Specific point for soothing asthma:- Dingchuan (Ex. 17).

Distal point:- Lieque (Lu. 7).

The following points may be added, thereafter, if any associated symptoms are observed:-

Pain and tenderness in the interscapular region:- Feishu (U.B. 13).

Pain in chest with Cough:- Zhongfu (Lu. 1).

Excessive sputum:- Fenglong (St. 40).

Low backache:- Shenshu (U. B. 23).

Palpitation and dyspnoea:- Neiguan (P. 6), Shenmen (H. 7).

Eosinophilia:- Sanyinjiao (St. 6), Geshu (U.B. 17).

Allergy:- Xuehai (Sp 10).

Rhinitis:- Yintang (Ex. 1), Yingxiang (L.I. 20).

Blocked nose:- Hose-Heliao (L.I. 19).

Treatment may be given daily or every other day. Fifteen days' treatment comprises one course. A few days rest may be given and the patient reviewed before a second course of treatment is decided on. A press needle at a suitable body or ear point, helps to prevent or abort attacks.

CARDIO-VASCULAR SYSTEM

Acupuncture has a number of important regulatory effects on the circulatory system, These effects (which include normalization of heart rate and blood pressure, and lowering of serum cholesterol, triglyceride and lipoprotein levels) together with the analgesic and sedative effects can be utilized, with advantage, in the management of cardio-vascular disorders. Electrocardiographic studies done on patients with angina pectoris, arrhythmias and other similar cardiac complaints have demonstrated, beyond doubt, the favourable effects of acupuncture on these disorders. The point Taiyuan (Lu. 9) the Influential point for the vascular system is helpful in all cardio-vascular disorders.

A. CARDIAC DISORDERS

The heart disorders which can be treated with acupuncture include acute coronary insufficiency, myocardial infarction, ischaemic heart disease, cardiac arrhythmias, paroxysmal tachycardia and cardiac neurosis.

It is advisable for the acupuncturist to see that the cardiac status of the patient is assessed, from time to time, by electro-cardiographic and other investigations. A cardiologist's opinion should certainly be sought to follow the progress of such cases. Further, it is absolutely essential that the patient be warned not to overtax himself; even if there is subjective improvement and relief of symptoms. Failure to observe this precaution could lead to serious results.

Principles of treatment:-

The chief points used are:- Shanzhong (Ren 17), Shenmen (H. 7), Bipay (U. Ex.).

The following additional points are used for specific symptoms:-

- 1) *Pain*: Hegu (L.I. 4), Xinshu (U.B. 15), Neiguan (P. 6), Jueyinshu (U.B. 14), Rugen (St. 18.).
- 2) *Shock and collapse*: Renzhong (Du 26) acupressure or strong stimulation with a needle. Hegu (L.I. 4).
- 3) *Palpitation, arrhythmias*: Baihui (Du 20), Neiguan (P. 6) strong stimulation Ximen (P. 4).
- 4) *Nausea, vomiting, hiccough, abdominal distension*: Zusanli (St. 36), Neiguan (F. 6), Zhongwan (Ren 12).
- 5) *Insomnia, restlessness, apprehension*: Baihui (Du 26) and Sishencong (Ex. 6), Shenmen (H. 7), Shenmai (U.B. 62).
- 6) *Dyspnoea, left ventricular failure, cardiac asthma*: Baihui (Du 20), Feishu (U.B. 13), Dingchuan (Ex. 17), Lieque (Lu 7), Yinlingquan (Sp, 9), Xi-Cleft point, if the condition is very acute: Kongzui (Lu 6). For excessive sputum:- Fenglong (St. 40).
- 7) *Oedema of ke! and ankles*: Baihui (Du 20), Shuifen (Ren 9), Shimen (Ren 5), Pishu (U.B. 20), Yinlingquan (Sp. 9), Sanyinjiao (Sp. 6), Local points around the ankles.
- 8) *Neurasthenia following coronary heart disease (cardiac neurosis)*: Baihui (Du 20).

Local points:- Shanzhong (Ren 17), Jujue (Ren 14) Zhongwan (Ren 12).

Distal points:- Neiguan (P. 6), Shenmen (H. 7), Zusanli (St. 36), Yinlingquan (Sp. 9).

- 9) *Bradycardia*: Baihui (Du 20), Neiguan (P. 6) Shaochong (H. 9), Suliao (Du 25).

B) VASCULAR DISORDERS

1. **Hypotension (low blood pressure):**

Use the General Tonification points:- Qihai (Ren 6), Zusanli (St. 36), Sanyinjiao (Sp. 6).

2. **Hypertension (high blood pressure):**

Baihui (Du. 20), Quchi (L.I. 11), Zusanli (St. 36), Sanyinjiao (Sp. 6).

Treat daily or every other day for 15 treatments and repeat after an interval of one week, if necessary.

According to traditional Chinese medicine, symptoms commonly associated with high blood pressure are related to the Liver and Kidney. If the response is inadequate after using the above points, one or more of the following points may be added:-

Ganshu (U.B. 18). Back-Shu point of the Liver.

Shenshu (U.B. 23). Back-Shu point of the Kidney.

Taichong (Liv. 3), Dangerous point, Xingjian (Liv. 2).

Taixi (K. 3).

If the blood pressure is very high, do not use points of the Liver Channel, especially Taichong (Liv. 3), as an abrupt fall in blood pressure may occur.

Acupuncture is useful in the management of many of the symptoms of hypertension.

- a) *Headache*: Baihui (Du 20), Fengchi (G.B. 20), Taiyang (Ex. 2), Touwei (St. 8), Shangxing (Du 23).

- b) *Dizziness, vertigo*: Baihui (Du 20), Yintang (Ex. 1), Taiyang (Ex. 2.), Shuaigu (G.B. 8).
- c) *Tinnitus*:- Baihui (Du 20), Ermen (S.J. 17), Tinggong (S.I. 19), Tinghui (G.B. 2), Yifeng (S.J. 17), Zhongzhu (S.J. 3), Foot-Linqi (G.B. 41).
- d) *Numbness of the extremities*:
- Upper limbs*:- Waiguan (S.J. 5), Quchi (L.I. 11), Zhongzhu.
- Lower limbs*:- Yanglingquan (G.B. 34), Zusanli (St. 36), Sanyinjiao (S.p. 6).
- e) *Facial paralysis following hypertension*:
Points of the Stomach Channel on the face.
Quanliao (S.I. 18), Yifeng (S.J. 17).

3. ***Thrombo-Angiitis obliterans***:

Baihui (Du 20), Hegu (L.I. 4), Taiyuan (Lu. 9), on opposite sides.

Points of Stomach Channel on leg, Yanglingquan (G.B. 34).

All points, except Baihui (Du 20), are stimulated to produce deqi.

If there is a gangrenous or ulcerated area, then the opposite leg is needled, in the area corresponding to the diseased area.

4) ***Peripheral vascular disorders***:

The points to be used are the same as for thromboangitis. The points for polyneuropathy (points along the Large Intestine and Stomach Channels) are also used. For numbness and coldness of hands and feet use:

Hand: Loagong (P. 8), Shaofu (H. 8), Yuji (Lu 10).

Feet:- Taixi (K. 3), Yongquan (K. 1),

Influential point:- Taiyuan (Lu. 9).

SPECIFIC PAIN SYNDROMES

(A) RAYNAUD'S DISEASE AND RAYNAUD'S PHENOMENON

Raynaud's disease is characterized by episodic constrictions of small arterioles in extremities in response to cold or emotional stimuli; it occurs most frequently in young women. The minimum criteria for diagnosis are intermittent attacks of pallor, cyanosis, or rubor in one or more extremities; lack of arterial occlusion (i.e., thrombus); symmetric or bilateral distribution; and trophic changes limited to the skin and never consisting of gross gangrene. Secondary criteria are the exclusion of primary diseases that can give rise to vasospastic symptoms. If vasospastic attacks occur in association with a systemic disease such as rheumatoid arthritis, cervical rib syndrome, thromboangitis obliterans, scleroderma, or periarteritis nodosa, the condition is properly termed Raynaud's *phenomenon*, not Raynaud's *disease*. In both conditions, attacks are usually limited to the arms and only occasionally involve the feet and toes.

As the process progresses to severe attacks, patients become significantly incapacitated by the almost constant presence of cold, numb, tingling fingers. Later, they may develop painful ulcers on the tips of the fingers, an occurrence more likely in Raynaud's phenomenon than in the disease.

Mild forms of the condition are managed by careful avoidance of exposure to cold whenever possible. Treatment for the more symptomatic patient has been based on numerous medications, with varying results reported. These medications include oral administration of reserpine, triiodothyronine, androgens, griseofulvin, methyl dopa, phenoxybenzamine, guanethidine, topical nitroglycerine paste and intra-arterial injections of guanethidine; hypnosis and operant conditioning have also been utilized. The number of therapies advocated is probably indicative of their lack of effectiveness.

The role of local anaesthetic sympathetic block in Raynaud's disease and phenomena is controversial, and objective data are lacking.

Since stellate ganglion or lumbar sympathetic blocks may alleviate numbness and tingling and are associated with little risk, it is reasonable to perform a diagnostic block to evaluate the likely benefit for each patient. If Raynaud's disease has progressed to digital ulceration, stellate ganglion blocks (alternating the sides) every other day may facilitate healing. The interval between attacks may be lengthened by stellate ganglion blocks if these are performed early in the course of disease and during the cold months when the symptoms are most severe. Surgical sympathectomy may be performed when severe disability occurs. (Of course, a diagnostic local anaesthetic sympathetic block should precede the operation.) Unfortunately, although immediate relief of pain frequently occurs, relapse is common, and surgery is not recommended by many physicians. Consequently, therapy for Raynaud's disease, or phenomenon, is a difficult long-term problem; however, patients may be helped over an "acute or chronic" attack by judicious use of sympathetic blockade.

(B) ANGINA PECTORIS

Nerve pathways from heart traverse the upper four thoracic sympathetic ganglia. Emotional stress resulting in sympathetic augmentation can cause angina pectoris. Blockade of the sympathetic innervation of the heart has been advocated for many years for treatment of angina pectoris. The paravertebral approach to the upper thoracic sympathetic ganglia has been used successfully, but we discourage it because of the unacceptable risk of pneumothorax in these seriously ill patients. Although stellate ganglion block docs reduce post-exercise ST depression and the severity of angina, patients with severe angina can withstand the more specific surgical vascularizing procedure. Surgery plus various drug therapies probably eliminates the need for stellate ganglion block in patients with angina pectoris.

Although not widely recognized as a discrete entity or as causalgia itself, cardiac causalgia is characterized by chronic precordial chest discomfort, which varies in intensity and distribution. It frequently follows the onset of angina pectoris, but, in contrast it is burning, constant, and unrelated to exertion. Movement of the body or

stimulation of trigger areas on the anterior chest wall may increase the pain. Hyperaesthesia of the skin overlying the painful area is commonly present. Although administration of nitroglycerine does not relieve the pain, steroid administration has been partly successful. Because cardiac causalgia resembles causalgia of the limbs, the sympathetic nervous system may play a significant role in its pathogenesis, although this possibility has not been evaluated with sympathetic blockade.

(C) PHANTOM LIMB PAIN

Most patients report phantom limb sensations almost immediately after surgical amputation. At first the phantom limb feels normal in size and shape, but in time it usually becomes smaller and may telescope into the stump. Tingling is the dominant sensation although various types of pain have been reported; eventually these sensations will usually disappear. However, pain occasionally persists and is described as “cramping,” “shooting,” “burning,” or “crushing,” sensations. Melzack has characterized the following major properties in phantom limb pain:

The pain remains for months or years after tissues heal.

More commonly, the pain will develop in patients who have suffered pain in the limb for some time prior to amputation.

Trigger zones may spread to healthy areas on the same or opposite sides. For example, pressure on the opposite limb may trigger pains in the phantom limb.

The pain may be dramatically attenuated or eliminated by decreases or increases in somatic input.

These observations have led to several explanations for phantom limb pain, which have been reviewed by Melzack. These explanations have been the basis for many therapeutic manoeuvres, none of which is completely effective, suggesting that the complete mechanism still is not known.

Before a therapeutic manoeuvre is attempted, phantom limb pain must be distinguished from stump pain. Stump pain takes several days or weeks to develop and usually is thought to be caused by physical irritation of cut nerves, accompanied by pressure between adjacent bone and a poorly fitting prosthesis, or by pressure on a terminal bulbous neuroma, which may have formed after amputations. Collagen deposition and perineural cell proliferation at the operative site during healing conducts regenerating nerve fibers away from the nerve stump; the development of neuroma follows about one month later. The neuroma will enlarge and adhere to fascia of adjacent tissues while axons grow extensively in all directions. Wall has reported the generation of abnormal impulse in neuromas. This may result in locally painful stump. Sometimes, local stump pain can be alleviated for some time by pounding directly over the sensitive neuroma with a firm object such as a wooden applicator with crutch rubber on one end. Infiltration of the painful stump with local anaesthesia may provide prolonged relief in some cases for reasons not understood. If relief lasts only as long as the duration of the local anaesthetic, then surgical resection of the neuroma may be considered. However, unfortunately, new neuromas form after surgical resection. Of prime importance, is fashioning the amputation stump with plenty of fatty tissue between the end of the bone and skin to improve the fit of the prosthesis.

Since no single therapeutic manoeuvre will universally relieve phantom limb pain, several approaches can be attempted, and many involve local anaesthetics. Injection of local anaesthetic into the stump tissues may relieve the pain for days or weeks. Sometimes, successive injections may produce increasingly longer periods of relief. Occasionally, injections of hypertonic saline into the stump may provide pain relief. Injection of either hypertonic saline or local anaesthetic into interspinous tissue initially may cause pain, which radiates into the phantom limb, but eventually provides relief of phantom limb pain for days or weeks. Even temporary relief of pain by local anaesthetic blocks will allow increased use of the stump prosthesis which increases activity of the remaining musculature and often exerts an inhibiting influence on phantom limb pain. Unfortunately, spinal anaesthesia or injection of local anaesthetic into the stump provides unpredictable results and occasionally

may increase the pain, which presumably is related to sensory deprivation.

At times, signs of sympathetic hyperactivity (vasoconstriction and sweating) occurs in the stump. These discomforts may be relieved by a sympathetic blockade if it is performed early.

However, sympathetic blockade is invariably successful only after digital amputation because sympathetic blockade rarely relieves postamputation pain above the wrist or ankle. Prophylaxis also involves early operation and possibly the use of a transcutaneous stimulator and acupuncture.

GASTRO-INTESTINAL SYSTEM

Principles of treatment:-

The Stomach and Ren Channels are those commonly used in the treatment of gastro-intestinal disorders. The Channels related to these, the Spleen and the Du Channels are also useful. The Back-Shu points of the Urinary Bladder Channel are also effective. A summary of the main points is given below:-

- a) Zusanli (St. 36), is the Distal point of choice for normalising peristaltic activity of the gastro-intestinal tract. It is also the best homeostatic point for abdominal disorders.
- b) Neiguan (P. 6.), is the most effective point for the control of upper abdominal pain and gastro-intestinal symptoms like nausea, vomiting and hiccup.
- c) "Alarm" points of the Fu Organs of the gastro-intestinal tract:-

Zhongwan (Ren 12)	:	Stomach.
Guanyuan (Ren 4)	:	Small Intestine.
Tianshu (St. 25)	:	Large Intestine.
Lanwei (Ex. 33).	:	Vermiform Appendix.

- d) “Alarm” Points of the Liver and Gall Bladder, as they are associated with gastro-intestinal functions:-

Zhongdu (Liv 6),	:	Liver.
Damiang (Ex. 35).	:	Gall Bladder.

- e) “Alarm” points of the Urinary Bladder Channel (Back-Shu points) which correspond to the Organs of the gastro-intestinal tract and related the Organs:-

Weishu (U.B. 21).	:	Stomach.
Dachangshu (U.B. 25).	:	Large Intestine.
Xiochangshu (U.B. 27).	:	Small Intestine.
Ganshu (U.B. 18),	:	Liver.
Danshu (U.B. 19).	:	Gall Bladder.
Pishu (U.B. 20).	:	Spleen.

- f) Points on the Spleen Channel, as it has an interior-exterior relationship with the Stomach Channel e.g., Gongsun (Sp. 4), Sanyinjiao (Sp. 6), Daheng (Sp. 15).

- g) Local points situated near the origin of the disorder and points adjacent to these.

- h) Distal points on Channels which traverse the affected region. The Channels most often used are the Stomach and Spleen Channels. However, the Ren and the Du Channels are also very effective in the treatment of gastro-intestinal disorders. When using the Ren and the Du Channels it must be noted that their Distal points are situated above the neck. Thus, in the treatment of haemorrhoids the point Baihui (Du 20) could be selected as a Distal point with Changqiang (Du 1) as a Local point. The point Yinjiao (Du 28) is another often used Distal point for ano-rectal disorders.

- i) Specific points for certain disorders, e.g.,
 Zhigou (S.J. 6) for constipation;
 Neiguan (P. 6) for nausea and vomiting.

TOOTHACHE:

The cause of the toothache needs proper dental attention. To relieve the pain, the following points may be used:-

Baihui (Du 20), Local points for the upper jaw:- Yingxiang (L.I. 20), Quanliao (S.I. 18), Xiaguan (St. 7).

Local points for the lower jaw:- Chengjiang (Ren 24), Daying (St. 5), Jiache (St. 6).

Distal points:- Hegu (L.I. 4), Neiting (St. 44), with strong stimulation.

These points may also be used as analgesia for the extraction of teeth. The points selected depend on the situation of the offending tooth.

DYSPHAGIA:

Most diseases of the oesophagus cause dysphagia. It may also be caused by certain diseases of the mouth and pharynx such as stomatitis and tonsillitis. Since, however, dysphagia may be due to causes such as neoplasms (especially in elderly people), the patient must be fully investigated before acupuncture is commenced to eliminate such aetiology. Where surgical, radiotherapy or other treatment has been carried out and the swallowing difficulty still persists then acupuncture may be tried for symptomatic relief. In treating dysphagia due to motor-neurone disease good results have been obtained by using acupuncture. Dysphagia due to psychosomatic causes, such as hysteria, respond well to acupuncture.

Baihui (Du 20).

Local points (select from):- Lianquan (Ren 23), Tiantu (Ren 22), Shanzhong (Ren 17).

Distal point:- Neiguan (P. 6).

HIATUS HERNIA:

A hernia may be described as the abnormal protrusion of an organ from one compartment of the body into another. Hiatus herina

is a protrusion into the thoracic cavity, through the diaphragm of the stomach or other viscus. This is commonly encountered after middle age. The commonest symptom is heartburn, but regurgitation of food and flatulence may also be often present.

Local points:- Shanzhong (Ren 17), Zhongwan (Ren 12), Liangmen (St. 21), Tianshu (St. 25), Weishu (U.B. 21).

Distal points:- Neiguan (P. 6), Zusanli (St. 36).

Since this is a mechanical disorder, acupuncture therapy is not uniformly successful in alleviating the disorder. Where surgery is contra-indicated, acupuncture may be used to relieve the symptoms.

HICCOUGH (HICCUP):

This condition is caused by involuntary spasmodic contraction of the diaphragm usually due to local irritation. It may also occur reflexly via the autonomic nerves supplying it. In most cases it stops fairly quickly but if it persists it may exhaust the patient. Hiccough which occurs following surgery can be particularly distressing. General causes like uraemia, ketosis also may cause hiccough.

Local points: Tiantu (Ren 22), (No stimulation), Geshu (U.B. 17), Shanzhong (Ren 17), Renzhong (Du 26).

Distal point:- Neiguan (P. 6), (Strong stimulation).

NAUSEA AND VOMITING:

These symptoms occur in a wide variety of diseases. Whatever the cause, the condition must be relieved, unless poisonous or toxic material has been ingested.

Local points:- Zhongwan (Ren 12), Zhangmen (Liv. 13).

Distal points:- Neiguan (P. 6), (Strong Stimulation). Zusanli (St. 36).

PEPTIC ULCER:

This is the destruction of a small area of the lining (mucosa) or the stomach (gastric ulcer) or of the duodenum (duodenal ulcer) by gastric juices (acid-pepsin). Cause is not known exactly.

The main symptom is a cramplike pain in the upper abdominal area with localized tenderness. In gastric ulcer, the pain usually felt to the left of the midline, and in duodenal ulcer the pain is felt towards the right side, or in the middle of the upper abdomen radiating upwards. Epigastric pain half to one hour after a meal is suggestive of a gastric ulcer and pain two to three hours later suggests a duodenal ulcer.

The pain may sometimes radiate to the back to the region of the eighth to the twelfth dorsal vertebrae where tender points (Alarm points for Stomach, Spleen) may be detected.

Local points:- (select from):- Liangmen (St. 21), Tianshu (St. 25), Pishu (U.B. 20), Weishu (U.B. 21).

Influential points:- Zhongwan (Ren 12).

Distal points:- Neiguan (P. 6), Zusanli (St. 36), Sanyinjiao (St. 6).

The Back-Shu Weishu (U.B. 21) and the Mu-Front Zhongwan (Ren 12). Alarm points may be used, instead of Local and Distal points,

Many antacids are available in the market, and many types of surgical intervention have been devised for treatment of peptic ulcer.

Catgut embedding therapy at Zhongwan (Ren 12) through to Liangmen (St. 21) may be tried in chronic cases.

DYSPEPSIA:

This term covers a variety of symptoms which include discomfort or pain, abdominal distension, nausea, diarrhoea and constipation. It is usually caused by overeating, or ingesting unsuitable food. It may also be caused by gastritis or gastric ulcer. Baihui (Du 20).

Local point (select from):- Liangmen (St. 21), Tianshu (St. 25), Pishu (U.B. 20), Weishu (U.B. 21), Shenshu (U.B. 23).

Influential point:- Zhongwan (Ren 12).

Distal points:- Neiguan (p. 6), Zusanli (St. 36), Sanyinjiao (Sp. 6).

APPENDICITIS:

In a high proportion of cases, the point Lanwei (Ex. 33) becomes tender and this may aid the diagnosis. (The point Lanwei (Ex. 33). Is the Alarm point of the vermiform appendix. (Lanwei is the Chinese word for the appendix).

Where adequate surgical facilities are not available such as on the high seas or in remote inaccessible areas or due to other reasons when surgery is contraindicated, conservative therapy combined with acupuncture helps to resolve the inflammation in the vast majority of cases. Baihui (Du 20).

Local point:- Ah-Shi points on the abdomen. Tianshu (St. 25), Guilai (St. 29).

Influential point:- Zhongwan (Ren 12).

Distal point:- Lanwei (Ex. 33), Zusanli (St. 36).

Analgesic point:- Hegu (L.I. 4).

Immune-enhancing and anti-infective points:- Dazhui (Du 14), Quchi (L.I. 11), Sanyinjiao (Sp. 6).

In the Peoples' Republic of China, several papers have been published describing the treatment of appendicitis with acupuncture alone or in combination with herbal drugs. Many Chinese authorities indicate that acupuncture is an effective therapy for acute appendicitis and that complete resolution takes place in the vast majority of cases, but in author's opinion appendectomy is the treatment of choice.

INTESTINAL COLIC:

Intestinal colic is due to the complete, or partial obstruction of the intestines, which is usually caused by inflammation after ingestion of toxic food. The pain of colic is characteristically intermittent, coming on at regular or irregular intervals. The pain is often severe.

The non-obstructive type of colic responds well to acupuncture. The obstructive type may be due to some mechanical cause and may need surgery. Baihui (Du 20).

Local point:- Tianshu (St. 25).

Distal points:- Zusanli (St. 36), Sanyinjiao (Sp. 6).

Specific point for pain:- Hegu (L.I. 4), with strong stimulation.

Strong manual stimulation of the Distal points may also be carried out.

CONSTIPATION:

Constipation may be due to faulty diet (e.g. insufficiency of 'roughage', irregularity of meals) or lack of exercise. Psychological factors may also be present. Proper advice on these matters should therefore be given to the patient, if relief obtained from acupuncture is

to be maintained. Constipation could also be a symptom of carcinoma of the large intestine. In the majority of cases of constipation, the cause is not known.

If the condition is neglected it may lead to haemorrhoids or anal fissure.

Local points:- Tianshu (St. 25).

Distal points:- Baihui (Du. 20), Zhigou (S.J. 6.), Zusanli (St. 36)
Strong manual stimulation.

Influential point:- Zhongwan (Ren 12).

HEPATIC AND BILIARY SYSTEM

The liver, gall bladder, biliary tract and the pancreas are functionally related to the digestive tract and to each other. In traditional Chinese medicine the term “Spleen” includes the pancreatic functions as well. This is why the Spleen Channel is also called the “Spleno-Pancreatic Channel”.

Principles of treatment:-

- 1) Owing to these inter-relationships, points from the following Channels are frequently used together in the treatment of this group of disorders:-
 - a) Liver Channel.
 - b) Gall Bladder Channel.
 - c) Spleen Channel.
 - d) Stomach Channel.

- 2) Points from the following Channels are used as they traverse the area of the abdomen:-
 - a) Urinary Bladder Channel.
 - b) Du Channel.
 - c) Ren Channel.

- 3) The Influential point of the Zang Organs, namely, Zhangmen (Liv 13).
- 4) The Back-Shu points of the affected organs: Genshu (U.B. 18), Danshu (U.B. 19), Pishu (U.B. 20).
- 5) The Mu-Front points and other Alarm points of the Organs involved in this group of disorders:-

Qimen (Liv. 14)–Mu-Front Alarm point of the Liver. Riyue (G.B. 24)–Mu-Front Alarm point of the Gall Bladder, Zhangmen (Liv. 13)–Mu-Front Alarm point of the Spleen. Zhongdu (Liv. 6)–Alarm point of the Liver in the leg. Dannang (Ex. 35)–Alarm point of the Gall Bladder in the Jiangjing (G.B. 21)–Alarm point of the Gall Bladder in the shoulder area.

These points are useful in diagnosis as well as in therapy.

- 6) The point Liangmen (St. 21), on the right side lies directly over the gall bladder and is often used in diseases of that organ. On the right side, therefore, this is a Dangerous point and for this reason on that side the needle should be inserted superficially or directed obliquely.
- 7) Further points may be used where accompanying symptoms are present:-

Pain:- Hegu (L.I. 4).

Hiccough, nausea, vomiting:- Nciguan (P. 6), Tiantu (Ren 22).

Infection:- Dazhui (Du 14) Quchi (L.I. 11), Sanyinjiao (Sp. 6).

Abdominal Distension:- Tianshu (St. 25), Daheng (Sp. 15), Zhongwan (Ren 12), Daimai (G.B. 26), Sanyinjiao (Sp. 6).

Constipation:- Zhigou (SJ. 6).

Diarrhoea:- Gongsun (Sp. 4).

BILIARY COLIC:

This refers to the characteristically intermittent severe pain produced as a result of the obstruction and inflammation of the gall bladder or its bile duct. The pain is felt generally in the upper abdomen with maximal tenderness in the right costal margin. It may radiate to the right shoulder and the back. Nausea, vomiting, fever and mild jaundice may also appear.

Acupuncture treatment is first given for the management of pain. After that the primary cause should be ascertained. Where ascariasis is present, appropriate vermifugal drugs need to be administered. If perforation of the gall bladder has occurred or obstruction to the bile duct is present, surgery will then be indicated. In all cases, the possibility of neoplasms must be excluded.

In acute cases Hegu (L.I. 4), should first be strongly stimulated to alleviate the pain, together with the Xi-cleft point of the Gall Bladder: Waiqiu (G.B. 36).

The following points may be used as a course of treatment:

Local point (select from):- Riyue (G.B. 24), Danshu (U.B. 19), Zhangmen (Liv. 13), Ganshu (U.B. 18), Huatuojiaji (Ex. 21), of 8-12 dorsal vertebrae. Liangmen (St. 21).

Also, select from:- Jingmen (G.B. 25), Daimai (G.B. 26), Qimen (Liv. 14), Pishu (U.B. 20), Weishu (U.B. 21).

Distal points:- Hegu (L.I. 4), Neiguan (P. 6), Dannang (Ex. 35), Zhongdu (Liv. 6), Zusanli (St. 36), Qiuxu (G.B. 40).

Specific points for infections:- Dazhui (Du 14), Quchi (L.I. 11), Sanyinjiao (Sp. 6).

PANCREATITIS:

This is an inflammatory condition of the pancreas which may occur in acute, subacute or in chronic forms.

Acute pancreatitis is a very painful disorder commonly associated with disease of the gall bladder. There may be obstruction of the pancreatic duct as it enters the duodenum due to a gallstone, oedema, or spasm, as the pancreatic duct shares a common opening into the duodenum with the bile duct. As a result of this obstruction, bile enters the pancreatic duct and activates the digestive enzymes secreted by the pancreas, which causes the digestion of the pancreatic tissue.

The patient usually suffers from a sudden onset of acute pain in the upper abdomen, often with nausea and vomiting. In severe cases the condition may render the patient unconscious. The pain often radiates to the back, to either shoulder, or to one or both the iliac fossae. As the destructive process of the pancreas continues, the digestive enzymes will leak into the abdominal cavity and cause a chemical peritonitis.

Since the symptoms may resemble perforated peptic ulcer, acute intestinal obstruction, acute appendicitis, or acute myocardial infarction, it is very important that an early diagnosis is made.

The immediate treatment is to control the severe pain by strong stimulation at:-

Hegu (L.I. 4), Sanyangluo (S.J. 8), Neiguan (P. 6).

If shock and collapse occur, use:- Jing-Well points, with Homeostatic points.

GENITO — URINARY SYSTEM

Principles of treatment:-

The Local points are selected principally from the Urinary Bladder. Ren and Du Channels, as they run anatomically in close proximity to or traverse the genitourinary system.

The Distal points are usually chosen from the Stomach, Spleen, Kidney and Urinary Bladder Channels, as they too overlie the lower abdominal area.

According to traditional Chinese medicine, disorders of the genito-urinary system are most likely to arise from the lack of balance of vital energy in the above Channels. These Channels are in Yin-Yang pairs, having an interior-exterior relationship with each other:-

<i>Yin</i>	<i>Yang</i>
Ren	Du
Spleen	Stomach
Kidney	Urinary Bladder

The imbalance responsible for these disorders can be corrected by the proper selection of points in the Yin and Yang Channels. In other words, the action of acupuncture in these disorders is primarily homoeostatic, even from the point of view of traditional medicine.

Modern research has also shown that it is their balancing of mechanisms like tubular secretion — re-absorption and contraction - relaxation of smooth muscle in the ureters, bladder and sphincters that are most favourably influenced by acupuncture in this group of disorders.

The Organ and Channel central to, and most directly concerned with the genito-urinary system is the Kidney. The traditional Chinese concept of the Kidney meant not only the anatomy and the functions of the kidneys themselves, but also included the adrenal glands (hence the emotion fear being associated with the Kidney), as well as the testes, the ovaries and genital functions.

In genito-urinary disorders, before acupuncture treatment, a full investigation is carried out to eliminate neoplastic disorders, mechanical obstructions, renal calculi and other similar conditions which contraindicate the use of acupuncture. Surgical treatment should be carried out where possible.

RENAL COLIC:

This refers to the spasm of the ureter, often due to a stone (calculus). There is sudden pain in the loin radiating to the groin, and often to the external genitalia. The pain becomes very intense in a few minutes and usually subsides within about two hours but may continue much longer. Sweating and vomiting may occur.

Strong manual stimulation should be administered at:-

Hegu (L.I. 4), and/or Shuiquan (K. 5), — Xi-Clelt point of the Kidney Channel, and often dramatic relief from pain is obtained.

After the pain is relieved, the needles should be inserted at the following points:-

Baihui (Du 20). *Local points* (select from):- Shenshu (U.B. 23), Yaoyangguan (Du 3), Dachangshu (U.B. 25), Pangguanshu (U.B. 28), Ciliao (U.B. 32), Zhibian (U.B. 54).

Distal points:- Zusanli (St. 36), Sanyinjiao (St. 6), Weizhong (U.B. 40), Taixi (K. 3).

Specific points for vomiting:- Neiguan (P. 6).

The treatment may be repeated daily for a few days, and also at the time of any acute exacerbations. Where indicated, surgical intervention should be undertaken early.

RETENTION OF URINE:

It may be caused by obstructions such as a calculus, prostatic enlargement, or inflammation of the urethra. It may also be due to the interference of the nerve supply of the bladder, such as a fractured spine. Occasionally, psychological factors may be the cause. The proper therapy is to remove any mechanical cause of obstruction surgically. Acupuncture may help in obtaining symptomatic relief Baihui (Du 20).

Local points (select from):- Zhongji (Ren 3), Guanyuan (Ren 4), Ciliao (U.B. 32), Pangguanshu (U.B. 28), Yaoyangguang (Du 3).

Distal points:- Sanyinjiao (Sp. 6), Yinlingquan (Sp. 9), Zusanli (St. 36), Weizhong (U.B. 40).

NOCTURNAL ENURESIS:

Enuresis or urinary incontinence occurs due to an inability to control the sphincters of the bladder. It may be due to such causes as diabetes mellitus, kidney disorder or paralytic disorders. Its commonest form, however, is bed wetting of children in which, sometimes, psychological causes may be found.

Baihui (Du. 20).

Local points (select from):- Shenshu (U.B. 23), Ciliao (U.B. 32), Pangguanshu (U.B. 28), Zhongji (Ren 3), Guanyuan (Ren 4), Qihai (Ren 6).

Distal points:- Zusanli (St. 36), Weizhong (U.B. 40), Sanyinjiao (Sp. 6), Taixi (K. 3).

If psychological factors are present, add:- Shenmen (H. 7.), Shemai (U.B. 62.).

Nocturnal enuresis in children responds remarkably well to acupuncture. Points in front of the body are used in the first course of treatment; points in the back are used in the second course.

However, it is essential to ensure that a neurological deficit such as a spina bifida is not present. Some Chinese authorities believe that moxa on the needle at Ciliao (U.B. 32) is very helpful in curing idiopathic nocturnal enuresis. The needle has to be precisely inserted into the second posterior sacral foramen, and this requires some degree

of experience. We insert press needles in the proximal and distal crease of the little finger of the both hand, and keep the needles for 1 week. Good results are often obtained in children.

DISEASES OF WOMEN

Acupuncture can be usefully applied in a wide range of gynaecological and obstetric disorders, as well as during normal childbirth.

Principles of treatment:-

Points on the Ren Channel are those most commonly used in these disorders. According to traditional Chinese medicine, the Ren Channel is believed to govern the reproductive functions (for which reason this Channel is also called the “Conception Vessel”).

Points on the Stomach, Spleen, Urinary Bladder and Kidney Channels are also used, as they traverse the area of the genitals.

Before attempting to treat gynaecological disorders with acupuncture, however, it is important that a competent gynaecologist rules out the presence of malignant or other neoplastic disorders.

A. GYNAECOLOGICAL DISORDERS

AMENORRHOEA AND IRREGULAR MENSTRUATION:

Amenorrhoea means the absence of menstrual periods. Primary amenorrhoea refers to the condition where menstruation has not begun, although the girl has reached or passed the age when it should have commenced. It may be an indication of a systemic disorder or of hormonal imbalance. Secondary amenorrhoea refers to the condition where a woman of childbearing age, who previously had periods has now stopped having them. If this is not due to pregnancy or menopause it must be regarded as a symptom requiring further investigation, as it is a feature of a wide range of conditions. Common causes of this type of amenorrhoea are anaemia, debilitating diseases, hormonal

imbalances, nervous strain and other emotional disorders. Since this is a symptom, it is necessary that the underlying condition be elicited and treated.

The term irregular menstruation is used to describe cases where the periods occur, but in an abnormal manner, e.g. irregularity of the menstrual cycle, excessive or scanty, prolonged or brief bleeding, or the blood being too dark or clots being formed.

The following points may be used, in addition to any points indicated by the presence of other symptoms:-

Baihui (Du 20).

Local points:- Qihai (Ren 6), Guanyuan (Ren 4), Shenshu (U.B. 23), Guilai (St. 29), Ciliao (U. B. 32).

Distal points:- Sanyinjiao (Sp. 6), Zusanli (St. 36), Taixi (K. 3).

DYSMENORRHOEA

Dysmenorrhoea may be defined as pain arising in direct association with menstruation. It is the greatest cause of loss of time at work among women. There are two main clinical categories.

“*Spasmodic*” or true dysmenorrhoea, in which the pain is of uterine origin, is directly due to menstruation. It gives rise to colicky lower abdominal pain and is more often seen in the first years after the menarche, and in nulliparae particularly. The severity may vary from mild discomfort lasting an hour or so, to really severe pain that disables for two or three days.

“*Congestive*” dysmenorrhoea occurs in an organ other than the uterus and is merely associated with menstruation. It is thought to be due to premenstrual congestion of the pelvic tissues, and is characterised by a dull and heavy feeling in the lower abdomen and often backache. The onset usually occurs a day or two before the menstrual flow begins. It may be associated with pelvic inflammatory disease and this should be excluded before treatment.

Dysmenorrhoea, which occurs for the first time after the age of 30 years, suggests the possibility of endometriosis. The treatment is that of the endometriosis.

The pain mechanism is not clear. In spasmodic dysmenorrhoea it may be due to incoordinate uterine action.

Progesterone increases the tone of the muscles around the isthmus and upper cervix. Excessive tone at this site may be the basis of the incoordinate action of the uterine muscle.

The nerve supply of the uterus is entirely from the autonomic system. The sympathetic fibres form a network which overlies the last lumbar vertebra and is known as the Presacral nerve. Division of this nerve, Presacral Neurectomy, may rarely be required in intractable cases of dysmenorrhoea.

Provided associated conditions e.g. pelvic infection, and endometriosis have been excluded, treatment in the first instance should always be by a good analgesic that does not have the side effects of habituation, gastric irritation, drowsiness or interference with bowel function. Only if this fails, as it does occasionally in the more severe cases, should resort be made to either suppression of ovulation by hormone therapy or dilatation of the cervix.

Baihui (Du 20).

Local points:- Qihai (Ren 6), Guanyuan (Ren 4), Zhongji (Ren 3), Zhongwan (Ren 12), Ciliao (U.B. 32).

Distal points:- Sanyinjiao (Sp. 6), Zusanli (St. 44).

Specific points for pain:- Hegu (L.I. 4), Neiting (St. 44).

Specific points for nausea and vomiting:- Neiguan (P. 6), Zusanli (St. 36).

For best results, the acupuncture treatment should be given about a week prior to the commencement of the menstruation. Three or four such monthly treatments usually suffice.

PAIN OF SECONDARY CARCINOMA:

Acupuncture is particularly useful in relieving the pain of secondary carcinoma of the cervix and other pelvic structures, where surgery and radiation therapy have failed.

The plan of therapy is follows:-

- i) Baihui (Du 20).
- ii) Hegu (L.I. 4) is punctured and manually stimulated very strongly, till most of the pain disappears.
- iii) Ah-Shi points of the body are located and needled.
- iv) Points of the low back such as Shenshu (U.B. 23), Yaoyangguan (Du 3), Dachangshu (U.B. 25), are needled together with the relevant Distal points like Weizhong (U.B. 40). Electrical pulse stimulation of the dense disperse pattern is applied at these proximal and Distal points.

A remarkable relief of pain is seen with this therapy.

Embedding needles are applied at the Ah-Shi points between treatments.

B. OBSTETRIC DISORDERS**HYPEREMESIS:**

This term describes the excessive vomiting in pregnancy which may occur in the first trimester. The cause is not known, but psychological factors are probably involved. In very severe cases, the pregnancy may have to be artificially terminated.

Although acupuncture is generally contraindicated in pregnancy owing to the risk of abortion, it may be used with advantage in cases of hyperemesis as it is less damaging to the foetus than drugs.

The points used are:- Neiguan (P. 6), Zusanli (St. 36). and other Homeostatic points.

Treatment should be given until the symptoms subside. If the symptoms are severe the patient may be treated two or three times a day.

LABOUR PAIN:

Acupuncture may be used during childbirth to relieve the pains of delivery. It may also be used in the other events that may occur during delivery such as delayed labour, episiotomy, suturing of the perineum after delivery, Caesarean section and the manual removal of the placenta.

The use of acupuncture in the above procedures has distinct advantages. Among them are a less exhausted mother, a better chance of survival for the baby as it is not exposed to narcotics and other drugs during delivery and a shortened delivery time.

The points to be used at the commencement of labour are:-

Baihui (Du 20.).

Hegu (L.I. 4) with manual stimulation. Nei-Ma (U. Ex.) Sanyinjiao (Sp. 6): with electrical stimulation.

The needles are placed at the left side only, to allow for the accoucheur to work on the right side of the patient.

If there is delay in the second stage of labour, acupuncture may be used to hasten the delivery by inducing and strengthening the uterine contractions. The points used are:-

Hegu (L.I. 4), Sanyinjiao (Sp. 6), Taichong (Liv. 3), Ciliao (U.B. 32), Yanglingquan (G.B. 34).

AGALACTIA:

A Inadequate milk supply may be due to almost any kind of ill health after childbirth. The common causes are a sore or cracked nipple, incorrect method of breast feeding, emotional stress, loss of appetite, or insufficient nutrition.

Local point:- Shanzhong (Ren 17) with the needle directed towards the affected breast-towards Rugen (St. 18) or Jiquan (H.I.).

Distal points:- Neiguan (P. 6), Hegu (L.I. 4), Sanyinjiao (Sp. 6), Foot-Linqi (G.B. 41).

DISEASES OF SOFT TISSUES, MUSCLES, BONES AND JOINTS

These includes muscular and ligamentous sprains and strains, different types of arthritis, spondylosis, spondylitis, and soft tissue lesions like bursitis, tenosynovitis, fibrositis and myositis. These disorders can be mild and self-limiting in their course, or they may become chronic and give rise to progressive degenerative changes. Generally, they are characterised by limitation of movement and the presence of pain which may be acute, subacute or chronic.

The pain is the symptom which bothers the patient most. Mild cases may be relieved within a short period with or without treatment, but the management of subacute and chronic cases is often unsatisfactory with heat, exercise, massage, manipulation and other methods of physical medicine. Treatment with prolonged drug therapy may be equally unsatisfactory due to the not infrequent accompaniment of side-effects, and it is doubtful whether these particular drugs have any favourable effect, at all, on the long term prognosis of the rheumatic group of disorders. However, one frequently finds patients who have been continuously on drugs for many years due to the want of a better alternative.

The author believes that acupuncture should not be used as the last line of defence, but as the first line of attack in this group of disorders. By using it at the early stages of the disease it is possible to prevent the many crippling deformities that often develop in these cases. For relieving pain, without causing side-effects, acupuncture is the method par excellence. With the population of every country tending to become more geriatric, the treatment of these disorders

with acupuncture will become increasingly important in the future, especially in the context of the surging cost of orthodox medical care and the escalation of drug costs.

Principles of treatment: . In the treatment of this group of disorders the method best recommended is the use of Local and Adjacent points along with relevant Distal points. Ah-Shi points should be detected and needled. The analgesic points Hegu (L.I. 4) and/or Neiting (St. 44) are used to alleviate pain. The chief homeostatic point Quchi (L.I. 11) may be used with Zusanli (St. 36) and Sanyinjiao (Sp. 6) which also possess strong homeostatic properties. Likewise, the main sedative points Shenmen (H. 7) and Shenmai (U.B. 62) would generally be indicated. Baihui (Du 20), an important sedative point itself, is usually used in nearly every case as the governing point.

Where bone and cartilage degeneration has occurred, the relevant Influential point, Dashu (U.B. 11), is used. The point Yanglingquan (G.B. 34), the Influential point for muscle and tendon, is always used in cases of paralysis, wasting of muscle, and tendon disorders.

TORTICOLLIS AND CERVICAL SPONDYLOSIS

Local points:- Ah-Shi points Fengci (G.B. 20), Dazhui (Du 14), Huatuojiayi point (Ex. 21), of the neck area.

Distal points:- Lieque (Lu. 7), Xuanzhong (G.B. 39)

Influential point for bone and cartilage:- Dashu (U.B. 11).

In cases of very painful and acute stiff neck with difficulty of lateral rotation and flexion, strong manual stimulation should be carried out at Yanglao (S.I. 6), or Houxi (S.I. 3), As the latter point is very painful, it is used only in very acute cases.

BACKACHE:-

In treating backache, it is best to commence therapy with a few points.

Local points:- Ah-Shi points.

Distal points:- Weizhong (U.B. 40), Kunlun (U.B. 60).

Analgesic points:- Hegu (L.I. 4).

If degenerative changes in the spine are present:- Dashu (U.B. 11).

Having evaluated the response to the first one or two sittings, further points may be added, if necessary.

