

VIBROACOUSTICS

Vibroacoustics is a somatic practice based on the use of low frequency sound transmitted to the body through physical supports like sound tables, recliners, etc. Its purpose is neither diagnosis nor the treatment of disease, but rather to support the body's regulatory processes—particularly those of the nervous system. Today is used in a wide range of settings: Wellness, education, somatic practices, supportive interventions, and in some cases, clinical contexts.

Fibro acoustics is not an isolated technique. It is a complex practice involving the nervous system, embodied perception, context, relationship, and time. Without a framework that integrates these elements, its application becomes reductive or inappropriate.

Vibroacoustics works through the body, but it cannot be reduced to a purely mechanical action on the body. It involves perception understood as an active process of constructing experience. The body is not an object to be acted upon, but a system that receives, interprets, integrates, and responds.

Time is an implicit therapeutic factor—often overlooked. Vibroacoustics engages processes that cannot be accelerated without consequences. For this reason, time is part of the intervention: continuity matters more than intensity, and effects should be evaluated over the medium term.

Common areas of use may include:

- stress, anxiety, and insomnia,
- Chronic pain (fibromyalgia, low back pain),
- Musculoskeletal disorders,
- Neurological rehabilitation (in selected protocols),
- Support in autism spectrum conditions (sensory stimulation),
- Palliative care and pain management.

SOUND, VIBRATION, AND INFORMATION IN BIOLOGICAL SYSTEMS

Sound is a mechanical wave: to exist and propagate, it requires a material medium. It does not travel through a vacuum; Instead, it moves through isolating particles, transmitting energy and information from one particle to the next. Depending on the medium it traverses—air, liquids, or solids—some changes in speed, behavior, and effects.

SOUND PROPAGATION THROUGH AIR

In air, sound propagates as a wave of compression and rare fraction of gas molecules.

Average speed: approximately 343 m/s (at 20°C).

Propagation is relatively slow, and higher frequencies attenuate more readily.

Sound is strongly influenced by distance, temperature, and humidity.

Air is the medium most familiar to us: speaking, listening to music, and perceiving everyday sounds occur primarily through error. However, here is not the most efficient medium for transmitting deep vibrations into the body.

SOUND PROPAGATION IN LIQUIDS

In liquids—such as water, which constitutes a large fraction of the human body—sound travels faster and more continuously.

Average speed in water: approximately 1,480 mm/s.

Higher density generally implies more efficient transmission and less energy dispersion.

The human body contains a substantial amount of fluids; Many biological structures are therefore immersed in fluid environments. As a result, vibroacoustic vibrations can spread widely through tissues, influencing regions distant from the point of application.

SOUND PROPAGATION IN SOLIDS BONES AND TISSUES

In solids, especially rigid structures such as bone, sound propagates even more rapidly and efficiently.

Speed and bone: up to approximately 3,000-4,000 m/s.

Transmission is more direct, with lower losses and therefore a high capacity to conduct vibration.

This principle underlines bone conduction, used in both medical and technological contexts. In the human body, bones function as vibrational transmission pathways that can deliver stimulation to depths not accessible through airborne sound alone. The skeletal system therefore contributes to a more global distribution of the stimulus.

SOUND INTERACTION ACROSS MEDIA

When a sound wave crosses multiple media (air tissues fluids bone), several phenomena occur:

- Reflection
- Refraction
- Absorption
- Resonance

Each interface partially modifies the wave, making the experience complex and multimodal. This helps explain why vibration perceived on the body is never purely “local”: the body responds as an integrated system, and seemingly simple stimuli can produce distributed effects.

Vibroacoustics leverages precisely this capacity of sound to traverse different media, adapting to their properties and interacting with deeper structures. It is not only a matter of “hearing” a sound, but of sensing it with the whole body. Vibration delivered through transducers propagates through tissues, spreads via bone, and interacts with body fluids. In this way it becomes a form of physical communication, not only an auditory one.

SUMMARY

In air, sound informs and stimulates

In liquids, sound connects and disperses.

In solids, sound structures and transmits to depth.

Understanding these pathways helps clarify why vibroacoustic work is not superficial, but fundamentally embodied.