Pausa Practical Guide: Stress Management

Chronic stress is not just “in your head” — it interacts with metabolism, mitochondria, inflammation, the microbiome, hormones, nutrition and trauma, and shapes how quickly you age and how well you function day to day.[1–3] Effective stress management reduces risk of cardiovascular disease and diabetes, improves mood and cognition, and supports healthspan rather than only lifespan.[2–5]

1. What stress is (and isn’t)

Stress is the body’s adaptive response to physical, mental or emotional change, recruiting neural, hormonal and immune systems to maintain balance. It is distinct from anxiety, which is a more persistent mental state that can continue even when no immediate stressor is present. From a root-cause perspective, chronic stress links directly to systemic inflammation, hormonal dysregulation and oxidative damage that underlie many chronic diseases. [10–13]

Small steps

- **Name it:** Once per day, pause and label whether you’re experiencing acute stress, chronic background stress, or anxiety.
- **Body scan:** Take 60 seconds to notice where stress shows up physically (jaw, shoulders, chest, gut).
- **“One lens” question:** When stressed, ask: “Is this more about my physiology right now (sleep, food, overload) or about the situation itself?”

2. Root-cause view of stress

Chronic stress can drive insulin resistance, inflammation and mitochondrial dysfunction, helping to initiate or worsen conditions like cardiovascular disease, type 2 diabetes and neurodegenerative disorders.[10–13] It also accelerates cellular aging via telomere shortening and disrupts repair, detoxification and hormone balance.[12–13] Addressing stress as a root cause often improves multiple systems at once, reducing the need for purely symptom-focused interventions.[11–12]

Small steps

- **Map your big three:** List your top three recurring stress domains (work, relationships, money, health).
- **Connect to physiology:** For each domain, note one body signal you see (sleep issues, digestion, headaches, sugar cravings, etc.).
- **Choose one lever:** Pick one root-cause lever to experiment with for two weeks (sleep, movement, food, or boundaries).

3. Why stress management matters

Chronic stress is linked to cardiovascular disease, immune dysregulation, metabolic disorders and faster biological aging.[36–41] It impairs cognition (memory, attention, decision-making), mood, emotional regulation and self-esteem, and erodes relationship quality, social connection and work performance.[16–22][39–54] Effective stress management builds resilience rather than eliminating stress, enabling better adaptation to future challenges.

Small steps

- **1–10 check-in:** Once a day, rate your stress from 1 to 10 and note one main driver.
- **“Stress receipt”:** When you notice stress, write one line: “Stress is currently costing me X (e.g., sleep, patience, focus).”
- **Weekly reflection:** At the end of the week, review your notes and choose one domain where a small change would have the highest payoff.

4. Factors that shape your stress response

Biology (genes, epigenetics, brain chemistry), development (trauma, attachment patterns) and lifestyle (diet, movement, sleep, social connection, substance use) all shape how stress lands in the body and mind.[23–31] Genetic and epigenetic differences influence stress reactivity; early experiences and attachment styles affect emotional regulation and coping; lifestyle can either buffer or amplify stress.[23–27]

Small steps

- **Personal stress story:** Write 5–10 bullet points about "how stress has looked in my life" (family patterns, health, work).
- **Lifestyle inventory:** Quickly rate (1–5) your sleep, movement, nutrition, substance use and social connection.
- **Choose your buffer:** Pick one lifestyle domain to strengthen as your primary "stress buffer" over the next month (e.g., sleep or social connection).

5. The stress response and performance

The classic "fight-or-flight" response involves amygdala activation, HPA-axis signaling, cortisol release, cardiovascular changes and immune modulation.[35–36] The Yerkes–Dodson law describes an inverted U-relationship between arousal and performance: too little stress leads to under-engagement, moderate stress can sharpen focus, and excessive stress impairs performance and health.[37–38]

Small steps

- **Notice your curve:** Before a key task, ask: "Am I under-activated, ideally activated, or over-activated?"
- **Down-shift:** If over-activated (racing heart, shallow breath), use 1–3 minutes of slow diaphragmatic breathing before acting.
- **Up-shift:** If under-activated (sluggish, distracted), use brisk walking or brief cardio for 3–5 minutes to raise arousal before focused work.[57–58]