IMPORTANT CAUSES OF BACK PAIN**Trauma**

- Crush fractures due to:
 - severe trauma (fall from height)
 - osteoporosis
 - osteomalacia
 - Malignancy
- Fracture of transverse processes
- Subluxated facet joints
- Minor trauma resulting in strains

Malignancy

- Primary tumour of bone or cartilage
- Secondary tumours in bone (arising from tumours of breast, prostate, lung, kidney, Thyroid, pancreas and ovary)
- Multiple myeloma

Infection

- Osteomyelitis
- Tuberculosis
- Pyogenic disc space infections

Prolapsed intervertebral disc

Sacro-iliac strain

- Inflammatory arthritis
- Sacro-ilitis due to:
 - ankylosing spondylitis
 - rheumatoid arthritis
 - inflammatory bowel disease
 - Reiter's disease
 - psoriasis

Lumbosacral strain

- Degenerative disorders
- Spondylosis
 - Osteoarthritis

Metabolic disorders

- Paget's disease
- Osteomalacia

Congenital disorders

- Spinal stenosis

Malingering

- Psychogenic causes

ANKYLOSING SPONDYLITIS

In young people, especially males, ankylosing spondylitis is a cause of pain in the low back. It should be suspected when the backache is of gradual onset unassociated with injury. It is always associated with morning stiffness in the back often lasting an hour or more.

The sacro-iliac joints are usually involved early with radiological changes of sclerosis, widening of the joints and with loss of definition. Later the whole spine is involved giving a “poker back” clinically and a “bamboo spine” on X-Ray from calcification of the ligaments.

An early physical sign is limitation of spinal movements, especially lateral flexion, so that the patient can no longer touch the outer side of the knee with the fingertips when standing.

Treatment is by analgesics and sometimes by ultra-sonics or radiotherapy, though no treatment prevents the evolution of the disease. If progression is very rapid immobilisation or the administration of corticosteroids may be helpful.

Local points:- Ah-Shi points. Du and U.B. Channel points Huatuojiaji (Ex. 21) points: in the affected region.

Distal points:- Sanyangluo (S.J. 8), Weizhong (U.B. 40), Kunlun (U.B. 60)

LOW BACKACHE AND SCIATICA:-

Local points (select from):- Ah-Shi points, Mingmen (Du 4.), Yaoyangguan (Du 3), Dachangshu (U.B. 25), Huatuojiaji points (Ex. 1), of the region, Ciliao (U.B. 32), Zhibian (U.B. 54)

Distal points (select from):- Weizhong (U.B. 40), Kunlun (U.B. 60), Chengshan (U.B. 57) Chengfu (U.B. 36), Yinmen (U.B. 37), Yanglingquan (G.B. 34), Taixi (K. 3), Sanyinjiao (Sp. 6).

Of the Distal points, one or two may be selected at each sitting. However, the first two mentioned are those which are most commonly used.

In acute sciatica, Huantiao (G.B. 30) with stimulation to produce deqi is very helpful in relieving pain.

In very acute low backache, Renzhong (Du 26) may be used to relieve the pain.

SUPRASPINATUS SYNDROME

The Supraspinatus Syndrome is one of several conditions that give rise to acute pain in the shoulder. The cause is inflammation of the tendon of supraspinatus, and typically, pain occurs only on active movement through a small arc of abduction. Supraspinatus tendonitis often fails to clear up spontaneously and may persist for many years.

Classically, passive movements are pain free through the whole range of shoulder movement, but the pain can be reproduced when the patient abducts the arm against the resistance of the examiner's restraining hand. Local tenderness over the supraspinatus tendon confirms the diagnosis.

The 'Painful Arc' or active movements is also caused by infraspinatus tendonitis, which can be differentiated by eliciting pain on external rotation against resistance, and tenderness over the infraspinatus tendon.

Subacromial bursitis causes pain on passive as well as active movement through the critical arc. Bicipital tendonitis will give pain also on flexing the elbow against resistance.

Treatment of supraspinatus tendonitis is by infiltration of the inflamed tendon with hydrocortisone, which may have to be repeated several times. This, with or without deep massage, is curative even in long neglected cases. Following acupuncture points are commonly used.

Local points:- Jianyu (L.I. 15), Jianliao (S.J. 14), Jianzhen (S.I. 9), Ah-Shi points.

Distal point and analgesic point:- Hegu (L.I. 4).

At the first sitting, the use of Tiaokou (St. 38) with fairly strong stimulation is helpful in mobilizing the shoulder. In about 70 - 80% of cases significant improvement is obtained immediately. (Cf. "The Use of the Point Tiaokou (St. 38) in Frozen Shoulder").

ELBOW PAIN:

Local points:- Ah-Shi points. Chize (Lu. 5), Quze (P. 3), Shaohai (H. 3), Quchi (L.I. 11).

Distal point and analgesic point:- Hegu (L.I. 4).

WRIST PAIN:

Local points:- Ah-Shi points. Daling (P. 7), Shenmen (H. 7), Taiyuan (Lu. 9).

Analgesic points:- Hegu (L.I. 4) of opposite side, and/or Neiting (St. 4).

CARPAL JOINTS PAIN:

Local points:- Ah-Shi points. Yuji (Lu. 10), Laogong (P. 8), Shaofu (H. 8).

Analgesic points:- Hegu (L.I. 4) of the opposite side, and/or Neiting (St. 44).

SACROILIAC JOINTS:

Local points:- Ah-Shi points. Tunzhang (U. Ex.), Ciliao (U.B. 32).

Distal points:- Weizhong (U.B. 40), Kunlun (U.B. 60).

Analgesic point:- Hegu (L.I. 4).

KNEE PAIN:

Local points:- Ah-Shi points. Hedong (Ex 31), Xiyan (Ex. 32), Dubi (St. 35.), Weizhong (U.B. 40).

Distal points:- Neiting (St. 44), Kunlun (U.B. 60).

Analgesic point:- Hegu (L.I. 4).

Specific point for effusion:- Yinlingquan (Sp. 9).

Influential point for bone and cartilage:- Dashu (U.B. 11)

SPRAINED ANKLE

This common injury is due to excessive inversion or eversion strain causing injury to the lateral or radial ligaments of the ankle. Sprains of the *lateral ligament* are much the more common and usually involve a partial tear of the anterior talofibular ligament.

Bruising and swelling appear quickly and are below and in front, of the lateral malleolus. More severe sprains may rupture the calcaneofibular ligament and give rise to instability of the ankle joint. To exclude this the antero-posterior X-Ray should be taken with the foot in forced inversion. If the calcaneofibular ligament is torn, tilt of the talus will be seen in the mortice of the ankle joint.

Minor sprains require analgesics and firm strapping, but Plaster of Paris immobilisation will be called for in more severe cases. Really major ligamentous tears may require surgical repair.

If treatment is possible within a few hours of injury, the pain of acute tarsus strain responds dramatically to aspiration of any haematoma, followed by infiltration of the damaged ligaments with hydrocortisone.

Local points:- Ah-Shi, Kunlun (U.B. 60), Taixi (K. 3), Zhaohai (K. 6), Jicxi (St. 41), Qiuxu (G.B. 40)

Analgesic point:- Hegu (L.I. 4).

Specific point for swelling:- Yinlingquan (Sp. 9).

Influential point for bone and cartilage:- Dashu (U.B. 11).

COMMON LOCOMOTOR DISORDERS

1) **Frozen Shoulder:-**

In this condition, which is commonly found in middle-aged people, there is pain and limitation of movements at the shoulder joint, often lasting several months.

This condition is often refractory to treatment in diabetic persons and concomitant treatment of the later disease is indicated. Hypertension may be present in some cases.

The point Tiaokou (St. 38) should be needled before inserting any other needles, in cases where there is much shoulder immobility. When strong manual stimulation is applied at this point there is often a dramatic increase in the range of movement. The patient should be asked to exercise the shoulder while this manoeuvre is being performed.

Local points:- (select from):- Ah-Shi points. Jianyu (L.I. 15), Jianliao (S.J. 14), Jianzhen (S.I. 9), Fcngchi (G.B. 20), Jianquan (U. Ex.), Jian Nie-Lin (U. Ex.), Taner (U. Ex.).

(The first three points are the more commonly used.)

Distal points:- Hegu (L.I. 4), Yanglingquan (G.B. 34) may be added.

2) **Tennis Elbow (Lateral Epicondylitis):-**

This is characterized by pain and stiffness in the extensor muscles of the forearm. It is often met with in tennis players, housewives and in workers who carry heavy loads. There is also pain as the elbow on extension of the wrist and on gripping an object.

Local points:- Ah-Shi points. Quchi (L.I. 11), Shousanli (L.I. 10)

Distal point:- Hegu (L.I. 4).

Influent point for muscle and tendon:- Yanglingquan (G.B. 34)

(In golfer's elbow, points on the medial aspect of the elbow are used).

3) **De Quervain's Disease:-**

This condition is indicated by pain just above the wrist and weakness of thumb movements. It is commonly found in middle-aged women who do hard work involving alternate pronation and supination of the forearm, such as washing and wringing clothes.

Local points:- Ah-Shi points. Lieque (Lu. 7), Yangxi (L.I. 5)

Distal point:- Hegu (L.I. 4).

Influent point for muscle and tendon:- Yanglingquan (G.B. 34).

4) **Interphalangeal Disorders (Rheumatoid Arthritis):-**

This is often due to rheumatoid arthritis, or Herberden's nodes.

Baihui (Du 20).

Local point:- Ah-Shi points. Baxie (Ex. 28).

Distal point:- Hegu (L.I. 4).

5) **Osteoarthritis of Hip:-**

Local points:- Ah-Shi points Huantiao (G.B. 30), Zhibian (U.B. 54.), Ciliao (U.B. 32), Biguan (St 31).

Distal points:- Hegu (L.I. 4), Neiting (St. 44).

6) **Osteoarthritis of the Knee Joint:-**

The commonest disorder of the knee joint osteoarthritis in elderly people. Traumatic arthritis and non-mechanical cartilage disorders also respond very well.

Local points:- Ah-Shi points. Hedong (Ex. 31), Medial-Xiyan (Ex. 32), Dubi (St. 35), Xuehai (Sp. 10), Liangqiu (St. 34), Weizhong (U.B. 40).

(The first three are the commonly used points).

Distal and Analgesic points:- Hegu (L.I. 4), Neiting (St. 44).

SKIN DISEASES

Principles of treatment:-

Local points with reference to the lesion, together with points which possess specific properties are selected:-

- a) Points Local and Adjacent to the lesion. The lesion itself is not generally needed, especially if it is ulcerated or excoriated.

Laserpuncture may be used directly on the affected area.

- b) Points of the Lung Channel (Lung is related to the skin). e.g., Chize (Lu. 5). Bleeding at this point,
- c) Points of the Kidney Channel (Kidney is related to head hair).
- d) The point Xuehai (Sp. 10) for its specific anti-allergic properties.

- e) The points Dazhui (Du 14) and Sanyinjiao (Sp. 6) for their anti-infective and immune-enhancing properties.
- f) The points Baihui (Du. 20) and Shenmen (H. 7) for their special sedative effects.
- g) The point Quchi (L.I. 11) for its powerful homeostatic effects.
- h) For pruritus, strong stimulation of the points Dushu (U.B. 16) and Xuehai (Sp. 10) are very effective.
- i) Where the circulation is poor, Taiyuan (Lu. 9), the Influential point for the vascular system, is used.

ACNE (PIMPLES)

Acne is a chronic skin disease affecting the sebaceous glands. These glands become excessively active due to hormonal or other imbalances and cause over-production of sebum, with blocking of their openings. This results in the formation of a plug over a small abscess or pimple of partially dried fatty material. This material is liable to bacterial infection (most commonly *Staphylococcus albus* and *Bacillus acnes*). As this disorder is believed to be primarily caused by some imbalance in the body, anxiety and psychological disturbances may aggravate the condition. This disorder is quite common during the period of puberty.

Baihui (Du 20).

Local points:- Points around the affected area.

Distal points:- Points distal to the affected area. Hegu (L.I. 4), if the face is affected.

Immune-enhancing points:- Dazhui (Du 14.), Quchi (L.I. 1), Sanyinjiao (Sp. 6).

Related Channel points:- Chize (Lu. 5), Lieque (Lu. 7).

URTICARIA:

Urticaria is an allergic reaction of the skin caused by sensitivity to various substances, mostly certain foods, and also to drugs such as aspirin, penicillin or streptomycin taken orally, applied externally, or administered by injection. Itchy weals develop very suddenly on the skin and heal after a few days, but may appear on another part of the skin afterwards. The pruritus may be very severe.

Angioneurotic oedema is a severe form of urticaria. The swelling becomes severe, affecting the skin of the face, hands or genitals with generalised anaphylactic reaction. The mucous membranes of the nasopharynx and the larynx may be affected causing serious respiratory obstruction and the patient may need urgent intensive care to maintain the patency of the airway.

Baihui (Du 20).

Local points:- Points close to the site of the reaction.

Specific point for allergy:- Xuehai (Sp. 10) with strong manual stimulation.

Homeostatic point:- Quchi (L.I. 11)

Immune enhancing points:- Zusanli (St. 36), Sanyinjiao (Sp. 6). Dazhui (D.U. 11).

If the attack of urticaria is prolonged, add the following points:-

Chize (Lu. 5), - prick to bleed. Weizhong (U.B. 40), prick to bleed.

Where the urticaria is caused by drug allergy, select from the following points for sedation of the patient:-

Sishencong (Ex. 6), Shenmen (H. 7), Yinxi (H. 6), Neiguan (P. 6), Ximen (P. 4), (Xi-Cleft point), Xinshu (U.B. 15), Shenmai (U.B. 62).

In severe urticaria, strong stimulation of the following specific points usually brings immediate relief:-

Dashu (U.B. 16), Xuehai (Sp. 10)

HERPES ZOSTER (SHINGLES):

Herpes Zoster is an infection caused by a virus similar or identical to that causing varicella. It affects the dorsal ganglion of one or more spinal or cranial nerves, and manifests itself in the first instance by acute pain, followed three or four days later by the typical vesicular eruption of the skin supplied by the affected nerve.

The Gasserian ganglion of the fifth cranial nerve is sometimes involved, commonly in its upper division. Vesication may then involve not only the skin supplied by the ophthalmic branch of the trigeminal nerve, but also the cornea of the eye on the affected side. Rarely iridocyclitis and secondary glaucoma occur as complications.

In the Ramsay Hunt syndrome, affection of the geniculate ganglion of the facial nerve causes facial palsy, pain about the ear, hyperacusis or deafness and vertigo. The herpetic eruption is found in the external auditory canal, drum, pinna and over the mastoid.

Fortunately the disease is self limiting, but post-herpetic pain, sometimes severe, may continue for weeks or months after the acute infection has subsided, particularly in elderly people. The origin of post-herpetic pain is uncertain. It has been reported that Vitamin B 12, and systemic steroids, may be of benefit in reducing the incidence, duration or severity of post-herpetic pain. Treatment is therefore mainly symptomatic, with emphasis on bringing about relief of the often agonising pain. As this may continue for some considerable time, it is important to choose an analgesic that may safely be given without fear of side effects or dependence.

However, after the herpes attack has subsided there may be persistent severe neuralgic pain in the area supplied by the sensory nerve for months and even years. The pain is usually excruciating.

Baihui (Du 20).

Local points:- Ah-Shi points. Points adjacent to the affected area. Du Channel points and Huatuojiagi (Ex. 21) points on the corresponding dermatome.

Distal points (select from): Hegu (L.I. 4), Waiguan (S.J. 5), Sanyangluo (S.J. 8), Houxi (S.I. 3), Neiting (St. 44): with stomg manual stimulation or with electricity.

Acupuncture is perhaps the best known treatment in the management of this disorder.

ECZEMATOUS LESIONS (DERMATITIS):

This is a non-specific condition arising from the inflammation of the skin, not primarily due to any infection, but usually as a result of an allergic reaction in sensitive subjects to substances such as certain foods, and to contact with certain chemicals either directly on the skin or by inhalation. It could also be precipitated by heat, cold, and sunlight. Emotional disturbances also play a part.

Initially a rash appears with severe itching. Then the skin breaks out in small vesicles which then rupture and an exudate forms (“weeping eczema”). At this stage the skin may become infected with bacteria. Pruritus and consequent scratching is liable to spread the infection. The skin may dry up and cracks may appear, or there may be formation of pustules. In the chronic stage the skin is dry and flaky and may become thickened. The itching and burning sensation may however continue.

Local points:- Points adjacent to (but not within) the affected area.

Specific points:- Dazhui (Du 14), Quchi (L.I. 11), Lieque (Lu. 7), Xuehai (Sp. 10).

Moderate stimulation at the point Dazhui (Du 14) and at the other points is used, if the response is inadequate.

In the chronic stage user- Hegu (L.I. 4).

For pruritus usei- Dushu (U.B. 16), Xuehai (Sp. 10): with strong stimulation.

LEUCODERMA:

Idiopathic leucoderma 'is a condition of depigmentation of the skin, occurring in patches or bands. The cause is usually unknown. Secondary leucoderma may follow burns, scars and skin infections.

Local points:-

- a) Insert a fair number of needles into acupuncture points in the affected area and follow with mild stimulation, and/or
- b) Tap the affected area softly with the plum blossom needle.

Distal points:- Dazhui (Du 14), Quchi (L.I. 11), Lieque (Lu 7), Xuehai (Sp. 10), Sanyinjiao (Sp. 6)

ALOPECIA AREATA:

Alopecia areata is a baldness which appears suddenly in patches, probably following a mental strain or an infective disorder such as typhoid fever. In most cases the hair grows again in a short time without treatment. Acupuncture may be used in refractory cases to stimulate the regrowth of hair.

Local points:- Baihui (Du 20), Sishencong (Ex 6).
and

A few additional points in the hairless area.

Specific points:- Taixi (K. 3), Lieque (Lu. 7).

Distal points:- Hegu (L.I. 4) (for front of head). Waiguan (S.J. 5) (for side of head). Lieque (Lu. 7) (for back of head).

Electrical stimulation of the head area along with the Distal points is helpful. Tapping the affected area with the plum blossom needle is also very effective.

PSORIASIS:

This is a non-infectious skin disease characterized by irregularly shaped, slightly raised red patches with a scaly surface. Elbows, knees and the scalp are the areas more likely to be affected.

Baihui (Du 20).

Local points:- Points in the affected area.

Homeostatic points:- Quchi (L.I. 11), Zusanli (St. 36), Sanyinjiao (Sp. 6).

Specific point for allergy:- Xuehai (Sp. 10).

Related Channel points:- Lieque (Lu. 7), Chize (Lu. 5).

Tapping the affected area with the plum blossom needle also gives good results. In refractory cases Chize (Lu. 5) should be bled once or twice a week.

If treatment is carried out for a prolonged period, there will be a noticeable improvement.

In the acute phase of a skin disorder, strong stimulation at Kongzui (Lu. 6), the Xi-Cleft point of the Lung Channel, may be helpful. If the scalp is involved, Shuiquan (K. 5), the Xi-Cleft point of the Kidney Channel may be strongly stimulated (Kidney is related to head hair).

EAR DISEASES

Principles of treatment:-

Points Local and Adjacent to the ear are selected along with Distal points on the Sanjiao and Gall Bladder Channels. These two Channels circle around the ear and are therefore connected with auditory and balance functions.

According to traditional Chinese medicine, points of the Small Intestine Channel, which ends in front of the ear, are also used as local points.

DEAFNESS, DEAF-MUTISM:-

Deafness, or impaired hearing, may be categorised into (a) conductive deafness, and (b) perceptive deafness (sensorineural):

- (a) Conductive deafness is the result of an obstruction in the transmission of sounds to the inner ear, which may be caused by too much wax in the ear, boils, damage to the ear drum, Chronic S.O.M. or otosclerosis. The deafness may not be total as the bones of the skull conduct some sound.
- (b) Perceptive deafness can be the result of a defect in the receiving mechanism in the inner ear, or a disorder in the auditory nerve pathways to the brain. This type of deafness may follow an infection such as mumps or measles, the side-effects of certain drugs (e.g., quinine), or Meniere's disease. The slow impairment of hearing due to old age or the constant exposure to loud noise and congenital deafness also belong to this category.

This classification of deafness should be noted as acupuncture obviously is less likely to be effective in cases of conductive deafness which is essentially a mechanical disorder.

Deaf-mutism is due to congenital deafness or deafness developing in an infant usually following an attack of measles, encephalitis, epidemic meningitis, typhoid fevers, or drug poisoning. As the child cannot hear he will stop talking and later completely lose his ability

to talk. Congenital deafness is found to be less effectively treatable with acupuncture. However, much research is going on in China on the subject of the treatment of deaf mutism.

Baihui (Du 20).

Local points (select from):- Ermen (S.J. 21), Tinggong (S.I. 19), Tinghui (G.B. 2), Yifeng (S.J. 17), Post-Tinggong (U. Ex.), Xia-Yifeng (U. Ex.).

Distal points (select from):- Zhongzhu (S.J. 3), Foot-Linqi (G.B. 41), Waiguan (S.J. 5), Yanglao (S.I. 6), Houxi (S.I. 3), Hegu (L.I. 4).

For mutism, add:- Yamen (Du. 15), Lianquan (Ren 23), Tongli (H. 5).

(Note:- Yamen (Du 15) is a Dangerous point).

Satisfactory results are sometimes seen after just a few treatments; however a long course of 60 treatments or more may be required to produce worthwhile results. Hearing aids are the only solution for possible rehabilitation.

TINNITUS:

Tinnitus, or the ringing, buzzing or hissing sounds occurring in the ear, have several causes. Disorders of the middle ear, inner ear, or the auditory nerve may produce tinnitus. Wax or other objects in the external auditory meatus, inflammation, drugs (e.g., aspirin) are among the common causes. It can also be caused by inflammation of the middle ear, Meniere's disease, anaemia, old age, trauma and vascular degenerative changes. It is an associated symptom of old age deafness:

The drugs used in tinnitus are vasodilators, like nicotinic acid and tranquilizers.

Baihui (Du 20).

Local points (select from):- Ermen (S.J. 21), Tinggong (S.I. 19), Tinghui (G.B. 2.), Yifeng (S.J. 17), Yiming (Ex. 7), Fengchi (G.B. 20.).

Distal points (select from):- Zhongzhu (S.J. 3), Waiguan (S.J. 5), Foot-Linqi (G.B. 41)

EAR-ACHE: (OTALGIA)

This occurs commonly in ear infections, in trigeminal neuralgia, glossopharyngeal neuralgia and in carcinoma of the cheek. For the symptomatic treatment of the pain, use:-

Baihui (Du 20).

Local points:- Ermen (S.J. 21), Tinggong (S.I. 19), Tinghui (G.B. 2), Yifeng (S.J. 17):

Distal Points (select from):- Zhongzhu (S.J. 3), Waiguan (S.J. 5), Foot-Linqi (G.B. 41), Hegu (L.I. 4) with strong manual stimulation.

Immune-enhancing points for injections:- Dazhui (Du 14), Quchi (L.I. 11), Sanyinjiao (Sp. 6).

MENIERE'S DISEASE, VERTIGO, MOTION SICKNESS, LABYRINTHITIS:

These disorders are caused by the dysfunction of the inner ear involving hearing and balance. In Meniere's disease, both these functions are impaired. Attacks of giddiness accompanied by deafness are experienced. As the deafness progresses the attacks of giddiness become less frequent and may disappear altogether when the deafness is complete.

Vertigo is a symptom of many diseases, including Meniere's disease, epilepsy, and also of intracranial tumour; the patient feels that his surroundings are rotating.

Motion sickness arises from the disturbance of the balance organs of the inner ear and may result in nausea and vomiting.

Labyrinthitis is the inflammation of the labyrinth of the inner ear consisting of the organs of hearing and balance.

Baihui (Du 20).

Local points (select from):- Ermen (S.J. 21), Tinggong (S.I. 19), Tinghui (G.B. 2): one needle. Post~Tinggong (U. Ex.), Xia-Yifeng (U. Ex.).

Distal points (select from):- Waiguan (S.J. 5.), Zhongzhu (S.J. 3), Yanglao (S.I. 6), Foot-Linqi (G.B. 41), Taichong (Liv. 3), Hegu (L.I. 4).

Specific points for nausea and vomiting- Neiguan (P. 6), Zusanli (St. 36).

Results are satisfactory in most cases; better results are however obtained with the use of electro-acupuncture. Satisfactory results have also been obtained in some patients especially children using laser-therapy. Drugs usually used are stemetil, Stugeron as antivertiginous; Avomine, Dramamine as antiemetic.

EYE DISEASES

Principles of treatment:-

Local and Adjacent points combined with Distal points are used.

- a) Local and Adjacent points are those within and around the orbital cavity.
- b) Distal points may be selected on the following principles.
 - i) The point Hegu (L.I. 4) which is the main Distal point for the face and the special sense organs.
 - ii) Points along the Liver Channel. According to traditional Chinese medicine, disorders of the eye relate to a dysfunction of the Liver (or the Gall Bladder), or as the traditional Chinese theories state, “the Liver opens to the eye”.
 - iii) Points along the Gall Bladder Channel, firstly because it is paired with the Liver Channel, and secondly because it begins its course near the eye.

- iv) Points along the Urinary Bladder Channel, because it begins its course near the eye, and also because some of its points which lie on the back of the trunk have specific connections with the Liver [Ganshu (U.B. 1)] and with the Gall Bladder [Danshu (U.B. 19)].
- v) Certain Distal points of the Gall Bladder and the Urinary Bladder Channels are specific for eye diseases; eg, Guangming (G.B. 37) for visual disorders; Chengshan (U.B. 58) for ophthalmoplegia.

CONJUNCTIVITIS

When infection is present antibiotics and steroids are preferable. However acupuncture can be used in resistant or chronic cases of conjunctivitis.

Local points:- Taiyang (Ex. 2), (prick to bleed), Jingming (U.B. 1), Sizhukong (S.J. 23), Chengqi (St 1), Tongziliao (G.B. 1), Fengchi (G.B. 20).

Distal points:- Hegu (L.I. 4), Taichong (Liv. 3), *Immune-enhancing points:-* Dazhui (Du 14), Duchi (L.I. 11), Sanyinjiao (Sp. 6).

GLAUCOMA

This is a disorder where there is an increase of the pressure of the fluid (aqueous and vitreous humour) in the eyeball. It may be caused by the over-secretion of this fluid, but is more commonly the result of blocking of the fine outlet channels which lead the fluid back into the veins. When the glaucoma is of acute onset there will be severe headache accompanied with nausea and vomiting. The vision will be impaired. There will be blurring of vision with red eyes and sometimes swollen eyelids. In the commoner chronic type of glaucoma the onset of the disease is insidious and may pass unnoticed until the optic nerve is damaged.

Results of acupuncture treatment have been very satisfactory, except in late cases.

Local points (select from):- Chengqi (St. 1), Qiuhou (Ex. 4), Taiyang (Ex. 2), Yangbai (G.B. 14), through to Yuyao (Ex. 3), Fengchi (G.B. 20), Zanzhu (U.B. 2).

Distal points:- Hegu (L.I. 4), Ganshu (U.B. 18), Taichong (Liv. 3).

Specific points for nausea and vomiting:- Neiguan (P. 6), Zusanli (St. 36).

Specific points for oedema:- Shuifen (Ren 9), Shimen (Ren 5), Yinlingquan (Sp. 9), Pishu (U.B. 20).

NIGHT BLINDNESS

The primary cause of this condition is the deficiency of Vitamin A or its provitamins. The deficiency may be either dietetic or some disorder of metabolism and insufficiency of its formation. Vitamin A helps to produce visual purple (rhodopsin) carried in the rods of the retina which are sensitive to light.

Local points (select from):- Chengqi (St. 1), Yangbai (G.B. 14), Qiuhou (Ex. 4), Zanzhu (U.B. 2), Taiyang (Ex 2).

Distal points:- Hegu (L.I. 4), Guangming (G.B. 37), Taichong (Liv. 3), Homeostatic points:- Quchi (L.I. 11), Zusanli (St. 36), Sanyinjiao (Sp. 6)

Note: Acupuncture is particularly useful in relieving pain in eye disorders.

ENDOCRINE DISEASE

Acupuncture is known to have effects on the hypothalamic-pituitary – adrenocortical axis. Physiological effects such as an increase in the thickness of the adrenal cortex, increase in the circulating blood levels of ACTH and an increase in the urinary excretion of 17-Ketosteroids occur after acupuncture needling. No doubt, other complex humoral mechanisms are also called into play.

The discovery of endorphins and enkephalins have added a whole new dimension to the acupuncture phenomenon.

Principles of treatment:-

- a) Use of points of the Ren and Stomach Channels situated in lower abdominal area.
- b) Use of points of the Urinary Bladder Channel in the low back area.
- c) Use of the main Tonification points especially where there is under-activity of gland function.
- d) Use of the points of the Kidney Channel (in traditional Chinese medicine the Kidney includes the adrenal glands, the testes and the ovary).
- e) Use of the point Jianjing (G.B. 21), which is a specific endocrine point that may be used in all endocrine imbalances.
- f) Use of Quchi (L.I. 11), the main homeostatic point of the body.

HYPOGONADISM

Hypogonadism denotes the failure of the functions of one or both of the testes, these being the production of spermatozoa and the secretion of androgens (i.e., hormones which control the secondary sex characteristics, such as the distribution of hair and the deepening of the voice). When this condition occurs before puberty, the external genitalia and the secondary sex characteristics fail to develop. If it occurs after puberty, there will be a gradual loss of pubic hair and the external genitalia will atrophy. Fatigue, loss of initiative and loss of sex drive are common symptoms.

Baihui (Du 20).

Local points:- Qugu (Ren 2), Zhongji (Ren 3), Guilai (St. 29), Guanyuan (Ren 4).

Tonification points:- Qihai (Ren 6.), Zusanli (St. 36), Sanyinjiao (Sp. 6).

Distal point:- Taixi (K. 3).

MASCULINIZATION SYMPTOMS IN WOMEN:

The masculinization symptoms in women may mean that there is too much androgen being produced.

However, another gland, the adrenal cortex, also produces sex hormones, especially androgens. The cause of masculinization must therefore be elucidated with particular attention being paid to the possibility of the presence of tumours affecting the adrenal cortex and causing the over-production of androgens.

Baihui (Du 20).

Local points (select from):- Qihai (Ren 6). Points in the lower abdomen in the Ren Channel. Points in the lower abdomen in the Stomach Channel. Points in the low back area in the Urinary Bladder Channel.

Distal points:- Kidney Chamiel points. Sanyinjiao (Sp. 6).

Homeostatic points:- Quchi (L.I. 11), Zusanli (St. 36).

GOITRE

The simple common forms of this disease are simple goitre and toxic goitre.

Simple goitre may arise from a lack of iodine in the diet. The gland is then stimulated to hypertrophy in an attempt to secrete more thyroxine, the principal hormone of this gland. Large goitres, besides being unsightly, may compress the neighbouring structures such as the trachea, veins and nerves and cause symptoms.

Hyperthyroidism is characterised by an increase in the basal metabolic rate. The patient becomes irritable, loses weight and has an increased pulse rate. It is a disease found commonly in adult females. The thyroid is usually uniformly enlarged and is not as large as in a simple goitre.

Baihui (Du 20).

Local points:- Neck-Futu (L.I. 18), Jianjing (G.B. 21) or Local “hot needle” therapy.

Distal point:- Hegu (L.I. 4).

In solitary adenomas, the most effective treatment is hot needling.

The “hot needle” is specially made for this purpose with silver mixed with a little platinum to make it durable. The technique of using this needle is extremely important. The needle is held to the flame and heated till it is red hot and then swiftly and precisely inserted into the lump and removed with the same movement. The needle stays in the body only for a fraction of a second. The lump is subjected to cauterisation from inside by the heat of the needle and slowly regresses. In cases where it is necessary to carry out thyroidectomy, acupuncture may be employed as the anaesthesia, as small adenomas can easily be removed under acupuncture anaesthesia.

DIABETES MELLITUS

As acupuncture has a homeostatic action, needling at any point tends to correct this disease. The patient is exposed to some danger of hypoglycaemic attack if the acupuncturist treats him for an unrelated condition while the patient continues to take the usual dose of insulin or oral anti-diabetic preparation. It is therefore important to inquire from every patient whether he is having any other disorder for which he is taking medication. Similar complications may arise in the case of hypertension. Diabetics and hypertensives who are undergoing acupuncture therapy for other disorders should, therefore, have their

medication tailored to the level of hyperglycaemia (glycosuria) or the degree of hypertension respectively.

Generally, mild and moderate diabetics respond well to acupuncture therapy. Together with exercise and dietetic advice, the vast majority of patients could live free of medication or with lesser doses of the drugs.

Baihu (Du 20), Jianjing (G.B. 21), Quchi (L.I. 11), Sanyinjiao (Sp. 6), Zusanli (St. 36), Dazhui (Du 14), Zhangmen (Liv. 13).

A press needle at the pancreas point of the (left) ear is helpful.

PSYCHIATRIC DISEASES

Acupuncture has proved beneficial in many forms of psychiatric illnesses and mental disorders such as neurasthenia, psychoneuroses, schizophrenia, depression, behaviour problems of children, drug addictions, mental states associated with old age, epilepsy and space occupying lesions of the brain. These disorders are being successfully treated in China with the use of acupuncture, supplemented in some cases with herbal therapy and drug therapy at dosage levels usually less than used in the Western countries.

Principles of treatment:-

Baihui (Du 20.), Shenmen (H. 7.), Neiguan (P. 6.), Shenmai (U.B. 62).

In addition to the above points, certain points along the Du Channel and the Shu points of the Heart and the Pericardium are beneficial in certain cases.

Other points may be added when special symptoms are present.

For example:-

Insomnia: Anmian I (Ex. 8), Anmian II (Ex. 9).

Fits: Renzhong (Du 26), Yanglinquan (G.B. 34).

Depression and vegetative states like presenile dementia: Zusanli (St. 36), Sanyinjiao (Sp. 6), Qihai (Ren 6).

Hyperexcitability and anxiety: Baihui (Du 20), Shenmen (H. 7).

Forgetfulness: Shendao (Du. 11).

Auditory hallucinations:

Local points:- Ermen (S.J. 21), Tinggong (S.I. 19), Tinghui (G.B. 2.): on needle.

Distal points:- Zhongihu (S.J. 3) or Waiguan (S.J. 5), Foot- Linqi (GB. 41).

The selection of points in psychiatric conditions requires much specialized knowledge and clinical acumen in evaluating the patient's condition. Treatment should be given daily, or every other day, until the condition is controlled; this may take 20 sittings or more, and booster treatments should be given every week for some months.

NEURASTHENIA

A much misused term, it is generally used as a label for lassitude not attributable to any recognised organic illness. It is often encountered in persons having anxiety neurosis and tension states with tiredness as the main symptom. Other associated symptoms are nervousness, irritability, anxiety, depression, insomnia, headaches, and sexual disorders. The main points to be used are:-

Baihui (Du 20), Shenmen (H. 7), Shenmai (U.B. 62).

These are combined with other points according to the symptoms presented, e.g.,

Headache: Baihui (Du 20), Fengchi (G.B. 20) (Occipital headache).

Palpitations:- Neiguan (P. 6).

Abdominal complaints:- Zusanli (St. 36).

Sexual disorders:- Qugu (Ren 2), Guanyuan (Ren 4), Sanyinjiao (Sp. 6).

HYSTERIA:

This is a condition which is wholly psychological in origin, characterized mainly by disassociation (i.e., apparent cutting off one part of the mind from the other). There is a diversity of symptoms, e.g., tics, paralysis, fits, which do not seem to accord with any positive findings on physical examination.

Baihui (Du 20), Shenmen (H. 7), Shenmai (U.B. 62).

Depending on the symptoms present, the following additional points may be used with strong stimulation:-

Renzhong (Du 26), Neiguan (P. 6), through to Waiguan (S.J. 5), Hegu (L.I. 4), Taixi (K. 3).

If the condition becomes acute, use a Jing-Well point preferably Yongquan (K. 1), with very strong stimulation.

SCHIZOPHRENIA:-

Schizophrenia (or “a split mind”) is a type of functional psychosis or mental derangement characterized by a pattern of symptoms such as delusions (e.g., of the patient’s own importance, persecution by others), disorders of thought, hallucinations (usually of hearing) and general lassitude. It occurs mainly in young and middle aged persons.

Select from: Baihui (Du 20), Shenmen (H. 7), Shenmai (U.B. 62), Renzhong (Du 26), Dazhui (Du 14), Xinshu (U.B. 15), Fenglong (St. 40), Anmian I (Ex. 8), Anmian II (Ex. 9).

In resistant cases, electrical stimulation may be used at the following points:

Hegu (L.I. 4), Shenmen (H. 7).

For this purpose, mild electrical stimulation at the rate of about five pulses per second may be given daily for two weeks. It may be continued thereafter with one week's rest and review.

If auditory hallucinations are present, the following specific points may be used:-

Local points:- Ermen (S.J. 21), Tinggong (S.I. 19), Tinghui (G.B. 2): one needle.

Distal points:- Zhongzhu (S.J. 3) or Waiguan (S.J. 5). Foot-Linqi (G.B. 41).

Recent research has led to the suggestion that in some cases schizophrenia is a chronic degenerative condition with neuronal loss. However, as many patients respond to neuroleptic drugs containing dopamine antagonist there may also be a reversible neurochemical disturbance. Studies of post-mortem brains of schizophrenies have consistently shown that some patients with schizophrenia have an increased number of dopamine receptors. The changes is limited to one type of receptors, the DZ, and appears to occur in some patients who have not 'really' been treated with neuroleptic drugs. It was observed_ however, that the neurochemical change appears to be related to the presence of positive symptoms. A neurochemical change which is more closely associated with negative symptoms is the loss of the neuropeptides cholecystokinin and somatostatin in the temporal lobe of the brain. It is thought that these changes could be part of process which leads to structural changes.

Thus the hypothesis that a neurochemical abnormality underlies some of the manifestations of schizophrenia is plausible, and an increase in dopaminergic neurotransmission is likely. There are also indications of organic changes in schizophrenic brains which may underlie some of the features of chronic schizophrenia. A series of

studies examining the pituitary hormones in unmedicated acute and chronic schizophrenics suggest that dopamine overactivity may be implicated in the genesis of the positive symptoms in schizophrenia.

Essential of Diagnosis (Schizophrenia)

- Social withdrawal, usually slowly progressive, often with deterioration in personal care.
- Loss of ego boundaries, with inability to perceive one- self as a separate entity.
- Loose thought associations, often with slowed thinking or rapid shifting from topic to topic.
- Autism with absorption in inner thoughts and frequent sexual or religious preoccupations.
- Auditory hallucinations, often of a derogatory nature.
- Delusions, frequently of a grandiose or persecutory nature.
- Symptoms of at least 6 months' duration.

Frequent additional signs:

- Flat affect and rapidly alternating mood shifts irrespective of circumstances.
- Hypersensitivity to environmental stimuli, with a feeling of enhanced sensory awareness.
- Variability or changeable behaviour incongruent with the external environment.
- Concrete thinking with inability to abstract; inappropriate symbolism.

- Impaired concentration worsened by hallucinations and delusions.
- Depersonalization, where in one behaves like a detached observer of one's own actions.

MENTAL DEPRESSION

This may be described as a disorder of mood which is deeper and longer than what would be normally expected from that particular person. There is a general impairment of all mental processes and of physical functions such as appetite, sleep, sex and work.

In what is called reactive depression, the patient reacts to external events to a greater extent and for longer than the circumstances warrant. Where the reasons for the misery seem to arise from within the patient himself it is referred to as endogenous depression. It should be noted that severe depression may be a symptom of other more serious mental illness like maniac-depressive psychosis.

Baihui (Du 20), Shenmen (H. 7), Neiguan (P. 6), Shenmai (U.B. 62), Qihai (Ren 6), Zusanli (St. 36), Sanyinjiao (Sp. 6).

Some common classifications of depression

Secondary depression (not normally diagnosed as depression)

Organic depression, e.g. due to brain tumour

Symptomatic depression, e.g., due to hypothyroidism

Drug-induced depression, e.g., due to reserpine

Schizophrenic depression, e.g., schizoaffective

Endogenous depression

Bipolar

Maniac depressive illness-rare

Unipolar

Retarded and recurrent ~ uncommon

Agitated and late onset- uncommon

Neurotic depression - common

Main differences between endogenous and neurotic depression		
	Endogenous depression	Neurotic depression
Body build	Pyknic build	Any build
Premorbid personality	Cyclothymic, i.e. tendency to mood swings from depression to elation	Neurotic, immature, hysterical
Psychogenic Factors	Usually absent	Usually present
Depressive Mood	Usually profound and not influenced by the environment	Variable and tends to fluctuate with the environmental situation
Diurnal variation	Worse in the morning	Worse in evening
Insomnia	Early morning wakening	Difficulty falling asleep
Blame	Blames himself	Blames others
Incapacity	Stops recreation first	Stops work first
Suicide risk	Suicide high	Parasuicide high
Weight loss	Rapid over a short period	No marked weight loss

Therapeutic Procedure. Summary of the Treatment of Depression

Diagnosis

It is important to differentiate between secondary, endogenous and neurotic depression

Management

1. In secondary depression, treat the causative illness
2. Administer antidepressants, e.g., amitriptyline, imipramine, nomifensine, mianserin. For recurrent depression these agents may need to be administered for 6 months or longer.

3. Electroconvulsive therapy is indicated when the depression is severe or has failed to respond to treatment with antidepressants.
4. Supportive psychotherapy should be provided throughout the course of treatment.

Some newer antidepressants.

Drug	Dose range (mg/day)	Dose frequency	Notes
Dexepin (Sinequan)	30-300 mg	Tds (start low)	sedative and anxiolytic tricyclic
Lofepremine (Gamanil)	140-210 mg	bd or tds	little sedative or anticholinergic action
Mianserin (e.g. Bolvidon)	30-120 mg	Tds or nocte	Sedative tetracyclic; very few cardiac or anticholinergic side effects
Maprotiline (Ludiomil)	75-150 mg	Tds or nocte	sedative tetracyclic; fewer anticholinergic effects, but otherwise like tricyclics
Nomifensine (Merital)	75-200 mg	Bd or tds	fewer anticholinergic or cardiotoxic effects; safe in epilepsy
Trazodone (Molipaxin)	100-400 mg	Tds or nocte	sedative and anxiolytic; said to be fast-acting; few anticholinergic or cardiotoxic effects
Viloxazine (Vivalvin)	150-400 mg	Tds	neutral bicyclic drug; few anticholinergic or cardio-toxic effects; nausea and headache may be a problem

SEXUAL IMPOTENCE:

The absence of sexual drive in the male may be due either to organic or more usually to psychological factors. When it is due to organic factors (e.g., diabetes mellitus, alcoholism, tabes dorsalis) the underlying cause may have to be treated first.

Ejaculatio praecox or the too early emission of semen during intercourse may be a precursor to impotence and is associated with a general debility of the patient.

Select fromz- Baihui (Du 20), Qugu (Ren 2), Zhongji (Ren 3), Guanyuan (Ren 4.), Qihai (Ren 6.), Mingmen (Du 4.), Shenshu (U.B. 23), Zusanli (St. 36), Sanyinjiao (Sp. 6), Taixi (K. 3), Ququan (Liv. 8).

DRUG AND OTHER ADDICTIONS:

The treatment of drug addiction with acupuncture is an experimental field with much promise. The pioneering work of H. L. Wen and S.Y.C. Cheung at the Neuro-Surgical Unit of the Kwong Wah Hospital , Kowloon, Hong Kong, has shown that relieving the drug withdrawal syndrome and counteracting drug addiction can be successfully done with acupuncture.

The following is a summary of the methodology used by the author for relieving several types of addictions. Electrical pulse stimulation is carried out in all cases. In between sittings press needles are placed in the relevant ear (auriculotherapy) points.

- a) *Drugs*
Baihui (Du 20), Shenmen (H. 7), Hegu (L. 4), Houxi (S.I. 3), Neiguan (P. 6), Waiguan (S.I. 5), Ear pt. Lung.
- b) *Food (obesity)*
Baihui (Du 20), Shenmen (H. 7), Ear pt. Stomach
- c) *Alcohol*
Baihui (Du 20), Shenmen (H. 7), Ear pt. Mouth Ear pt. Stomach Ear pt. Liver.

- d) *Smoking*
Baihui (Du 20), Shenmen (H. 7) Ear pt. Lung Ear pt. Large Intestine.
- e) *Betel Chewing*
Baihui (Du 20), Shenmen (H. 7), Ear pt. Mouth.
- f) *Glue sniffing*
Baihui (Du 20), Shenmen (H. 7), Internal Nose.

Note: Press needles must be retained at an appropriate point in the ear throughout the period of treatment (the needle being replaced at a new ear point every week).

DISEASES OF CHILDREN

Principles of treatment:-

Acupuncture may be used on children, including infants, on the same principles as for diseases of adults. It will be found that acupuncture is very effective in many children's disorders, the response to treatment being quicker and more positive.

However, there are special problems in using acupuncture in children. Unlike in the case of an adult, it may not be easy to obtain the co-operation of the patient. Children are generally averse to needling and a greater degree of tact and skill is required of the acupuncturist. Playfully distracting the child's attention, and skill in the painless insertion technique are the keys to carrying out the treatment in an acceptable manner. Force or compulsion should never be used.

For these reasons the ancillary methods such as acupressure, electro-acupuncture without needles, the plum blossom needle and lasertherapy may be used without any diminution in effectiveness. Where needles are used, the thinner gauges are preferred, e.g., gauge 32, and the degree of stimulation should be kept at moderate to low levels.

INFANTILE CONVULSIONS, FEBRILE FITS:

The most effective way of controlling a fit is to apply firm finger pressure at the point Renzhong (Du 26). Pressure is exerted in an obliquely upward direction for a short time. The fit in most instances ceases almost instantly. If the fit is severe, this point may be strongly stimulated (sedation) with a needle and the following points added according to the severity of the condition:-

Yongquan (K. 1) (stimulate strongly with a needle).

Shaoshang (Lu. 11), Shixuan (Ex. 30): (prick to cause bleeding).

After consciousness is regained, further points may be used according to the presenting symptoms:-

High fever:- Dazhui (Du 14), Quchi (L.I. 11).

Clouded sensorium:- Neiguan (P. 6), Taichong (Liv. 3).

Meningismus:- Fengchi (G.B. 20).

Respiratory depression:- Suliao (Du 25).

Cough:- Lieque (Lu. 7).

Excessive sputum:- Fenglong (St. 40).

In appropriate conditions drug therapy in suitably reduced dosages may be combined with acupuncture.

EPILEPSY, REPETITIVE FITS:

In treating epileptiform disorders, it is best to discontinue drugs and start with daily treatment.

Baihui (Du 20), Yintang (Ex. 1), Renzhong (Du 26), Shenmen (H. 7), Shenmai (U.B. 62), Yaoqi (Ex. 20).

Very good results may be obtained in idiopathic epilepsy without the use of drugs.

A press needle in the ear helps to prevent attacks.

BEHAVIOUR DISORDERS:

As these disorders are predominantly due to psychological factors, the main sedative points are used.

Baihui (Du 20), Sishencong (Ex. 6), Neiguan (P. 6), Shenmen (H. 7), Yanglingquan (G.B. 34), Shenmai (U.B. 62).

NOCTURNAL ENURESIS:

Treatment may be considered for bed wetting by children over three years of age. Intermittent bed wetting could be due to inflammation of the urinary passages, but more often the cause may be neuromuscular in co-ordination with a psychological overlay. However, before commencement of acupuncture treatment it will be useful to ascertain whether the condition is not due to spina bifida, diabetes mellitus or kidney disease. Generally, very good results are obtained with acupuncture in this condition.

Baihui (Du 20).

a) Points on front of trunk (select from):-

Local points:- Guanyuan (Ren 4), Zhongji (Ren 3), Qugu (Ren 2.), Guilai (St. 29).

Distal points:- Zusanli (St. 36), Sanyinjiao (Sp. 6).

b) Points on back of trunk (select from):-

Local points:- Shenshu (U.B. 23), Yaoyangguan (Du 3), Ciliao (U.B. 32), Zhibian (U.B. 54).

Distal points:- Weizhong (U.B. 40), Kunlun (U.B. 60).

The above points may be used in different combinations, e.g.,

- (i) many local points without Distal points;
- (ii) Local and Distal points;
- (iii) combined Mu-Front and Back-Shu points.

Many Chinese acupuncturists believe that the point Ciliao (U.B. 32) is specific for this disorder.

The use of moxibustion at the Urinary Bladder points is particularly useful in this condition. An often used technique is to heat with moxa a needle inserted at Ciliao (U.B. 32). This is known as the moxa on needle technique.

PYREXIAS:

High fever in children occurs due to a variety of causes. When a child is moribund and toxic, the response to drugs in high fevers is not always satisfactory. Acupuncture is known to bring down the fever often dramatically.

The points used are:-

Dazhui (Du 14), Quclli(L.I. 11), Hegu (L.I. 4).

Strong stimulation at Dazhui (Du 14), relieves the fever, often in a matter of minutes.

ACUPUNCTURE AND BEAUTY

INTRODUCTION

To be truly beautiful you have to take pride in yourself as a person. If you are outwardly pretty, but inside you are unhappy, or unfulfilled, or simply unrecognized, your aura of beauty will be somewhat askew. Imagine if someone gave you a gift wrapped in shiny, eye-popping paper, with glorious flowing ribbons and silk bows, but when you opened it, it was empty. You would be disappointed-and the image of the beautiful gift would be destroyed. Even if the outer perfection is momentarily so dazzling as to be seemingly “perfect,” remember, this perfection will eventually and inevitably fade, leaving a “less-than-perfect,” inwardly empty shell.

The lesson, then, is to take pride in yourself as a person-let your confidence, warmth, poise, spirit, grace, humour-shine through. 7711s is beauty.

Take pleasure in beholding your face. Let it be the mirror of your soul, your emotions, your feelings, your passions, your experiences, Don` t be obsessed with lines and wrinkles-think of them as the expressions of your life. This doesn` t mean you can` t minimize them by learning how to take care of your skin, by acupressure that enhances your best features, and making yourself as beautiful as you can be.

Beauty is making the best of what you are and what you have, and believing in your own beauty. A good friend once said that if you think you are beautiful, chances are others will too. Self- confidence is a large part of beauty.

Don't try to look like someone else. First of all, most of the people you see in magazines, in films or on television shows—those “perfect images”—are made up to look perfect for the camera, to be as beautiful as they can be for their roles. Believe me, their features are not perfect, either. It is an unhealthy waste of time to try to look like them because you are setting yourself up for failure—you can never look exactly like those persons anyway, so you can never win.

Remember, those persons without their make-up and hair-stylists and wonderful camera people are just like you, Their beauty is calculated to please—it is not a pure natural phenomenon. Many of these persons when they look in the mirror, see lines and shadows and spots, just as you do. And yet, conversely, some of them are even more beautiful in person.

Beauty, they say, is in the eye of the beholder. But I think it is even more in the attitude of the person beheld! For if you are to be successfully beautiful, you *must* have confidence. I have met so many men and women who feel that their looks have deteriorated, when, in fact, they were simply not making the most of themselves.

The majority of people who are familiar with acupuncture and the various areas to which it has been applied often fail to realize the close relationship between acupuncture and beauty. Thinking of acupuncture only as a form of therapy, the idea that it can enhance and beautify the physical body is often a surprising revelation to many people. *Acupuncture as a means of cultivating a beautiful body is perfectly logical if we again answer the question, “What exactly is beauty”.*

Genuine beauty is a result of a deep inner vitality that permeates the entire body giving one a magnetic aura of dazzling radiance. Regardless of physical built, age, or body characteristics, this inner vitality will outshine deficiencies in any of these areas providing one has knowledge of, and persistence in, applying correct techniques that will cause the life energy to saturate all parts of the body.

Once the energy flow within the body has been balanced, artificial cosmetics and beauty aids, if they are needed at all, will be used to enhance or accentuate body features that one might wish to emphasize. Only in a body that is “starved” for life energy is there a need to overly mask oneself with cosmetics in an effort to cloak devitalized body features. Therefore, if a beautiful body is one’s goal, a knowledge of practical acupuncture techniques that will rejuvenate the entire body is indispensable.

Healthy skin is possible for anyone whether the skin is at present oily or dry; and, rest assured, anyone can have silky, lustrous hair even if they’re on the verge of baldness.

The condition of both the skin and the hair have a close relationship with the lungs. Actually, perspiration or skin breathing is an extension of the lungs’ functioning. Therefore an evaluation of the energy balance within the lungs is the first step to beautify the hair and skin. Diseased skin and lifeless hair are both a sure indication of an energy imbalance within the lungs. The perfect functioning of the internal glands is also essential for healthy skin. Of special significance in the production of hormones is the thyroid gland; Points on the neck should be pressed to ensure a constant supply of vital hormones that will rejuvenate the entire body,

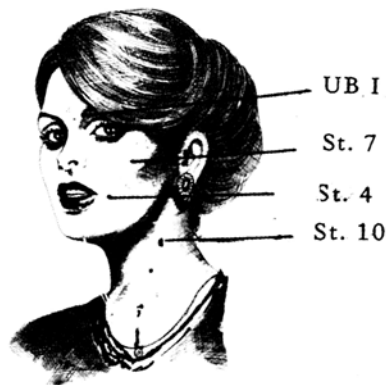


Figure 7-1: Points for Healthy Skin

The conservation of sexual energy will not only aid the condition of the skin but will also strengthen the entire body. When sexual energy has been conserved for an adequate length of time, a slow transformation of the body will commence. Therefore, regulating the menstrual cycle is essential for women, and men are advised not to dissipate their energy in unnecessary ejaculations.

Balancing the energy within the entire body will automatically provide hair cells with adequate nourishment to grow hair with a beautiful, natural sheen even in the most seemingly hopeless cases.

So called “crows-feet” and wrinkles around the eyes can be eliminated by pressing the points illustrated in figure and by massaging around the eyes as indicated in figure. Notice the direction of the massage in that it differs from the massage that people generally use upon awakening. Rather than causing the muscles to droop, as with prolonged use of the outward directional massage, the inward directional massage will tonify the entire area surrounding the eyes.

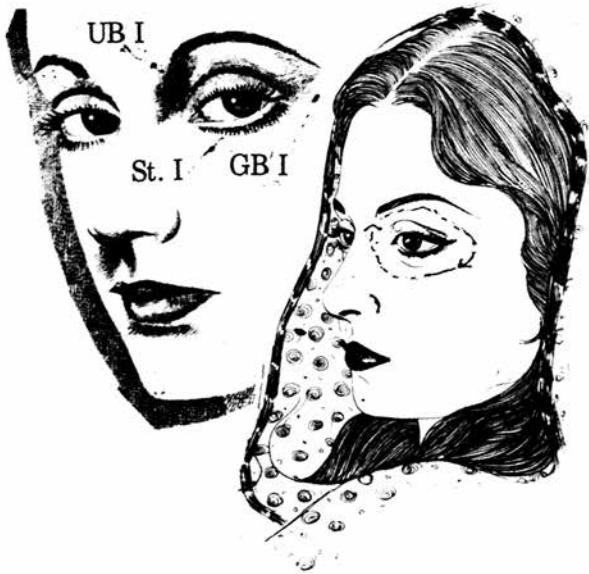


Figure 7-2: Points for Eye Beauty

A few minutes daily spent on the following exercise is a guarantee of keeping the original set of *teeth in top condition* for a lifetime. Stimulate the gums by massaging the cheeks atop the entire bottom and lower gums. Another way to stimulate the gums is to grit the teeth 36 times upon arising. Finally, when urinating or during the expulsion of faecal matter, grit the teeth tightly; for it is during these moments that the entire system is “loosened” or relaxed and therefore very vulnerable.



Figure 7-3: Points for Teeth Beauty

With respect to *weight problems*, a diagnosis and adjustment of the digestive system is mandatory. If one is overweight, it means over-eating, or that the digestive system is absorbing every particle of food eaten, or both. Application of dispersal techniques will regulate the overactive digestive system and will simultaneously curb the appetite. For those who are underweight, the opposite of the preceding must be applied.

To counteract the *aging process*, special attention should be given to the entire nervous system. Not only will an acute sensitivity to the external environment be maintained, but also all the organs of

the body will be enlivened with vital force. Pain in the shoulders and back indicates a loss of suppleness in the joints that is indicative of age. Figure illustrates the points to be treated to stimulate the flow of energy to the nervous system.

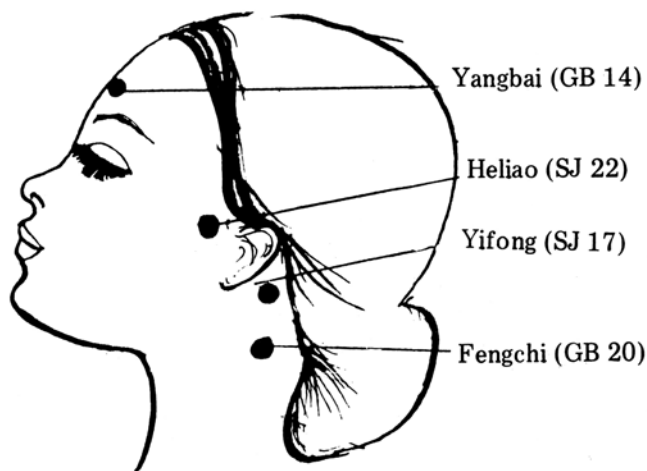


Figure 7-4: Points for Vital Force

To cultivate a beautiful body should be a pleasant endeavour as long as one's life may last, Natural beauty need never be the outcome of tedious effort, but rather the natural outcome of simple life-promoting exercises. The techniques described, if faithfully followed, will provide a constant level of energy that will sustain the bodily processes throughout life.

CHINESE FINGERTIP PRESSURE TECHNIQUES

PROCEDURE

- (1) *Thumb Thrusting* (*T'ui*—"T'ui") is done with the ball of the thumb. The most advantageous areas for its use are on the chest, abdomen, low back_ and limbs. The thrust is perpendicular to the target (*P'ing-t'ui*). When done horizontally on the head or neck, it is called *Ts'e-t'ui*. *Pao-t'ui* is a back-and-forth motion of the Thumb on the legs or chest. *Ch'ant'ui* is a rotary motion with the side of the thumb and nail and is used along the ribs. This same technique may also be used on the abdomen. *Tien-an* is the thrust

of the very tip of the thumb into an acupuncture point and is not recommended. But don't worry about Chinese names! Just learn the technique.

- (2) *Palmar Press (An)* — Although the fingertips may be used firmly or gently, the palmar press (*Chang-an*) is used most often on the belly. The finger press (*Chih-an*) is used on the neck, head, legs, and low back.
- (3) *Shaking (Na)* — The skin over an acupuncture point is grasped gently between the thumb and index finger and vibrated. The underlying soft tissues may or may not be involved. Individual muscles, as in the neck, may be grasped and shaken vigorously (*Yao-fa*). In *Tou-fa* the skin on the legs is squeezed between the fingertips and moved gently back and forth. *Chin-so-na* is the act of compressing skin and muscles on the shoulders and neck. The most rigorous grasping and shaking techniques is that of *Chan-Chuan-fa* in which muscles are grasped and rolled in a circular motion,
- (4) *Tapping (P'o-fa)* — This procedure is done on an acupuncture point with the fist, a knuckle, a palm, or finger, and must not be used on children!
- (5) *Rubbing (Mo-fa)* — This technique is a gentle back-and-forth scrubbing motion with the thumb, finger, or palm.
- (6) *Two-Handed Palm Rub (Ch'a-fa)* — In just that manner it is used on the low back and legs.
- (7) *Fist Rocker (Kun-fa)* — The clenched fist is rocked gently on the area.
- (8) *The Pincher (Nieh-fa)* — The flesh is caught between thumb and index finger with a quick nip. Each nip follows along the course of a muscle or body part.



Figure 7-5: Skin Beautification

SKIN BEAUTIFICATION:

The point Shuitu (St. 10) on either side of the lower neck is specific point for skin beautification. It not only keeps the skin looking young, but it keeps the hair from turning grey! Thyroid gland is stimulated through this point which in turn produce thyroxine. This exotic power-hormone keeps the skin soft, gentle in texture and somewhat transparent. This revitalizes tissues so that the cheek and neck do not sag and the lips remain full and firm.

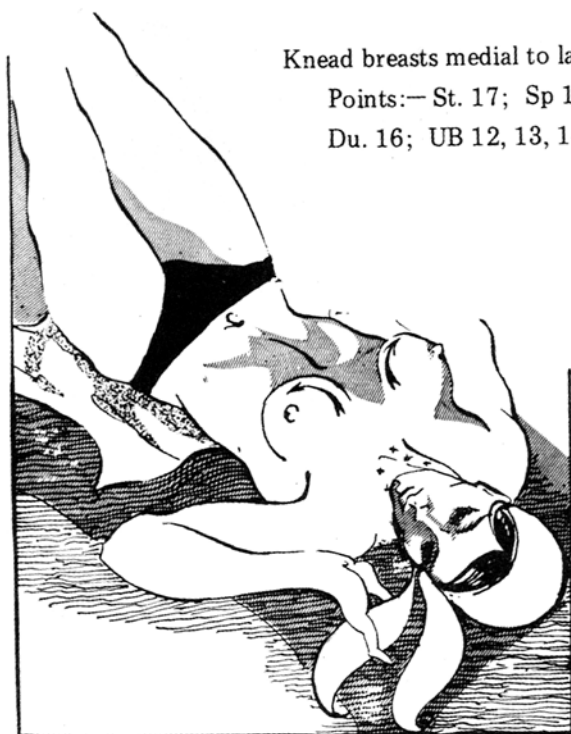
EYE BEAUTIFICATION:

For lovely, clear-eyed beauty make index-fingertip pressure contact at the inside corner of each eye in Chingming (U.B. 1). Then go to the outer corner Tongziliao (G.B. 1) point. Both begin at the eye, and this makes them all important points for stimulation. Now make a three-finger contact over the eye brow i.e. Chenghehi (St. 1) and Tsanehu (U.B. 2). Then make forefinger contact on Sizhukong (S.J. 23) at the temples. This will result relief from eye pain, headache, eye strain and lovelier eyes are achieved.

BREAST BEAUTIFICATION:

In the breast conscious ladies who need to develop more lovely breasts, they should apply their palmer pressure in circular motion,

with the fingertips cupped under the breast. Massaging gently, using a rotating motion, making the nipple projecting through the aperture made by the thumb and index fingers. With each rotation, use a lifting forward pressure. Kneading each breast medial to lateral side.



Knead breasts medial to lateral:

Points:— St. 17; Sp 18; K 22;

Du. 16; UB 12, 13, 14, 15.

Figure 7-6: Breast Beautification

Transcutaneous electrical nerve stimulation (TENS) or needles can also be used on the following points:-

Ruzhong (St. 17) - Only massage or TENS.

Tianxi - (Sp. 18).

Bulong (K. 22).

Fengfu (Du 16).

Fengmen (UB. 12), Feishu (UB. 13), Jueyinshu (UB 14), Xinshu (UB. 15), are interscapular points.

TENSION RELEASE:

Tension is very common in normal and hard working individuals. The abnormal tensions of everyday life are age-makers today. They need release. Grasp the heavy muscles running from skull down the neck to the shoulder in between the thumb and other fingers, Compress at I inch intervals. Move from above down. Use

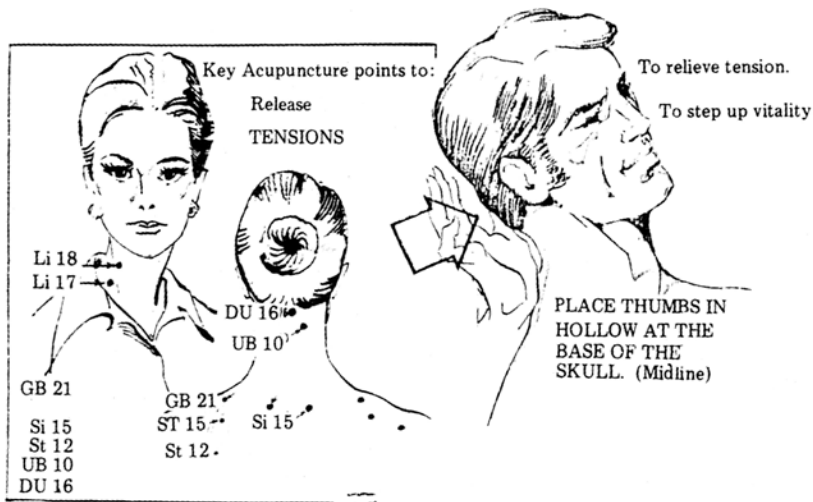


Figure 7-7: Tension Release

TENS or needles on the following points:- Tianding (Li. 17), Neck Futu (Li 18). Jianjing (G.B. 21) Tianliao (SJ. 15), Jiarizhongshu (Si. 15), Bingfeng (Si. 12), Tianzhu (UB 10), Fengfu (Du 16).

VITALITY:

How to step up your vitality? Long hidden from this hemisphere have been many Oriental secrets. One of these secrets is that of maintaining youthful energy, and bringing a new glow to the face and new vitality to the body. Many drugs-vitamins, hormones, tonics etc. are available in the market but they have more harmful effect than usefulness. Acupuncture has revitalizing effect. Chihai (Ren 6) is an important point-means sea of energy, just below this point in Shimen (Ren 5) is also a centre of energy. Both points be conveniently

accessible on the body's midline, just a few fingers below the umbilicus. Both are power sources when you need them most. Both stimulate the ovaries of the female and testes of the male. Both increase sexual desire. Both help bring back to life those who have gone through mental and physical torture.

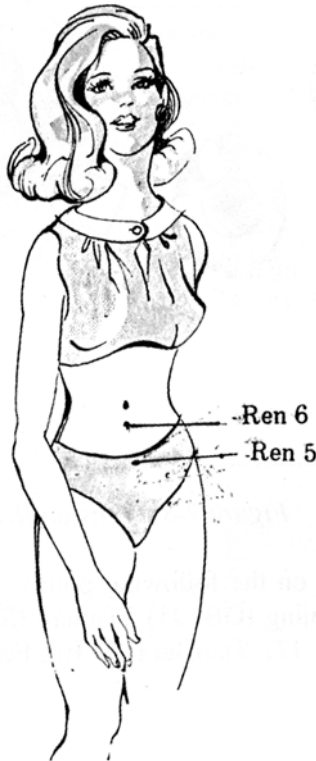


Figure 7-9: Vitality

YOUTHFUL DIGESTION:

Since food is one of the body's fuels, digestion must be maintained to preserve the factors of youth. To assist the digestion acupuncture is useful, following points are used:-

Liangmen (St. 21). Fengchi (G.B. 24), Fuai (Sp. 16), Juke (Ren 14), Jiuwei (Ren 15). Shenjue (Ren 8).

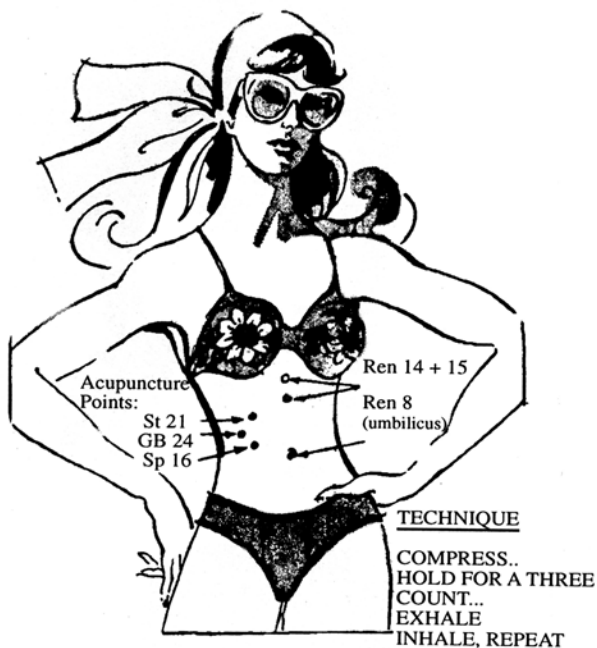


Figure 7-10: Youthful Digestion

REJUVENATION:

Age is a state of mind long before it becomes a bodily condition, anyone who would live long and stay younger has to take advantage of Nature. Chronologically the years may pile up in the body, but not in the brain, and to revive glandular vitality health, beauty and go-power one should try acupuncture.

Aging comes from neglect and failure. Aging is what shows when one or more physiological links begin to weaken because you are not keeping them under control, You are not using the fountain of youth within you. Acupuncture reactivates your endocrine glands to rejuvenate and recuperate you. Following points are used commonly: Tianrong (S.I. 17), Dicang (St. 4), Zanzhu (G.B. 2), Zhongfeng (Liv 4), Qimen (Liv 14). Fengchi (G.B. 20).

FACE REJUVENATION

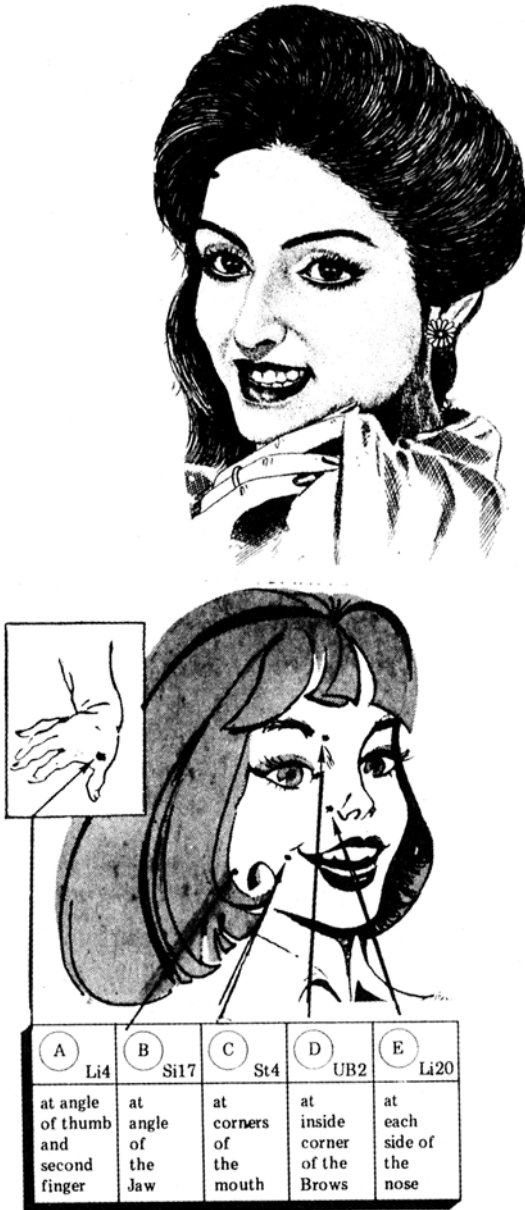


Figure 7-11

No matter how young you are, you are already old when you can no longer bend and touch the floor. When you have difficulty getting up out of chair, when keenness of mind slips away, when wrinkles and fat pad begins to show, when the skin on your elbows gets rough, when jowls hang, and when a fold of skin caught between two fingers is thicker than a quarter inch, you are already growing old. Each one of these signposts is an alarm, signalling neglect. Because of this, rejuvenation is a personal matter. It is the failure to use the natural power within yourself.

OBESITY—WEIGHT REDUCTION

Obesity is a complex disorder that may be defined as an increase in weight of over 10% above “normal,” due to generalized deposition of fat in the body. “Normal” weight is difficult to determine; the standard age, height, and weight tables are ordinarily used for practical clinical purposes, although they are not always reliable. Body build, musculature, familial tendencies, and socioeconomic factors must be taken into consideration. Social factors have a marked influence on the prevalence of obesity, and situational determinants have a great effect on the eating habits of obese persons. It is important to differentiate weight increase due to depot fat from the increase due to body water or lean body mass. The measurement of skinfold thickness (triceps fat fold) has been reported to be a simple and reliable method of identifying obesity among individuals in the medium range of body size. About 20% of the adult population of the Pakistan are considered to be overweight.

From a metabolic point of view, all obesity has a common cause: intake of more calories than are required for energy metabolism. The reason for differences in the food intake energy utilizations of various individuals, which make it possible for one person to utilize calories more “efficiently” than another, are not always known. It has been suggested that there is a more effective absorption of food stuffs from the gut in obese individuals than in lean ones. Many clinicians feel that the metabolic changes in obesity are a result of obesity rather than a cause of it.

Current evidence points to 2 major types of obesity based upon the number as well as the size of the cells. Patients with so-called

hypertrophic or adult onset obesity have a normal fixed number of fat cells and gain weight by fatty deposition or hypertrophy of the normal number of cells. The patient with hypertrophic obesity is reasonably amenable to weight reduction. In the hyperplastic-hypertrophic type of obesity, where both number and size of fat cells increase during childhood, weight reduction is difficult to achieve and to maintain. A high rate of weight reduction failure must be accepted, and particular effort must be made to minimize the metabolic consequences (e.g., hyperglycaemia) without inducing secondary physical disability and psychologic depression.

Although most cases of obesity are due to simple overeating resulting from emotional, familial, metabolic, and genetic factors, a few endocrine and metabolic disorders lead to specific types of obesity (e.g., Cushing's syndrome and hypothalamic lesions). It is particularly difficult to explain the phenomena of fluid retention and fat mobilization and storage in obesity. Hypothyroidism is rarely a cause of obesity.

TREATMENT:

“Specific” weight-reducing chemical and hormones (e.g., thyroid, chorionic gonadotropin), singly or in combination, are either ineffective or hazardous and have no place in the treatment of obesity. Juvenile onset obesity is often very difficult to treat, possibly because of some ill-defined metabolic disorder and it is important to institute a therapeutic programme as early as possible.

A. **Diet:** Diet is the most important factor in the management of obesity. There are a number of points to consider.

1. *Calories*—In order to lose weight, it is necessary to decrease the intake to below the caloric requirements. An intake of 500 kcal per day less than the required calories should lead to an average weight loss of approximately 0.5 kg a week.

A daily caloric intake of 800—1200 kcal is satisfactory for a modest reducing diet. (Vitamin supplementation is advisable for patients with a daily intake of less than 1200 kcal).

2. *Proteins*—A protein intake of at least 1 g/kg should be maintained. If it is necessary to add protein to the low-calorie

diet, protein hydrolysate or casein (free of carbohydrate and fat) can be used.

3. *Carbohydrate and fat*—To keep the calories and ketosis down, fats must be decreased. After the protein requirements have been met, the remaining calories may be supplied as half carbohydrate and half fat.
 4. *Vitamins and minerals*—Most reducing diets are likely to be deficient in vitamins but adequate in minerals. Therefore, vitamins should be used to supply the average daily maintenance requirements during the time of weight reduction.
 5. *Sodium restriction*—It has been shown that a normal person on a salt-free diet will lose up to 2-3 kg in a matter of days; this reduction is temporary, and the weight will return when salt is added to the diet. The same is true of the obese patient. and, although an apparently dramatic effect can be obtained with salt-free diets, it is of no permanent value.
 6. *Starvation regimen*—Total starvation has again been advocated as a weight reduction regimen. Although rapid loss of weight can be achieved by this means, the method may be quite hazardous and must be carried out in a hospital setting, with strict supervision. Several deaths have occurred. Total starvation results largely in breakdown of fat, but it may also lead to excessive protein breakdown, fainting due to decrease in extracellular fluid volume because of sodium loss, and other unphysiologic results. Massive weight reduction can result in severe hepatic impairment or even fatal hepatic necrosis.
- B. **Shunt Operation:** Jejunioileal shunt is being performed on selected patients whose massive obesity (i.e., 2—3 times ideal weight) has failed to respond to all conservative measures and is considered to be an imminent health hazard. The procedure provides permanent weight reduction and alleviates many of the physiologic abnormalities associated with obesity, but the operation is still largely investigational and should be carried out only in medical centres. Patients must be observed carefully for intestinal malabsorption and fluid and electrolyte disturbances.

C. Medication:-

1. *Appetite suppressants*—Amphetamines and other anorexi-
genic drugs may be of temporary value in aiding selected
patients on reducing regimens by decreasing the appetite
and giving a sense of well-being. However, because of their
long-term inefficiency and the hazard of drug abuse the
trend is away from the use of these drugs.
2. *Drugs to speed up metabolism*—Note: There is no satisfactory
drug to speed up metabolism. Thyroid has little or no place
in the management of obesity.

D. **Exercise:** Increase in physical activity is an important factor in long-range weight reduction and maintenance as well as for general psychologic and physical well-being. Although exercise increases the energy output, extreme exercise is necessary to alter body weight significantly. Caloric limitation must be observed simultaneously with a planned exercise programme.

E. **Psychologic Factors:** Overeating is largely a matter of habit and may be associated with varying degrees of emotional problems.

LOW-CALORIE DIETS: FOODS TO BE DISTRIBUTED INTO REGULAR MEALS DURING THE DAY

	800 kcal	1000 kcal
Breads, enriched white or whole grain	1/2 slice	1 slice
Fruit, unsugared (1/2 cup)	3 servings	3 servings
Eggs, any way but fried	One	One
Fats and oils, butter, or oil	None	3 tsp
Milk (nonfat, skimmed, or buttermilk)	2 cups	2 cups
Meat, fish, or poultry, any way But fried	4 oz	5 oz
Vegetables, raw (salads) (1 serving % cup)	2 servings	2 servings
Vegetables, cooked, green, yellow, Or soup (1 serving = % cup)	2 servings	2 servings
Starch, potato, etc	None	None
Artificial sweeteners	As desired	As desired

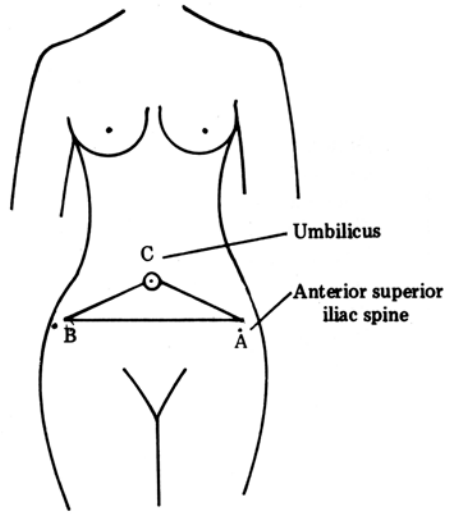
CALORIC VALUES OF COMMON “SNACK” FOODS

		Amount or Average Serving	Calorie Count
1.	Bread	1 slice	60
2.	Cola beverages	12 oz glass (Pepsi)	150
3.	Chocolate malted milk	10 oz glass (1/4 cups)	450
4.	Tea or coffee, no cream or sugar	1 cup	0
5.	Tea or coffee, with 2 tbsp cream and 2 tsp sugar	1 cup	90
6.	Apple One	3-inch	90
7.	Banana	One 6-inch	100
8.	Grapes	30 medium	75
9.	Orange	One 2 ^{3/4} inch	80
10.	Pear	One	100
11.	Almonds	10	130
12.	Cashews	10	60
13.	Peanuts	10	60
14.	Chocolate bars Plain	1 bar ((1 ^{1/4} oz)	190
15.	With nuts	1 bar	275
16.	Ice cream Chocolate	1/2 cup	150
17.	Vanilla and other flavours	1/2 cup	130
18.	Milk sherbet	1/2 cup	120
19.	Cold potato	1/2 medium	65
20.	Chicken leg	1 average	88

OBESITY MEASUREMENT:

The fat usually deposits around flanks, abdomen and hips, but protruded abdomen (pot belly) looks very ugly. At some stage your chest, abdomen and hip may be more or less of same measurement, whereas your vital statistics should be around 36-26-36 inches in woman. It means that “Waist-line” should be as small as possible.

The author (Salim) has introduced an “Obesity Triangle” which gives a rough idea about the ‘Waist line’ and obesity limit, A distance is measured between two ‘anterior superior iliac spines’ (asis) i.e. distance A and B. Then distance between one ‘asis’ to umbilicus is measured i.e. AC or BC. Normally $AB=AC + BC$ or AC should be half of AB. In other words distance between umbilicus to ‘asis’ should be half of inter ‘asis’



Salim's obesity triangle (see text)

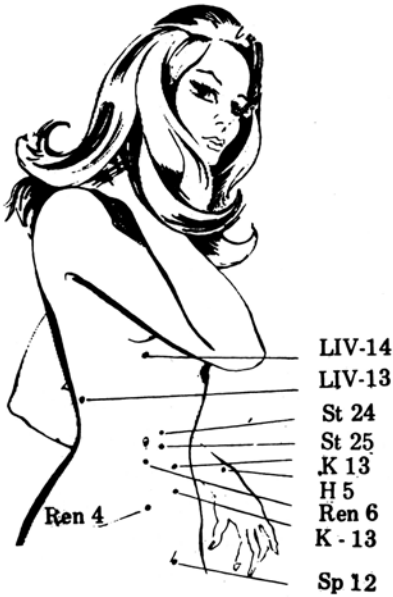


Figure 7-12: For reduction of weight: Abominal points



Figure 7-13

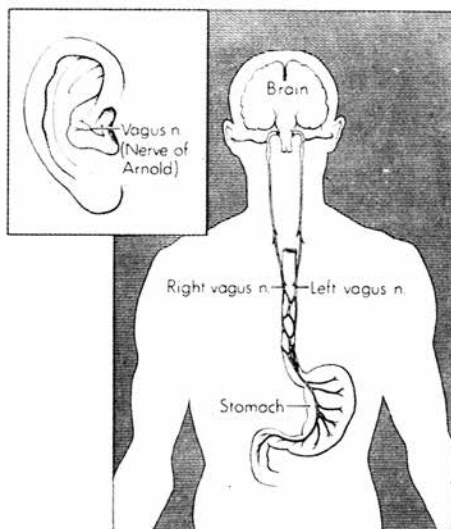


Figure 7-13

Now for example 'your' distance between two anterior superior iliac spines is 12 inches and distance between umbilicus to one asis is 8 inches (where as it should have been 6 inches 8 minus 6 is equal to 2 inches. It means you have 2 inches. It means you have 2 inches layer of fat around your waist).

Acupuncture points should be selected within this triangle in addition to other peripheral points which help to dissolve fat.

EAR ACUPUNCTURE FOR REDUCING WEIGHT

1. A small pin pointed staple or ball is inserted and fixed in both ears, which may be kept for weeks or months. Usually 'Stomach' point is selected. ,
2. It gives constant stimulation and reduces your appetite. It is believed that specific points in the ear stimulate nerves (vagus) in the ear, which normally increase the secretions and motility of the stomach. But here due to feedback mechanism vagus nerve probably delays the stomach emptying and you don't feel like eating all the time.

3. You have to press the staple or needle for at least 8-10 times a day, preferably before eating. You may not change your eating habits but low calorie diet is must.
4. Continue your exercise and walk if you are doing it already. Preferably do abdominal and neck exercises. Fat usually deposits over the abdomen, neck and flanks.
5. Ear acupuncture is harmless. You may feel sleepy occasionally but not lethargic.
6. Please note that first 4-5 days after acupuncture you may not notice any change but you are supposed to lose 10 pounds weight in one month at least.
7. If your ear needle/staple troubles you or you feel pain or it is dislodged then remove it and get it reinserted.
8. It may be psychological or physiological — but it works!
9. In some cases we also use abdominal acupuncture points to reduce the fat.

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PAIN AND ANAESTHESIA

NERVE PHYSIOLOGY: EXCITABILITY AND CONDUCTIVITY

ANATOMY

The nerves or nerve trunks are composed of a certain number of nerve fibres, usually defined in terms of their function: afferent fibres transmit impulses from the periphery to spinal cord and central nervous system, and efferent fibres transmit impulses from the spinal cord and central nervous system to the periphery.

Individual nerve fibres are covered by endoneurium. A few fibres placed together are enclosed in perineurium, whereas the nerve trunk is covered by epineurium.

The large peripheral nerve fibres are covered by a myelin sheath, interrupted by the nodes of Ranvier; outside it, the nerve fibre is covered by neurolemma, the cells of which are called Schwann cells. These sheaths and coverings originate from connective tissue. The small nerve fibres (e.g., the postganglionic fibres of the autonomic nervous system) are unmyelinated.

The neuron is the basic functional unit of the nervous system, and consists of three parts: cell body, dendrites, and axon. It is the axon which is referred to as the nerve fibre. The terminals of the axon of one neuron terminate in the cell body or the dendrites of another.

The entire nerve fibre derives its nutrition from the cell body. In the event of a complete interruption of the nerve trunk, the peripheral part undergoes degeneration, known as Wallerian degeneration. The central part, however, regenerates; the axon grows out and the Schwann cells extend. The myelin sheath also regenerates, but at a much slower rate. This type of regeneration depends upon the presence

of neurolemma, the lack of which prevents regeneration from taking place in the brain or spinal cord.

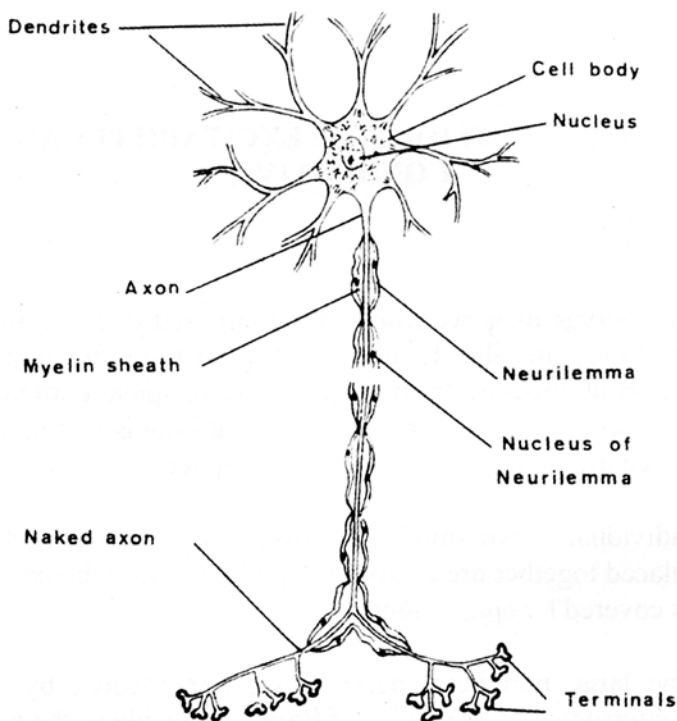


Figure 8-1: Schematic representation of neuron consisting of a cell body, dendrites, and axon

NERVE IMPULSES

A nerve possesses properties of excitability and conductivity that depend primarily upon the nerve membrane. It has been shown experimentally that excision of the axoplasm does not significantly change the impulse conduction of the remaining membrane.

Membrane Potentials

The cell membrane is usually described as a layer of lipid and protein. There are multiple pores throughout the lipid framework. Both sides of the membrane are surrounded by an electrolyte solution.

The solution contains about 150 mEq per litre of anions (negatively charged ions), and a corresponding number of cations (positively charged ions). An excess number of anions accumulates immediately inside of the membrane and an excess number of cations accumulates immediately outside the membrane. This creates the membrane potential.

The concentration of potassium ions is much greater on the inside of the cell membrane, while that of sodium ions is much greater on the outside. This imbalance is maintained by two main processes, active transport and diffusion.

Active Transport. Sodium is actively transported from the inside to the outside of the cell, This transport occurs against a concentration gradient and requires energy. It is accomplished by an active transport mechanism, the sodium-potassium pump, which utilizes the energy derived from hydrolysis of adenosine triphosphate (ATP), and involves the enzyme adenosine triphosphatase (AT Pase). The sodium pump decreases the concentration of sodium cation to 10 mEq per litre inside the cell and maintains a high level of 142 mEq per litre outside the cell. The pump plays a much smaller role in the transport of potassium ions than of sodium. The result is that the potassium ion concentration is large (140 mEq per litre) inside the nerve and low at (5 mEq per litre) the outside.

Diffusion. The resting membrane is much more permeable to potassium ions than to sodium. The smaller potassium and chloride ions pass freely through the cell pores, whereas the large sodium ions pass through with difficulty. There are also large number of anions such as protein, sulfate, and phosphate inside the membrane that diffuse very poorly or not at all.

In summary the basic source of the generation of the resting membrane potential is the sodium-potassium pump. This pump is more effective in transporting positively charged sodium ions to the outside of the cell than potassium ions to the inside. Thus the large number of anions inside the cell incapable of diffusion through the membrane remain unbalanced by positive ions, and result in the negative charge inside the cell.

Action Potential

The permeability of the membrane can be changed by a variety of factors including electrical stimulation, application of chemicals, mechanical damage, and excessive heat or cold.

Depolarization and Repolarization. The existing potential measured in many nerves generally falls in the range of 60 to 100mV (inside negative). In the presence of an outside stimulus, the electrical difference between the two sides of the membrane drops to 45 mV (inside negative). The 45 mV level is the threshold at which the membrane loses its semipermeability and the ions, start passing freely from one side to the other. The ensuing rapid change in membrane potential is called the action potential. It occurs in two stages called depolarization and repolarization.

The influx of sodium cations through the enlarged pores not only neutralizes the membrane potential but also, for a brief period, reverses the polarity across the membrane. Shortly after the influx of sodium, potassium starts moving to the outside of the membrane. This rapid change of the membrane voltage is called depolarization. There is usually a change of at least 100 mV, from -60 to + 40 mV on both sides of the membrane.