6. Impact of chronic stress on body and brain

Chronic stress increases risk of hypertension, coronary disease and stroke; depression itself is an independent cardiovascular risk factor.[39–40] It suppresses immunity, alters gut–brain communication, and dysregulates cortisol and other hormones.[41–43] It impairs memory, attention and decision-making, shifts risk-taking, and alters brain regions involved in emotion and executive function (hippocampus, amygdala, prefrontal cortex).[44–47]

S*mall steps*

- **One system to watch:** Choose one system you notice under stress (sleep, digestion, blood pressure, headaches) and pay attention to patterns.
- **Brief cognitive hygiene:** When stressed, delay major decisions if possible; use a short checklist (facts, options, worst-case) instead of reacting automatically.
- **Brain supports:** Discuss with a clinician whether optimizing B12, vitamin D, omega-3s and glucose control makes sense in your context.

7. Core stress-management strategies

7.1 Nutrition for stress

Diet quality influences inflammation, neurotransmitters and mood; ultra-processed, high-sugar diets are linked with increased stress and poorer mental health, while nutrient-dense diets support regulation and resilience.[55–56] Blood-sugar swings and alcohol both worsen stress reactivity and sleep, while stable glycemia and hydration support more stable moods.[55–56]

Small steps

- **Stress-supportive plate:** At one meal per day, build a plate with half vegetables, a palm-sized portion of protein and visible healthy fats.
- **Sugar rule:** Avoid high-sugar foods and drinks in the 3 hours before bed.

- **Hydration baseline:** Start the day with water (optionally with a pinch of salt/lemon) before caffeine.[36–37]

7.2 Physical activity

Regular physical activity reduces anxiety and depressive symptoms, improves cognitive performance, and modulates neurotransmitters and inflammatory pathways.[57–58] Both acute and chronic exercise can improve mood and stress resilience.

Small steps

- **Daily 10:** Do 10 minutes of any movement (walk, mobility, stairs) at a consistent time each day.
- **"Stress walk":** When overwhelmed, take a 5–10 minute brisk walk before responding to emails or messages.
- **Movement anchor:** Pair a simple exercise (e.g., 10 squats or push-ups) with an existing habit (after brushing teeth, after lunch).

7.3 Sleep hygiene

Sleep is essential for emotional regulation, HPA-axis calibration and cognitive function; improving sleep quality leads to better mental health outcomes. Chronic sleep loss amplifies stress reactivity and mood symptoms.

Small steps

- **Fixed wake time:** Choose a consistent wake-up time and protect it 6–7 days/week.
- **60-minute wind-down:** For the hour before bed, avoid work and bright screens where possible; use dimmer light and calming activities.
- **Caffeine cut-off:** Set a personal caffeine curfew (often 6–8 hours before bed).

7.4 Mindfulness, breathing and meditation

Mindfulness-based interventions reduce stress, anxiety and depressive symptoms, and improve well-being.[60–61] Diaphragmatic breathing can rapidly reduce negative affect and physiological arousal by engaging the parasympathetic nervous system.

Small steps

- **3-minute breathing:** Once a day, inhale through the nose for 4 seconds, exhale for 6–8 seconds, repeat for 3 minutes.
- **Micro-pause:** Before switching tasks, close your eyes for 3 breaths, noticing the body and re-choosing your next action.
- **Weekly practice block:** Schedule one 10–15 minute “practice block” per week for guided meditation or body scan.

7.5 Social connection

Strong social ties buffer stress and improve resilience and mental health; social connection is repeatedly linked to better health outcomes and longevity. [63–64] Conversely, isolation and loneliness increase stress and vulnerability.

Small steps

- **One intentional contact:** Each day, send one message, voice note or call to someone you trust.
- **Shared movement:** Once a week, combine social time with movement (walk with a friend, group class).
- **Ask for a small thing:** Practice asking for a concrete, small form of help or support once in the coming week.

7.6 Cognitive-behavioral tools

CBT-style cognitive restructuring changes stress responses by identifying and reframing unhelpful thoughts.[65–66] This reduces physiological arousal and improves coping by shifting appraisals of events.

Small steps

- Thought log: When stressed, write down: “Trigger – automatic thought – feeling – alternative perspective.”
- 10% reframe: Ask, “What else could this mean?” and aim for a 10% less catastrophic interpretation.
- If/then plan: Create one plan such as, “If I notice I’m catastrophising, then I will write down at least one realistic outcome.”