After the impulse has passed, the sodium cation is again excluded from the axon by the action of the sodium pump. However, this is a very slow process and plays almost no role in the return of the resting potential. Repolarization is 'accomplished by the delayed rapid diffusion of potassium ions outward through the membrane which restores the normal polarity (60 to 100 mV) of the membrane potential.

Propagation of the Nerve Impulse. After an action potential is elicited at any point of the nerve membrane, it spreads to the adjacent areas and thus results in propagation of the nerve impulse. The action potential increases the permeability of the membrane of the adjacent areas, which enables sodium to penetrate to the inside of the cell. 'Propagation can occur in both directions along a conductive fibre.

The All-or-None Law. Experiments have shown that a weak stimulus will not produce a propagated impulse. A strong stimulus,

however, will create an action potential which fires at a maximum voltage or not at all. The magnitude of the action potential depends on the properties of the nerve fibre and is independent of the strength of the stimulus.

Diagrammatic presentation of an idealized action potential. The spike potential is the portion above zero. Note how the action potential returns to its resting level (-80 mV,) and even becomes more negative for a short period.

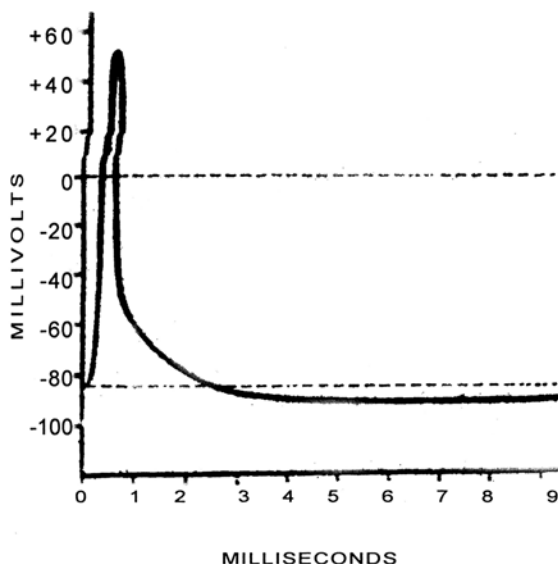


Figure 8-2

Propagation of Repolarization. Repolarization begins at the same area at which depolarization originally started and spreads along in the direction of depolarization.

The Refractory Period. If a stimulus, regardless of its strength, is applied when the membrane is still depolarized, no nerve impulse will be elicited. This period of inexcitability is called the absolute refractory period. It is followed by a relative refractory period during which the threshold for excitation is high and the magnitude of the action potential is reduced. Only a strong stimulus can elicit an action potential during this period.

The refractory period is a safety factor that limits the frequency of conduction of impulses by different nerves.

Saltatory Conduction of Myelinated Fibres. The myelin sheath covering some fibres acts as an insulator through which ions cannot flow. At the nodes of Ranvier, however, the nerve fibres come in contact with the extracellular fluid. At these points the membrane is 500 times more permeable than are the membranes of the unmyelinated fibres. The current thus spreads by jumping from node to node rather than progressing continuously as in the unmyelinated nerves.

Classification of Peripheral Nerve Fibres

In 1943, Gasser classified nerve fibres by the designations A, B, and C according to their diameters and the conduction velocity of their nerve impulses. The A fibres have the largest diameter and are subdivided, according to the diameter of the fibres, into α β γ and δ , the C fibres have the smallest diameter. The A and B fibres are myelinated. Because of saltatory-type conduction, the velocity of conduction in these fibres is much faster than in the unmyelinated C fibres. For example, because the small A fibres transmit the pricking type of pain at velocities of 6 to 30 meters per second and C fibres transmit the burning and aching types of pain at slower velocities of 0.5 to 2 meters per second, a painful stimulus will create a fast, pricking Pain sensation followed by a burning and aching sensation.

Types of Peripheral Nerve Fibres and Some of Their Properties

Terminology	Diameter (μ) (msec)	Conduction Speed (msec) (msec)	Duration of Action Potential	Absolute Refractory Period
A	2-20	5-120	0.5-0.4	1,0-0.4
B	3	3-14	1.2	1.2
C	2	0.5-2	2	2

The majority of nerve fibres in peripheral nerves are C fibres. They transmit a vast amount of information including pain, temperature, itch, and crude touch sensation.

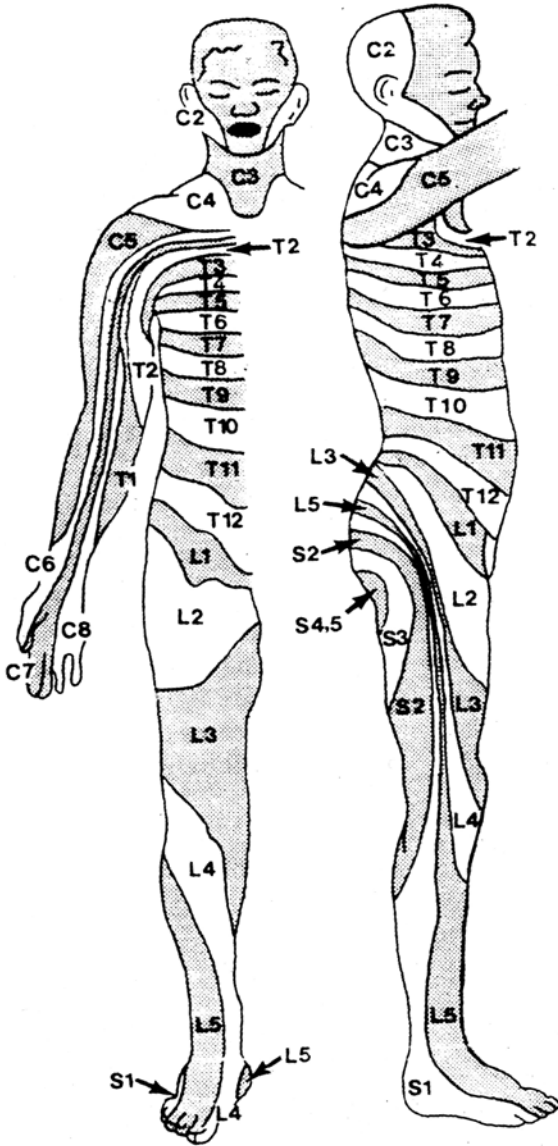


Figure 8-3

PAIN

Pain is one of the most extraordinary and compelling experiences. There is no precise clinical definition of pain, in part because the understanding of the pain mechanism, despite all the efforts made, is far from complete.

Under psychodynamic control, pain causes both reflex motor and mental reactions. It can arouse strong emotional protests such as anguish, anxiety, and crying. Pain can be considered from several perspectives with regard to its psychologic and psychiatric aspects, including the influence of personality and culture on pain tolerance and description. Two components of pain are well recognized: (1) the experience associated with actual or threatened tissue damage, and (2) the experience associated with compelling, unpleasant feeling.

The science of anaesthesia was created to alleviate the pain of the surgical patient. New therapeutic concepts and methods have led to the development of pain clinics that employ an organized, team approach in the treatment of pain and its consequences. The first pain clinic was opened in Army Medical College Rawalpindi (Pakistan) in 1979.

Pain and Temperature Receptors

Painful stimuli can be classified into three major categories: (1) physical injury of mechanical or thermal nature; (2) ischaemia leading to accumulation of large amounts of lactic acid; and (3) inflammation caused by toxins, infection, and various chemicals.

Pain receptors, which are free nerve endings, are localized on the surface of the skin, in deep tissues and viscera. They can be classified into three groups: (1) mechanoreceptors, which sense touch

and motion: (2) thermoreceptors, which sense temperature changes; and (3) nociceptors which are stimulated by strong mechanical and thermal stimuli. The nociceptors are much more resistant to damage than the mechanoreceptors and the thermoreceptors. Nociceptors also develop a form of sensitization. Initially they are activated only by strong stimuli, but later they respond to stimuli of smaller magnitude.

The receptors are also activated by various substances such as bradykinin, histamine, or serotonin. Bradykinin or histamine is released in cases of pain associated with vascular ischaemia. There is evidence in support of the release of chemical substances at cutaneous receptors. The skin receptors for temperature sensation are the bulbs of Krause for cold, and the bulbs of Ruffini for warmth.

Visceral Pain

Frequently, visceral pain is used to diagnose inflammation or disease. The peritoneum, pleura, and other viscera have sensory receptors for pain only, while the parenchyma of internal organs, including the brain, have no pain receptors.

Pain sensation from most of the internal organs of the body is conducted by fibres that pass along the visceral sympathetic nerves and the lateral spinothalamic tract. Pain fibres from the distal colon, rectum, and bladder enter the spinal cord through the sacral parasympathetic nerves, while those from the pharynx, trachea, and upper oesophagus are transmitted via the glossopharyngeal and the vagus nerves.

Visceral pain is diffuse in character and cannot be easily localized. Muscular rigidity is frequently associated with it. When pain is felt on a surface area of the body far away from its original source, it is known as referred pain. This is caused when fibres supplying the painful skin area enter the spinal cord at the same segment as the ones conducting pain from the visceral organ. The spinal cord's first and second thoracic segments, for instance, receive skin sensory fibres from the left upper extremity and from the heart. Pain caused by coronary insufficiency

may therefore be felt in the precordial chest wall area, radiating down the left arm. Similarly, pain originating in the gallbladder area may be felt over the right shoulder.

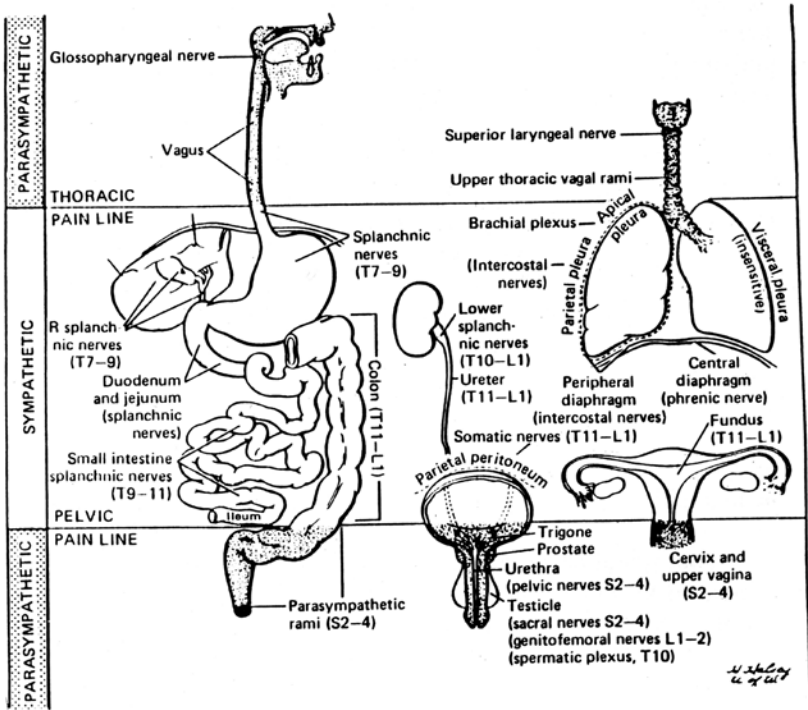


Figure 8-4: Visceral Pain

Deep Pain

Pain may be referred from deep structures like joints, tendons, muscle, and fascia. Pain impulses from deep structures travel the same pathways as those from the skin. The periosteum has a very rich nerve supply and, therefore, is very sensitive to painful stimuli.

Deep pain endings can be stimulated chemically and mechanically. Various metabolic products (as in intermittent claudication) can cause ischaemic pain. Muscle contractions and spasms frequently cause pain as well.

Conduction of Pain in the Peripheral Nerves

Pricking pain signals are carried by A 5 fibres having a velocity of conduction between 3 and 10 metres per second. Aching and burning pain signals are conducted by C fibres at velocities of 0.5 metres per second. Hence a painful stimulus creates a double pain perception: a fast pricking sensation and a slow burning sensation.

The Spinal Cord in Pain Perception

The cell bodies of A 8 fibres are located in the dorsal root ganglia and synapse with dorsal horn neurons. The dorsal horn of the spinal cord has been divided into six longitudinal laminae, lamina I being the most posterior, Laminae I and V contain large cells that are stimulated by high-threshold, noxious stimuli and by inputs from low threshold thermoreceptors and mechanoreceptors. The activity of laminae IV and V can be codified by the descending pathways. Pyramidal tract, rubrospinal tract, and reticulospinal tract stimulation inhibits the response of lamina V cells to painful stimuli.

The suppression of lamina V cells is important in the management of pain perception. Ketamine, morphine sulphate, nitrous oxide, and hyperventilation all suppress the activity of these cells.

Lamina II and III (substantia gelatinosa) contain small cells that are stimulated by A α fibres and inhibited by A δ fibres and C fibres.

The Somatic Ascending Sensory System

The fast-conducting large-diameter A₂ cutaneous afferent fibres ascend in the posterior column and the medulla, and synapse in the gracilis and cuneate nuclei. The neurons originating from these nuclei cross the midline (medial lemniscus) and terminate in the ventrobasal nuclei of the thalamus. From the thalamus, impulses are relayed to the somatosensory cortex through the thalamocortical projection.

The dorsal column carries the sensation of touch, position, and fine discrimination.

The slowly conducting afferent A δ fibres and C fibres synapse in the spinal cord with dorsal horn neurons. Axons of the second neurons cross the midline and turn upward in the lateral spinothalamic tract. The tract ascends through the spinal cord, medulla, and pons and terminates in the posterolateral nucleus of the thalamus. From there, impulses project to the postcentral gyrus of the parietal lobe.

The tracts of the ventrolateral column transmit pain and temperature. Recent evidence suggests that they also receive input from low-threshold mechanoreceptors.

Pain fibres from the face, cornea, and mucosa of the lips, cheeks and tongue are carried in the trigeminal nerve.

Pain Appreciation

The exact site of pain appreciation is not well defined, though painful stimuli are known to elicit certain reactions:

1. In the spinal cord, segmental reflex changes are evoked.
2. In the medulla and pons, the cardiac and respiratory centres can be stimulated.
3. In the hypothalamus, anger and fear may be generated.
4. In the midbrain and limbic system, the perception of unpleasantness may be elicited. The midbrain reticular formation generates signals of impending danger and acts as an alerting station to the cortex.
5. In the frontal lobe memory may be stimulated.

Crude perception of pain is experienced when the impulse reaches the thalamus. However, complete appreciation of pain stimuli is elicited only when the impulse is conducted to the parietal cortex. In this area pain sensation is integrated with other sensory stimuli.

Abnormalities in Pain Sensation

Paresthesia is the spontaneous sensation of prickling, tingling or numbness caused when impulses are carried all the way to the brain

and a sensation is localized in an area of the body that has not been directly stimulated. It can result from dorsal root. Peripheral nerve, or central nervous system irritation.

Hyperesthesia is hypersensitivity of the sensory fibres.

Analgesia is an absence of pain in a certain area, other modalities of sensation are preserved.

Anaesthesia is a loss of all sensation including pain.

Phantom pain follows amputation of a limb. Some patients attempt to use the amputated part and remain conscious of it. They may also experience a tingling sensation, heat or cold, or shooting, crushing pain. These feeling may persist for years after amputation. Presently, there is no convincing theory to explain all the manifestations of this syndrome.

Causalgia is typically seen in those wounded in combat. It is a painful state that results from violent deformation of peripheral nerves. It is burning in character and can be elicited even by very gentle touch of the injured area.

Neuralgia is characterized by severe, recurring pain in the distribution of a spinal or cranial nerve and is usually precipitated by stimulation of the cutaneous area supplied by the nerve. Tic douloureux is associated with excruciating pain occurring along the sensory distribution of fifth cranial nerve over one side of the face. Frequently, the pain is set off by a sensitive "trigger area" on the surface of the face, mouth, or nose.

Theories of Pain

The most popular theories of pain include the specific theory, the pattern theory, and the gate control theory.

Specific Theory. According to this theory, specific fibres conduct specific sensation and terminate in the central nervous system in a specific area. For instance, when pain fibres are stimulated, pain is felt irrespective of what the stimulus is (heat, electricity, incision, etc.). These pain receptors are the free nerve endings of the A δ fibres and the C fibres.

Pattern Theory. According to this theory, summation of stimuli after the impulse has entered the spinal cord, is important in initiating pain sensation. The summation is the result of reverberating circuits in the spinal cord. There are several varieties of reverberating or so-called oscillating circuits in the nervous system, the simplest one being presented in Figure. In this case, the output neuron discharges a collateral nerve fibre back to its own body cell to restimulate itself. Thus, the feedback stimuli could, theoretically, keep the neuron discharging for a very long period of time. In the spinal cord, the reverberating circuits exist in the internuncial pool. These internuncial neurons are located in the spinal cord between the anterior and posterior horns. Their role is to coordinate and relay impulses to the appropriate areas.

Other pattern theories propose the absence of inhibition as a main cause of summation.

Gate Control Theory. The gate control theory was originated in the mid 1960s by Melzack and Wall and has been revised on several occasions. A gating mechanism is proposed in the posterior horn of the spinal cord (substantia gelatinosa) which decreases or increases impulses from the periphery to the central nervous system and thus acts as the modular centre for pain.

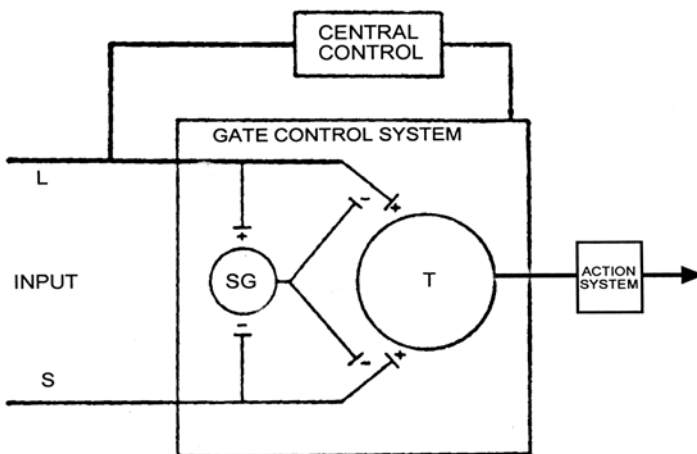


Figure 8-5: (a)

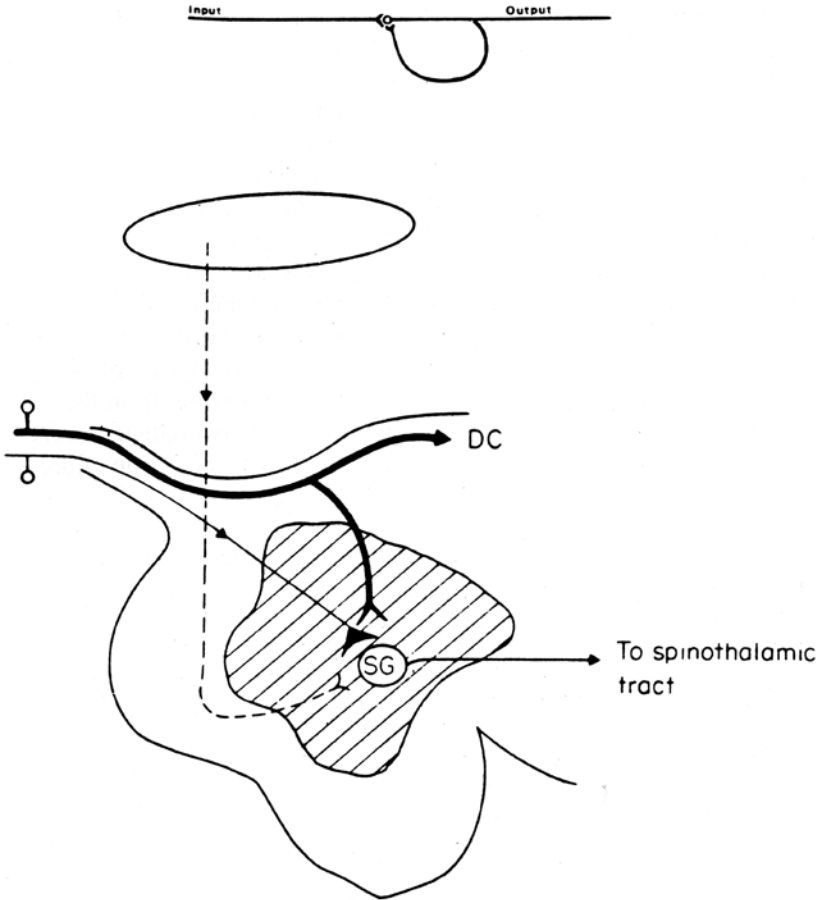


Figure 8-5: (b)

Hemisection of spinal cord showing integration of pain impulses via substantia gelatinosa. SG. Substantia gelatinosa, DC Dorsal column. □ A δ and C fibres conducting 'first' and 'second' pain impulses. □ Large sensory A fibres sending collateral branch to inhibit (? Presynaptically) pain transmission. Descending fibres via reticular formation inhibiting (? Post-synaptically) pain transmission

In the spinal cord, any pain impulse from the skin is transmitted to the substantia gelatinosa (lamina III) or the central transmission T-cells (laminae VI to VIII). The gating cells in substantia gelatinosa exert presynaptic inhibition in both the large and small fibre endings. Since the small fibres (A and C) transmit impulses to the spinal cord without any apparent stimulation, they inhibit the gating cells and maintain the gate open, thus allowing conduction of new impulses. Continuous tactile stimulation will maintain the gate closed, while in the absence of tactile stimulation the gate will remain open and pain impulses will be readily transmitted. Strong stimulation will elicit impulses predominantly in the large fibres ($A\beta$). The large fibres excite the gating cells, close the gate, and thus inhibit transmission to the T-cells. Adaptation of the large fibres during sustained stimulation and eventually the unopposed-activity of the small fibres predominates. Hence, the gate will open and the outflow from the T-cells will increase. The gate will also open and so produce severe pain when there is selective degeneration of the large fibres (phantom limb).

Recently, new anatomic and physiologic evidence has identified visceral afferent fibres, which synapse with the T-cells; the latter are the same cells receiving cutaneous impulses.

The gating process which begins at the spinal cord continues in the brain, and the filtering of the impulse occurs at every level of the conductive pathway. Such is the tonic inhibitory action of the reticular formation at all levels, which is called "the central biasing mechanism." The brain may excite or inhibit the presynaptic transmission and can open or close the gate. This has been called the "central control trigger."

Recently, evidence of the role of the brain stem in control of spinal pain transmission neurons as well as the role of the endogenous opiate system have been emphasized. Therefore new concepts of pain control have now been developed.

Itch and Tickle

Itching is probably produced by repetitive low-frequency stimulation of C fibres. Very mild stimulation, especially if produced by something that moves across the skin, produces tickle. Itch spots can

be identified on the skin by careful mapping; like the pain spots, they are in regions in which there are many naked endings of unmyelinated fibres. Itch persists along with burning pain in nerve block experiments when only C fibres are conducting, and itch, like pain, is abolished by section of the spinothalamic tracts. However, the distributions of itch and pain are different; itching occurs only in the skin, eyes, and certain mucous membranes and not in deep tissues or viscera. Furthermore, low-frequency stimulation of pain fibres generally produces pain, not itch, and high-frequency stimulation of itch spots on the skin may merely increase the intensity of the itching without producing pain. These observations suggest that the C fibre system responsible for itching is not the same as that responsible for pain. It is interesting that a tickling sensation is usually regarded as pleasurable, whereas itching is at least annoying, and pain is unpleasant.

Itching can be produced not only by repeated local mechanical stimulation of the skin but by a variety of chemical agents. Histamine produces intense itching, and injuries cause its liberation in the skin. However, in most instances of itching, histamine does not appear to be the responsible agent; doses of histamine that are too small to produce itching still produce redness and swelling on injection into the skin, and severe itching frequently occurs without any visible change in the skin. The kinins cause severe itching, and it may be that they are the chemical mediators responsible for the sensation. It is interesting in this regard that itch powder, which is made up of the spicules from the pods of the tropical plant cowhage, contains a proteolytic enzyme, and the powder presumably acts by liberating itch-producing peptides.

Current Concepts of Pain Perception

The present understanding of the mechanism of pain perception can be summarized as follows:

1. The pain receptors are localized on the skin in deep tissues (joint capsules, nerve sheaths, blood vessels) and various visceral organs. They are not specific for pain. Weak painful stimuli will elicit pain responses from free nerve endings. Strong stimuli will elicit responses from all type of receptors.

2. The pain impulses are conducted by A δ and C fibres. However, the large A β fibres, as proposed by the gate control theory, also play a role in pain conduction.
3. The posterior horn is the site for integration of all pain impulses conducted to the spinal cord.
4. The pain impulses are conducted by the spinothalamic and trigeminothalamic pathways which project upon the thalamic nuclei.
5. The cortical areas for pain perception include the frontal, parietal, and limbic lobes. The frontal lobe is associated with intellectual appreciation and affective reaction, and the parietal cortex with the appreciation of well localized pain sensation. The limbic lobe is associated with memory of pain. There is also crude perception of pain in the thalamus.

PAIN RELIEF

Relief from pain can be obtained by interfering with pain perception or interrupting pain conduction at the various sites of the pain pathways:

1. Receptor-pain relief obtained by administering aspirin is due to the inhibitory effect of aspirin on the receptor site.
2. Conduction in peripheral somatic nerves can be temporarily or permanently interrupted by nerve blocks or neurectomy. A δ fibres and C fibres are affected by injection of cold hypertonic saline in the subarachnoid space.
3. Pain impulses can be modulated by stimulating A α fibres, by compresses, massage and percutaneous or implanted stimulators (gate control theory). Acupuncture is most important these days.
4. Posterior nerve roots can be anaesthetized and partially destroyed by neurolytic agents such as absolute alcohol and phenol-glycerine.
5. The sympathetic nerve can be blocked by paravertebral sympathetic block or sympathectomy.
6. At the spinal cord, pain conduction is interrupted by the effect of inhalation anaesthetic agents and ketamine on

lamina V. The lateral spinothalamic tract can be interrupted by tractotomy, after which pain and temperature perception of the contralateral side is lost. Bilateral cordotomy is necessary to abolish pain in visceral organs. Intradurally implanted electrodes which stimulate the posterior column have been used to relieve pain, though unfortunately the initial successful rate of 80 per cent has gradually declined to about 25 per cent. The decrease and eventual disappearance of pain with termination of the stimulation is encouraging.

7. Thalamic sensation is crude. The pain impulse is localized and the intensity is determined in the sensory cortex. In individuals with a severe emotional reaction to pain, prefrontal lobotomy or a stereotaxic ablation of intralaminar nuclei of the thalamus is performed. Such individuals will still feel pain but will not suffer emotionally.
8. In descending inhibitory control, hypnosis or placebos exert the desired effect by influencing the activity of the descending cortical inhibitory mechanism.

Endogenous Opiates

Opiates exert multiple effects on various organs in the body. The most important include respiratory depression, analgesia, changes in autonomic and endocrine function, and changes of mood. In the process of evaluating the mechanism of action of radiolabeled opiates, researchers found them to bind to specific receptors in the central nervous system. Originally two peptides with opioid activity were extracted from the brain and termed met- and leu-enkephalins. The term endorphin was originally used to include all opioid peptides; however, the tendency is to apply the term enkephalin to met- and leu-enkephalins, whereas endorphins refers to large opioid peptides than the enkephalins. Four endorphins are identified on the basis of their structure: α , β , ζ and δ .

There are two major differences in the relative distributions of the enkephalins and endorphins within the central nervous system; (1) endorphin cells are located mainly in the pituitary and hypothalamus with few projections to the medulla and spinal cord, where as

1. Acupuncture, acupressure
2. Drugs: (including anaesthetics)
3. Nerve section
4. Sympathectomy
5. Myelotomy of spinothalamic fibres
6. Posterior rhizotomy
7. Antero-lateral cordotomy
8. Medullary tractotomy
9. Mesencephalic tractotomy
10. Thalamotomy
11. Gyrectomy_ electrode implantation
12. Prefrontal lobotomy (leucotomy)
13. Dorsal column stimulation
14. Transcutaneous electrical nerve stimulation (TENS)
15. Massage, manipulation, physiotherapy, osteopathy, naprapathy chiropractic, reflexotherapy, counterirritants, hot water bottle, etc.
16. Injection of nerve roots, local anaesthesia, peripheral nerve blocks intravenous anaesthesia, alcohol injection
17. Hypnosis
18. Meditation, praying, 'taweez'.
19. Others e.g., devil dancing, witchcraft, grouptherapy

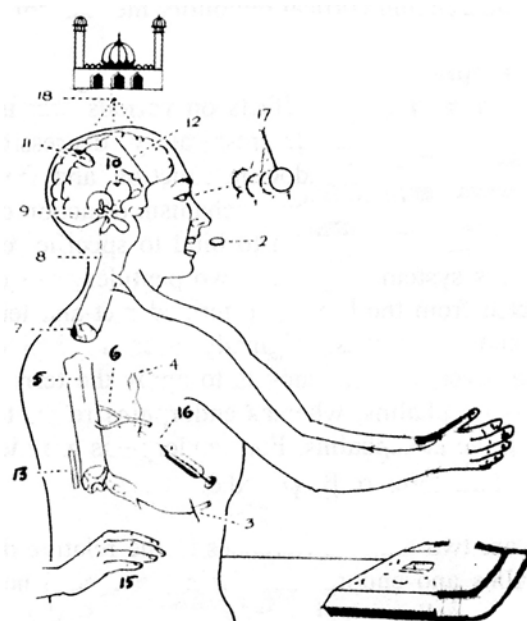


Figure 8-6

enkephalin cells are found in many areas of the brain and spinal cord; and (T) enkephalins are found in close association with opiate receptors while endorphins are not. There has been evidence in support of the role of enkephalins as neurotransmitters. Although the physiologic role of endogenous opiates is not fully understood, marked progress has been made in this direction in the last few years.

The Role of Endogenous Opiates in Pain, Analgesia, and Anaesthesia. The presence of a strong correlation between the distribution of endogenous opiates and opiate receptors in the regions of the brain (periaqueductal gray matter and thalamus) and spinal cord (substantia gelatinosa) involved in pain sensation suggests the presence of an endogenous pain suppression system. This correlation provides a possible explanation for the partial reversal with naloxone of nitrous oxide, enflurane, cyclopropane, and light halothane analgesia and anaesthesia in animals. In this case, naloxone antagonizes the effect of endogenous opiates, the release of which is caused by inhalation agents.

The discovery of opiate receptors in the spinal cord has led to new techniques in the treatment of acute and chronic pain. Pain relief lasting up to 20 hours, for example, has been obtained by intrathecal injection of 0.5 to 1 mg of morphine, while epidural injection of meperidine hydrochloride has been shown to produce analgesia in cancer patients. Interestingly enough, analgesic levels in blood did not develop until after 30 minutes of sedation. The sedation, but not the analgesia, was reversed by intravenous naloxone, indicating that the analgesic effect was mediated at the spinal level. In contrast to local anaesthetics epidural morphine has been found not to affect the motor or sympathetic system and therefore not to cause hypotension or weakness. However, unconsciousness, respiratory depression, and hypotension are reported 6 to 12 hours following subarachnoidal or epidural injection of morphine. Naloxone has been successfully used to reverse these side-effects without affecting analgesia, suggesting possible absorption of the narcotic in the central nervous system.

Of particular interest are studies which have reported suppression of transmission of noxious information directly at the spinal level. This has been accomplished by iontophoretic administration

of opiates either near the neuron under study or in the substantia gelatinosa. The administration of morphine in substantia gelatinosa inhibited the noxiously evoked activity of laminae IV and V of the posterior horn of the spinal cord.

Other interesting findings include the development of hyperalgesia in response to a painful electric shock administered to pain tolerant patients who have received naloxone, and the lack of such development in pain-sensitive patients. Studies of this nature support the concept of the endogenous opiates serving a pain suppression system and explain the individual variations in pain tolerance depending on their level. Also, naloxone has been found to reverse the increased pain threshold attained by acupuncture, a finding in support of the concept that acupuncture analgesia is due to an activation of the pain inhibitory system and endorphin release.

ACUPUNCTURE & MECHANISMS OF PAIN

Ronald Melzack

During the past decade, the gate control theory of pain has opened the way for a search for new techniques to modulate chronic pain. The theory suggests that pain control may be achieved by the enhancement of normal physiologic activities rather than their disruption by irreversible lesions of the spinal cord or brain. In particular, it has led to attempts to control pain by activation of inhibitory mechanisms.

Basically, the gate-control theory¹² proposes that neural mechanisms in the dorsal horns of the spinal cord act like a gate which can increase or decrease the flow of nerve impulses from peripheral fibres to the central nervous system. Somatic input, therefore, is subjected to the modulating influence of the gate before, it evokes pain perception and response, Wall and I proposed that large-fibre inputs tend to close the gate while small-fibre inputs generally open it, and that the gate is also profoundly influenced by descending inhibition from the brain. We further proposed that the sensory input is modulated at successive synapses throughout its projection from the spinal cord at the neural areas responsible for pain experience and response. Pain, we suggested, occurs when the number of nerve impulses arriving at these areas exceeds a critical level.

Wall¹⁹ has recently assessed the present-day status of the gate control theory in the light of new physiologic research. It is apparent that the theory is alive and well despite considerable controversy and conflicting evidence. Although some of the physiologic details may need revision, the concept of gating-or input modulation-is stronger than ever.

Hyperstimulation Analgesia

It is well known that brief intense stimulation of myofascial trigger points by dry needling,¹⁸ intense cold,¹⁸ or injection of normal saline¹⁷, often produces prolonged relief of seine forms of myofascial or visceral pain. This type of pain relief which may be generally labelled as “hyperstimulation analgesia,” is one of the oldest methods used for the control of pain. It is sometimes known as “counter irritation”, and includes such methods of folk-medicine as application of mustard plasters, ice packs, hot cups, or blistering agents to parts of the body. Seine of these methods are still frequently used although there has not been (until recently) any theoretic or physiologic explanation for their effectiveness. Suggestion and distraction of attention are the usual mechanisms invoked, but neither seems capable of explaining the power of the methods or the long duration of the relief they may afford.

This interest in folk-medicine gained enormous impetus in recent years by the rediscovery of the ancient Chinese practice of acupuncture—inserting needles into specific body sites and twirling them manually. More recently the Chinese have practiced electro-acupuncture, in which electrical pulses are passed through the needles.¹⁴ We now know that the original claims that acupuncture can routinely produce surgical analgesia (or anaesthesia) have not been borne out by later investigation⁴. However, acupuncture stimulation has recently been shown in several well-controlled clinical and experimental investigations to provide substantial relief of chronic pain. This is not surprising because it is now evident that there is nothing mysterious or magical about acupuncture; it is a form of hyperstimulation analgesia comparable to cupping or blistering the skin.

On the basis of these considerations I developed the hypothesis that transcutaneous electrical stimulation could be administered in the same way as acupuncture-for brief periods of time at moderate-to-high stimulation intensities. Consequently, I carried out 3 studies

to determine whether acupuncture and transcutaneous electrical stimulation are comparable procedures.

*The 1st study*⁸ examined the effects of brief, intense transcutaneous electrical stimulation at trigger points (TPs) or acupuncture points (APs) on severe clinical pain. The data indicated that the procedure provides a powerful method for the control of several forms of pathologic pain. The duration of relief frequently outlasted the 20-minute period of stimulation by several hours, occasionally for days or weeks. Different patterns of the amount and duration of pain relief were observed. Daily stimulation carried out at home by the patient sometimes provided gradually increasing relief over periods of weeks or months.

*The 2nd study*⁵ compared the relative effectiveness of transcutaneous stimulation and acupuncture on low back pain. The results showed that both forms of stimulation at the same points produce substantial decreases in pain intensity but neither procedure is statistically more effective than the other. Most patients were relieved of pain for several hours, and some for one or more days. Statistical analysis also failed to reveal any differences in the duration of pain relief between the 2 procedures.

In the 3rd study,¹¹ my colleagues and I examined the correlation between TPs and APs for pain. The results of our analysis showed that every TP reported in the Western medical literature has a corresponding AP. Furthermore, there is a close correspondence—71%—between the pain syndromes associated with the 2 kinds of points. This close correlation suggests that TPs and APs for pain, though discovered independently and labelled differently, represent the same phenomenon and can be explained in terms of the same underlying neural mechanisms.

The relative advantages of transcutaneous electrical stimulation and acupuncture merit consideration. The chief advantage of

acupuncture is that the procedure is of short duration—at intense levels, stimulation may sometimes last only a few minutes. The method, however, is invasive, and requires licensed practitioners with specialized training. Transcutaneous electrical stimulation, on the other hand, is noninvasive; and once the appropriate points are located, it can be administered by paramedical personnel. Furthermore, once the procedure is found to be effective for a given patient, it can be self-administered with supervision by the physician.

Physiologic Basis of Hyperstimulation Analgesia

There are 3 major properties of hyperstimulation analgesia: (1) a moderate-to-intense sensory input is applied to the body to alleviate pain, (2) the sensory input is sometimes applied to a site distant from the site of pain, and (3) the sensory input, which is usually of brief duration (ranging from a few seconds to 20 or 30 minutes) may relieve chronic pain for days, weeks, sometimes permanently.

The relief of pain by brief intense stimulation of distant TPS (or APs) can be explained in terms of the gate control theory. The most plausible explanation⁹ seems to be that the brainstem areas which are known to exert a powerful inhibitory control over transmission in the pain signalling system may be involved. These areas, which may be considered to be a “central biasing mechanism,” receive input from widespread parts of the body and, in turn, project to widespread part of the spinal cord and brain. The stimulation of particular nerves or tissue by transcutaneous electrical stimulation or any other form of stimulation that activates small fibres could bring about an increased input to the central biasing mechanism, which would close the gates to inputs from selected body areas. The cells of the midbrain reticular formation are known to have large receptive fields, and the electrical stimulation of points within the reticular formation can produce analgesia in discrete areas of the body.² It is possible, then, that particular body areas may project especially strongly to some reticular area, and these, in turn, could “close the gate” to inputs from particular parts of the body.

There has been exciting recent support for this hypothesis. Direct electrical stimulation of the brainstem areas which produce analgesia inhibits the transmission of nerve impulses in dorsal horn cells that have been implicated in gate-control mechanisms.” Bilateral lesions of the dorsolateral spinal cord abolish these inhibitory effects and also abolish or reduce the analgesia produced by brainstem stimulation and morphine.³ Furthermore, the analgesia-producing brainstem areas are known to be highly sensitive to morphine, and their action is blocked by administration of naloxone.¹ The demonstration that naloxone also blocks the analgesic effects of transcutaneous electrical stimulation¹⁵ and acupuncture⁷ thus provides powerful support for the hypothesis that intense stimulation activates a neural feedback loop through the brainstem analgesia-producing areas. There is still further exciting evidence to support the hypothesis; the analgesia-producing areas have been found to contain endogenous morphine-like compounds (endorphins) and electro-acupuncture has been found to produce an increase in endorphins in cerebrospinal fluid in patients treated for chronic pain.¹⁶

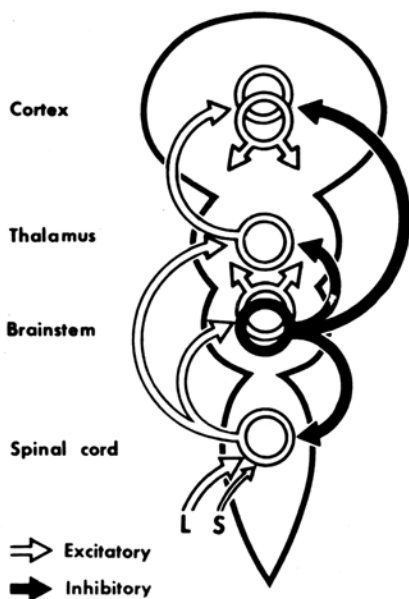


Figure 8-7: Schematic diagram of the central biasing mechanism. Large and small fibres from a limb activate a neuron pool in the spinal cord, which excites neuron pools at successively higher levels. The central biasing mechanism, represented by the inhibitory projection system that originates in the brainstem reticular formation, modulates activity at all levels. Loss of inputs to the system would weaken the inhibition; increased sensory input or direct electrical stimulation would increase the inhibition. L, large fibres; S, small fibres.

The prolonged relief of pain after only brief stimulation requires the additional postulation of prolonged, reverberatory activity in neural circuits which may underlie “memories” of earlier injury.⁶ These reverberatory circuits may be facilitated by low-level inputs, such as those from the pathologic structures of processes that subservise TPs or APs and is disrupted for long periods of time (perhaps permanently) by a massive input produced by electrical or other intense stimulation. Furthermore, when pain is blocked, even briefly, the patient tends to become physically active and carry out normal motor activities such as walking and working. The normal patterned proprioceptive inputs that result from these activities may prevent the resumption of the abnormal reverberatory neural activity that underlies prolonged pain.

So far, I have dealt only with ways to increase the sensory input. However, doing the opposite is also a form of sensory modulation and, indeed, anaesthetic blocks of sensory input often produce pain relief that outlasts the duration of the block.⁶ Successive blocks may relieve pain for increasingly long periods of time. Anaesthetic blocks of TPs, tender skin areas, peripheral nerves, or sympathetic ganglia would have the effect of diminishing the input through the gate and, thereby, would bring about a cessation of activity in reverberatory neural circuits. Thus, increasing or decreasing the input would have the same effect of disrupting abnormal neural activity. In both cases, moreover, the relief of pain would permit normal motor activities which would tend to prevent the recurrence of abnormal central neural activity.

The Concept of a “Pattern Generating Mechanism”

Recently, Loeser and I¹⁰ reviewed physiologic evidence to show that deafferentation (such as root sections) produces abnormal physiologic activity in spinal and brain cells deprived of input. The cells fire spontaneously in high-frequency bursts and may be triggered by inputs from adjacent structures; the abnormal firing may persist for hours after a single, brief triggering stimulus, and abnormal activity has been observed to persist for months.

On the basis of these data, as well as observations that paraplegics with total section of the spinal cord sometimes suffer severe pain below the level of the lesion, Loeser and I suggested that denervated areas in the transmission pathways from dorsal horns to cortex may become “pattern generating mechanisms.” Their abnormal activity, we proposed, is capable of producing patterns of nerve impulses that give rise to pain. The cells that comprise these pattern generating mechanisms receive inputs from multiple source: the peripheral nervous system, the visceral and autonomic systems, the brain, as well as abnormal activity within the central nervous system based on prior injury.

The implication of the model for therapy is that we should seek to modulate several of these sources at once. For example analgesic drugs given in combination with transcutaneous electrical stimulation may permit a greater degree of control over pain than either one alone. The model suggests that cutting peripheral or central pathways is a deafferenting process which could increase the abnormal firing. Instead the emphasis of therapy should be to modulate the input by using all techniques available singularly or in combination.

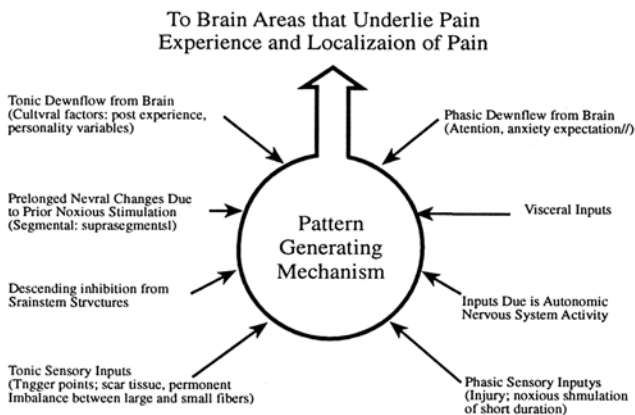


Figure 8-8 Concept of a pattern generating mechanism controlled by multiple inputs

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PSYCHOLOGICAL ASPECTS OF PAIN

Ishrat Hussain, M. Wasif Khan, Muhammad Hussain Rana

1. INTRODUCTION

a. HISTORY OF PAIN (PALAEO NOSOLOGY)

Pain has existed as a marvelous alarm mechanism, and as an essentiality, an instinct, a sensation and a social expression of an internal event from the times, not of actual creation of ADAM but from moment when the idea of creation of Adam was conceived. This idea was “painful” to the Satan in particular and all angels in general.

From this theophilosophical concept of pain arose the theory of pain as an emotion and not a sensation.

Pain was shared in the earliest social clans by friends and inflicted by foes. Pain was thought to be expressed only to induce a social proximity and to gain sympathy and thus to decide who all were friends.

In the Archaic Medicine in Greece, pain was considered as an expression of gods’ rejection of an individual or his act and was form of a punishment endowed by Zeus and Apollo, by shooting arrows and throwing darts on those who provoked their wrath.

In Vedic Medicine of India - discomfort and pain was again a resultant of a combination of religious, magical and empirical factors. Pain was considered not a result or after effect (as amongst Greeks) but an accompaniment of SIN, the breaking of a norm. It was a signal to the individual on one end and to the gods and devils like VARUNA, RUDRA and SOMA at another. These gods punished, if the pain was

self inflicted and cured, if it was transgressed unknowingly or was a result of a wanton curse of a fellow man. The treatment consisted in placating the irate deity in drawing out and fighting the demons. This was always accompanied in Hindu medicine by prescription of drugs, which not only relieved discomfort but elevated mood. Use of Bhang and opiate derivatives at temples was a common practice.

The Smakha and Yoga instead have non Aryan interpretation of pain and describe that our self is by nature pure and divine, but ignorance covers it with a veil. Ignorance leads to egoism, attachment, aversion and clinging to life, all of which become PAIN BEARING OBSTRUCTIONS. The method of relief of pain here is detachment from these obstructions by certain psychosomatic practices leading to a gradual detachment from the world till the nature of self is revealed.

Thus one may say that before 19th century theorists philosophers and physicians of body and mind all thought of PAIN AS AN EMOTION. Later due to description of physiological and anatomic details of pain pathways and receptors overwhelmingly resulted in acceptance of pain as a SENSORY ACTIVITY.

Current state of art accepts pain as an interplay of well defined physio-anatomic realities, titrable biochemical processes and observable electrical wave patterns on one end and vague, ill defined, minimally understood, iceberg knowledge of description of psychological influences, which play as important a role as the former in deciding the pattern of perception of pain and the response to it. To summarise; 'PAIN IS A RARE EMOTION with A WELL DEFINED NEUROLOGIC PATHWAY OF A SENSATION'.

b. PSYCHO-SOCIAL PERSPECTIVE OF PAIN

The word "pain" is Poena in Latin means - penalty. Oxford Dictionary defines pain as suffering or distress of body or mind (from injury or disease).

In Brussel's words "in its special sense in psychiatry, pain refers to disagreeable, embarrassing, or guilty feelings often unconsciously experienced and therefore not recognised by the subject at the level of awareness; also called-psycho pain".

The word Patient has been described from Latin: "Pati" means-to suffer, - a suffer.

Oliver Wendell's impressions of a PATIENT read as:

"God opens one book to physicians that a good many of you don't know about - THE BOOK OF LIFE. That is none of your dusty folios with black letters between pasteboard and leather but it is printed in bright type and the findings of it are warm and tender to every touch. They reverence that book as one of the Almighty's infallible revelation."

c. **THE FACT AND FATE OF BEING -ILL**

The objective to treat a psychiatric patient having pain is to rehabilitate him in his environment as normal or as near to the state as he was before the pain. The primitive concept of leaving the patient to fend himself or die i.e. to get rid of the "sick" and the "well" having no obligations to assist the sick was detrimental to comprehensive health care.

The fate (? primitive) of one who falls ill (? psychiatric illness) of being in complete isolation (7 reject) from the society is rather mortal situation still practiced in our primitive (undeveloped) societies. French RM, has very correctly pointed out about the fact of being ill i.e. "the fact of being ill interposes complication, which must be dealt with just as carefully as those that precipitate and cause the illness, otherwise doctors (medical services) may not be successful in returning the patient to productive life."

2. **PSYCHOLOGICAL THEORIES OF PAIN**

I. **Psychosomatic theory of Pain.**

Here pain is said to be in association with anxiety. One is said to aggravate the other.



II. Psychoanalytical theory:-

i) PAIN AS AN IDEA/HALLUCINATION

Pain occurs as a delusional idea, or a hallucination in some psychiatric patients. This may happen in patients with severe Depression, Schizophrenia, Epilepsy.

ii). Szasz theory of Pain.

US Psycho analyst Thomas Stephen Szasz describes pain as a danger signal, an alarm which is triggered in a threat to the integrity of the body. Perception of pain here is a consequence of the individuals appreciation of loss in terms of bodily function.

Although a wholly psychological theory, it bridges the gap between the intensity of pain experienced and the extent of bodily lesions in reality which is so obvious when a patient reports with PAIN. Here the same "PAIN" can be regarded as "Organic" or "Psychogenic" according to the observer's (Doctor's) opinion of the reality of the threat to the body. This appreciation has to be different from that of the sufferer as two are different individuals with their own personalized concepts of "THREAT TO BODY". The best psychiatrist or a physician would be the one who gets closest to the patients philosophy or appreciation of this threat, The actual presence or absence of structural disturbance thus becomes purely secondary and even irrelevant in certain situations.

MAIN AIM THUS IS TO ASSESS THE REALITY OF THE THREAT, e.g. by Measurement of Pain - (discussed later).

III. **Wall's Theory:**

Wall considers pain to be linked more to the bodily state of an individual than to the injury or external stimulus causing its perception. He has challenged the concept of 'Pain' as one of the sensory modalities with fixed receptors and a sensory pathway. To him pain is more of an "awareness of a need state" (like hunger) than an awareness of an event state (like hearing). Thus he has broken the bond between injury and pain - and feels that one can exist in the absence of the other. Pain like hunger is difficult to describe precisely and is affected by emotional state quite so often. Fear, anxiety, anger and concern are almost always intimately woven and are experienced alongwith pain rather than as its after effect. These emotional responses are part of the over all pain response and not separate entities. Pain can thus be considered a behavioural response, a reaction pattern with three distinct phases.

- i. Immediate phases is the first response to injury - a protective reaction, in which one withdraws, escapes, overcomes or destroys the source of injury or pain. .
- ii. Acute phases occurs only when events come fully under one's control. Here one tries to protect his wound and acute anxiety is as much part of this phase as is acute pain.
- iii. Chronic phases of pain is marked by recovery from injury. This phase may well follow the injury and persist even after healing is complete. Thus the resultant syndrome is characterised by lassitude depression and intractable pain. This is the reason chronic pain responds to drugs like carbamazepine and antidepressants. It thus implies that pain initiates a body state similar to thirst or

hunger and as these are associated with search for food and water, pain is associated with search for treatment in form of change of postures, hot water bottles and analgesics.

- iv. *Psycho-physiological perspective:-* Sensation is the most subjective of all neurologic functions. When a patient complains of pain, loss of sensitivity, or abnormal sensations, the existence of his problem and the extent of his problem are established by his complaints alone. Objective signs will substantiate the complaints unfrequently, but when these objective signs occur, they are usually quite dramatic. The pattern of pain that the patient describes is often helpful in establishing whether or not there is a structural basis for the complaint, as well as, what the structural basis is. Unfortunately, some of the most distressing disorders of sensation, such as the pain developing with lumbar disc diseases, may never evolve into a distinctive pattern or be accompanied by power and coordination problems. In such instances familiarity with the patient's personality and circumstances is more valuable than consistent neurologic sign in deciding what course of investigation and treatment to pursue.

Lechtenberg has rightly commented that MUCH more is involved in the experience of pain than the simple, registration of a noxious stimulus by receptors that relay the information to the brain along sensory nerves and tracts. Sensory receptors certainly play a role in the perception of destructive or dangerous stimuli, but the information they provide is modified by both psychologic and physiologic factors that enhance or minimize the experience of pain.

3. MEANINGFUL EVALUATION

A basic knowledge of soft tissue and normal functional anatomy of the part(s) involved in pain and disability is mandatory for a meaningful evaluation of the patient.

Ceilliet while discussing the psychological aspect of pain has pointed out that psychological correction can result only if the defective ~ physiologic abnormality is recognised and understood.

Experimental studies on working of Nociceptive System:

Raimond Emmer commenting on the specific activity rhythm in the thalamus has pointed out that “experimental studies on pain are riddled with unusual difficulties, one of the most subjective of all sensations, pain defies precise description. No general standard for rating its intensity exists and at times neither “stabbing” “throbbing” “nagging” nor any other description of its quality seems adequate”. Moreover, nonverbal indicators of pain are often unreliable. Are attempted movements during surgery indicators of pain or are they simply reflexes which are not suppressed even by relatively large doses of analgesic? Direct analysis of the sensory activity underlying pain have been confounded by the finding that most neural elements that respond to noxious stimulation of sensory receptors can also be activated by innocuous stimuli. This invokes not only experimental but also theoretical complexities in understanding how the nociceptive system works.

In its simplest form pain is a somatopsychic phenomenon, a signal of actual or potential danger to body tissues and to the person, and as such, it is an important adaptive mechanism.

Under some circumstances, pain can become nagging and persistent and impair the sufferer’s ability to work, to think, to sleep, and Alfred M. Freedman has rightly commented that “it can even destroy his will to live”.

For a person to experience pain, consciousness, attention, and self concern are necessary. Intense stimulation of other senses, such as loud noises, may reduce or abolish pain. Activities that narrow attention, such as those practiced by Yogis, seem to cancel pain.

In infancy and childhood, pain is perceived when impulses from the surface and internal organs of the body are initiated by noxious stimuli. As the personality develops, pain sensations become associated with feelings, ideas and actions related to life experiences.

Memories of painful experiences in childhood may be recalled latter, fantasised, or even hallucinated. As the human mind develops the capacity to form symbols by associating sensations with feelings and ideas, pain becomes invested with increasingly complex meanings. Specific painful experiences in childhood are influential in how a person perceives and experiences pain in later life.

During childhood, pain is frequently associated with punishment. This association may be exaggerated in children who are made to submit to painful forms or punishment to an excessive degree. As adults, they may suffer pain as a neurotic symbol to evade feeling guilty for some impulse or action by reviving a pain from their past and experiencing it as if it were in the present.

Some children receive love and attention only when they are suffering from a painful injury or disease. Later in life, they exaggerate a current minor ache or hallucinate a past pain in an attempt to regain the sympathy and concern they received when they suffered as children.

For other persons, pleasure and pain are inextricably intertwined. The equation, setup in childhood, that pain and suffering accompany forbidden pleasures and unacceptable impulses allows them to express both sides of the conflict.

4. CLINICAL FEATURES

Prof. Zaki has highlighted the neuro anatomical and neurophysiological model of pain, stressing the link of pain with emotion. Pain is currently perceived as a central perception, based on complex system of psychological, neurochemical and neurophysiological influences. Pain is at once a state and the need for action. When the need is constantly frustrated, a state of despair ensues.

Chronic pain patients tend to exaggerate the memory of their pain, and tend to remember more pain than they have previously recorded.

- a. *SOME PAIN SYNDROMES THAT COMMONLY BECOME CHRONIC PROBLEMS ARE:-*
- i. Post-traumatic pain (Causalgia)
 - ii. Musculo-skeletal problems I
 - a. Disc Syndromes
 - b. Low back pain
 - c. Headaches.
 - iii. Latrogenic from previous surgery
 - iv. Phantom pain
 - v. Neuralgias

Psychogenic pain may be a secondary symptom of psychophysiological disorder, or it may be a neurotic conversion symptom. In both situations, an underlying conflict, outside the patient's awareness, is active and involves a clash between dependent, hostile, or sexual impulses and opposing intrapsychic inhibitions, ideals, or cultural mores.

b. *PAIN IN PSYCHO-PHYSIOLOGIC DISORDERS*

Pain as symptom in psychophysiological disorders results from the stimulation of peripheral end organs, triggered by the emotionally induced physiologic dysfunctions_ Such as with pain of peptic ulcer, the discomfort originates with organic damage, which is the end result of chronic gastrointestinal dysfunction secondary to psychic conflict.

c. *NEUROTIC CONVERSION PAIN*

A neurotic conversion pain originates in the mind, but is experienced as if it were in the body. It derives from psychic representation (memories) of bodily functions that are used to represent unconscious conflicts in a symbolic manner.

The patient is aware neither of the conflict nor of the mechanism used to express it.

A conversion pain develops when the patient is unable to resolve current frustrating life situation. It permits the expression of the forbidden wish in a form not recognizable by the patient, and at the same time it imposes suffering for such a wish. It also removes the patient from disturbing life situation and provides a different way of relating — that is the sick role which is sanctioned by society. The patient for whom such a pain is serving well, feels little or no anxiety or depression and is indifferent to the pain.

Conversion pain may be based on pains reported to the patient by some-one with whom he has or had an intense ambivalent relationship. Such a pain is an identification with the other person with whom the patient is or has been in a conflict that he will not allow himself to recognize. Conversion pain may be a punishment wished on some one else.

Frequently, conversion pain is associated with:

- Localised tenderness
- Changes in autonomic function
- Motor weakness, and
- Hyperalgesia

d. *SOME SPECIFIC PAINFUL STATES*

While discussing psychogenic pain, it would not be out of place to mention briefly about the following states:-

- i. Masochism.
- ii. Phantom Limbs Pain.
- iii. Pain proneness.
- iv. Painful post-operative states.
- v. Psychogenic headache.

I. **Masochism**

In the masochistic life style, the patient suffers pain as a neurotic form of adaptation. Masochistic persons have learned to enjoy

suffering in order to assuage guilt impulses, fantasies, or actions. By combining forbidden gratification with self-inflicted pain, they avoid guilt. The pain itself is not originally a source of gratification, it is price the patient pays in order to avoid feeling guilty. The unacceptable impulses are often sexual ones, often sexual ones, and frequently a combination. Masochists seek-out situations that will be painful or make the most of an organically induced pain and think that they suffer from bad luck or maltreatment.

II. **Phantom Limbs Pain**

Although temporary phantom sensations of the distal portion of a severed limb are experienced normally, the sensation gradually disappear as the patient learns to accept the loss of part of himself and to modify his body image accordingly. People whose phantom sensation become chronic, painful and disabling are expressing their inability to accept the loss and then turning on themselves the resentment and hate connected with their misfortune.

III. **Pain Proneness**

In this, partially successful type of masochism, persons use pain to avoid or alleviate guilt. Such persons also have episodes of depression and difficulty in controlling aggression. They tend to be accident-prone and often have difficulty in handling success. They struggle with intense aggressive impulses, which they attempt to control by being loners and by suffering from various chronic intolerable pain syndromes, often connected with injuries at work.

IV. **Painful Post Operative states**

There are over-lapping syndromes in which a trivial injury leads to chronic pain, often associated with a non-healing wound and depressive symptoms and frequently complicated by litigation involving accidents.

V. **Psychogenic Headache**

The term "Psychogenic headache" is not precise, and not diagnostic. Headache is only a symptom and search should be

made to define the distress, Packard in a survey to explore the question of "What is psychogenic headache" found varying responses from physicians: 67% of physicians agreed that it meant tension headache, 26% ensured "No organic basis." A response from a psychiatrist was "the type of headache that is sent to us" _ Because this diagnosis is ill-defined, more specific terms like "muscle contraction headache" or "eadache with out a peripheral pain-inducing mechanism" may be preferred. To this definition the author (Ishrat) agrees.

In a well designed study, Budzynski, *et al.*, demonstrated that a combination of EMG feed back and home relaxation exercises are quite effective in curing/managing many tension headache.

Headache is a major complain of more than one half of the patients who seek attention of the physician. Hofling has pointed out that headache as such is a symptom which may be associated with a large variety of physiologic and psychological origin.

The most commonly encountered headaches are the "tension headaches" from sustained muscular tension and vascular constriction; these are frequently associated with disturbing emotional conflicts. Migraine headaches rank next in frequency followed by headaches associated with fever and septicaemias etc.

The diagnostic evaluation of headache is difficult because of the many ways in which the symptoms may vary and the fact that multiple etiologic factors, acting separately or in casual chains, may contribute to the symptom. The attending physician should have a working knowledge of the physiological mechanism of headache and the role that psychological factors play in the production of this symptom.

"Psychogenic Headache" - a loose designation.

In a small percentage of patients the headache can not be understood in terms of "end organ" mechanism and it has features that indirectly indicate that it is initiated at a cortical

level of the central nervous system. Such headaches previously have been loosely designated as “Psychogenic” and this classification, generally has not been taken to include those many kinds of headaches, e.g. migraine and tension headaches that are precipitated by - personality disturbances which initiate vascular and muscular physiological changes in the pain-sensitive structures of the head.

The so-called psychogenic headaches are composed of two broad groups of emotionally determined complaints. One is the type of headache conventionally called hysterical, this type of symptom is part of a conversion reaction. The other type of headache is that affected by the malingerer; it involves the feigning of pain to achieve consciously planned aim.

VI. Factors Influencing the Intensity of Pain

The perception of pain is influenced by several factors that include:

- a. The attention given by the patient.
- b. The degree of associated anxiety.
- c. The degree of associated depression.
- d. The secondary gain derived from the suffering.
- e. The cultural tolerance of individuals who expand upon the discomfort they are experiencing.

Other factor which should be taken into consideration are:

1. Age
2. Sex
3. Occupation
4. Social circumstances
5. Learning effects
6. Anxiety/mood
7. Personality

5. DIAGNOSIS OF PAINFUL DISORDERS

Pain is either “acute” or “chronic”. The point at which acute pain becomes chronic pain varies, but pain of over six months duration is usually considered chronic. Several clinical features differentiate acute from Chronic pain. Patients suffering from severe acute pain can usually give a clear description of its location, character, and timing. Furthermore, objective signs, particularly of autonomic nervous system hyperactivity, with tachycardia, hypertension, diaphoresis, mydriasis, and pallor, are present. Acute pain usually responds well to analgesic agents, and psychologic factors often play a minor role in its pathogenesis. By contrast in patients suffering from chronic pain, the localization, character and timing of the pain are more vague, and because the autonomic nervous system adapts, signs of autonomic hyperactivity disappear. Furthermore, chronic pain usually responds less well to analgesic agents, and psychological factors are more important than in acute pain. All of these factors may lead the physician to believe that the patients complaints are exaggerated since there are no reliable objective tests to assess chronic pain, the physician must believe the patient’s report, taking into consideration his age, his cultural background, his environment, and other psychologic circumstances known to alter reaction to pain. In general, the physician is wise to accept at face value the patient’s report of the severity of his pain unless there is over whelming evidence to the contrary.

For purposes of classification by pathogenesis, chronic pain can be divided into three categories, although the physician should realise that there is much overlap among these categories.

The FIRST GROUP is chronic pain associated with structural disease such as pain in Rheumatoid Arthritis, Metastatic Cancer, or Sickle Cell Anaemia. In these conditions, psychologic factors may play an important role in exacerbation or relieving pain but treatment of the pain by analgesics or therapy directed to the underlying disease is usually more helpful.

The SECOND GROUP of patients suffer from — psychophysiological disorders causing pain. In these patients, structural disease such as herniated disc or tom ligaments may once have been

present, but psychologic factors have engendered chronic physiologic alterations such as muscle spasm, which produces pain long after the underlying deficit has healed. Such patients tend to respond, poorly to analgesic drugs, but often respond well to combination therapy directed to the end – organ (e.g. injection of trigger points in muscles) and at psychologic factors which are disturbing them.

The THIRD GROUP of patients are those who complain of pain which appears to be caused by neither structural nor psychologic disorders. These patients are suffering from somatic delusions. Such patients have profound psychiatric disorders such as psychotic depression or schizophrenia, and the history of the pain is so vague and bizarre and its distribution so anatomic as to suggest the diagnosis. These patients respond ONLY to psychiatric therapy.

a. *Importance of History Taking*

A thorough history, general physical examination, and careful neurologic examinations are imperative in any patient complaining of pain. Often the description of the nature and distribution of pain is so characteristic (e.g., trigeminal neuralgia or tabetic tightening pains) that it allows no other diagnostic procedure. Inquiry should be made concerning:-

1. The temporal pattern of pain
2. Its distribution
3. Exacerbating factors, and
4. Relieving factors

b. *Psychiatric History*

A careful psychiatric history, looking particularly for signs and symptoms of depression, should be elicited from all patients. Specifically, physicians should inquire about the degree to which pain has interfered with the patient's activity, whether he is having difficulty in appetite or bowel habits. Early morning awakening, anorexia, and constipation are somatic manifestation of depression, and either may be caused by chronic pain or may exacerbate the effects of the pain.

c. *Measurement of Pain*

To ensure objectivity to a subjective feeling of pain is a great challenge, but should be the supreme aim of a diagnostician. It is usually taken up in patients in the chronic, without an obvious organic basis e.g. low backache. This approach should be utilized even more in patients presenting with pain with an underlying psychiatric illness.

Tests commonly employed by psychiatrists and psychologists are numerous, but only a few are enlisted here:-

- i. *PAIN DRAWING*:- Patient draws the anatomic location, boundaries radiation and extent of his pain with marks and shades. This not only clarifies the symptom but facilitates communication between the patient and the therapist and thus, help remove the barriers of language, educational status, and medical terminologies. This also documents, the reasonableness or otherwise of the symptom in patients who tend to magnify their claims.
- ii. *DRUG ABREACTIONS*:- Interviews are conducted under a semi hypnotic state induced by pentothal injection. Movements that induced pain in wakeful state may now be performed, and his reactions noted and compared. Emotional exaggeration is considered if there is a gross discrepancy. A similar state may be induced by suggestion - but both the techniques require specialized perfection and should not be taken up as routine outdoor procedures.
- iii. *MINNESOTA MULTIPHASIC PERSONALITY INVENTORY MMPI*:- is a very scientific, time honoured and widely used and accepted test which gives a meaningful personality profile. It gives scores of an individuals frustration tolerance, pain threshold, hysterical traits etc., alongwith his mental state in terms of psychiatric diagnosis.

It should be remembered though that such tests only categorise patients at the time of test and the same may not be true for the time of initial occurrence of illness or injury.

- iv. *SOCIAL READJUSTMENT RATING SCALE*:- It is based on the theorem that the time of disease or injury do relate significantly to personal, social, vocational and economic changes in patient's life.

High stress versus low stress are thus evaluated and this may enlighten the diagnostician about the causation of the disability.

An essential component and unavoidable adjunct to these procedures and tests is a personal unstructured as well as a structured interview which should be conducted by a trained psychiatrist/ psychologist.

d. *Diagnosis of Conversion Headache*

The diagnosis of conversion headache can not be made simply after medical diagnostic, procedures have proved equivocal or negative. To make the diagnosis, the psychological meaning of headache and associated complaints should be classified by thorough psychiatric history and insight and the hysterical character structure of the patient should be established including evidence that the psychological mechanism of conversion probably has been used in the past as well as in the present.

6. DIFFERENTIAL DIAGNOSIS

Pain associated with psycho-physiological disorders results when coping mechanisms, including conversion are ineffective or fail. Failure to cope with problems is experienced by these patients in term of anxiety, fear and feelings of helplessness; the activation of their biological systems lead to physiologic changes, such as tachycardia, sweating, vasoconstriction and hyperperistalsis.

- a. Conversion symptoms are common among persons with hysterical character structures. These patients are apt to be

histrionic in describing their pain and vague in describing the circumstances surrounding its development. This pain does not correspond to anatomical or physiological reality. Such patients demand attention, admiration, and support from the people they are involved with, including their physicians. Women of this type are often seductive in their manner and at the same time find sex distasteful. A past history of previous conversion symptoms, phobias, and repeated surgical operations for abdominal pain of obscure nature is common.

- b. Psychogenic pain is some times a symptom in neurotic and psychotic depressive reactions. A marked depression may be manifested by a conversion pain - for example, a toothache or other mouth pain in a patient with an intense conflict over biting impulses.
- c. Complaints of pain play a large role in hypochondriacal syndromes. Such pains are wide spread, vaguely and bizarrely described, and linked with feelings of anxiety and depression, often with hints of paranoid thinking.
- d. In some schizophrenies pain appears as a somatic delusion. Association disorders of thought, volition and perception help to make the diagnosis.
- e. The malingerer who complains of pain is usually evasive, in contrast to the patient with conversion pain - who relates well to the physician. Malingering occurs in person who have an obvious gain to be achieved by being sick.

The differentiation of psychogenic pain from neurogenic pain, that due to damage to the peripheral or central nervous system is made on the basis of a history of injury to the nervous system, and the burning, persistent, disagreeable, and diffuse quality of neurogenic PAIN.

7. MANAGEMENT

Pain is the most common symptom for which patients seek medical assistance, and chronic pain is among the most vexing problems which

physicians face. Posner has rightly commented that pain can have no precise definition because only the individual suffering it not the observer - perceives it.

Pain always has two aspects: The first is an emotionally neutral perception of a stimulus which is usually sufficiently strong to produce tissue damage; the second is an affective response to the perception of that stimulus. Pain implies damage to the organism, either: physical or psychologic, and chronic pain, if untreated, will itself damage the organism. It is the physician's two fold therapeutic task to discover and treat the cause of pain and also to treat the pain itself whether or not the underlying cause can be defined and treated. To meet this two-fold task, the physician must know something of the anatomy, physiology and biochemistry of pain pathways.

“PAIN IS A BENEFICIAL FUNCTION IF NOT MISUSED”

Effective natural discipline, if it is true, may be painful at the moment. But the effective use of pain in accord with natural laws, is invariably beneficial. Misuse is another story entirely.

Walter Cannon studied pain and hunger, and their bodily effects, alongwith fear and rage. He treated all four as useful motivations because, in their bodily results, the facts seemed to prove they naturally were beneficial functionings.

We seldom think of pain as a friendly creation because it hurts. But it has to hurt to benefit us. The tooth must ache, and ache hard enough, to drive us to go to the dentist and have it treated before it is destroyed. The pain in the right lower quadrant must hurt sufficiently to drive us to seek diagnosis and treatment (to remove the cause) before the infected appendix abscesses, ruptures, and causes a deadly peritonitis. The fire must bum our finger to teach us to avoid burning ourselves to death.

Nobody can or should like pain. But that is no reason denying its essential, beneficial function.

But pain, to serve its natural function effectively, is always appropriate in both severity (degree) and kind, as measured by our

socially useful performance in responses to it, The pain of a foreign body in the eye, even though this be, but a grain of dust drives us unmercifully to take steps to preserve our vision. It quite literally demands that the cause be removed. It gives us no rest until it is removed. If it failed to so drive us, many of us would be blind from scars on the cornea, before we reached adulthood. The acute tenderness of the cornea is appropriate in degree and kind to serve its essential function effectively;

Any physician who uses drugs to relieve pain due to a removable foreign body, would be guilty of interfering with this essential, disciplinary, natural function if he failed to remove the cause. The physician who relieved the pain of appendicitis with opiates before making a diagnosis and making arrangements for operation, when indicated is guilty of - malpractice. Physicians, now fully accept this need for the effective natural disciplinary action of natural pain in the physical realm.

We have not realized that mental pain is intended to serve the same purpose in preventing mental disease. It has hardly occurred to us that emotional upsets, often more painful than any pain due to organic disease, demand the removal of the cause, point the way to removing the foreign body in the mental eye of the patient and will drive the patient to remove it given the free opportunity. The physician has no right in psychiatric conditions to use pain killers whether they be chemical or reassuring words-which have no basis in demonstrated fact, instead of learning to use discipline, in accord with natural law, to remove the cause.

Sommelweis was probably accused of being unorthodox and medically unethical. Actually he was living up to one of the fine traditions of medical discipline. He began by disciplining himself. He stopped his own unsafe practice first, thus living up to the first and most important item of medical ethics. He put the welfare of the patient first at the cost of great pain for himself.

Pain whether physical or emotional in origin actually promotes a maximum of comfort in life for the individual when correctly implemented in disciplinary action. Pain, in this sense, provides for a maximum of self-coding-effective cuddling. It is an agent that does

every thing possible to drive us to maintain ourselves in the best possible, comfortable state of physical and mental health. Primitives and wild animals cuddle their young, when cuddling is appropriate, beneficial and safe.

Effective medical management does the same. Effective cuddling is an intelligent expression of self-interest.

Pain, in patients should be managed by treating the underlying disorders, but the management is very difficult of patients in whom the underlying cause is either obscure or the pain is chronic in nature. The attending physician is able neither to treat the undefined underlying disturbances nor to offer specific therapy for that type of pain. In such situation following principles should be followed by the physician:-

- a. The pain should be treated by the simplest effective means. The aim should be to relieve or obviate the physically debilitating and psychologically demoralizing effects.
- b. The pain should be treated early. In general, the earlier one undertakes to treat pain, the more successful one is.
- c. The pain should be treated promptly. The dose and time intervals of the medication are important factors. The patients should be encouraged to take prescribed drugs when the pain first appears rather than wait until it becomes unbearable.
- d. In order to augment medication as many drugs are additive, more than one treatment should be utilized rather than separately.
- e. Narcotic drugs should be used with discrimination, but they should not be withheld if no alternative therapy is effective. However, it should be remembered that long term use of narcotics produces tolerance and physical dependence.
- f. Psychogenic factors always play a role in chronic pain - the pain is more severe when the patient is anxious and stressed and less severe when he is relaxed. The treating physician must assess the psychological factors in any patient with pain.

However, no patient should be diagnosed as having “psychogenic Pain” until an exhaustive examination has ruled out structural disease.

Psychiatric consultation is necessary if psychogenic factors are causing the pain.

Depression, whether endogenous or reactive, should be treated with antidepressant drugs. Tricyclic antidepressants appear to have analgesic properties, and may be effective in relieving pain by themselves, more frequently they are effective as analgesic adjuvants.

Psychiatric consultation is necessary if psychogenic factors are causing the pain.

- g. Placebo effects are important. The physician should utilize a patient's drive to be free of pain by approaching the therapy in an enthusiastic and reassuring manner. It is less important whether it is the placebo or the drug which was effective than that the patient be relieved of his pain.
- h. *Multi-disciplinary pain clinics* which diagnose and treat pain should be established of which the Community Psychiatrist and Acupuncturist are most important members of the team.
- i. *Abolition of Pain by Trance State*: The role of trance state and hypnosis in abolition of pain has long been accepted. The basis suggested is change of attitude as well as certain biochemical changes which seem to occur with these states. This seems to hold for moderate, slowly rising intensities of pain, but much less effective for sudden or severe pain,

8. MANAGEMENT OF TENSION HEADACHE

In approaching the task, the physician should prepare himself with knowledge of the distinguishing characteristics of the different kinds of headaches as well as with the range of tests and techniques useful in differential diagnosis. However, that would be an unpardonable error of diagnosing a physiologically determined

headache as psychological and to treat it only by psychological means and to diagnose psychologically determined headache as completely physiological and use only such a means of treatment.

The preferred treatment of conversion headaches is psychotherapy. Medications should be used sparingly, for it is only of transient avail and it may lead to habituation.

The doctors should learn about his patient's life adjustments before the development of the painful syndrome and about the psychological and social setting in which the pain was first experienced. To gather this information, the treating physician should use an interview style that elicits psychological and inter- personal data concurrently with the bodily complaints.

Insight psychotherapy is indicated for patients who are willing and able to deal with their emotional problems. However patients who are unwilling to face their problems are likely to become depressed or to develop another complaint or a behavioural symptom when confronted with their intrapsychic conflict. The physician can best treat these patients by helping them to learn to live with their pain.

Analgesic drugs probably owe their effect in eliminating psychogenic pain to their role as placebos. For patient is whom pain represents depressive equivalent antidepressant drugs, and if the drugs are ineffectual, electro-shock therapy are of value. The phenothiazines are effective in relieving pain that represents a somatic delusion.

Behavioural modification therapy trains the patients to give up his pain habit and to learn healthier patterns of adjustment. Hypnotherapy is of value in some cases for the short-term relief it offers, but it rarely gives the patient lasting relief. When patients are relieved of psychogenic pain, persuasion, suggestion, and positive doctor - patient relationship are essential ingredients.

Neuro-surgical procedures are resorted to in patients with chronic psychogenic pain when other measures fail. Incisions, excisions, and electrical stimulations at all levels are often followed by pain relief but it is usually short lived.

In management of patients having pain (7 psychogenic) the following aspects as mentioned by Dale i.e. the biofeedback training, relaxing techniques, family counselling and assertive (Social Skill) training would be very helpful. Insight-oriented psychotherapy would be treatment of choice.

9. PSYCHIATRIC MANAGEMENT OF PAIN IN GYNAECOLOGICAL PRACTICE

Munro 1973 has very rightly commented that there are many gynaecological conditions in which psychological factors appear to play a significant part - and it has been known for a considerable time that women psychiatric patients are excessively liable to complain of menstrual abnormalities. Cooper (1965) found that 25 per cent of a group of psychoneurotic women had consulted doctor about their menses, 20 per cent had a dilatation and curettage (D and C) and or tonsillectomy and 25 per cent had an appendectomy.

No one would deny that many psychiatrically disturbed Women need gynaecological help but there is a well founded suspicion among psychiatrists that many women patients are investigated and operated on because they have importuned the surgeon for having pains etc., rather than because there were positive reasons for the procedure being carried out.

The author (Ishrat) during his long experience as a Consultant Psychiatrist in the country knows that considerable number of women come for psychiatric help having had fairly recent gynaecological operations and at times the suspicion is that the operation was carried out because the patient was making a hypochondriacal complaint. Purely as a practical measure, and aside from any fanciful psychosomatic theory, it is incumbent on the general practitioners and the gynaecologists to take much more note of the patient's emotional state before hurrying off with an essentially elective procedure and in some cases it would be best to enlist psychiatrist help at that early stage.

It is still a widely held belief that the possibility of any physical disorder should be eliminated before a psychiatric diagnosis is made, specially in patients complaining of vague pains but this is bad medicine.

A primary psychiatric diagnosis can be and should be made and the appropriate treatment carried out at the earliest possible moment, alongside treatment of a somatic condition, if need be. Ignoring the psychiatric element often leads to un-necessary physical investigation and treatment and an unsatisfactory outcome.

10. PUNISHMENT IN PSYCHOGENIC PAIN

The Arawaks had developed a system for disciplining their children which made slapping almost unknown. They had discovered how to prevent the need for the ever-lasting and in effective nagging, scolding, fuming and fussing all too common in our homes which too often_ ends up in punishment worse than slapping. More than a quarter of century of expertise on the part of the author (Isirat) seems to demonstrate the Arawak principles are fully applicable and equally effective, in curing and preventing these behavioural ailments in any civilization.

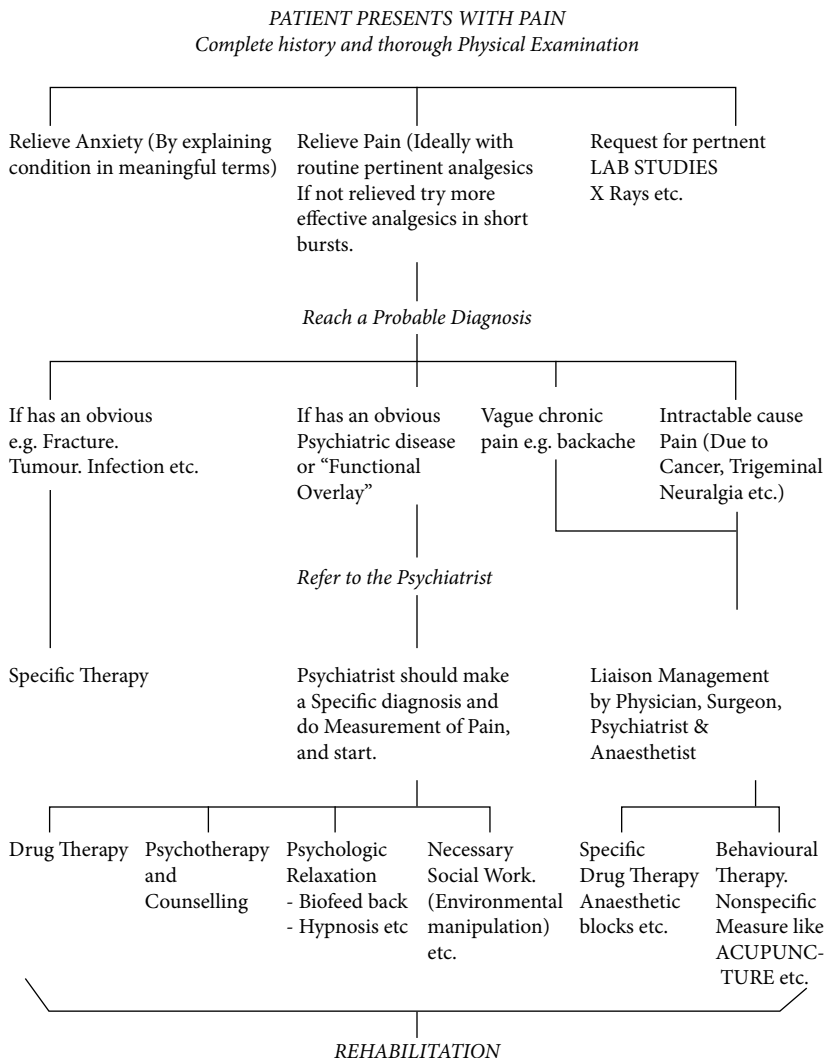
11. SUMMARY OF THE PRE-REQUISITES OF THE MANAGEMENT

Whatever medical, surgical, or psychological measures the physician uses in the management of psychogenic pain, it is imperative that the physician understands and deals with his patients as persons and in so far as possible, deal with the forces that drove him to his dismal choice of pain.

12. MEDICATION ERROR

As Klein has pointed out, medication, especially in patient with pain is often used on emergency singly dose basis purely for the control of episodes of the pain rather than as pan of a treatment plan. Such adhoc medication is frequent when a physician is vacillating between a purely psychosocial approach and the decision that such an unalloyed approach is not the answer for his patient's difficulties. Such footless treatment lead to the worst of both worlds leaving the patient with the hopeless belief that medication was tried and it failed. Medication - dosage, timing and continuity as advised is a hallmark of success in dealing with such patients.

To summarise and to provide a quick reference to the Physician who is managing PAIN – a How chart follows:



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ROLE OF NEUROSURGERY IN THE RELIEF OF PAIN

Nazeer Ahmed Qureshi

Neurological surgery has an important role to play in the management of various pain disorders. It is materially impossible to discuss each in detail, and therefore a brief account of the more important conditions is presented, viz:

1. *Trigeminal neuralgia.*
2. *Dorsal rhizotomy.*
3. *Cordotomy.*
4. *Mesencephalotomy.*
5. *Sympathectomy.*
6. *Relief of pain by intracerebral stimulation.*

1. **TRIGEMINAL NEURALGIA:** When carbamezapine fails to provide effective relief, some sort of a major or minor surgical procedure is indicated.

A) *Minor Procedures:*

These include supraorbital and infraorbital nerve avulsions for first and second division pain. This causes anaesthesia in the trigger areas with pain relief which may last for as long as upto two years. However the pain invariably returns as this is a form of postganglionic section. The supraorbital nerve is approached via an incision over the medial part of the eyebrow whereas the infraorbital nerve is reached through a sublabial incision.

B) *Major Procedures:*

- i) *Extradural trigeminal root section:* is done via a small temporal craniectomy followed by a careful extradural approach to the trigeminal ganglion. Now the sensory root of the trigeminal nerve is identified and the fibres forming the second and third divisions are divided. Pain recurs after this procedure in about 15% of cases.
- ii) *Intradural sensory root section:* entails opening of the dura after temporal craniectomy, lifting of the temporal lobe, and incision of the dura over the ganglion. After this the sensory root is identified and divided.
- iii) *Microvascular decompression in the posterior fossa:* is indicated in patients younger than 70 years. This is based on the theory that most cases of trigeminal neuralgia are a result of irritation of the trigeminal root by an arterial loop in the posterior fossa. A unilateral posterior fossa craniectomy is done on the side of pain, the cerebellum is retracted, and with the help of an operating microscope the trigeminal nerve is identified. A loop of superior cerebellar artery is usually seen compressing the nerve which is carefully freed and a small piece of muscle or gelfoam is placed between the artery and the nerve. This operation has the advantage over other procedures already mentioned in that no nerve is cut and hence all sensations are preserved. As the cause of pain is removed there is no recurrence.
- iv) *Trigeminal tractotomy:* This procedure destroys the descending fibres of the trigeminal tract in the medulla via percutaneous stereotaxic approach.

2. DORSAL RHIZOTOMY:

Sectioning of the posterior roots causes complete anaesthesia in the supply zone with preservation of motor power. In the limbs however the sectioning has to be selective as total sectioning causes loss of proprioceptive sense with incoordination. Best results are obtained

when the painful process is localized so that a limited rhizotomy can be performed. Occipital neuralgia responds to C 2-3 denervation. For intercostal neuralgia two roots above and below the affected area are divided. Pain of myocardial ischemia responds to unilateral or bilateral T1-4 rhizotomy. It is superior to cordotomy for pain arising in the upper cervical, thoracic, and upper lumbar regions. The site of operation is confirmed by preoperative radiological methods and placement of a marker. A laminectomy is performed at this level and the dura is opened. With the help of an operating microscope the dorsal roots are identified and divided with a bipolar coagulator. The dura is closed in a watertight fashion.

3. **CORDOTOMY:**

In this procedure the spinothalamic tracts carrying pain and temperature sensations in the antero-lateral part of the spinal cord are divided for pain relief. This can be done either stereotactically or by an open operation. These procedures are indicated for patients with pain below the mandible of a somatic nature. It is specifically indicated for cancer patients with limited survival, as the effect of this procedure gradually wears off within 1 to 2 years. Sharp lancinating pain is conducted by spinothalamic tracts and responds best to this procedure. Dysaesthetic pain is not responsive to cordotomy as it is transmitted in different pathways. The procedure can be done by an open operation at thoracic or high cervical levels, unilaterally or bilaterally, A hemilaminectomy is performed at T1-2 level on the side opposite to pain for thoracic cordotomy. Dura is opened as a small flap based laterally and the denticulate ligament is identified and divided. It is grasped in a haemostat and the cord is gently rotated posteriorly. The spinothalamic tract occupies an area from this ligament to the anterior root entry zone. A sharp knife incises this part of the cord. For patients with pain in the chest, arm, brachial plexus etc. a similar procedure can be done at C1-2 level. For bilateral pain it is better to do Commissural Myelotomy. This divides the fibres in the anterior commissure which bring pain impulses from both sides of the body.

4. MESENCEPHALOTOMY:

This procedure interrupts the spinothalamic and trigeminothalamic pain pathways in the midbrain. This should be used as the last resort for pain relief when everything else has failed. This is recommended for intractable pain from carcinoma of head, neck, and brachial plexus. The procedure is done stereotactically by an electrode introduced through a burr hole in the frontal region on the side opposite to the pain. It has a 5% mortality and a 40% complication rate,

5. SYMPATHECTOMY:

Sympathectomy is indicated for relief of different types of causalgias, which are characterized by severe pain of burning character with cutaneous hyperalgesia. It may occur after injury to a mixed nerve after fractures, infections, burns etc. There is some sort of sympathetic overactivity which responds to the operation] Phantom limb pain is no longer believed to respond to this operation. Cervico-thoracic sympathectomy removes lower third of stellate ganglion and upper two thoracic ganglia.

6. INTRACEREBRAL STIMULATION:

Three areas in the brain are being presently studied regarding stimulation for pain relief viz; thalamic nucleus ventralis posteromedialis or posterolateralis, posterior limb of the internal capsule lateral to these nuclei, and the periventricular grey matter along the wall of the third ventricle near the posterior commissure. In the midbrain periaqueductal grey, opiate binding receptors have been identified to which binding substances produced in the brain known as "enkephalins" and which resemble morphine in their analgesic effect. It is believed that stimulation in this region causes increased release of enkephalins causing pain relief This method of pain relief is still in the experimental stages and different workers have achieved different levels of success.

ROLE OF DIAGNOSTIC RADIOLOGY IN PAIN

M. B. Zafar

1. *Introduction.* Diagnostic radiology is defined as organ imaging technique by means of X-rays or allied sources of energy. These allied sources of energy may be ultrasound (echography), radioactive emissions **radioisotopic** scanning, magnetic energy (nuclear magnetic resonance), infrared rays energy (thermography) and so on.

Recent imaging techniques like xerography etc. are also inclusive. *Diagnostic radiology enjoys a very important place in detecting the cause of pain.* Infact it is used as a routine in most (if not all) cases of pain anywhere in the body. In a percentage of cases, relief of pain can also be brought about by radiological means. In many fields precise cause of pain becomes apparent and draws the attention of treating clinician, towards possible remedies available, to remove the cause of pain. In our experience, the clinician can some times be confused about the exact site of pain and diagnostic radiology can, in those cases, pin point the exact location. To cite two examples, the patient has many time presented with pain in upper abdomen and has been suspected of pain in gastrointestinal tract (GIT). A barium examination is thus requested. However, on skiagraphic study, gall stones may be found and patient treated accordingly. It could be vice versa, also. Second example which can be quoted is that of a common ailment of backache. On suspicion of renal cause of pain in the back, urography is advised but on thorough study of abdominal films, it may be the spine which is involved, say in caries spine or vice versa.

2. *The aim.* Aim is to have a bird's eye view about how best to exploit the diagnostic radiological armamentarium in patients with pain.

The aim is not to cover full details or even to encompass all types of pain, because of scope and space. These notes include only general information and that which is really common place in the form of recapitulation of accepted facts.