7.7 Relaxation, time management and nature

Progressive muscle relaxation, guided imagery and related techniques reliably reduce physiological arousal and improve stress and sleep. Time-management training reduces perceived stress by increasing a sense of control.[68–69] Nature exposure lowers cortisol, blood pressure and rumination, improving mood and stress markers.[70–71]

Small steps

- **5-minute body release:** Once per day, tense and relax major muscle groups from feet to face while breathing slowly.
- **Daily top-3:** Each morning, list your three most important tasks; do one before checking messages.
- **Nature window:** Aim for 10–20 minutes outside daily (park, trees, water, or even a quiet street) without headphones.

8. Supplements and botanicals (with clinical guidance)

Adaptogens like ashwagandha, rhodiola and holy basil, and calming botanicals like chamomile, lavender and lemon balm have evidence for modest reductions in stress, anxiety and sleep problems.[72–77] Nutrients like magnesium, L-theanine and omega-3 fatty acids support stress regulation, sleep and cardiovascular and brain health.[78–81] These should complement, not replace, core lifestyle foundations and be used under professional supervision.

Small steps

- **Food first:** Before adding supplements, stabilise the basics (sleep, movement, food, alcohol/caffeine).
- **One change at a time:** If adding something (e.g., magnesium or L-theanine), introduce only one at a time for 2–4 weeks to observe effects.[78–79]
- **Always check:** Review any new supplement with your clinician, especially if you have medical conditions or take medication.

9. Professional and structural support

Psychotherapy (CBT, MBSR, ACT), coaching, occupational health interventions, biofeedback, group support and integrative medicine can all play a role in managing more severe or persistent stress.[65–66][82–87] Workplace interventions that adjust workload, autonomy and support reduce burnout and stress-related absenteeism.[83–86]

Small steps

- **Threshold rule:** If stress significantly impairs sleep, work, relationships or safety, treat this as a clear signal to seek professional help.
- **Prepare one page:** Write a one-page summary of your main stressors, symptoms and what you've already tried; bring it to a clinician or therapist.
- **Workplace micro-change:** Identify one realistic change (meeting length, notification rules, break timing) and propose it to your manager or team.

10. Prevention, maintenance and your personal "stress protocol"

Long-term resilience comes from consistent, modest practices rather than occasional intensive efforts.[88–94] Regular physical activity, sleep routines, balanced nutrition, boundary setting, time management, ongoing learning and periodic "stress check-ins" create a dynamic toolkit you can adapt as life changes.[88–94]

Small steps

- **Weekly review:** Once per week, rate your stress, sleep, movement, food, and connection from 1–5 and pick one area to nudge up by 1 point.
- **Personal protocol:** Write your own 5-line “Stress Protocol” (e.g., Move, Breathe, Sleep, Connect, Reflect) and keep it visible.
- **Iteration mindset:** View stress management as a long-term experiment; keep what works, drop what doesn’t, and revisit every few months.