The system adopted is to start with head and neck and descend down the body, in an arbitrary fashion, because of certain limitations in a work like this. The skeletal system and soft tissues, which are present in all regions will be touched upon towards the end.

3. *Regional study*

- i. *Headache.* Causes of headache are innumerable but to highlight the role of radiology, in unveiling the cause of headache, we shall consider some selected conditions, e.g. brain tumours, paranasal sinus conditions and refractory errors in the eyes. If cause of headache is bone tumours then skull X-ray may show increased vascular markings, erosion of sella turcica, hyperostosis of skull bones or their erosion. On CAT scanning erosion is seen better but what is more striking is that soft tissue density changes in brain substances are picked up early. This technique though is very costly, and not universally available in Pakistan, should be fully exploited when available. Abnormal calcification and displacement of normal structures by space occupying lesion can be detected. Latter is easily done by echography, which is a harmless and easy technique.

Headache is caused by sinus infection and tumours. In our experience many patients who went to eye specialist for checking up of their possible refractive error in eyes as cause of pain in eyes, landed with us for sinus X-rays. Paranasal sinuses X-ray study revealed that it were their sinuses which were found to be affected. By simple skiagraphy destructive changes in bone due to carcinoma of sinuses can be visualised. Once the cause has been located, appropriate treatment can be instituted.

- (ii) *Neck.* Simple skiagram of neck can give clue to pain of shoulders and down the arm. Most commonly it is the osteophyte formation (spondylosis) which impinge, on adjacent intervertebral foramina and press on nerves passing out through them. Sometimes, if pain happens to be in left shoulder, it creates, apprehension in the minds of both, the physicians and patients that it may be of cardiac origin. Cervical spine skiagram may give out the cause as spondylosis and relieve the anxiety (see below cardiac pain and GIT study). In such cases role of diagnostic radiology becomes quite apparent in pain.
- (iii) *Chest pain.* We can divide chest pain into, that of cardiac origin or the one related to respiratory system. In both these situations radiological investigations are quite important.
- (a) It has been mentioned in foregoing paragraphs that cardiac pain may be mimicked by cervical spondylosis. Similarly some gastrointestinal conditions like hiatus hernia, can give rise to symptoms like those of cardiac pain. A double contrast barium study of GIT may solve the problem. As a matter of fact GIT barium series is almost becoming a routine investigation in suspected cardiac pain.

Even in cardiac pain chest X-ray is taken routinely, firstly to exclude associated causes of pain in the lungs etc., secondly to see the condition of heart and changes in the lungs subsequent to acute failure. Similarly, pericardial effusion can easily be detected by echography, which is the technique of choice, if pericardial effusion is suspected. This technique is totally harmless in the diagnostic range. Trauma of chest is considered later under this general heading. Angiocardiography and cardiac catheterisation are now quite in use in finding out the cause and area of myocardial infraction.

Thallium scanning (thallus chloride in doses of 2.5-3 uCi) is less invasive, diagnostic radiological procedure to pick up infarcted area in the heart muscle.

- (b) Respiratory pain may be due to many conditions but the main ones which will be considered here are pneumonias, pleural effusions, bronchogenic carcinoma, mediastinal tumours and caries in thoracic spine. The last one will be discussed with backache.

Pneumonias are quite common and pain a frequent symptom. Only PA chest film may clinch the diagnosis and if the pneumonias are of secondary type, then basic cause (e.g. bronchogenic carcinoma) may also be unveiled. Similarly in pleural effusion, Radiography is most of the time rewarding in defining the cause of pain in such case. In tumours like bronchogenic carcinoma, lymphomas, and other mediastinal tumours, pain in chest is common. PA and lateral views of chest, tomography and barium studies are helpful in these cases. CAT scan is a technique par excellence to see detail of enlarged glands, erosion in bones and displaced vessels etc.

In pulmonary infarcts the cause of pain and area involved can be mapped out by radioisotopic scanning. Ventilation and vascular scans are done and the matching defect on both of these, can give lot of information. Dissecting aneurysm of aorta can give rise to acute chest pain and arteriography help us to see the cause.

(iv) *Abdomen*

- (a) Abdominal pain may be considered mainly in two categories. One is acute pain and second is chronic and dull type. In both these types, diagnostic radiology

plays a very important role in diagnosis. In acute intestinal obstruction paired plain abdominal study in supine and erect positions, can show its cause, type and level of obstruction, in most cases. Contrast study in acute peptic ulcer can detect the ulcers. Emergency arteriography can locate bleeding peptic ulcer and emergency radiography is used in perforation also. In intussusception, the diagnosis can quite often be made by emergency barium enema study. Radiology has therapeutic role also in pain of this origin and will be mentioned in the end of this chapter. In acute appendicitis some times appendicoliths can be demonstrated and in chronic appendix pain, and appendicular abscess can be outlined on plain abdominal film.

Other acute pains are related to urinary and biliary systems. There are many radiological modalities at the service of patient to find out the cause. Plain control film will show radio opaque urinary calculi and gall stones. Excretion urogram and isotopic scanning further help in locating the cause of pain. They also determine the level of excretory function of kidney. In the biliary system cholecystograms of various types (oral, intravenous bolus or infusion techniques etc.) can help in full assessment of cause of pain, particularly radiolucent stones.

In renal tumours dull pain is usual. Echogram can differentiate between a cystic and solid space occupying lesion. In outlining the true extent of cyst, renal cyst puncture and double contrast study is carried out. (It has therapeutic value also for which, please see later).

In carcinomas, angiography outlines the whole extent of tumour. Extension of angiography in the form of embolisation is described later.

- (b) *Backache*. Can occur in any region but is common in the lumbar region, therefore, it is considered here. The description can apply to other regions of spine as well, e.g. cervix spine. Backache is usually due to bone involvement. Here, only the infection (cervix spine), tumours, secondary deposits and congenital deformities are considered.

Cervix of spine is quite common in our country and only plain films will, most of the time, give cause of pain. Once diagnosed, this is a treatable condition. Osteopaenic change, reduced intervertebral disc spaces and collapse of vertebral bodies will be evident. In tumours, it is usually the pedicles which are involved and IV disc spaces remain intact. Secondary deposits can be osteolytic or osteoblastic. These appearances are well visualised and can be a pointer to the cause e.g. osteoblastic secondaries may be from prostate (skeletal survey and isotopic imaging will be mentioned in the consideration of skeleton). In developmental anomalies like sacralisations, vertebral defects, diastomatomyelia, besides plain radiography myelogram is also of value. Liver pathology can cause subdiaphragmatic pain, so does subdiaphragmatic abscess. Plain study, echography, isotopic study, fluoroscopy of diaphragm can solve many a problem in this region. ERCP, PTC (percutaneous transhepatic cholangiography) are other tools in the hands of diagnostic radiologist to further elicit the cause of pain.

- (v) *Pelvis*. Lymphadenopathy e.g. in lymphosarcoma may be best visualised on CAT scan. Lymphography can outline the lymphatic system beautifully. Genital conditions particularly in females, which cause pain or dull ache include fibroids in uterus, carcinoma and cysts. Radiography will outline say calcified fibroids, soft tissue outline of cysts and erosion of bones by carcinoma. Contrast studies are required to pin

point the abnormality in uterus and gynaecography can be done in expert hands.

- (vi) *Skeleton*. Acute pain occurs in fractures. This is considered in a subsequent section under trauma. Other causes of pain are infections, tumours and secondary deposits. The role of radiology in diagnosis of these conditions is common place and really needs no further elucidation. In tumours pain may be presenting feature. Main role of radiology here, is to differentiate between benign and malignant lesions. This can be confidently done on plain radiography. It will make a lot of difference to the patient. Benign lesion means relief to the patient psychologically and malignancy, a loss of may be a limb. In secondary deposits vague pain is usual. Skeletal survey is done to search such deposits and to find out the extent of skeletal involvement. The best study now is the isotopic whole body imaging by gamma camera.
- (vii) *Soft tissues*. Breast carcinoma and benign pathological states may cause discomfort and sometimes pain. Again the main role of radiology in this situation also, is to differentiate between benign and malignant lesions. Mammography supplemented with thermography and xerography can do that job excellently well. Nuclear magnetic resonance has also been promising in this field.

Leg pain is a common symptom in venous thrombosis. Venography is a simple technique which will show the lumen of veins well and therefore cause of pain can be found out. Varicose veins can also be demonstrated.

Soft tissue ligamentous calcification is one of the early signs in spondylitis ankylopoetica. This is cause of backache in young patients. Proper radiography can show earliest specks of calcification at thoracolumbar junction, on AP skiagrams of this region of spine. Further confirmation will be forthcoming by bone radiography of sacroiliac joints. Soft

tissue injury of ligaments of joints are a common cause of pain. These are best studied by arthrography and contrast entering into tom soft tissue areas, outlines its entire extent fully. In pain of Raynaud's phenomenon, angiography of affected part is quite rewarding.

- (viii) *Trauma* is the commonest cause of pain in the body, particularly in armed forces. In injury of the body, X-ray of affected parts of the body is again a routine. It helps to exclude fractures and if latter is present the extent, position and type of fragments is best visualised on plain film study.

In chest trauma, rib fractures, surgical emphysema, haemothorax and pneumothorax etc. are causes of pain and simple chest X-ray can give a lot of information and help in the management of causes.

In avulsion injury of large vessels in accidental cases, emergency arteriography is now a routine procedure in developed radiology departments. In abdomen, viscera like kidney may rupture and again emergency arteriography reveals lot of information. Rupture of urinary bladder is best studied by urogram and cystogram. Urethral ruptures are studied by urethrography.

- (ix) *Skin*. Only one painful condition like herpes zoster is mentioned. Its cause may be bronchogenic carcinoma, which can be investigated radiologically.

4. *Therapeutic role*

Pain occurs in renal carcinoma, meconium ileus, intussusception, renal cysts, ureteric calculi, lymphosarcomas etc., to mention a few common conditions.

Besides diagnostic role in these conditions, therapeutic value of radiology is also well established.

In those cases of renal cell carcinoma which are inoperable, embolisation of pathological vessels is the only palliation which

can be offered to the patients. After this, size of tumour regresses and thus the pain is reduced. In renal cyst, if puncture is done under echographic screening and fluid drained, the pain is reduced. Further oily contrast media like pantopaque have been injected into cysts and this initiates fibrosis causing reduction in size and even disappearance of cysts. A small ureteric calculus can pass out under the influence of diuretic effect of urographic contrast media. Emergency urography is now accepted as established procedure and has both diagnostic and therapeutic roles. The patient may become totally symptom free after this investigation.

Meconium ileus causes discomfort and abdominal pain. Gastrografin enema is now a well entrenched technique used in this condition. This hypertonic solution withdraws fluids from the tissues, and liquifies hard meconium, which is later expelled out.

In intussusception, the diagnosis is confirmed and reduction can be accomplished by proper technique of barium enema. Lymphography is used for therapy in pain due to lymphosarcomas etc. by injecting radioactive substances at lymphography. In trigeminal neuralgia, the neurosurgeon performs block injections (alcohol) in trigeminal ganglion and approach is through foramen ovale. Needle insertion is controlled by radiography of base of skull. It is a radiological help in therapeutics.

4. *Conclusion.* The role of diagnostic radiology in the detection of cause of pain is well known and well established. Its routine use is required in the proper management of pain. The scope and space allotted did not permit full account. Some common conditions have been mentioned just to advocate the place of radiology in investigation of pain in any and every region of body. Its use is indispensable in any pain clinic. The therapeutic role of radiology is highlighted to remind those who may be unaware. Well developed radiological services in any pain clinic will be worth the trouble taken to establish the same. Emergency procedure in diagnostic radiology can be helpful.

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ROLE OF ORTHOPAEDICS IN PAIN

M. A. Cheema

Orthopaedics is the science of locomotion. Locomotion is another name for progress. Little progress is possible with painful movements of human frame. Prevention of pain with foresight and if it does develop, its treatment, is the main challenge to an orthopaedist, whose entire efforts are reserved for keeping the human motor, pain free, well greased and functioning efficiently, without any clinks and clonks. The sources of painful stimuli in orthopaedics are soft tissues and bones.

Soft tissues form an enormously major proportion of problems faced, much more than is generally recognised. Not only that these are thought to be trivial and ignored, but also require a greater acumen and wisdom for management. Since soft tissue injuries do not show on X-rays, it does not mean that these are of little consequence, their sequelae last while the fracture heals. If given a choice between sustaining fracture and torn ligaments, wise will always prefer a fracture. Monitoring of injury and progress in healing of fracture is easy, not so in ligaments, as these do not show on X-rays.

Again it is a common experience that a patient with a fracture shaft, after healing of fracture will not complain of pain at fracture site, but rather in the adjacent joints, once the process of mobilisation has started. The source of pain is not the bone but soft tissues. One major contribution in orthopaedics in the last couple of decades has been, the recognition of importance of soft tissues in fractures. The soft tissues distinguish an orthopaedic surgeon from a carpenter.

The proverbial, black, ingratitude that was thought to be lodged in the bones, had been in soft tissues all along. The recognition has come a bit late, or may be, of late, it has spilt over into soft tissue! More pain and morbidity is the result of the neglect of soft tissues

than of fracture itself Education of all concerned, particularly of the patient is of paramount importance, in improving upon the results of trauma. Prevention is better than cure. The attention to soft tissues must start the moment there is an injury to the bone. With emphasis on physiotherapy, physical medicine, and rehabilitation the future of orthopaedics looks bright.

Pain from soft tissues is from trauma to muscles, ligaments, periosteum and synovial membrane. By clinical evaluation it should be pinned down. More than one tissue may be injured. Treatment will depend on severity of injury, conservative or surgical.

One important factor however should be remembered that any sprain or rupture of ligament will leave some tell-tale scar and weakness; and may leave permanent disability and pain. The only way to prevent it, would be to supplement it by muscle power, more than was present at the time of injury. Hence the exaggerated importance of physiotherapy. We cannot improve upon our ligaments, but certainly on muscle power. Hypertrophied muscle mass of body builders due to specific exercises prove testimony to the fact.

Our skeleton gives us our personality and height. Bones are tower of strength, Like stoic soldier, these are not of complaining type. Crying with pain is not a characteristic of bone. Bones are far too noble for that. Periosteum, more than endosteum may let down the bones. Muscles when see bones in agony, cannot stand it, and undergo spasm, which again is the cause of pain. Pain therefore, in orthopaedics is an essentially soft tissue affair. If we cater for soft tissues, pain will be taken care of. Causes of pain arising from soft tissues are far too diverse to be included in this chapter. The usual headings under trauma, infections, malignancy and degenerative disorder cover them well. The treatment is of cause as far as is possible. Degenerative disorders form the bulk of patients. Symptoms of pain may not correlate with radiological changes which may be normal wear and tear, to gross changes. Minimal radiological signs and lot of symptoms. Like small dogs which bark the loudest. When radiological changes correlate with symptoms, the treatment becomes more aggressive. Oral analgesics, chiropractic manipulation physical therapy, steroid injections, Manipulation under

anaesthesia, are the usual gimmicks; in that order. Surgery is the last court of appeal.

Although antirheumatic drugs (NSAIDs) have mushroomed and are used widely and wildly, the role is only symptomatic, there is always a price to be paid for their use, in the form of untoward reactions, due to the prolonged use.

Physical medicine therapy is a better proposition, when applied sensibly. As adjuvant in orthopaedics, its role is unsurpassed. This will not only prevent complications, like contractures, but can offer great relief in pain. A painfree joint will move better, and will improve the quality of a patient's life.

Mobilization and immobilization, are two divergent forms of treatment for control of pain in orthopaedics. Each has to be applied intelligently and one cannot replace the other. The patient is usually locked in a double bind. Joint would not feel better, unless he uses it, but he cannot use it, until it feels better. Physical medicine is a great asset in orthopaedics. A good trained therapist is worth his weight in all the NSAIDs available.

ROLE OF SURGERY

Most if not all orthopaedic surgery is concerned with pain. Either to relieve pain or to prevent it. This applies to simple splintage for fractures, to total joint replacement. The scope of surgery for pain has increased over the past few decades. Better understanding of biomechanics, improvement in quality of prosthesis and great strides in the management of patients, has helped in the improvement of locomotion. Not only pain in arthritic, ankylosed and useless joints is relieved, but vastly improved mobility, give a new dimension to life, for hitherto bed-ridden or wheelchair bound cripples. With improvement in design of bionic joints, it is possible to replace any joint, from interdigital to hip joint, regaining virtually full range of movements. With the advent of cementless joints, a major criticism of problems

of interface has been overcome. The designs are on the improve every day. Hundreds of thousands of happily mobile patients bear testimony to the success story.

Osteotomies, once very much in vogue have lost their popularity in favour of arthroplasty. Osteotomies are now reserved for corrective surgery for deformities. Pain and deformities are interlinked and surgery breaks this vicious circle. Orthopaedic surgery has therefore



Figure 8-9.

major contribution to make in relief of pain, by corrective surgery, realigning the axes to normal and by replacement arthroplasties. Mind and body are intermingled. Pain in mind will persist, unless it stops hurting the body. Orthopaedics surgery removes the cause, by excising the diseased joint, and replacing it with a painfree implant, and by restoring the joints to normal by correcting their axes by osteotomies.

RHEUMATOLOGY

Shahid Abbas

Pain is by far the commonest presenting feature in virtually all rheumatological problems. It is also the most disabling of the symptoms. Moreover both the short-term and long-term disability of these patients mainly stems from pain. Alleviation of pain therefore, is the single most important aspect of the treatment of patients with rheumatological problems. It must be remembered, however, that analgesic drugs are not the only available method of pain relief. Most important of all corticosteroids are the drugs of last choice and must never be used until all else fails.

The principles of treatment of pain in all rheumatological disorders can be divided into the following subheads:-

- a. Rest, physiotherapy (including hydrotherapy, electrotherapy, ultrasound treatment, occupational therapy etc.) and training in 'activities of daily living' (ADL).
- b. Transcutaneous nerve stimulation.
- c. Acupuncture.
- d. Supplementation of the above with non-steroidal anti-inflammatory analgesics and other non-opiate analgesics.
- e. Tranquilizers and anti-depressants.
- f. Disease modifying drugs, including specific treatment for related disorders like ulcerative colitis, psoriasis etc.
- g. Intra-articular steroids.
- h. Systemic corticosteroids and corticotrophin.
- i. Surgery.

RHEUMATOID ARTHRITIS AND ITS VARIANTS

Treatment must remain empirical in the absence of a known etiology of rheumatoid arthritis (RA).

Rest. Active movements of the affected joint leads to increased synovitis and hence an increase in the pain. The actually painful joint thus needs to be rested and only passive exercises permitted with the relative pain-free range. Crepe bandages, splints or other supports may be required especially at night. At times hospitalization is necessary to enable the patient to rest completely.

Physiotherapy. Exercise helps in the prevention of contractures and deformities, maintenance of the full range of movements of the joints and reduction in muscle hypotrophy. Passive exercises are suitable for actively inflamed and active exercises for quiescent joints.

The various forms of heat treatment (pool, bath, tank, shower, ultrasound, diathermy, wax bath) are usually quite effective. Their choice depends upon the joints affected and the individual response. Metal implants are a contra indication to treatment with ultrasound and diathermy.

Occupational Therapy. Occupational therapists and medical social workers play an important role in the rehabilitation of patients with RA. Since the pain limits the freedom of movements, these patients require a training in carrying out the 'activities of daily living' (ADL). They may also require a modification of their household, their place of work and even their job.

Transcutaneous Electrical Nerve Stimulation (TENS). Although the use of TENS in the pain of RA is still experimental, it is now known that it helps to liberate endorphins in the brain and the spinal cord. One of its advantages is that it can be used by the patient himself at home during his leisure time.

Acupuncture. The detail of acupuncture points have already been discussed in the chapter of 'Treatment'. Acupuncture is quite effective in many painful conditions.

Analgesics. There are scores of non-steroidal anti-inflammatory drugs (NSAIDS) available in the market but none is uniformly effective or devoid of side effects. Moreover, the natural history of RA is not significantly affected by them, though some newer NSAIDs are stated to modify the immune reaction in RA.

Aspirin is the prototype of this group of drugs. It is available in various formulations which make it less irritant to the gastric mucosa. To be effective it should be given in appropriate doses: about 4 Gm. daily in adults in divided doses.

Points to remember while prescribing NSAIDs are:

1. The response to a particular NSAID varies considerably from patient to patient. A drug which is useful in one person may not be effective in another.
2. The side effects of the drugs also vary considerably in individual patients.
3. If a drug is well tolerated but is apparently ineffective it should not be abandoned until its maximum recommended dose is given.
4. Combinations of NSAIDs must be avoided as they offer little benefit and increase the incidence of side effects a great deal.
5. If more than one analgesic must be given, paracetamol can safely be added to a prescription of a NSAID.
6. In the presence of a wide range of NSAIDs it is not wise to give drugs which have potentially serious side effects like agranulocytosis with phenylbutazone and oxyphenbutanone or renal damage with phenacetin.
7. Newer NSAIDs should not be used indiscriminately as some of them are later discovered to have serious, even fatal side effects. Other non-narcotic analgesics without anti inflammatory action like paracetamol are not very effective when given alone. Narcotic analgesics are habituating and even addictive and must be avoided in a chronic disease like RA.

Tranquilizers and Anti-depressants. Many patients with RA have exogenous depression. Sympathetic understanding of the patients problems by the physician go a long way in alleviating the patients mood. At times a supplement of tranquilizers and even anti-depressants are required.

Disease modifying drugs. Gold (sodium aurothiomalate), penicillamine hydroxychloroquine, chloroquine and immunosuppressants affect the disease process in rheumatoid arthritis and related conditions but not the other types of inflammatory arthritis. They usually take 4-6 months to reach a full response though some benefit may be evident after a few weeks of treatment. They not only improve the pain and other clinical features of RA but also retard the progress of the disease and thus help to prevent joint deformities. They are also effective in improving the extra-articular manifestations of RA such as subcutaneous nodules, rheumatoid lung, vasculitis etc. They should be given early in the course of the disease before irreversible destruction of joints has occurred. Gold (Sodium aurothiomalate) is given by intramuscular injections. To test the patients tolerance the treatment is begun with 1,5 and 10 mg doses at weekly intervals. A dose of 50 mg I/M is given thereafter every week until a response is obtained, which usually takes at least 8-10 doses (total of 500 mg). The dose interval is then increased to fortnightly until 1 Gm of gold has been given. It is then given at monthly intervals. If a relapse occurs the dose is increased to 50 mg weekly immediately. Treatment with gold injections should not be discontinued until at least 6 months of complete remission and is usually given for 2-3 years. In upto 5% of patients an acute hypersensitivity reaction follows the first dose which may be fatal. Toxic reactions include skin rashes, mouth ulcers, oedema, proteinuria, blood dyscrasias (sometimes sudden and fatal). It is essential therefore that a blood count including platelet count and urine examination be done at monthly intervals.

A gold salt which can be given orally, Auranofin, is now available. Its efficacy is yet to be proven, though the initial reports are encouraging.

Penicillamine has a similar action to gold but is probably more effective and better tolerated. An initial dose of 125 to 250 mg daily may be increased to 1500 mg daily with increments of 250 mg, at four weekly intervals. Some patients may respond to 250 mg, whereas others may require as much as 1500 mg daily. Improvement in patients symptoms is usually not apparent until at least 6-12 weeks. Regular blood counts including platelets, and urine examination to detect

blood dyscrasias and proteinuria are mandatory throughout the treatment. A proteinuria of less than 2 Gm/24 hours does not warrant discontinuation of treatment. Loss of taste is a common problem but it usually returns in a couple of months even if the treatment is continued. Other side effects include hypersensitivity reactions, nausea, anorexia, mouth ulcers, muscle weakness, skin reactions oedema and myasthenia. Skin rashes which occur in the first few months of treatment disappear when the drug is stopped. Treatment in these cases can be re-introduced at a lower dose and gradually increased. Late rashes take longer to disappear and may necessitate discontinuation of treatment.

Chloroquine and hydroxychloroquine act in a similar way to gold and penicillamine but their ocular toxicity limits their use. All patients on these drugs require an ophthalmic examination before starting treatment and at 3 monthly intervals. Ocular toxicity is not common if the drug is given in the proper dosage and treatment is discontinued for 2 months after every 10-12 months. Corneal opacities produced by these drugs are reversible but not the retinal damage. The initial dose of chloroquine is 150-300 mg daily after meals and the maintenance dose 150 mg daily (150 mg chloroquine=200 mg chloroquine sulphate=250 mg chloroquine phosphate-approximately). Hydroxychloroquine sulphate is given in initial dose of 400-600 mg daily in divided doses after meals and in a maintenance dose of 200-400 mg daily.

Immunosuppressants have a similar action and are useful alternatives in cases that have failed to respond to gold, penicillamine, chloroquine or hydroxychloroquine. Azathioprine is given in a dose of 1.5 to 2.5 mg per kg body weight daily in divided doses. Blood counts should be carried out every 4 to 6 weeks to detect possible neutropenia which is usually resolved by reducing the dose. Other side effects include nausea, vomiting, diarrhoea and herpes zoster infection.

Chlorambucil in a dose of 5 mg daily is another alternative, immunosuppressant. Cyclophosphamide is too toxic for use in RA.

Intra-articular steroids. Corticosteroid injections into individual joints have a useful place in pain relief and in the management of

patients with RA but this is never the prime line of treatment. Their main value is relief in pain, increased mobility and reduced deformity when the disease is particularly active in one or a few joints.

The injections are given into the synovial sheath after aspirating excess synovial fluid, if present. Rigorous antiseptic technique must be used. Infected areas and unstable joints should be avoided. If there is any doubt about the presence of infective arthritis of any type, intra-articular injections must never be given.

Intra-articular injections not only produce pain relief but by inhibiting the inflammatory process within the joint probably help in reducing the joint destruction being produced by the inflammation. But these injections themselves damage the joint and hence a careful assessment is needed and benefits weighed against the potential hazards before this form of treatment is used.

Since the effect of the intra-articular injection in RA lasts for a maximum of several weeks, these should be given with the aim of tiding the patient over in an acute exacerbation in a particular joint. Local injections in RA are also sometimes needed in tendon sheaths and bursae.

Systemic corticosteroids and corticotrophin: In RA corticosteroids must never be used except in certain named situations and then only after a very careful consideration and more than adequate trial of all others modes of treatment available. In a chronic disease like RA there is no place for short courses of corticosteroids. Once a patient of RA is given systemic corticoids, it is more than likely that he is going to remain on it for good, with all its sinister repercussions.

However when all else fails and especially in the following situations, corticosteroids may be given.

1. In "Palindromic RA" in the elderly.
2. In elderly patients with RA in whom being bed-ridden is more dangerous than the use of corticosteroids.

3. To “buy time” in patients with severe RA in whom specific disease modifying drugs have recently been introduced but their effect is not yet apparent.
4. In cases of severe RA with vasculitis and systemic features like rheumatoid lung when a fair trial of other drugs has failed.
5. Very occasionally for special social or domestic situations as a short term solution, though this may itself cause a long-term problem.

Surgery:- Surgery in rheumatological diseases may be directed towards synovium, articular cartilage, capsule, bone nerves, muscles and tendons. It is not a curative procedure but certainly helps in relieving stiffness and deformity and is an essential part of the treatment programme of the patient with RA.

OTHER SEROPOSITIVE ARTHROPATHIES

Besides RA and its variants, other seropositive arthropathies include SLE, systemic sclerosis, dermatomyositis, mixed connective tissue disease etc. The treatment for pain relief in all these conditions is essentially the same as in RA, but penicillamine, gold and chloroquine are not commonly used and corticosteroids may have to be used more often.

SERONEGATIVE ARTHROPATHIES

Rest and immobilization must never be prescribed, the major part of the treatment being active mobilization. The patient is asked to engage himself in pleasurable athletic activities like squash or tennis, which not only keep the lumbosacral spine mobile but also increase the respiratory activity, without the patient having to undertake monotonous breathing exercises. A firm mattress or a hard bed should be used and extension exercises of the spine should be prescribed. Prolonged bed rest has irreversible effect on posture and function. If this becomes necessary due to an intercurrent illness regular physiotherapy must be arranged to keep the patient as mobile as possible. NSAIDs help in pain relief. The principles of using NSAIDs are the same as

in RA. Phenylbutazone is said to be especially effective in ankylosing spondylitis, but due to its propensity to cause fluid retention and occasionally agranulocytosis and aplastic anaemia, should be used only if other NSAIDs have been tried and failed.

Corticosteroids, gold, penicillamine, chloroquine and immunosuppressants do not help in this condition. Radiotherapy too should not be prescribed as it only has a palliative effect and may lead to the development of leukaemia later.

REITER'S DISEASE

Although bed rest is needed in the acute stage of the disease, if prolonged it results in the development of ankylosis. The patient should therefore be given physiotherapy even in the acute stage, though only passive exercises may be permitted. Short wave diathermy, ultrasound treatment, infrared heat etc. are all useful to a varying degree in relieving pain. NSAIDs need to be given in almost all cases. Steroids should be avoided but occasionally have to be resorted to. Prednisolone 60 mg daily or its equivalent would be required initially. This is later reduced to a maintenance dose of 15- 20 mg. Antibiotics do not influence the course of the arthritis but are helpful for urogenital infection i.e, urthritis, prostatitis and cystitis. Tetracycline is given in a dose of 250-500 mg 6 hourly for 2 to 3 weeks.

PSORIATIC ARTHRITIS

The treatment for psoriatic arthritis is the same as for RA except that chloroquine is contraindicated and penicillamine is not effective. The skin lesions need to be treated at the same time on their own merit. It must be remembered that topical corticosteroid preparations if used are absorbed and are capable of producing side effects similar to systemic steroids. Topical steroids should therefore be avoided or used with caution.

Physiotherapy, electrotherapy, acupuncture and NSAIDs are all used as in RA. Gold can be used in severe cases of arthritis along similar lines to RA. Penicillamine has not been proved to be effective

in psoriatic arthritis. Chloroquine compounds may exacerbate the skin lesions of psoriasis and hence are not to be prescribed. Intra-articular steroids are as useful as in RA. Systemic steroids though necessary at times, must be avoided if at all possible. Azathioprine on its own or with steroids is also useful in psoriatic arthritis. The folic acid inhibitor, methotrexate is effective for psoriatic skin lesions as well as for arthritis. It must be remembered, however, that it is a potentially lethal drug and therefore should only be prescribed if absolutely necessary. Other immuno-suppressive drugs like cyclophosphamide and chlorambucil are also toxic and their use is rarely justified. Surgery may be needed in severe psoriatic arthritis on similar lines to RA.

COLITIC ARTHROPATHY

Type I colitic arthropathy is usually an oligo-arthropathy, asymmetrically affecting large joints, present equally in both sexes. The symptoms of ulcerative colitis in this type of arthropathy usually precede the arthritis. Effective treatment of ulcerative colitis by drugs (e.g., sulphasalazine), ileostomy and especially by colectomy results in relief of joint symptoms. In type II colitic arthropathy which is indistinguishable clinically from ankylosing spondylitis and predominantly affects males, joint symptoms may precede the development of ulcerative colitis. In this type, the treatment of colitis does not influence the course of arthritis.

In both types of colitic arthritis, physiotherapy, electro-therapy, acupuncture and NSAIDs are also required in most cases besides the treatment of ulcerative colitis.

POLYMYALGIA RHEUMATICA AND GIANT CELL ARTERITIS

In all cases of polymyalgia rheumatica, temporal artery biopsy should be done to look for evidence of giant cell arteritis (GCA). If there is no evidence of the later the patient may be managed on NSAIDs but if the biopsy is positive, high dose corticosteroids would be required. Even in polymyalgia rheumatica not associated with GCA, prednisolone in an initial dose of 20-30 mg daily is needed in

many cases. This can usually be reduced to a maintenance dose of 10 mg daily. If at any time signs of GCA appear or if there is histological evidence of GCA, prednisolone is increased to 60 mg daily, and to 100 mg daily if there is ophthalmic or neurological involvement. Complete withdrawal of the steroids may be possible in two or three years.

POLYMYOSITIS AND DERMATOMYOSITIS

Corticosteroids are the mainstay of treatment, as in polymyalgia rheumatica and GCA. They improve the patient's condition dramatically and are life saving in many cases. Prednisolone is given initially in a dose of 60 mg daily and may need to be continued for years. Azathioprine may be added, if necessary, as this has a steroid sparing effect. To prevent contractures and deformities, passive exercises in the acute stage and active exercises later are essential. NSAIDs, electrotherapy and acupuncture are also helpful in relieving the patient's discomfort.

GOUT

Gout results from the deposition of sodium urate crystals in and around joints. The most rapid and effective method of treatment of acute gout is aspiration of the affected joint, followed by a local corticosteroid injection. All NSAIDs are effective and depending upon the individual response and safety profile, any of these may be prescribed. Uric acid lowering drugs must never be given in an acute attack as this would cause an exacerbation of the acute attack. Colchicine which was the drug used for gout traditionally, now has little place in the treatment of this condition. It needs to be given in a dose of 0.5 mg every 2 hours and produces undesirable gastrointestinal side effects. Moreover it is less effective than many newer NSAIDs. Occasionally systemic corticosteroids are needed as a short course in an acute attack which has failed to respond to the above measures. Once the acute attack is over, drug which lower the plasma uric acid are needed. Allopurinol inhibits the enzyme xanthine oxidase, and hence prevents the formation of uric acid. Allopurinol in a dose of 200-500 mg daily has been shown to be safe, even when used for many years. Uricosuric drugs like probenecid (1-2 Gm daily) and sulphinyprazone (200-400 mg daily) increase the excretion of urate by the kidneys.

They increase the risk of renal calculi and are less effective in renal failure. They are therefore drugs of second choice in lowering plasma, uric acid in gout. NSAIDs must be given regularly when plasma uric acid is being lowered to prevent or minimize an acute attack of gout. Salicylates antagonize the action of uricosuric drugs and should not be prescribed coincidentally.

Surgery is needed for gouty tophi but uric acid lowering drugs need to be given in addition, to prevent their reformation.

PYROPHOSPHATE ARTHROPATHY

As in gout the most effective treatment in an acute attack is aspiration of synovial fluid and local injection with a corticosteroid preparation. In addition NSAIDs are given as in gout. Chronic pyrophosphate arthropathy is treated as other degenerative joint disease.

OSTEOARTHRISIS OF PERIPHERAL JOINTS

Trauma is the usual cause of pain in osteoarthritis (OA). Rest which protects the patient from trauma is the most important aspect of conservative treatment in OA. For weight bearing joints like hips, knees, ankles and joints of the feet, reduction in weight in obese patients is the single most effective way of reducing trauma and thus pain. Proper walking aids and foot wear also go a long way in alleviating the patients symptoms. Physiotherapy is useful with a particular stress on improving the strength of muscles acting across the effected joint, and patients education about gait, posture and the use of walking aids. Electrotherapy and heating devices may be prescribed alongwith exercise therapy.

NSAIDs need to be given in most cases. Some patients also require TENS or acupuncture treatment. Local corticosteroid injections are usually not effective. They may be of value in pain arising from particular soft tissue.

Surgery including total replacement of joints is the ultimate answer to the problems of patients with severe degenerative peripheral joint disease.

INTERVERTEBRAL DISC LESIONS

The so-called “slipped disc” is caused by the rupture of the outer ring (annulus fibrosus) and extrusion of the central core (nucleus pulposus), This produces acute tissue damage and direct pressure on the nerve root. This is usually seen in the younger patient with otherwise normal spine. At the other end of the spectrum are the elderly patients who have multiple shrunken discs with secondary bony overgrowth. This results in recurrent local and root pain - cervical or lumbar spondylosis.

Backache and pain in the neck with or without radiation to the arm and leg respectively are the commonest rheumatic complaint and probably the commonest cause of time lost from work.

Treatment of cervical disc protrusion consists of NSAIDs and other analgesics. Local heat by any available method may be helpful. The cervical spine is immobilized by a collar. If there are neurological signs, myelography and surgery may be required.

Acute lumbar disc lesions are treated by rest on a hard bed and non-narcotic analgesics. To this may be added heat treatment with electric heating pad, short wave diathermy etc. Lumbar corsets, belts and casts are not of any proven benefit in this condition.

If the lesion is localized to one disc on myelogram or CT scan, the offending disc may be removed surgically. This usually relieves the root pain but not the backache.

CERVICAL AND LUMBAR SPONDYLOSIS

Pain is relieved by NSAIDs and other non-narcotic analgesics. Local heat is usually helpful. This may be given by electric pad, Infra-red lamp, shortwave diathermy or ultrasound. Cervical collar and Goldthwaite belt may help by immobilizing the cervical and lumbar spine respectively. Rest on a hard bed is required for acute exacerbations of pain in lumbar spondylosis. Traction and manipulation with or without anaesthesia are not of any proven benefit, though they are practiced both by osteopaths and qualified surgeons.

MEDICAL ORTHOPAEDICS

PERIARTHRITIS OF THE SHOULDER

This includes lesions like rotator cuff tendinitis, supraspinatus tendinitis, bicipital tenosynovitis, subacromial bursitis, capsulitis, frozen shoulder and the shoulder-hand-syndrome.

Rotator cuff tendinitis is the inflammation of the rotator cuff tendon and the sub-deltoid bursa. Rotator cuff tendon forms the top of the glenohumeral joint and links the muscles of the shoulder, responsible for external rotation and first 40° of abduction of the arm, to the humerus. Between this tendon and the deltoid muscle is the subdeltoid bursa.

Supraspinatus tendinitis is the commonest rotator cuff lesion and causes pain on active abduction of the arm from 60° to 120°, when the inflamed tendon rubs against the acromion above. Pain is abolished in this condition if the arm is externally rotated before carrying out the abduction.

Bicipital tenosynovitis produces pain on attempted flexion of the shoulder against resistance and tenderness anteriorly over the bicipital groove.

Subacromion bursitis frequently occurs along with the other lesions of the rotator cuff described above. It is nearly always an associated feature and does not occur on its own.

Inflammation of a tendon of the rotator cuff may spread to involve the other tendons and the joint capsule and is then called capsulitis. If this limits all movements at the glenohumeral joint it is described as a frozen shoulder.

Rarely a frozen shoulder is associated with vasomotor and trophic disorder of the hand and forearm on the same side. This is called the shoulder-hand-syndrome and is a sympathetic reflex dystrophy of the upper limb. Treatment of all these lesions is local infiltration with corticosteroids. NSAIDs need to be given in addition. Local application of ice in the acute phase and heat in the chronic phase is also helpful.

Active exercises within the pain free range help in returning the joint mobility. Care should be taken not to force the arm in the painful range.

TENNIS ELBOW

Tennis elbow or lateral humeral epicondylitis is treated by injecting a small amount of a corticosteroid preparation into the site of maximum tenderness. After the injection the pain may increase for the initial 24 hours and the patient should be warned about it. He is also asked to avoid manoeuvres that were previously painful, for at least two weeks. Repeated injections are required in many patients, and some go on to require surgery for the relief of their pain.

GOLFER'S ELBOW

Golfer's elbow or medial humeral epicondylitis is a similar condition on the medial side of the elbow. Treatment is the same as in tennis elbow, but while injecting one must take care not to damage the adjacent ulnar nerve.

DE QUERVAIN'S SYNDROME

De Quervain's syndrome or tenosynovitis of the abductor pollicis longus is treated with an injection of corticosteroid and local anaesthetic into the affected tendon sheath. NSAIDs should be given in addition. If repeated injection fail, a plaster cast extending from the forearm to the distal skin crease of the thumb is applied for six weeks. If all else fails, slitting of the tendon sheath in the affected area is curative.

CARPAL TUNNEL SYNDROME

It is a common disorder arising from compression of the median nerve by the transverse ligament at the wrist. This is treated by a corticosteroid injection into the carpal tunnel, NSAIDs and wearing a wrist splint especially at night, If these do not help, division of the transverse ligament always cures the pain.

TRIGGER FINGER

Trigger finger or stenosing tenovaginitis is produced when there is a stenosed segment of the tendon sheath through which a thickened section of a digital flexor tendon has to pass. If hydrocortisone injections into the tendon sheath fail to cure the condition, the constriction should be incised.

PLANTAR FASCITIS AND ACHILLES TENDINITIS

These are two common causes of pain in the heels, and may occur either in association with a seronegative arthropathy or independently. The treatment consists of provision of properly fitting shoes with heel cushions, NSAIDs and local corticosteroid injections, if there are calcaneal spurs which are producing heel pain, they may occasionally need to be excised.

PAIN IN WOMAN

(Talat Parveen)

About 25% of all women attending the gynaecological out-patient, have some form of pain as their chief complaint. If we leave aside acute pain requiring specific treatment or surgical intervention like twisted ovarian tumour, ruptured ectopic pregnancy or pain of abortion etc.; still there are certain physiological phenomena in her life which causes pain and in some cases, it is quite agonising and becomes a chronic syndrome requiring treatment.

Chronic pain syndrome associated with physiological phenomena varies with cultural background of the population. The pain is usually lower abdominal or low backache.

INNERVATION OF THE FEMALE GENITALIA

The lower abdominal wall and the anterior part of the vulva are innervated by the iliohypogastric, the ilio-inguinal and the genitocrural nerves. Dorsal rami (the superior clunial nerves) derived from L1 and L2 innervate the region of the lower back where pain sensations due to gynaecological conditions may be felt.

Impulses from the perineum and the lower part of the vagina are conveyed by branches of the pudendal nerves, which are themselves derived from S2, S3, S4. Noxious impulses from the corpus uteri the medial part of the fallopian tubes, the cervix and the upper part of the vagina are conveyed by visceral afferents that accompany the sympathetic nerves of the uterus and enter the spinal cord at T11-T12 and L1. These visceral afferents travel through the inferior hypogastric plexus, the hypogastric nerves, the superior hypogastric plexus and the lumbar and lower thoracic sympathetic chain.

Contrary to a long-held view according to which impulses from the cervix are conveyed to the sacral segments S2–S4, Bonica (1953) has shown that there is no evidence for an afferent pathway from the uterine cervix to the sacral segments. The ovaries and the lateral part of the tubes are innervated mainly through the ovarian plexus. The afferent fibres supplying the ovaries are mainly components of the tenth thoracic nerve; those supplying the fallopian tube reach the spinal cord through the 11th and 12th thoracic nerves.

ACUTE LOWER ABDOMINAL PAIN

The most frequent causes of acute lower abdominal pain

Complications of pregnancy:

abortion, septic abortion, ectopic pregnancy, degeneration of fibroids.

Disorders of the adnexa:

acute salpingo-oophoritis, torsion of adnexum or ovarian tumor, haemorrhage in a cyst, rupture of follicle cyst or corpus luteum cyst, ovarian hyperstimulation syndrome, rupture of endometriotic cyst.

Non-gynaecological causes:

acute appendicitis, diverticulitis, intestinal obstruction, ureteral colic, haematoma of rectus muscle.

The genital structures are sensitive in varying degrees to pain producing stimuli and conscious awareness of visceral pain depends on the impulses reaching the sensory cortex.

The skin of perineum, lower part of vagina, vulva are very sensitive, Upper part of vagina and cervix are less sensitive. Cervical dilatation causes sickening pain due to density of nerve endings around

the internal os and isthmus_ Uterine corpus is less sensitive than isthmus and cervix. Uterine contractions are especially more painful when uterine contents press the nerve endings at the level of internal os. All pains in woman can be adequately treated with acupuncture, which have been described in section of ‘Treatment’ in this book. Here besides acupuncture other measure will be mentioned to relieve pain syndrome.

COMMON PHYSIOLOGICAL PHENOMENA ASSOCIATED WITH PAIN

I. DYSMENNORRHOEA (PAINFUL MENSTRUATION)

It is the most common of all the gynaecologic pains and most women experience some discomfort during or a few days preceding periods. In 2-8%. this becomes pathologic pain — in incapacitating a woman and make her seek some treatment. Severe form is seen in unhappy girls or those who have ill-health and lead sedentary life.

TYPES OF DYSMENNORRHOEA

(i) *PRIMARY:*

No organic lesion is present. It usually starts 1-2 years after menarche when the cycles become ovulatory.

CHRONIC AND RECURRENT PELVIC PAIN
The various causes of recurrent and chronic pelvic pain
Recurrent or cyclic pain: dysmennorrhoea - primary - secondary, Mittelschmerz, premenstrual tension.
Chronic pain: endometriosis, posterior parametritis, chronic PID, pain of gastrointestinal origin, displacements of the uterus. ovarian pain, parietal pain, chronic pelvic pain without obvious pathology pain of urological origin, pain due to malignant condition of the internal female genitalia.

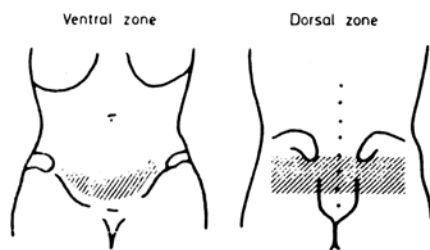


Figure 8-10: Usual locations of chronic pain of gynaecologic origin

(ii) **SECONDARY:**

There is organic pelvic lesion present as endometriosis, adenomyosis, pelvic inflammatory disease, uterine myomas, malpositions, malformations.

CHARACTER OF PAIN

Intermittent and spasmodic pain present in lower abdomen and radiates to low-back and thighs (inner side).

Pain is due to spasm of uterine muscles giving ischaemia. Spasm is caused by the prostaglandins produced by the desquamating endometrium especially ovulatory.

In the past it was believed that pain is entirely psychosomatic but now we know that prostaglandins play a key role in it, of course psychological and constitutional factors do have some contribution.

Pain is associated with:- Nausea in 50%, Vomiting in 25%.
Tenesmus and frequency of stools: 35%.

Primary dysmenorrhoea is essentially first day pain starting a few hours prior to bleeding and lasts a few hours after it.

TREATMENT

A. General

a. Education of girls on correct lines regarding menses. b. Improve general health. c. Active life. d. Hot bath. e. Hot bottle fomentation of lower abdomen.

B. Drugs

Prostaglandin synthetase inhibition is very effective and non-steroidal and anti-inflammatory agents are active inhibitors so they are very effective.

Therapy is started with the onset of menses. Common agents used are:-

1. *Ibuprofen* (400 mg): Thrice daily;
2. *Mefenamic Acid* (250 mg): Four times daily;
3. *Naproxen Sodium* (250 mg): Twice a day;
4. *Acetyl Salicylic Acid* (300-500 mg): Daily;
5. *Indomethacin* (25 mg); Thrice daily;
6. *Voltaren* (50 mg): Thrice daily;
7. *Analgesics*: Like Paracetamol.
8. *Anti-Spasmotics*. Like Buscopan, may relieve pain in some.
9. *Hormone Contraceptive Pills*. These cause anovulation and endometrium becomes relatively atrophic with low prostaglandin production, hence the menses become pain free.

Surgical Intervention or Paracervical Block

It has no place now in the treatment of primary dysmenorrhea. In secondary dysmenorrhea specific treatment of organic disease is required along with the symptomatic treatment.

II. CYCLICAL INTERMENSTRUAL PAIN (MITTELSCHMERZ SYNDROME)

Also called ovulation pain. 25% of women experience brief discomfort at the time of ovulation particularly in tense and nervous ones.

Character of Pain

1. Mild brief twinge in lower abdomen.
2. Discomfort for few hours.
3. Acute lower abdominal pain requires differentiation from acute appendicitis and with other intra-abdominal disorders. Occasionally unnecessary laparotomy is performed if one does not go into details of character of pain.

Treatment

1. Reassurance and explaining of innocuous nature and occurrence, of pain.
2. Analgesics.
3. Suppression of ovulation, (if severe frightening pain occurs repeatedly for few cycles). Pain usually recurs after cessation of treatment in such cases.

III. MASTODYNIA (MASTALGIA)

There is pain and swelling from vascular engorgement and oedema of breasts in pre-menstrual period, which requires differentiation from inflammation and neoplasia.

Treatment

1. Diuretic therapy for mastodynia during few pre- menstrual days is usually successful.
2. Refractory cases - sublingual methyl testosterone 5 mg o.d. during luteal phase (later half of menstrual cycle) for 2-3 cycles.

**IV. PRE-MENSTRUAL TENSION SYNDROME
(MENSTRUAL MOLIMINA)**

There is exaggeration of general discomfort of menses which exerts influence on general behaviours and well being of women. Most women have minimal discomfort which doesn't curtail their activity.

Some women have broad range of symptoms which persist for 1-10 days and cease abruptly or become less severe at the onset of menses or are altered in character to become actual menstrual molimina. If symptoms are severe to disturb her life pattern, she requires treatment and then it is called PMT syndrome Cause is obscure. There is fluid retention giving weight gain, oedema, bloating and breast tenderness. A pathogenetic role is given to estrogen - progesterone imbalance. Hypoglycaemia, hyper- prolactinaemia, allergy to progesterone. There is excessive production of aldosterone and ADH in response to loss of vascular fluid into the tissue leading to sodium and water retention. Symptoms differ but pattern is same in one woman from cycle to cycle.

a. *BEHAVIOURAL SYMPTOMS.*

1. Nervousness. 2. Irritability. 3. Agitation.
4. Unreasonable temper. 5. Sleep disturbances.
6. Tiredness and lethargy. 7. Depression, violence.

Crimes and suicides among woman of reproductive age group are frequent a week before periods.

b. *NEUROLOGICAL SYMPTOMS.*

1. Headache and vertigo 2. Syncope 3. Aggravation of epilepsy.

c. *RESPIRATORY SYMPTOMS.*

1. Cold 2. Hoarseness of voice 3. Rhinitis 4. Dyspnoea.

d. *GIT SYMPTOMS.*

1. Abdominal bloating (typical) 2. Nausea vomiting and Constipation: (Less common symptoms) 3. Colicky pain. 4. Change in appetite.

OTHER SYMPTOMS are:

1. Oedema;
2. Premenstrual weight gain;
3. Palpitations;
4. Feeling of weight in the pelvis;
5. Weakness;
6. Oligurea;
7. Enuresis;
8. Easy bruising;
9. Conjunctivitis and even visual change can occur;
10. Acne rash and mastalgia.

Symptoms occur for 7-10 days before period and are common in 35-45 years age group.

Treatment

1. *EMPIRICAL*
 - a. Improve general health
 - b. Vit B Complex supplementation
 - c. Psychotherapy.
2. *DRUGS*
 - a. Oral contraceptives.
 - b. Spirinolactone
 - c. Pyridoxine
 - d. Bromocriptine
 - e. Mono-amine oxidase inhibitors. All these fail to reveal any benefit.
 - f. Progestone. In severe cases in heavy doses gives better results, but there is no scientific support for this.
 - g. Inj Progesterone 100 mg I/M daily in premenstrual period for 7-10 days.
 - h. Inj Medroxy Progesterone 150 mg I/M every 3 months.

V. DYSpareunia

- (a) *SUPERFICIAL*
 1. Psychological.
 2. Anatomical reasons.
 3. Local infection or injury.

(b) DEEP

1. PID
2. Endometriosis
3. Prolapsed Ovaries in POD
4. Fixed retroversion

Treatment

1. Reassurance
2. Tranquilizers in small doses
3. Treat the cause.

VI. LOW BACKACHE

1. Prolapsed uterus
2. PID
3. Fixed retroversion
4. Tumours
5. Endometriosis
6. Pelvic congestion syndrome
7. Sacroiliac strain and other factors as orthopaedic or rectal.

Treatment

1. Symptomatic with analgesic 2. Treat the cause.

VII. ABDOMINAL PAIN DURING PREGNANCY

1. It is due to pressure and dragging weight of uterus on pelvic supports and abdominal wall.
2. Stretching of round ligaments in late pregnancy.
3. Flatulence, distension of bowel, cramping due to mechanical displacement of bowel and hypotonia of intestines.
4. Uterine contraction causing premature labour.
5. Uterine and adenexal tumour.
6. Associated intra-abdominal pathology.

Treatment

1. Psychotherapy.
2. Symptomatic Treatment.
3. Treat associate pathology.

VIII.LABOUR PAINS

Labour is a physiological phenomena with strong and painful uterine contractions. Response to these pains is response of total personality of a woman. Obstetrician is obligated to provide a comfortable or at least a 'tolerable labour' and delivery. Tense and apprehensive patient may require more attention and care. In the first stage pain is due to contraction causing ischaemia of uterine muscles and cervical effacement and dilatation. Pain of 2nd stage is due to stretching and distension of ligaments, vagina and perineum.

Pain increases in intensity and duration as the intensity and duration of uterine contractions increases. Hundreds of agents have been used to relieve pain during labour but none of the agents or method is perfect and absolutely safe for mother and child. Following types of measures are taken to give pain relief during labour.

1. Positive conditioning of the patient during antenatal period along with relaxation exercises
2. Hypnosis and use of anti-spasmodics.
3. Analgesic to increase pain threshold.
4. Amnesics to obscure the memory of pain and disagreeable experience.
5. Regional analgesia.
6. Inhalant analgesics.
7. Uterine relaxants.
8. General anaesthesia.
9. Local anaesthesia.
10. Acupuncture.

Every method has its advantages and disadvantages. Modality used has to be individualised according to concerned patient. Usual methods used are:-

PARENTERAL DRUGS

- (a) 1. Inj pethidine 100 mg; 2. Inj promethazine 25-50 mgs; 3. Inj Pentazocine 30-60 mgs; 4. Inj Buscopan; 5. Sedatives and tranquilizers to allay anxiety and fear.
- (b) **Inhalational.** Pre-mixed mixtures are used and administered by special apparatus.
 - 1. Entonox (N₂ + O₂) 2. Emotril (Trilene). 3. Pentherane (Methoxy-flurane). 4. Tecota (Temperature compensated, Trilene Air) inhaler.
- (c) Epidural Block. It is most satisfying method of painless labour. Placental circulation is also improved with this. It lowers the BP and is very suitable for cases of pre-eclampsia. Any necessary manipulation or operation can be performed without any further anaesthesia. It is safer than general or inhalational analgesics in cardiac and respiratory disease.

BUT it requires an expert to administer it. There is danger of local sepsis. It should not be given in grand multiparas, cases on anti-coagulants or who have scared uterus or any neurological disease. It should not be used if proper monitoring of patient and foetus is not possible.

Signs of impending uterine rupture are masked. It may cause severe hypotension, foetal heart irregularities, bradycardia and IUD.

Second stage of labour is longer and there are more cases of persistent occipito-posterior position or deep transverse arrest, because rotation of head is delayed, The woman does not experience the expulsive contraction, hence forceps delivery is required in most of the cases.

Postnatally she may get backache, difficulty in emptying the urinary bladder, headache and weakness of legs. Symptoms subside after some time. The amount of blood loss during

delivery is also more and shock may occur promptly in cases getting epidural analgesia. Therefore the case requires vigilant monitoring at every step.

(d) Local Blocks and Infiltration. (As pudendal block.)

IX. *AFTER PAINS*. Spasmodic contractions of uterus occurring during 48-72 hrs after delivery may be troublesome in some women. They are mostly experienced by multiparas. They are due to retained blood clots in uterus in some cases.

Treatment

1. Massage the uterus and express the clots.
2. Analgesics and sedatives are helpful.
3. Inj pethidine may be required in some cases to relieve the pain.

X. *OTHERS*.

- a. Pain with IUCD insertion may warrant its removal if not cured with symptomatic treatment.
- b. Psychogenic pelvic pain is caused by unresolved conflicts and psychiatric treatment alongwith simple sedative and tranquilizers.

ANALGESIC AGENTS

NARCOTIC ANALGESICS

The descriptive title is derived from the Greek word *narkoo* (to benumb), and opium (juice) was first obtained from the capsules of the unripe poppy seed in the 4th century BC. Early writings suggested that it was principally used for its antidiarrhoeal activity, but in the 16th century the analgesic, sedative and antitussive properties had become well recognized throughout the World. The principal active ingredient, morphine, was isolated in 1803.

Opium smoking became popular in the Orient in the 18th century. The invention of the hypodermic syringe and needle in 1853, the ready availability of morphine and its increased usage in the treatment of battle injuries, and the migration of Chinese people all contributed to the development of the problem of compulsive drug usage and drug dependence in Western civilization. The semisynthetic opiate heroin (diacetylmorphine) was produced at St Mary's Hospital in 1874 with a view to curing morphine addiction; it was many years later before it was appreciated that it provided a 'cure' only by substituting itself as the addictive drug. The search for agents having the analgesic qualities of morphine, but without the side-effects of dependence and tolerance, has continued. The introduction of drugs which appear chemically dissimilar to morphine, such as pethidine and methadone, has unfortunately conferred little advantages from this aspect.

The potential of abuse undoubtedly exists with all narcotic analgesics. The liability is low with codeine and its substitutes; however, these are less effective analgesics than morphine, and can produce undue excitation with increasing dosage. More promise has been shown in recent years with the development of analgesics showing either partial agonist activity, or a mixed agonist-antagonist profile, although such drugs may have their own particular disadvantages.

CLASSIFICATION OF ANALGESICS

1.	Non-narcotics			
	aspirin			
	paracetamol			
	nefopam			
2.	Narcotic agonists	Narcotic agonist-antagonists		
		Morphine-type	Nalorphine-type	Other
Weak	codeine			
	dextropropoxy-	profadol	pentazocine	
	phene	propiram		
	ethoheptazine			meptazinol
	oxycodone			
Strong	morphine	buprenorphine	nalbuphine	
	diamorphine		butorphanol	
	hydromorphone			
	methadone			

MODE OF ACTION

Narcotic analgesics have previously been considered to modify the complex emotional experience of pain, rather than to affect its transmission as a sensory modality. The influence of such drugs on the reactive component of pain (anxiety, fear and suffering) can markedly increase the ability of a patient to tolerate pain. Conversely, the pain threshold (the intensity at which a stimulus is first appreciated as pain) is generally little affected by these drugs in experimental studies.

Various neurochemical mechanisms, including an increased utilization of brain amines and an anticholinesterase effect, have been observed using narcotic analgesics in animal studies. However, a number of factors suggested that specific opiate receptors may exist within the c.n.s. These included the following.

1. The stereospecificity of opiate activity, which is usually exhibited by the laevorotatory isomer.

2. The development of highly potent opiates, such as etorphine, indicated a great affinity for receptor sites.
3. The discovery of the pure narcotic antagonist naloxone would imply displacement of the agonist from a receptor site.

The rate of uptake of various radio-labelled opiates by animal brain preparations was shown to closely accord with the clinical potency of the drug. Regional localization of opiate receptors was later demonstrated using auto radiographic techniques. In the spinal cord, the uptake of the radiolabelled drug is confined to a dense band corresponding to the substantia gelatinosa. In the brain stem localization of opiate receptors is shown in solitary nuclei which receive afferent vagal fibres, and in the area postrema which contains the chemoreceptor trigger zone (CTZ). This gives an explanation for some common side-effects of the opiates, including respiratory depression, suppression of the cough reflex, postural hypotension, nausea and vomiting.

In the cortex, high uptake of opiate is seen in the thalamus, especially in the medial thalamic nuclei which mediate poorly localized and emotionally influenced pain arising from deeper structures. Uptake also occurs in the periaqueductal grey matter (PAG) and, most abundantly, in the amygdaloid nuclei contained in the limbic system: it is possible that these later receptors are associated with the influence of opiates on emotional behaviour.

Classification of narcotic analgesics according to chemical structure

1. Naturally occurring (opium alkaloid)
 - a) Codeine
 - b) Morphine} Extracted from opium
2. Semisynthetic (opiates)

- a) dihydrocodeine
- b) oxycodone
- c) diamorphine
- d) hydromorphone
- e) oxymorphone

Obtained by relatively simple structural modifications of the morphine or codeine molecule

3. Synthetic (opioids)

Morphinans

- a) pentazocine
- b) phenazocine
- c) levorphanol

Phenylpiperidines

- a) pethidine (meperidine)
- b) anileridine
- c) alphaprodine
- d) fentanyl

Diphenylpropylamines

- a) dextropropoxyphene
- b) dipipanone
- c) dextromoramide
- d) methadone

Synthetic compounds with structural resemblance to the whole or to a part of the morphine molecule

NON-STEROIDAL ANTI-INFLAMMATORY DRUGS

This group of drugs is frequently referred to as the anti-inflammatory antipyretic analgesics or as the non-narcotic analgesics. These drugs are usually administered orally in the treatment of mild to moderate pain which usually involves superficial structures, and are considered to exert their analgesic action chiefly at peripheral sites.

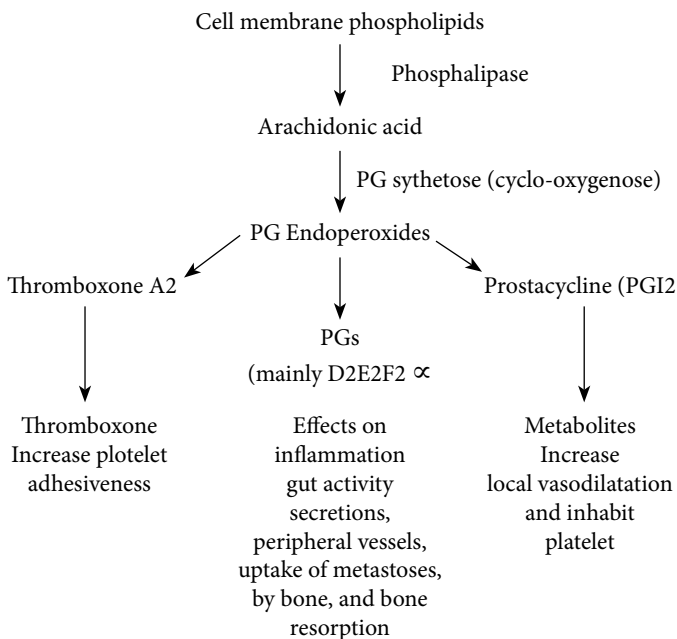
MODE OF ACTION

In classical experiments many of these drugs have been shown to modify nociceptive responses induced by the poly-peptide bradykinin, the formation of which can be induced by tissue injury. The hyperaemia, pain and oedema of an inflammatory response can all be mediated by bradykinin, and the peptide can be identified in inflammatory exudates and synovial fluid from arthritic joints.

More recently, interest has centred upon the role of these drugs in inhibiting the synthesis of prostaglandins (PGS) from long-chain fatty acids.

In man, the subdermal infusion of prostaglandins of the PGE type will produce oedema and a lowered pain threshold to artificial stimuli, although spontaneous pain will not occur; however, if bradykinin is subsequently infused into the site, intense pain will result. Accumulated evidence indicates that prostaglandins of the E series which are produced at the site of injury will sensitize the peripheral receptors to other mediators such as bradykinin.

A central component in the analgesic action of these drugs undoubtedly exists(Experimentally, pain responses evoked in decerebrate rats require greater amounts of aspirin for suppression than in intact animals. Prostaglandins can be found in the c.n.s., where they are putative transmitters whose production is thought to be influenced by the anterior pituitary hormone, prolactin_ In addition, pyrogens increase the synthesis of PGEs in the hypothalamus, which is the site of the antipyretic action of these drugs.



The simple analgesics and anti-inflammatory drugs classification and unit dose.

CENTRALLY-ACTING

Morphine-like	Codeine	Not used alone
	Dihydrocodeine	30 mg
	Dextropropoxyphene	
	Hydrochloride	65 mg
	Dextropropoxyphene	
	Napsylate	100 mg
Agonist-antagonist	Pentazocine	50 mg
Not morphine-like	Nefopam	30 gm

PERIPHERALLY-ACTING

Nsaids

- Aspirin 600 mg
- Azapropazone 600 mg
- Diflunisal 500 mg
- Fenoprofen 200 mg
- Ibuprofen 400 mg
- Indoprofen 200 mg
- Mefenamic acid 500 mg
- Naproxen 500 mg
- Naproxen sodium 555 mg
- Piroxicam 20 mg
- Zomcpirac 100 mg

Not anti-inflammatory: paracetamol 1 g

COMBINATIONS

Dextropropoxyphene + aspirin or paracetamol

Codeine + aspirin or paracetamol

Dihydrocodeine + aspirin or paracetamol

Pentazocine + paracetamol

Aspirin + paracetamol + caffeine

A selection of non-steroidal anti-inflammatory drugs with appropriate doses

<i>Approved name</i>	<i>Trade name</i>	<i>Dosage</i>
Aspirin	(various)	600-900 mg q.d.s. of 600 mg as required for pain
Azapropazone	Rheumox	600 mg b.i.d.
Benorylate	Benoral	10 ml (4 g) b.i.d. of suspension of 1.5 g t.i.d. using tablets
Choline magnesium trisalicylate	Trilisate	1 g b.i.d. for osteoarthritis. 1.5 g b.i.d. for rheumatoid
Diclofenac	Voltarol	50 mg mane 100 mg nocte or 50 mg t.i.d.
Ditlusinal	Dolobid	500 mg stat then 250 or 500 b.i.d.
Fenbufen	Lederfen	300 mg mg mane 600 mg nocte. Night dose only may be enough
Fenclofenac	Flenac	300 mg b.i.d.
Fenoprofen	Fenopron	600 mg t.i.d. or 300 mg as required for pain
Feprazone	Methrazone	200 mg b.i.d.
Flurbiprofen	Froben	50 mg mane 100 mg nocte
Flufenamic acid	Meralen	200 mg t.i.d.
Ibuprofen	Brufen	400 mg t.i.d. or 400 mg as required for pain
Indomethacin	Indocid	25 mg t.i.d. 75-100 mg at night for night pain/morning stiffness
Indomethacin (slow release)	Indocid R	75 mg nocte or b.i.d.
Indoprofen	Flosint	200 mg t.i.d. or 200 mg as required for pain
Ketoprofen	Orudis	100 mg b.i.d.
Meclofenamate sodium	Meclomen	50-100mg h.i.d.q.l.d.
Mefenamic acid	Ponstan	500 mg t.i.d. or 500 mg required for pain
Naproxen	Naprosyn	500 mg b.i.d.
Phenylbutazone	Butazolidin	100 mg t.i.d. Not more than 7 days
Piroxicam	Feldene	20 mg o.d. momlmg or night
Sulindac	Clinoril	200 mg b.i.d.
Tolmetin sodium	Tolectin	400 mg t.i.d.
Zomepirac	Zomax	100 mg t.i.d. or 100 mg as required for pain

Classification by toxicity and suitability for particular problem patients

<i>Usually OK for the delicate stomach</i>	<i>Usually OK with anticoagulants</i>
Fenbufen	
Indomethacin	
Ibuprofen	Naproxen
Naproxen	Ibuprofen
Anything by suppository	Piroxicam
NOT Apirin	NOT Aspirin
Indomethacin	Phelbutazone
Flurbiprofen	BUT monitor carefully
More likely to cause rashes	Suitable for children
Fenbufen	Aspirin
Fenclofenac	Ibuprofen
Feprazone	Naproxen
	Mefenamic acid
– warn the patient	

PROPERTIES OF THE IDEAL ANALGESIC AGENT: (Summary)

- Effective relief of pain, with long duration of action.
- Absence of side effects (e.g. dizziness, nausea, vomiting, constipation, ventilatory depression).
- Absence of addictive properties.

The classical analgesic is opium which contains two distinct alkaloid groups, phenanthrenes such as morphine (9-20%), codeine (0.3-4%), and thebaine (0.2-0.5%), and the isoquinoline alkaloids such as papaverine and narceine.

The phenanthrenes cause stimulation of higher centres (constriction of pupil, vomiting), followed by depression (respiratory rate decreases) and increase smooth muscle tone (contraction of the sphincter of Oddi, micturition hindered). The isoquinolines relax smooth muscle and have no effect on the central nervous system.

There is now thought to be a spectrum of opiate receptors and at present four have been postulated and these have been given the Greek symbols, μ , κ , δ , σ .

DRUGS WITH A PREDOMINANTLY CENTRAL ACTION:-

Fentanyl 0.1– 0.5 mg (i. v.) 0.05 – 0.1 mg (i. m.)

Related to pethidine. Shorter duration action than pethidine and phenoperidine. 0.2 mg equianalgesic with 10 mg morphine but causes more ventilatory depression.

Buprenorphine 0.3 - 0.6 mg (i.m.)

Greater maximum analgesic effect than pentazocine. Longer duration of action. More sedation than pentazocine. Analgesic and ventilatory depression effects cannot be readily reversed by naloxone due to slow removal of buprenorphine from the receptor site. Buprenorphine is reversed by naloxone but on a larger time scale. Vomiting possibly more common than with morphine. Thebaine derivative.

Phenoperidine 0.5 - 5.0 mg (i.v.)

Derivative pethidine. High potency, rapid onset action and short duration action. Ventilatory depression common. 2 mg equianalgesic with 10 mg morphine.

Lavallorphan 0.5 - 1 mg (i.v.)

Derivative of levorphanol. Has narcotic antagonist activity. Shorter duration action than levorphanol. Less respiratory depression than nalorphine.

Levorphanol 2 - 4 mg (oral, i.m.)

Synthetic analgesic. Marked analgesia and ventilatory depression. Conjugated with glucuronic acid. 2 mg equivalent to 10 mg morphine. Equianalgesic doses same dependence liability, resp. dep. and spasmogenic properties as morphine.

Diamorphine 5 -10 mg (oral, i.m.)

Metabolised to monoacetylmorphine and then morphine and then morphine conjugated as glucuronide. 5 mg equipotent with 10 mg morphine. Duration of action shorter. Clinical trials unable to demonstrate less ventilatory depression. More sedation and less nausea and vomiting when compared with equianalgesic doses of morphine. Addiction well recognised.

Dextromoramide 5 - 10 mg (oral, i.m.)

High potency narcotic analgesic related to methadone. 5 - 7.5 mg equianalgesic to 10 mg morphine. More side effects than morphine. Dependence occurs-Appears to have no advantage over morphine.

Morphine 10 - 20 mg (oral), 10 - 15 mg (i.m.)

Absorption by mouth poor. Conjugated with glucuronic acid in liver. Side effects: ventilatory depression, nausea, vomiting and constipation. Spasm smooth muscle, Miosis. Tolerance and physical dependence.

Methadone 5 - 20 mg (i.m.)

Synthetic narcotic analgesic. 10 mg equianalgesic with 10 mg morphine. Similar side effects to morphine but repeated doses cumulative. Antitussive. Marked dependence liability Maintenance therapy for heroin addicts.

Papaveretum 5 - 20 mg (i.m.)

Preparation of the water soluble alkaloids of opium standardised to contain 50% anhydrous morphine. Mg for mg sedative and analgesic properties less than morphine.

Piritramide 20 mg (i.m.)

Potent analgesic. Duration approximately 6 hours. Unrelated to other compounds. Less ventilatory depression than equianalgesic morphine dose. Vomiting less common.

Nalorphine 5 - 10 mg (i.v.)

Narcotic antagonist with analgesic activity. Analgesia and ventilatory depression similar to morphine. Severe psychotomimetic activity. Reverses both analgesic and ventilatory depression actions of opiates, but not other narcotic antagonist analgesics (e.g. Pentazocine).

Dipipanone 20 - 25 mg (i.m.)

Analogue of methadone. 25 mg equianalgesic with 10 mg morphine. Little hypnotic activity. Side effects increase with increasing dosage.

Pethidine 50 - 100 mg (oral, i.m.)

Synthetic analgesic. Metabolism in liver. 100 mg higher peak analgesia than 10 mg morphine. Shorter action than morphine. Ventilatory

depression effect similar to morphine but less effect on rate and more on tidal volume. Nausea, vomiting and sedation all occur. Spasmolytic (Sphincter Oddi). Tolerance and physical dependence less than morphine.

Pentazocine 30 - 60 mg (i.m.), 25 - 100 (i.v.)

Has both analgesic and antagonist properties. Extensively metabolised. 60 mg equianalgesic with 10 mg morphine. Lasts shorter time. Depresses ventilation. Reversible by naloxone only. Nausea, vomiting, dysphoria and dizziness, Drug abuse occurs.

Dihydrocodeine 30 - 60 mg (oral, i.m.)

60 mg equivalent to 10 mg morphine in analgesic potency. Duration shorter than morphine. Above 50 mg ventilatory depression. 30 mg minimal side effects and similar to codeine in pain relief Some antitussive action.

Pholcodine 60 mg (oral)

Morpholinoethyl ether of morphine. Used mainly as antitussive agent. Nausea, constipation and drowsiness occur.

Dextropropoxyphene 65 mg (oral)

Structurally related to methadone. No more effective than aspirin and codeine. Nausea, vomiting, dizziness and constipation occur but to a lesser extent than with codeine. Less potential abuse than codeine.

Codeine 10 - 60 mg (oral)

Found in small conc. in opium. Absorption similar to morphine. Metabolised in liver to inactive conjugates with glucuronic acid. 10% excreted unchanged in urine. 5 - 10 times potency of aspirin by oral route. Can cause ventilatory depression, nausea, vomiting, sedation, dizziness and constipation. Depresses cough reflex. Addiction reported.

DRUGS WITH PREDOMINANTLY PERIPHERAL ACTION:

Acetylsalicylic acid 0.3 - 1.0 mg (oral)

Absorbed in stomach and intestine. PH up absorption down. Rapidly hydrolysed to salicylic acid. 50 - 80% protein bound.

Metabolites salicylic acid, salicyluric acid, gentisic acid and glucuronides excreted in urine. Salicylate clearance increased 4 times when urinary pH up from 6 to 8. Anti-inflammatory and anti-pyretic action. Gastrointestinal irritation and haemorrhage can occur. Can reduce prothrombin levels by decreasing Factor VII. Also reduces platelet adhesiveness (bleeding time increased).

Paracetamol 0.5 - 1.0 (oral).

Major metabolite of phenacetin. Antipyretic with minimal anti-inflammatory action. 25% protein bound. 80% conjugated in liver. Equipotent with aspirin. No gastric irritation or coagulation defect. Liver damage with overdose.

Phenacetin 0.3 - 0.6 (oral)

Readily absorbed from G.I. tract and biotransformed to paracetamol, conjugated and excreted in urine. Can lead to methaemoglobinaemia. No marked anti-inflammatory action. Nephrotoxic.

Mefenamic acid and flufenamic acid 0.25 – 0.5 g (oral), 0.1 – 0.3 g (oral)

Effective analgesics but diarrhoea, gastrointestinal bleeding, ulceration, agranulocytosis, thrombocytopenic purpura, megaloblastic anaemia and pancytopenia can occur. Some possibility of renal damage. Can prolong prothrombin time when given with coumarin.

Sodium Salicylate 0.3 — 0.6 g (oral)

Inferior analgesic action to aspirin and antipyretic.

Salicylamide 0.2-1.0 g (oral)

Inferior to aspirin as analgesic and antipyretic.

Benorylate 6.0 - 8.0 g 12 hourly (oral)

Does not cause gastrointestinal bleeding. On absorption hydrolysed to produce acetylsalicylic acid and paracetamol.

Ibuprofen 200 mg 6 hourly (oral)

Mild antianalgesic, antipyretic and anti-inflammatory drug. Side effects few.

Indomethacin 25 mg 8 hourly (oral)

Mild analgesic and antipyretic and anti-inflammatory agent more effective than acetylsalicylic acid. Gastrointestinal side effects can occur. Only absorbed when reaches small intestine.

Phenylbutazone 200 - 400 mg daily (oral)

Related to amidopyrine. Effective long-acting anti-inflammatory analgesic. Can cause sodium and water retention and increase excretion of uric acid. Depression of bone marrow and thrombocytopenia can occur.

LOCAL ANAESTHETICS

Local anaesthetics administered in sufficient concentration block the conduction of impulses in nerve fibres. Since this block is reversible, such local agents are widely employed in the clinical setting.

All local anaesthetic drugs contain a lipophilic group, an intermediate chain, and a hydrophilic group. The intermediate chain may be an ester or an amide. The ester group includes procaine, 2-chlorprocaine, and tetracaine. The most commonly used amides are lidocaine mepivacaine hydrochloride, prilocaine hydrochloride, bupivacaine hydrochloride, and etidocaine hydrochloride.

The activity and potency of any local anaesthetic depends on its lipid solubility, its chemical structure, and the pK, of the solution. *The pK of any substance is the pH at which 50 per cent of the substance is ionized.* Etidocaine, for example, is 50 times more lipid soluble and only four times more potent a local anaesthetic than lidocaine (lignocaine).

Local anaesthetics, being weak bases, are kept in an acid solution in which they form a water-soluble salt. The base, being lipid-soluble, can penetrate through various tissue barriers. Once the local anaesthetic solution reaches the nerve membrane, the cation plays an active part. The concentration of base or cation in the solution depends on the pK of the local anaesthetic: the higher the pK when applied, the lower the concentration of base in the tissues. A decrease in the amount of base

facilitates removal of the local anaesthetics, thus resulting in a shorter duration of action.

Lidocaine, mepivacaine, prilocaine, and etidocaine have low pK (7.6 to 7.8). Their onset of action is rapid because about 35 per cent of the amount exists in the base form at a tissue pH, Procaine, tetracaine, and bupivacaine have a slow onset of action because their pK is 8.1 to 8.6; only 10 to 20 per cent of the amount of the local anaesthetic will be in the form of free base at physiologic pH.

The duration of action of local anaesthetic is also affected by the local vasodilation which most of them produce. This accelerates their removal.

Experiments have shown that the degree of block produced by a given concentration of local anaesthetic depends on the level and on the time of the last nerve stimulation. Thus a nerve which has been recently and repetitively stimulated is more sensitive to a local anaesthetic than a resting nerve.

Local anaesthetics initially increase the threshold for electrical stimulation. Later, they slow the rise of the action potential and propagation of the nerve impulse, and finally establish a complete conduction block. Local anaesthetics exert their effect on the cell membrane by preventing its depolarization. Few theories have been put forward to explain the mode of action of the local anaesthetics. They are summarized as follows.

1. Local anaesthetics block the influx of sodium into the nerve, either by combining with a specific receptor in the membrane and thus expanding the plasma membrane, or by changing the electrical potential and thus the properties of the membrane. Although there is evidence that all these phenomenon occur, some remain difficult to prove experimentally.
2. These compounds inhibit the release of calcium from the cell membrane. Calcium release precedes membrane depolarization.

3. Local anaesthetics react with the phospholipids that act as ion carriers and thus interfere with the transport of A potassium and sodium across the cell membrane.
4. There is a close relationship between the clinical potency of the local anaesthetics and their ability to increase the surface tension of a monomolecular lipid layer. When local anaesthetics come into contact with the membrane and decrease the surface tension, the result is decrease in the size of the pores.

Local anaesthetics act first upon the unmyelinated and the smaller fibres. The myelin sheath acts as an insulator and limits their access. Sensory and autonomic fibres (those that relay pain and temperature sensation, followed by touch and deep pressure) are affected first; motor paralysis follows.

ACUPUNCTURE ANAESTHESIA

1: *BRIEF HISTORY OF DEVELOPMENT OF ACUPUNCTURE ANAESTHESIA*

Acupuncture anaesthesia (acu-algesia) is based upon the theory that acupuncture has the effect of easing pain and regulating physiological functions of the human body. It is anaesthesia, accomplished by needling a certain point or points of the patient's body, enabling the patient to accept surgery in a fully-conscious state.

Acupuncture anaesthesia is a development based on the clinical practice of acupuncture treatment techniques in Chinese medicine. In China, these techniques have a history of several thousand years and are a reflection of the rich experience of China's people in their struggle against diseases. Acupuncture, an important component of the great treasure-house of Chinese medicine and pharmacology, has a salient and historic attribute—needling can ease pain. As early as 2,000 years ago, in the classic work on traditional medicine in the Chapters titled “Hsieh-ch'i Tsang-ii; Ping-hsing,” “Ching-mo,” “Ching-chin,” and “Chou-pi,” Ling-shu Ching reported the treatment of headaches, toothaches, lumbago, joint pain, and various kinds of abdominal pain. In 1958, a mass movement began to unite traditional medicine with Western medicine, and Western physicians began to learn traditional medicine. In these circumstances acupuncture therapy was extensively and unprecedentedly popularized, and there were many new developments.

On the basis of the extensive application of acupuncture for relieving pain, local medical service personnel made many attempts at using acupuncture to take the place of drug anaesthesia. In the spring of 1959, a national conference on acupuncture anaesthesia work was called in Hsi-an, and at this conference medical workers from every region of the country exchanged their experiences in and understanding of the use of acupuncture for these purposes. Later the same year, in

July 1959, a national symposium on the Chinese traditional techniques of acupuncture and moxibustion was held in Shanghai. In July 1960, there was a conference in Shanghai to exchange experiences in combining traditional and Western medicine. At these meetings there were reports on anaesthesia through needling of acupuncture points given by delegates from Shensi, Shansi, Kansu, Heilungkiang, Hopei, Shantung, Kiangsu, Anwhei, Fukien, Kiangsi, Hunan, Kuangtung, Kuangsi, Yunnan, Szechwan, Peking, and Shanghai. Delegates from Kiangsi and Chekiang reported on ear needling acupuncture, and delegates from Kiangsu and Shanghai reported on anaesthesia brought about by the injection of a small quantity of drugs in acupuncture points. Additionally, delegates from Shensi, Hopei, Hunan, Kuangtung, Kansu, Peking and Shanghai delivered accounts of the theory of pain relief by needling.

In the year before the cultural revolution, even though there had been few cases of surgery performed under acupuncture anaesthesia, through enthusiastic cooperation between traditional and Western-style physicians, some preliminary experience was gained in the matters of point selection, method of stimulation (needle manipulation), surgical technique, and nursing care: A definite foundation was established for future development.

Before the revolution, acupuncture anaesthesia was limited to a few large cities and large hospitals. But during the revolution, many regions organized medical personnel into medical-treatment and surgical teams to travel up the mountains and in the country-side developing acupuncture anaesthesia. They started training classes to popularize the technique, and gradually enlarged the range of application to include various forms of common surgery so that the new therapeutic technique could be used to serve the masses of poor and middle farmers. A large number of basic-level medical workers, "barefoot doctors," and rural educated youths successfully overcame hardship in learning acupuncture anaesthesia for common ailment in rural villages and mountain regions. Their work was a great convenience for the poor and middle farmers, and they received a great deal of praise for their efforts. In May 1970, the Ministry of Public Health arranged a national training class for acupuncture

anaesthesia as a further step in promoting its popularization in the entire country. According to statistics, in the 8 years before the cultural revolution, fewer than 10,000 surgical operations were performed under acupuncture anaesthesia. Since the revolution, the number of acupuncture anaesthesia cases in all regions has exceeded 400,000.

As acupuncture anaesthesia was being popularized, the clinical effect of acupuncture anaesthesia was concurrently improved and the techniques simplified. A great deal of firsthand data were acquired toward finding anaesthetically effective points by medical personnel needling their own bodies to test analgesic effects. Stemming from these experiments was the discovery that relatively difficult and complicated surgery may be performed under acupuncture anaesthesia. Medical workers continued to experiment upon themselves and also engaged in a great deal of clinical practice. Their experiences were continuously summarized in a search for regularities and in efforts to pinpoint the major contradictions. They brought to focus the function of the main point and reduced the number of secondary points, so that the selection of points- for acupuncture anaesthesia was continuously simplified while the clinical effect was continuously improved.

For example, the medical workers of Peking and Shanghai reduced the number of points used for acupuncture anaesthesia in pneumectomy and gastrectomy from several tens of points to a very few, in some cases just one or two points. The medical workers of Kiangsu Province continued to summarize experiences from practice to effect a continuous expansion of the clinical application of ear points in anaesthesia, with obviously improved analgesic effects. The medical workers of Shanghai, Kiangsu, Heilungkiang, Shansi, Kwichow, and Shensi created many new methods of acupuncture anaesthesia, such as face acupuncture anaesthesia, nose acupuncture anaesthesia, "Ch'ih-i-chen" anaesthesia, hand acupuncture anaesthesia, foot acupuncture anaesthesia, ear acupuncture anaesthesia, and head acupuncture anaesthesia.

Moreover, theoretical research on acupuncture anaesthesia has also been strengthened. During the cultural revolution, masses of scientific workers criticized a revisionist line of scientific research

which separated theory from practicality. They walked out of the tall buildings and isolated offices and plunged into clinical practice. They cooperated with clinical workers so that theoretical studies of acupuncture anaesthesia were united with practical application. They also resolved some practical problems. The party and the state looked upon theoretical research work on acupuncture anaesthesia as very important, and numerous directives were issued urging medical workers and scientific research workers to take the work seriously and to do a good job.

After the results of research on acupuncture anaesthesia were announced in *Jen-min Jih-pao*, in August 1971, the *Hung-ch'i* magazine began to assign a special column to discuss its theoretical principles and pointed out that "*in the therapeutic practice of acupuncture anaesthesia, medical workers have accumulated considerable and precious experience. This direct sensory understanding should be continuously raised to the level of rational understanding to bring about a new leap forward*". This statement greatly encouraged medical workers pursuing theoretical research into acupuncture anaesthesia. They carried out heated discussion on the theory of and published many papers on this anaesthesia, giving additional impetus to the theoretical research. Currently, a national level scientific research team has been formed for advanced studies on the clinical regularities and basic theories of acupuncture anaesthesia. Through continuous clarification of results of clinical research and the theoretical principles of acupuncture anaesthesia, medical and biological sciences will gain a new leap forward.

2: CHARACTERISTICS OF ACUPUNCTURE ANAESTHESIA

(A) Safety:-

Acupuncture anaesthesia is a relatively safe form of anaesthesia. Drugs used for anaesthesia may sometimes cause accidents due to overdose or patients' hypersensitivity to the drugs. Errors in the techniques of application may also create hazards. Also, in patients whose cardiac, lung, liver, or kidney function is not perfect, the application of anaesthetic drugs often produces side effects. Acupuncture anaesthesia

has no side effects on the organic functions of the patient and, as a rule, acupuncture anaesthesia in itself does not cause serious accidents.

(B) Few Physiological Disturbances

Due to the fact that needling of acupuncture points has the function of regulating the capabilities of the body, under normal conditions there can be no serious disturbance to the patient's physiological functions during surgery under acupuncture anaesthesia. The patient's blood pressure, pulse, and breathing generally are relatively stable. When surgery is performed in the stomach region, the effect on the gastrointestinal tract is minor, and peristalsis recovers very quickly. Thus, it is generally not necessary to reduce the gastrointestinal pressure and the patient may benefit from this. Moreover, the patient may eat soon after the surgery, and this is favourable postoperative recovery. When acupuncture anaesthesia is applied for surgery upon patients in shock, due to the regulating effect of needling (with some additional anti-shock measures) the blood pressure should very quickly rise, and can be maintained in stable condition during surgery. In cases of chronic consumptive diseases, where aging and malnutrition as a rule are present, acupuncture anaesthesia is eminently suitable.

(C) The Patient's Co-operation

In the acupuncture anaesthesia process, the patient remains conscious. Aside from a dulled sense of pain his sensory and motor functions remain normal. For this reason, the patient may fully exercise his subjectivity and cooperate with the surgeon in bringing about a good surgical operation. For example, during a muscle tendon transplant in a finger, the doctor may at any time ask the patient to move his fingers to check the effect of the operation. Similarly, when the sensory root of the trigeminal nerve is being severed, the area of sensory loss of the patient's face may be tested to avoid severing too much or too little of the nerve root. When acupuncture anaesthesia is used in emergency rescue

operations and for those wounded in battle, the wounded remain conscious with complete physiological functions; therefore it is easier to take care of and transport them.

(D) **Simple, Convenient, Inexpensive**

Application of acupuncture anaesthesia is relatively simple and convenient. Generally, a short period of training is all that is needed to master the technique. As special implements are not required, it is suitable for the needs of rural villages and mountainous regions, as well as in a wartime environment. This factor has important significance for the implementation of Chairman Mao's policy of "preparing for war, preparing for famine, for the people." Acupuncture anaesthesia applications require very little expense, are a factor in reducing the cost of medicine for farmers, and favourable for stabilizing the cooperative medical systems of rural villages.

(E) **Problems Awaiting Solution**

Acupuncture anaesthesia, a product of cooperative traditional and Western medicine has a strong life force, but it is still new and people's understanding of it remains to be deepened. At present, the clinical application of acupuncture anaesthesia has a few problems awaiting complete solution.

(i) *Partial analgesia*

Under acupuncture anaesthesia, the pain threshold of the patient is raised, but his sensation of pain is not completely eliminated. During certain stages of an operation, the patient may sometimes feel some pain.

(ii) *Traction Pain*

During an abdominal operation, the internal organs may be pulled for investigation and the patient may feel pain or other discomfort, and sometimes this pain or discomfort may cause the patient to become irritated. Surgeon should be very gentle during handling of viscera.

(iii) *Poor muscular relaxation*

During abdominal surgery, tension of the abdominal muscles sometimes causes some surgical difficulty.

(F) **Rate of Success and Advantages and Disadvantages**

The above problems are manifested in different degrees in cases of surgery under acupuncture anaesthesia. In the majority of cases, the analgesic effect is good, but in some cases the problems are more obvious. Currently, the rate of success of acupuncture remains about 10 per cent of the cases for whom, for various reasons the effect is relatively poor and drug anaesthesia has to be administered during the operation. Of course, these currently existing problems are not impossible to overcome. Through the method of point selection and stimulation the technique of application may be bettered, and a proper application of accessory drugs may bring about improvement toward future elimination of the problems.

There are advantages and disadvantages in both acupuncture anaesthesia and drug anaesthesia. The two techniques should complement one another so as to be improved together. If medical and public health goals are aimed at with persistence, and if unity of traditional and Western medicine is maintained, this new medical technique of acupuncture anaesthesia will be perfected to become a powerful weapon in mankind's struggle against diseases. It will become an important constituent of China's united new medicine and pharmacology.

METHODS AND TECHNIQUE:

Prior to surgery, both the surgeon and anaesthetist discuss the details of the surgical and acupuncture procedures with the patient. The anaesthetist shows the patient the specific points to be used and describes the subjective sensations to be felt by the patient; the anaesthetist may perform a trial run of the necessary points prior to surgery; the trial run tests the patient's level of pain tolerance and his response to needling so as to gauge the force needed for needle

manipulation or electrical stimulation. Hysterical patients, blessed with a neurotic disposition are not considered satisfactory candidates for acupuncture anaesthesia; for the patients should be emotionally stable in order to tolerate the psychological trauma of being conscious during major surgery.

Continuous practice over the last many years has led to an increasing number of methods of anaesthetization by means of acupuncture, from manual rotation of the needles to the electrical stimulation, from pressing a point with the fingers to injecting distilled water into the point. Finger pressure anaesthesia, the massage of acupuncture points, serves as an especially good method in dental work with children. Through practice, the number of points required for acupuncture has been effectively reduced; for example: in pulmonary resection, the number of points have been reduced from forty to one only. Regardless of the type of acupuncture manual rotation, electrical stimulation, or the injection of a particular solution at the acupuncture site, the Peking Acupuncture Anaesthesia Coordinating Group found no significant difference in efficacy between types.

With acupuncture anaesthesia, the pre-anaesthetic drugs are similar, in most cases the drugs which are used in Western anaesthesia, for example, scopolamine, demerol, phenobarbital and amytal with atropine. The *induction time* for acupuncture anaesthesia usually lasts from 15 to 20 minutes. The Peking Acupuncture Coordinating Group found that an induction time less than 15 minutes could decrease the efficacy of the anaesthesia and that an induction time greater than 30 minutes would not intensify the efficacy. In studying the cortical electric potential evoked by stimulation of tooth pulp in rabbits, they found that they could increase the analgesic effect of the acupuncture by using an induction time of 20 minutes. Even after induction, the needle stimulation or rotation has to continue throughout the operation.

In spite of the almost exorcistic sensationalism attached to acupuncture in some quarters, the technique used for acupuncture anaesthesia is quite simple, regardless whether it is manual rotation or electrical stimulation. With manual rotation_ the anaesthetist holds the needle with his or her thumb, index and middle fingers.

This way the thumb controls the rotating movements of the needle while the index and middle fingers guide the lift and thrust of the needle. The lift and thrust of the needle may vary from 0.5 cm to 1 cm; the degree of rotation varies from 180 to 360 degrees. The frequency of the manual twirling varies between 140 to 160 movements per minute.

Certain factors such as the *force of rotation* influences the anaesthesia. The pressure and frequency used in rotating the needles varies from patient to patient and also with the particular surgical procedure or manipulation in question. An increased force is used on patients with a good tolerance to needling during very traumatic surgical procedures; a decreased force is used on patients with poor tolerance to needling or on patients during minimally traumatic surgical procedures. For example, the force required for rotating the needle to produce anaesthesia for incisions of the skin or muscles may be relatively strong; in contrast while operating on internal organs, the force required may be relatively weak. For instance in sewing up the scalp after brain surgery, the frequency of the twirling has to be increased to diminish the pain, however, a milder stimulus is quite satisfactory during the actual surgery.

The technique of *electrical acupuncture* decreased the number of personnel needed for anaesthesia. With this technique, the needles are stimulated electrically. The frequency used for anaesthesia usually varies from 200 to 300 cycles per minute. The frequency does affect the result of the anaesthesia; in experiments on cats, lower frequencies such as sixty cycles per minute produced better results than higher frequencies such as 2000 cycles per minute. Nevertheless, the force of stimulation or voltage must be sufficient: clinically, 3 to 5 volts are usually used in electrical anaesthesia. However, the intensity may vary from 0.5 volts to 13 volts. The desired intensity of stimulation in animal experiments has varied from 4 to 18 volts; the cortical electrical effects of anaesthesia could not be inhibited with a decrease in voltage; but increasing the voltage did not increase the depression of cortical functions.

Through practice, the Chinese anaesthetists learned that the concept, "the more needles, the better the anaesthesia" was incorrect.

Through practice, the Chinese medical workers have also learned that one type of operation may be performed with different combinations of points, and that one combination of points may be suitable for many different kinds of operations. Perhaps these facts may be difficult for many Western physicians to understand and accept. Dr. Michael Debakey, who visited China in 1973, has expressed some concern over the "illogical selection of points".

The author is concerned too, that the acupuncture procedure varies widely and illogically from one hospital to another. Moreover, the acupuncture points selected seem to bear no relation to the human nervous system - and as yet no research anywhere has shown an alternative to the nervous system for the transmission of pain in the human body.

The selection of some points can be explained by conventional neurophysiological theory such as the principle of selecting points which are near the target area or innervated by the same nerve which innervates the target area. However, contemporary neurophysiology and neuroanatomy cannot explain the fact that needling the ear produces anaesthesia for abdominal and thoracic surgery as well as facial surgery or the fact that needling Kuang-Ming (GB-32), a point on the lower leg, produces acupuncture anaesthesia for eye operations. Endorphins, enkephalins and some other neurotransmitters may be playing a part in acupuncture anaesthesia.

SURGERY UNDER ACUPUNCTURE ANAESTHESIA

Acupuncture has considerable value. It is economical both in terms of initial investment and operational cost. The equipment not bigger than a telephone instrument does not require to be fixed or installed and can be carried from place to place. It is these additional qualities of acupuncture which favour its introduction and adoption, particularly in developing countries like our own. But unless placed exclusively in the hands of professionally qualified persons, these same qualities are also apt to encourage its indiscriminate use by quacks and unqualified, in whose hands acupuncture could turn into a harmful weapon which otherwise it is not.

With a view to popularise acupuncture in Pakistan, it would do well if the Armed Forces can take the lead by introducing it in all of their hospitals and medical institutions. This is being suggested not only because the Armed Forces are better equipped both in men and material to undertake this work but also because of their capability to maintain a better control and discipline on its use on a scientific basis and also with a view to add to the store of knowledge and information which is building up in respect of acupuncture therapy in the other countries of the world. I am, sure acupuncture will show the potentialities it has for taking its place side by side with the other recognised medical and surgical therapies. In the following pages different operations will be discussed.

1. ABDOMINAL SURGERY:-

Gastric Surgery:- Types of gastric operation consist of subtotal or total gastrectomy, pyloroplasty with vagotomy and gastrojejunostomy etc.

Points: Tsu san li (St. 36).

Shang chu Su (St. 37).

Needling is done bilaterally. Most of the patients experience practically no pain or distension, nausea, vomiting or urinary retention after operation. They are able to resume ambulatory activities two days after operation, drink liquid on fifth day. Sometime patient feels discomfort when peritoneum is touched and internal viscera is manipulated. The discomfort is quite severe during ligation of gastric artery, exploring the duodenal bulb, separation of adhesions and pulling the stomach. *To overcome incisional pain add point:*

Liang-men (St. 21) and penetrate forwards, Tien shu (St. 26) bilaterally.

Or Chiu-Wei (Ren 15) to chimen (L. 14). To reduce pain during skin incision needles are placed subcutaneously and longitudinally. These two needles which are placed parallel on each side of the incision

are stimulated with high frequency, usually 3000 to 6000 cycle per minute, that is maximum frequency on machine BT 701 and G 6805. Other needles which are placed on the legs are stimulated about 200 cycle per minute. While inserting peripheral needles patient should feel *teh-chi*, that is patient is inquired about whether he is feeling numbness, soreness, swelling and distension. If *teh-chi* is present, then usually the results are better.

Once the leg needles are connected to the electric stimulator note the movement of the feet. If feet move from outward to inward then the analgesic effect of acupuncture is good.

Once skin incision is made then electric stimulation can be slowed down. 20-30 minutes stimulation is required before skin incision is made, and just before skin incision it is advisable to give pethidine injection about 50 mg I.V.

As it has already been mentioned that surgeon should be very gentle while handling internal organs, retraction should be gentle, manipulation should be smooth and pulling of stomach should be avoided. Quiet and friendly atmosphere in operation theatre is necessary. 3 ml 2% xylocaine is diluted in 20 ml of distilled water and is injected or sprayed over peritoneum if required.

I would suggest here that all patients who are prepared for acupuncture anaesthesia should have same preparation as for general anaesthesia - A point which I want to stress that patient should not take anything by mouth at least 4 hours before operation. At some stage of operation anaesthetist may have to give general anaesthesia in case acupuncture fails.

Acupuncture anaesthesia should not be used if patient is obese or hypertensive. Result is good if patient is grade 1 in preneedling test. Thin patient, with age around 40 years and with broad costal margin acupuncture is effective. It is seen that gastric operation Billroth II effect is good, with acupuncture anaesthesia muscular relaxation is poor, to overcome this patients cooperation is necessary. While retracting

muscles, force is applied very gradually as muscle has adaptability when they are retracted they do not cause discomfort to the patient.

2. **Appendicectomy:-**

If it is chronic appendix and adhesion or mass is suspected then acupuncture is not applied.

Points:- Tsu-San-Li (St. 36).

San Yin Chiao (Sp. 6).

These points may be used on right side only. Some prefer to use:

Ho-Ku (Lt. 4)

Nei Kuan (P. 6).

Two extra points Nei Madian and Lan-Wei can also be used. Some prefer to use point Tai-Chung (L. 3).

Appendix should be searched with forceps and if necessary 1% Novocaine 1-2 ml can be used to spray peritoneum or injecting base of appendix.

3. **Gastroscopy:-**

Cheng Chiang (Ren 24); Lien Chuan (Ren 23) Shah Chung (Ren 17); Chung Wan (Ren 12) Tsu San Li (St. 36) bilateral; Neikuan (P. 6) bilateral, and Hoku (Li. 4) bilateral.

Electrical stimulation to needles is given about 1 ma. 12 Hz. for 1 ms. The electrical stimulation is started about 10-20 minutes before, and lasts throughout the endoscopy.

4. **Herniar:-**

Tsu-San Li (St. 36), San Yin Chiao (Sp. 6), Nei Madian (extra), Kung Sung (Sp. 4).

In some hospitals point San Yin Chiao (Sp. 6) and Shang-Chu-shu (St. 37) are commonly used.

5. **Hydrocele:-**

Wai toa (G.B. 28), Hung Ku (K. 11) or Yang Shi (Li. 5), Yao shu (Du 2), Yao Yan Kuan (Du 3).

6. **Hysterectomy:-**

Two sets of points can be used. In Chang Hai Second Army Medical College Hospital Shanghai I was taught by Professor Liu Shu Shao to use following points:-

Tsu San Li (St. 36) bilateral. San Yin Chiao (Sp 6) bilateral.

In Peace maternity (Ta Hwa) hospital Shanghai, Professor Hsu Chun Yi made me practiced to use following points:-

Chi-Chung (Du 6), Ming men (Du 4), Yao Shu (Du 2).

These points are situated on the midline of the back, and while needling in spinal position needle is forwarded till it almost reaches extradural space. High frequency is used to stimulate needles, and voltage is increased gradually till patient feels numbness on lower abdomen and perineal area. Needles are bent and strapped on the back till the end of the operation. Negative leads are connected to Chi-Chung and Ming Men while two positive leads are connected to Yao-Shu points.

Adjuvant drugs are given within specific limits. Results with both techniques are same - over 90% success.

7. **Labour Pains:-**

To control labour pain and have painless delivery, following points are commonly used:

Wai-Ling (St. 26), Gui-Lai (St. 29).

Needles are inserted transversely pointing towards midline. Both sides can be needled, depth of needles should be skin deep.

To induce labour pain use Ho-Ku (Li 4) and San Yin Chiao (Sp. 6) bilaterally and give strong stimulation for 30-40 minutes.

Dr. Aldo Fava of Italy has communicated us his personal experience in Labour Pain. He uses point Tizhong (Du 6) and Ciliao (U.B. 32) for induction of labour. Ciliao (U.B. 32) is a traditional point for labour pain. Other points viz UB 31; GB 33; GB 34; Ren 5,6,12; and bilateral St. 25 are also used.

For hypogalactia point Shanzhong (Ren 17); Ju-Ken (St. 18) are useful. It increases amount of milk delivered per feeding and speed of How from the breast.

8. **Tubal Ligation:-**

Tsu San Li (St. 36), San Yin Chiao (Sp. 6).

In International Peace Maternity Hospital Shanghai I was taught to use ear acupuncture for all cases of tubal ligation. In ear following points were used:-

Shen-men point. Sympathetic point. Brain to lung point.

9. **Caesarean section:-**

Anaesthetist who wants to give anaesthesia with acupuncture I would advise to try in thyroid surgery or Caesarean section before attempting for any other operations.

Acupuncture in L.S.C.S. (Lower Segment Caesarean Section) is safer, bleeding is less than epidural or general anaesthesia. Blood pressure fluctuation is less in pre-eclamptic patient, but in eclampsia and convulsion acupuncture should not be given. Following points are selected:

Tsu San Li (St. 36) bilateral. San Yin Chiao (Sp. 6) bilateral. Nei Madian (extra) bilateral.

When there is foetal distress and emergency operation is to be done, then avoid acupuncture, as 20-30 minutes are required for induction and undue delay may be dangerous for the foetus.

10. **Cholecystectomy and Splenectomy:-**

Tsu San Li (St. 36); San Yin Chiao (Sp. 6); Dannage (extra), or Tsu Sanli (St. 36); Ho-Ku (Li 4); Nei Kuan (P. 6).

In addition to peripheral points, local points should also be applied to reduce skin incision pain. It has already been mentioned that local points should be stimulated with high frequency such as 6000 cycle per minutes.

11. **Haemorrhoidectomy:-**

Pai-Huan-Shu (UB 30) bilateral.

12. **Prostatectomy:-**

Same points as Hysterectomy.

II **OPERATION ON UPPER LIMB:-**

Only those points are usually stimulated which are located near the nerves. For example point Chui pen (St. 12) corresponds to brachial plexus, and similarly Che Chuan (H. 1) is also related to brachial plexus. These two points are very important as strong stimulation of these points can make the whole limb numb and all sort of operations on upper extremities can be performed.

Chih-tse (Lu. 5) correspond to radial nerve. Shao-hai is related to ulnar nerve. Lieh Chueh (Lu. 7) is related to wrist radial newe; Naikuan (P. 6) to median nerve in wrist and Ling Toa (H. 4) ulnar nerve in wrist. Needle is inserted just near to the nerve and strong stimulation with high frequency is applied.

Adjuvant drugs are used if necessary.

III. OPERATION ON LOWER LIMB:-

1. Menisectomy:- Main points are:-

Chihai Shu (U.B. 24). Tachang Shu (U.B. 25).

Femoral nerve point Chiman (Sp. 11) is added and also sciatic nerve point Yin men (U.B. 51) is added sometime. Feng Shih (St. 31) is related to lateral cutaneous nerve of the thigh.

For medial menisectomy of the knee:-

Chimen (Sp. 11) and Yin men (U.B. 51).

For lateral menisectomy of the knee:-

Feng Shih (St. 31) and Yin men (U.B. 51).

2. Internal fixation of the fracture neck of femur:-

Tsu San li (St. 36), Tai Chung (Liv, 3), Chiu Chu (G.B. 40), Hsuan Chung (G.B 39), San Yin Chiao (Sp. 6) Fu Yang (U.B. 59) Wai Chiu (G.B 36), Feng Lung (St. 40).

Some times Pi Kuan (St. 31) and Huan Tiao (GB 30) are also selected.

3. Laminectomy:-

Laminectomy in neck region, results are better than other sites. For neck Ho Ku (Li 4) and Nei Kuan (P. 6) are selected and two needles are inserted parallel to the incision about 6-8 cm. apart or four needles are inserted just under the skin to encircle the incision line. It is a sort of "Transcutaneous Electrical Nerve Stimulation" (TENS).

IV. OPERATION ON NECK:-

Thyroidectomy, Thyroglossal fistula, neck dissection plastic repair etc. are common operation. In thyroidectomy results are excellent.

Futu (Li. 18); Ho Ku (Li. 4).

Nei Kuan (P. 6) are commonly used points. In the ear, point Shenmen, point lung, and point neck, can be used.

Thyroidectomy:-

Ho-Ku (Li. 4) bilateral, Nei-Kuan (P. 6) bilateral, Fu-tu (Li. 18) bilateral.

Fu-tu point should be located carefully. Electrical stimulation is given upto 6000 cycle per minute and voltage is increased gradually till patient feels numbness over the thyroid area. If patient feels numbness over the shoulder it indicates that needle location is not correct, so change the direction of the needle. Fu-tu point is very important. but needles come in way of operation field. So it is advisable to bend the needle at Fu-tu point and fix it with sticking plaster. In some hospital Fu-tu point is not used still the results are same; but I think Fu-tu point make the skin incision painless, so it should be used.

Adjuvant drugs should be given if necessary.

Anaesthetists who are new in this field. I would suggest them to try acupuncture anaesthesia in thyroid surgery. It is better to select small adenoma to begin with. Anaesthetist should choose his surgeon who is gentle and quick in surgery. Pulling of thyroid tissue should be avoided as patient may feel suffocation. Do not hyper-extend the neck during operation. Tissue should not be handled roughly. If there is nausea, droperidol may be given.

V. *NEURO-SURGERY:-*

In neuro-surgical operations acupuncture anaesthesia is quite successful, Intracranial pressure fluctuation are not marked. 3 to 5 minutes after stimulation of needles intracranial pressure rises, after that it comes to normal, the rise is less than general anaesthesia.

Chuan Liao (Si 18) for forehead and central region Ho Ku (Li 4) for frontal and parietal region. These two points are common.

Tai-Chung (Liv. 3), Lin Chi (GB 41), Hsien Ku (St. 43)-among these three points usually one point is selected as it control nausea and vomiting. In some hospitals following points are commonly used:-

Erh men (S.J. 21); Ting hui (GB 2); Tsuan Cho (U.B. 2); Shuai Ku (G.B. 8).

If ear acupuncture is to be used, then needle-points shenmen, brain stem, lung, and sympathetic.

When scalp incision is made it is better to inject saline and adrenaline along the incision line. 100 ml. saline with 0.2 to 0.5 mg of adrenaline.

In supra tentorial operation results are good. In posterior cranial fossa surgery there may be slow breathing or apnoea during operation with abrupt rise in blood pressure and convulsion. This situation should be tackled carefully by the anaesthetist.

VI. *EYE OPERATIONS:-*

Eye lids and cornea are very sensitive to pain. Acupuncture anaesthesia raises the intra-ocular pressure. Operation on eyelids- result of acupuncture is poor.

Ho-Ku (Li 4) and Nei Kuan (P. 6) are common points.

Yang Pai (G.B. 14), Yu Yao (Extra 3), Zan Zu (U.B. 2), Cheng- chi (St. 1) Sui Pai (St. 2) are also used.

120-180 cycle/min frequency may be used for the points around the eye. High frequency does not effect muscles of the eye but it effects ocular pressure. Low frequency causes facial muscle twitching.

In some hospitals prenicdications are not given but some prefer to give only luminal 0.25 to 0,75 mg. Diamox may be given or

glycerine 50% 100 ml is given orally half an hour before operation to lower the intraocular pressure. Some also use 2-3 drops of pentocaine locally.

VII. *E.N.T. OPERATION:-*

Among operations on Ear, Nose and Throat, it has been seen that acupuncture anaesthesia results are good in D.N.S. (deviated nasal septum) operations.

S.M.R. and Nasal polyp:-

Needle is inserted from Yin tang (extra 1) to Shang Ying Hsiang point and twisted for 5-10 minutes. Needle should go deep and should touch the periosteum. While twisting the needle conjunctiva of the eye becomes congested, if congestion is more, the analgesia is effective. Excellent results are obtained in 90% of the patients. To avoid bleeding nasal pack with adrenaline or ephedrine can be given,

Radical maxillary operation:-

Yin tang (extra 1) to Shang Ying Hsiang. Ho Ku (Li 4) and Nei Kuan (MC 6). 1% Pentocaine pack is usually needed for this operation.

Radical Mastoidectomy:-

Inject 1 ml of 0.1% of Pentocaine in point Yi feng (SJ 17) and Hsia Kuan (St. 7). If patient feels distension it is enough otherwise stimulate Fu-tu (Li 18) and Anmian point with high frequency and Ho Ku (Li 4) and Nei Kuan (MC 6) with low frequency.

Hsia Kuan point may block facial nerve. Pethidine should be used while chiseling the bone.

Tonsillectomy:-

Ho Ku (Li 4), Chung Chu (SJ. 3), Nei Kuan (P. 6).

Laryngectomy:-

Ho Ku (Li 4), Chih Kou (SJ. 6).

Ear points are:- Lung, shenmen, adrenals, and neck.

VIII. OPERATION ON FACE AND MOUTH:-

Fu-Tu (Li 18) Ho-Ku (Li 4) are common points.

Chu Liao (St. 3) is useful for maxillary area. Hsia Kuan (St. 7) effect trigeminal nerve in front of ear. Tian Rong (St. 17) blocks infra auricular nerve.

Others are distal or peripheral points:-

Yang-fu (GB 38) Fu-Yang (UB 59), Tai Chong (Liv 3) Xiangu (St. 43), Xiashi (GB 43).

Ear points are:- Shenmen, sympathetic and lung.

Tooth Extraction:-

Chu Liao (St 3) for upper teeth Chia che (St. 6) for lower teeth.

Hsia Kuan (St. 7) is added if necessary. So in some hospitals finger press method is used, where points are pressed and massaged with thumb and index finger Ho-Ku (Li 4); Taiyang (Ex. 2) can also be used.

SUMMARY OF POINT SELECTION IN DENTAL EXTRACTION

$\begin{array}{c} \\ \hline 3 \quad 1 \quad \quad 1 \quad 3 \end{array}$	$\begin{array}{c} \\ \hline 5 \quad 4 \quad \quad 4 \quad 5 \end{array}$	$\begin{array}{c} \\ \hline 8 \quad 6 \quad \quad 6 \quad 8 \end{array}$
Renzhong (Du 26) Yingxiang (L.I. 20)	Quanliao (S.I. 18) Sibai (St. 2)	Xianguan (St. 7)
$\begin{array}{c} \hline 3 \quad 1 \quad \quad 1 \quad 3 \end{array}$	$\begin{array}{c} \hline 5 \quad 4 \quad \quad 4 \quad 5 \end{array}$	$\begin{array}{c} \hline 8 \quad 6 \quad \quad 6 \quad 8 \end{array}$
Chengjiang (Ren 24)	Daying (St. 5)	Jiache (St. 6) Zhilong 4 (Extra)

Distal points: Hegu (L.I. 4) Yiangxi (L.I. 5) Quchi (L.I. 11) Lieque (Lu. 7) Neiting (St. 44).

Method of stimulation

- a. Hand rotation of the needle.
- b. Only 1-2 points are used per operation,
- c. Three movements of the needle - lifting, thrusting and rotating are done simultaneously.
- d. Frequency: 180 times/min.
- e. Rotation extent: 90°-180°.
- f. Moderate stimulation. Patients may have a feeling of soreness, distension, heaviness or numbness.
- g. Induction time: 1-2 min.

Parotid gland operation:-

Fu-Tu (Li 18); Hsia-Kuan (ST 7); are stimulated with high frequency and Hu-Ku (Li 4); Nei-Kuan (P. 6); Feng-Long (St. 40) Yang-Fu (GB 38) are stimulated with low frequency. Local analgesis may be added while exploring facial nerve.

Temporo Mandible joint operation:

Fu-Tu (Li 18); Tien-Rong (Si 17) are blocked with 2 ml of 1% Pentocaine. Ho-Ku (Li 4) & Nei-Kuan (P. 6) are stimulated electrically. Fu-Tu injection should be deep, while cutting of ramus mandible, give Pethidine 50 mg I.V.

Hare lip operation:-

Acupuncture in children is not effective. In adults use Chu-Liao (St-3) point bilaterally. Needle should enter infra orbital foramen & stimulate with high frequency. Patient will notice numbness in the upper lip.

Ho-Ku & Nei-Kuan may be added they potentiate the analgesic effect of Chu-Liao.

In children Chu-Liao point can be used provided they are heavily sedated.

Palate operation:-

Ho-Ku (Li. 4) Nei-Kuan (P. 6) and Feng-Long (St. 40) are commonly used points.

Droperidol is given to avoid nausea & locally lignocaine should be sprayed also.

IX. CHEST OPERATION:-

Acupuncture for chest surgery is difficult because there is problem of open pneumothorax. When chest is opened paradoxical breathing, mediastinal flutter & pendular breathing etc. may occur. To avoid these problems patient is given breathing exercises 1 to 2 weeks before operation. 2.5 kg. weight sand bag is kept on the chest and patient is trained to breath abdominally. Weight is increased daily upto 10 kg. Glottis is relaxed and abdominal breathing is given 5 times per minute for half an hour. PCO₂ may rise during operation, so it is advisable to ask the patient to breath deeply through oxygen mask.

After opening the chest there may be secretions which cause cough, pulmonary resistance is increased. So scopolamin and atropine is given pre-operatively in such cases, or give morphine I.V. In most of the cases conscious tracheal intubation is used under local spray.

Lung operation:-

If respiratory function is poor and there are pleural adhesions then acupuncture anaesthesia is not successful.

Point just below Yi-Feng (S.J. 17) is Hsia-Yi-Feng which is important point. Tip of the needle is directed anteriorly or posteriorly according to the site of incision. Or needle, San-Yin-Lo through Hsi-Men (P. 4), stimulator is connected to Hsia-Yi-Feng with positive lead San-Yang-Lo and Hsi-Men with negative lead. Frequency is usually 200 cycle per minute.

Locally saline and adrenaline is injected. If ribs are cut then 0.2% Pentocaine 2 ml is used to block the intercostal nerve. Retract the chest wall gradually & gently, open pleura 1-2 cm. then wait for a few minutes till patient gets adapted and acclimated. 5 ml of 0.5% Pentocaine may be used to block the hilum of the lung.

Other points are Ho-Ku (Li. 4) and Pi-Rou (Li 14). Pi-Rou control cough also. Nei-Kuan (P. 6) Hsi-Men (P 4) have analgesic effect. San-Yin-Lo and Chen-Liao are selected sometime.

Beside body acupuncture in some hospitals scalp acupuncture is also used for chest operations - bilateral thoracic cavity region is needed on the forehead.

Mitral commissurectomy, pericardectomy & oesophageal operations can also be done under acupuncture analgesia.

PRE-OPERATIVE TESTS FOR ACUPUNCTURE ANAESTHESIA

During my early training in Shanghai Second Army Medical College I gave acupuncture anaesthesia to 46 cases over a period of 8 weeks. In the following pages we shall discuss preneedling tests carried out in all cases one day before operation. The patients were graded as to how they shall take acupuncture anaesthesia.

I. Tests for Pain Sensation:-

The patient with high pain threshold not necessarily have good results with acupuncture anaesthesia, but patient with good tolerance may have good results. There is no parameter to measure pain. Threshold and tolerance are different from each other. Acupuncture anaesthesia is related with pain tolerance but we use pain threshold.

Location of test:- Any area of the body can be selected, it is preferred to select acupuncture points on the body such as Ho-Ku and Tien-Tu points.

Following methods can be applied:

- (a) *Tooth forceps with 1000 calibration* – Skin is pinched and note the mark on the scale. Three tests are given on each point and average is recorded.
- (b) *Potassium ion analgesic meter* – when impulse passes K^+ goes in the cells and pain results. With 10 to 20 voltage pain threshold is recorded in milliamperes. If the current is more, then more K^+ will go into the cell. We can measure pain tolerance and pain threshold, but it is related to skin resistance and sweating (in sweating resistance is more).
- (c) *Analgesic meter of spring pressure:-* 0-500 gm pressure is applied with a pointer of 1 mm diameter and pain threshold is measured in grams. It is not commonly used.
- (d) *Electric Stimulation analgesic meter:-* Except D.C. (direct current) all kind of pulse current or A.C. (alternate current) are used. D.C. cause burns of the skin. Pulse & A.C. are harmless to skin. Amount of current applied measure the degree of analgesia, similarly voltage in other machine measure the degree of analgesia. It is common to use square wave constant stimulation. All electric stimulators give gradual increase in current. So rate of increase of current should be same and time should be equal for each point under test. Distance between two electrodes should be same i.e., between fixed and exploring electrode.

Clinically pain threshold is low in neck and high in extremities that is why some say acupuncture anaesthesia results are good in neck surgery.

- (e) *Analgesic meter of Heat radiation:-* 50 Watt 12 voltage bulb is kept at a certain distance from patients skin. Count the time in seconds, longer the time higher is the threshold.

- (f) *Tolerance of needling*:- Above five methods indicate about pain tolerance & threshold both, but the needling method would tell only tolerance, Ho-Ku and Nei-Kuan are selected. Insert the needle and note the patient's reaction while inserting the needle, then while twisting lifting and thrusting it. If patient can stand all these sensations then patient is placed in grade I. Otherwise patient will have poor response with acupuncture anaesthesia.

Pain threshold measurement is not adequate so other test should also be carried out.

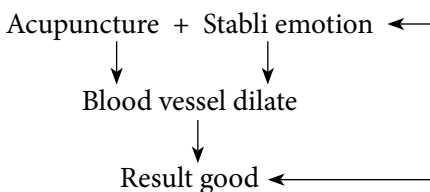
II. Testing skin and Blood vessels State:-

After needling if there is no sweating and extremities are warm then acupuncture anaesthesia result will be good. Watch for sweating on the tips of the fingers. This phenomenon is related to autonomic (sympathetic) system. If sympathetic is depressed results are good. So skin temperature, resistance and capacity of blood vessels are related to sympathetic nervous system:-

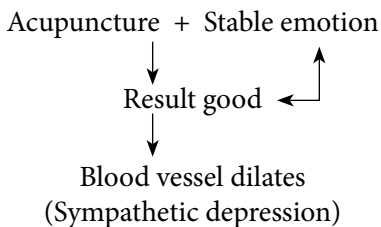
- (a) *Skin temperature*:- Thermistor, or thermal elements are used to take temperature but thermal element is more accurate. Take temperature before and after needling. 18-22°C should be room temperature. If after needling skin temperature rises half degree then results are good. If temperature remains same or drops down or temperature rises after removal of needle-then results are also good. This shows blood vessels have dilated. But this test is not reliable,
- (b) *Skin resistance*:- After needling if resistance is low then results are good, but there is some difficulty in measuring skin resistance; patient is to be calmed first, if blood vessels dilate then skin resistance is low. It is done with two needles.
- (c) *Capacity of blood vessels*:- It is a more reliable method. It is an objective method of measuring pain. In pain blood vessels constrict and capacity reduces. This tells whether

there is pain or not but not the degree of pain. Finger tip vessels (capillaries) are taken and wave form is recorded. If vessels dilate then wave amplitude is high. In pain, vessels are constricted and wave form is of low amplitude. It is 90% reliable test. Vessel resistance is indication of blood capacity. After needling test if the capacity is low then the results are not good, but the opinion differs. It is said Acupuncture Anaesthesia (AA)—if effect good—blood vessels dilates—So give drugs to dilate the vessels. On the other hand AA—vessels dilate-effect good here no drugs are used.

Again if sympathetic is easily excited results are not good. Opinion differs. Sympathetic depression has good results, but good results also produces sympathetic depression. This state of affairs is also related to emotional stability of the patient. Blood vessels dilate if patient is stable and the results are good.



Again:



III. Mental state:-

Emotional factor also plays a part in acupuncture anaesthesia. In nervous patients results are not generally good but this is not a constant affair. If patient is calm and cooperative the results are good.

IV. Traditional method Yang Hsu & Yin Hsu:-

If Yang is hypoactive, effect of acupuncture anaesthesia is good but in hypo Yin results are not good. For hypo Yang: tongue is highly coated enlarged and in hypo Yin: tongue is reddish, pale and dry. Similarly pulse is weak and slow in hypo Yang but quick and deep in hypo Yin. Pulmonary tuberculosis is Yin hypoactivity, other chronic diseases are Yang hypoactivity.

V. State of Meridians:-

Bilateral twelve meridians should be in state of balance. If corresponding meridians are not balanced then it is said that acupuncture anaesthesia results are better. Meridian balance is measured with K+ ion analgesic meter. Finger and toes Ching points i.e. point located on fingers and toes are taken into account & pain threshold is measured in micro amperes. Average value of pain threshold of one hand points is taken and compared with other hands value. If one reading is less than average upto 150% then hypoactivity. But for preoperative tests it is not indicated. We compare the value to numbers only, if it exceed 200% it is unbalanced. If two corresponding meridians are unbalanced then results are good. For example 1 in gastrectomy operation if bilateral stomach meridians are grossly imbalanced then effect of acupuncture anaesthesia will be good in that particular patient.

VI. Other methods:-

- (a) *Discrimination of two points:* Two points discrimination test is done on both forearms before and after needling test. If distance increases after needling then it is thought that acupuncture will have good result.
- (b) *Adrenaline test:* 0.1 ml of 1:2:1000 adrenaline is injected intradermally, a white patch is measured every five minutes approximately. If patch starts disappearing in half an hour then acupuncture has good effect. If patch disappears quickly then results are excellent. This test is not related to emotional state of the patient which I have seen clinically. I think there

is something which absorbs the adrenaline from local site quickly.

- (c) *Atropine test*:- 0.5 mg atropine is given intramuscularly, pulse is recorded, This is parasympathetic test, if there is slight change in pulse then result is good, if on the other hand difference in pulse rate is high then result will be poor.
- (d) *Sweating* is recorded before and after needling; result is good if there is no sweating alter needling.
- (e) *Triple response test*: if result is positive then the effect of acupuncture is good.

I have mentioned, above six methods which one should try before giving acupuncture anaesthesia. All tests are not possible to apply in a single patient. So tests should be selected according to the availability of time, but certainly these tests would be of great help in research project and further advancement of the acupuncture anaesthesia.

There are still some problems in acupuncture anaesthesia as *incomplete analgesia, traction pain and poor muscular relaxation*. I am sure with further research and hard work we shall over come these problems.

Following tables should be used to assess the degree of acupuncture analgesia and suitable chart should be made which should be attached with patients case sheet. I have made this chart for the convenience of anaesthesia students:-

I. **Pain threshold with K⁺ analgesic meter.**

Neck Thorax Abdomen

Before needling:

After needling:

Grade:-

II. Two point discrimination Test:

Left Arm *Right Arm*

Before needling:

After needling:

Grade:-

III. Adrenaline Test:

1 minute 5 minutes 15 minutes 30 minutes 40 minutes

Grade:-

IV. Response to needling at Ho-Ku point:

Strong

Medium

Weak

Fear of needling

Grade:-

V. Ching-Lo Balance

Ching-Lo	Left hand	Right hand	Ching-Lo	Left foot	Right foot
L			Sp		
Li			Liv		
P			St		
SJ			GB		
H			K		
Si			UB		

Grade:-

VI. Yin and Yang Concept:

	Yang Hsu	Yin Hsu
Pulse:	Slow Strong	Rapid, thready
	White & Coated	Red
Tongue:	Light tongue	Yellow & dry coated
	Small size	Large size
Stool :	Diarrhoea	Constipation
Urine:	Polyurea	Oligurea
Sleep:	Good	Poor
Temperature:	Fear of cold	Fear of warmth

Grade:-

After performing preliminary tests for acupuncture anaesthesia patient is graded as to see how they shall take acupuncture anaesthesia. Once acupuncture anaesthesia is given, the patients response is noted again and it is compared with preliminary grade. Record is made during operation. All steps of operation are recorded & patients response is noted on a proforma which should have following column:-

Operation steps; Time; Blood pressure; Pulse; Respiration. Vascular volume, EMG, EEG, ECG; Reaction to pain (such as drawing, obvious pain), Sweating, Frequency of electrical stimulator and its voltage, Drugs given etc.

If a patient is given a grade I in preliminary test then patient will show good response during operation also, but sometime it has also been seen that patient with poor preliminary test shows excellent result during operation.

The patients are usually graded as follow during operation:-

Grade I: Excellent: Patient does not feel pain on skin incision. Patient remains calm and still during operation. Pethidine (or other strong analgesia) is not given more than 75 mg in adult Operation is completed smoothly, Novacaine 0.1 % is given 10 ml or less.

Grade II: Good: Patient comparatively calm, pain or pain expressions at crucial steps of operation. Novacaine 0.1% within 20 ml. Pethidine 100 mg in adult.

Grade III: Obvious pain to the patient, which can be relieved by adjuvant drugs and it is still possible to complete the operation. Novacaine 0.1% within 30 ml.

Grade IV: Failure: 2 Acute pain, patient cannot tolerate the pain and general anaesthesia, spinal or epidural is given to complete the operation.

It has been seen that following types of patients show good results with acupuncture anaesthesia:

1. Patients over 30 years of age.
2. Seriously ill patient.
3. Thin patient.
4. In labourers, workers and peasants results are better than intellectuals.
5. Emotionally stable patient.
6. Routine patient shows better result than emergency case.
7. Patient those who are in actual need of operation such as plastic repair of some defect.

ACUPUNCTURE ANAESTHESIA (Personal Experience)

During my training in Shanghai Second Army Medical College Hospital, administered acupuncture anaesthesia to 46 surgical cases. In all cases anaesthesia was successful. Following grades were given.

Nature of Operation	Grade	Grade	Grade	Grade	No. of Pt.
	I	II	III	IV	
Abdominal Hysterectomy	2	5	2	-	9
Tubal Ligation	1	1	-	-	2
Caesarean Section	1	1	-	-	2
Inguinal Hemia	-	-	2	-	2
Thyroidectomy	2	4	-	-	6
Hydorcele	-	-	1	-	1
Meniscectomy Knee	-	2	-	-	2
Gastrectomy	3	3	-	-	6
Pterygium	1	3	-	-	4
Glaucoma	-	1	-	-	1
Nasal Septoplasty	5	1	-	-	6
Repair Cranial Defect	2	-	-	-	2
Appendicectomy	1	1	1	-	3
TOTAL	18	22	6	-	47

Acupuncture anaesthesia is safest as compared to general anaesthesia or local analgesia. There is no fall in blood pressure, pulse remains stable. There is less bleeding and post operative recovery is quick and requirement of analgesia drugs are far less.

I have used acupuncture for post operative pain also. W.H.O. and Pakistan Medical Research Council have given a special grant for this acupuncture project. The research in post-operative pain is quite encouraging, and I am sure acupuncture in post-operative pain can be very useful and we can avoid many side effects of analgesic drugs.

Acupuncture decreases the need for narcotics in the relief of postoperative pain. Acupuncture also improve chest expansion and mobility in patients who have had thoracotomies. It also decreases the incidence of pulmonary complications by alleviating incisional pain.

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CURRICULUM

Acupuncture Training Centers has mushroom growth in the previous few years. The author feels that number of people have come into this field without any medical knowledge. It is preferable if the basic knowledge of the following is carried out. It is therefore recommended that the following may be included in the Curriculum.

A. ANATOMY

This can be divided into two parts.

- a. SURFACE ANATOMY.
- b. INTERNAL ANATOMY.

The study of the following may be considered for better understanding.

1. Wounds and infections.
2. Arteries and veins.
3. Lymphatics.
4. Hand & Foot and Injuries pertaining to them.
5. Skin and Burns.
6. Bones, joints, Cartilages and ligaments.
7. Congenital diseases.
8. Muscles, Tendons and Fascia.
9. Neurological disorders of Musculo skeletal system.
10. Upper and lower limbs.
11. Head, Skull, Scalp and Brain.
12. Spine.
13. Nerves.
14. Eye and orbit.
15. Face, lips and palate.
16. Teeth, Gums and Jaws.
17. Mouth, Cheek and Tongue.

18. Ear, Nose and Throat.
19. Neck and Thyroids.
20. Thorax.
21. Oesophagus, Stomach, Duodenum, Spleen and Liver.
22. Gall bladder and pancreas.
23. Intestines. (Large and small including appendix),
24. Anal canal and rectum.
25. Abdomen. (Wall, Umbilicus, Hernia).
26. Urinary Tract. (Kidneys, Ureters, Urinary bladder).
27. Prostate and Urethra
28. Genital Area. (Penis, Testes and scrotum).

B. PHYSIOLOGY:

Study of physiology is essential because it tells us the functional organization of the human body and control of the internal environment. The following topics maybe covered under the respective systems.

1. ALIMENTARY TRACT.
 - General principles of G.I. Motility.
 - Secretory functions of G.I. Tract.
 - Digestion and absorption in the Gut.
 - Gastro intestinal disorders.
2. RESPIRATION
 - Basic mechanism of Respiration.
 - Functions of Respiratory passages.
 - Principles of Gaseous Exchange in the body.
 - Regulation of Respiration.
 - Respiratory disorders and artificial respiration.
3. CARDIOVASCULAR SYSTEM.
 - The heart as a pump & regulator of Cardiac functions.
 - Cardiac cycle & Cardiac contractility.
 - Study of ECG.
 - Abnormalities of Cardiac origin.
4. CENTRAL NERVOUS SYSTEM
 - Organization of Nervous system.
 - Sensory and Motor divisions.

- Levels of Nervous system Functions.
- Transmission & processing of Nervous system.

Somatic sensations e.g. Pain, Thermal, Headache.

5. GENERAL.

- Study of Blood
i.e. Blood Group, Haemoglobin, Anaemia, Transfusion etc.
- Study of Muscles.
i.e. Contraction, Hypertrophy, Atrophy etc.
- Study of Lymphatic System.
i.e. Oedema, Lymphatic drainage etc.
- Study of Pulmonary & Coronary Circulation.
i.e. Lungs, Capillary dynamics and blood flow etc.
- Study of regulation of Arterial pressure.
i.e. Hypertension, Circulatory Shock etc.
- Study of body fluids and kidneys.
i.e. Intra and Extra cellular fluids, Formation of urine, Renal disorders.
- Study of optics of vision.
i.e. Eye, Retina Colour vision etc.
- Study of metabolism and Temperature Regulations.
i.e. Lipid, Protein, Vitamin & Protein metabolism, Fever etc.

C. **PATHOLOGY**

- a. General Pathology
- b. Specific Pathology
 1. Cell Injury, Cell Death
 2. Inflammation
 3. Neoplasia
 4. Genetic disorders.
 5. Immunity & diseases
 6. Infectious diseases

7. Deficiency diseases.
8. Deceases of Infancy
9. Diseases of Aging
10. Endocrine System
11. Growth disorders.
12. Viral and Rickettsial Injections.
13. Fungal Infections
14. Animal Parasite Infections
15. Pigments and Pigmentation
16. Ionizing Radiation
17. Regional Pathology
 - a. Heart
 - b. Blood Vessels
 - c. Kidney
 - d. Respiratory
 - e. Mouth, Neck, Desophagns
 - f. Stomach & Duodenum
 - g. Intestine
 - h. Liver, Biliary Passages
 - i. Pancreas
 - j. Urinary Tract
 - k. Male Reproductive organs
 - l. Female Reproductive organs
 - m. Breast
 - n. Pituitary
 - o. Adrenals
 - p. Thyroid
 - q. Parathyroid
 - r. Blood
 - s. Spleen
 - t. Lymph Nodes
 - u. Nervous System
 - v. Bones
 - w. Joints
 - x. Muscles
 - y. Skin
 - z. Dental Pathology

The author (Salim) suggests that anybody who would like to establish a pain clinic should follow the advice of well renowned pain specialist Dr. S. Lipton whose advice is as follow:-



SL/SPY

2nd June, 1992

Brigadier M. Salim, MBBS, MCPS (Pak),
Professor of Anaesthesiology,
Military Hospital,
Rawalpindi,
Pakistan.

Dear Professor Brigadier,

Thank you for your letter of 18th May 1992. You have come up against the real problem in getting a pain centre established - namely the neglect of your fellow physicians and sometimes their active opposition.

The only three things I can suggest are:-

- 1) Continue to treat the patients who come your way as effectively as you can.
- 2) Do not kill (or allow to die) any patient however ill, that you treat in your initial major 20 treatments.
- 3) The majority of severe pains will probably be cancer pain and fortunately these offer the best chances of pain relief - but remember 2) above.

As long as you continue to treat pain patients and get the usual 50% of patients benefitting sooner or later your colleagues will start sending the patients to you. You might also see if any of them would like to be associated with you in the pain clinic for your mutual benefit. This should bring in different types of pain patients.

Yours truly,

S. Lipton
S. LIPTON

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