References

1. Schneiderman N, Ironson G, Siegel SD. Stress and health: psychological, behavioral, and biological determinants. Annu Rev Clin Psychol. 2005;1:607-628. doi:10.1146/annurev.clinpsy.1.102803.144141
2. Friedman HA. Healthspan is more important than lifespan, so why don’t more people know about it? Washington University in St. Loius. Updated May 30, 2017. Accessed August 21, 2024. https://publichealth.wustl.edu/heatlhspan-is-more-important-than-lifespan-so-why-dont-more-people-know-about-it/
3. Yaribeygi H, Panahi Y, Sahraei H, Johnston TP, Sahebkar A. The impact of stress on body function: a review. Excli j. 2017;16:1057-1072. doi:10.17179/excli2017-480
4. Tamminga SJ, Emal LM, Boschman JS, et al. Individual-level interventions for reducing occupational stress in healthcare workers. Cochrane Database Syst Rev. May 12 2023;5(5):CD002892. doi:10.1002/14651858.CD002892.pub6
5. Tossici G, Zurloni V, Nitri A. Stress and sport performance: a PNEI multidisciplinary approach. Front Psychol. 2024;15:1358771. doi:10.3389/fpsyg.2024.1358771
6. Adam EK, Quinn ME, Tavernier R, McQuillan MT, Dahlke KA, Gilbert KE. Diurnal cortisol slopes and mental and physical health outcomes: a systematic review and meta-analysis. Psychoneuroendocrinology. Sep 2017;83:25-41. doi:10.1016/j.psyneuen.2017.05.018
7. Alizadeh Pahlavani H. Possible role of exercise therapy on depression: effector neurotransmitters as key players. Behav Brain Res. Feb 29 2024;459:114791. doi:10.1016/j.bbr.2023.114791
8. Del Giudice M, Buck CL, Chaby LE, et al. What is stress? a systems perspective. Integr Comp Biol. Dec 1 2018;58(6):1019-1032. doi:10.1093/icb/icy114
9. Gouveia P. Understanding generalized anxiety: contributions from phenomenology and philosophy. Eur Psychiatry. 2022;65(S1):S671-S672. doi:10.1192/j.eurpsy.2022.1727
10. Mehdi S, Wani SUD, Krishna KL, Kinattingal N, Roohi TF. A review on linking stress, depression, and insulin resistance via low-grade chronic inflammation. Biochem Biophys Rep. Dec 2023;36:101571. doi:10.1016/j.bbrep.2023.101571
11. Merabet N, Lucassen PJ, Crielaard L, et al. How exposure to chronic stress contributes to the development of type 2 diabetes: a complexity science approach. Front Neuroendocrinol. Apr 2022;65:100972. doi:10.1016/j.yfrne.2021.100972
12. Tsigos C, Kyrou I, Kassi E, Chrousos GP. Stress: endocrine physiology and pathophysiology. In: Feingold KR, Anawalt B, Blackman MR, et al, eds. Endotext [Internet]. MDText.com, Inc.; 2020. Accessed September 1, 2024. https://www.ncbi.nlm.nih.gov/books/NBK278995/
13. Kiecolt-Glaser JK, Glaser R. Psychological stress, telomeres, and telomerase. Brain Behav Immun. May 2010;24(4):529-530. doi:10.1016/j.bbi.2010.02.002
14. Salleh MR. Life event, stress and illness. Malays J Med Sci. Oct 2008;15(4):9-18.

15. Mariotti A. The effects of chronic stress on health: new insights into the molecular mechanisms of brain-body communication. Future Sci OA. Nov 2015;1(3):FSO23. doi:10.4155/fso.15.21
16. McEwen BS. Neurobiological and systemic effects of chronic stress. Chronic Stress (Thousand Oaks). Jan-Dec 2017;1:2470547017692328. doi:10.1177/2470547017692328
17. NIH-NIA. Cognitive health and older adults. National Institute of Health - National Institute on Aging. Updated June 11, 2024. Accessed September 1, 2024. https://www.nia.nih.gov/health/brain-health/cognitive-health-and-older-adults
18. Flores-Kanter PE, Moretti L, Medrano LA. A narrative review of emotion regulation process in stress and recovery phases. Heliyon. Jun 2021;7(6):e07218. doi:10.1016/j.heliyon.2021.e07218
19. Lau KKH, Randall AK, Duran ND, Tao C. Examining the effects of couples' real-time stress and coping processes on interaction quality: language use as a mediator. Front Psychol. 2018;9:2598. doi:10.3389/fpsyg.2018.02598
20. Epel ES, Blackburn EH, Lin J, et al. Accelerated telomere shortening in response to life stress. Proc Natl Acad Sci U S A. Dec 7 2004;101(49):17312-17315. doi:10.1073/pnas.0407162101
21. Ganster DC, Rosen CC. Work stress and employee health: a multidisciplinary review. J Manag. 2013;39(5):1085-1122. doi:10.1177/0149206313475815
22. Southwick SM, Bonanno GA, Masten AS, Panter-Brick C, Yehuda R. Resilience definitions, theory, and challenges: interdisciplinary perspectives. Eur J Psychotraumatol. 2014;5:25338. doi:10.3402/ejpt.v5.25338
23. Zannas AS, West AE. Epigenetics and the regulation of stress vulnerability and resilience. Neuroscience. Apr 4 2014;264:157-170. doi:10.1016/j.neuroscience.2013.12.003
24. Lucassen PJ, Pruessner J, Sousa N, et al. Neuropathology of stress. Acta Neuropathol. Jan 2014;127(1):109-135. doi:10.1007/s00401-013-1223-5
25. Kessler RC, Aguilar-Gaxiola S, Alonso J, et al. Trauma and PTSD in the WHO world mental health surveys. Eur J Psychotraumatol. 2017;8(sup5):1353383. doi:10.1080/20008198.2017.1353383
26. Mikulincer M, Shaver PR. An attachment perspective on psychopathology. World Psychiatry. Feb 2012;11(1):11-15. doi:10.1016/j.wpsyc.2012.01.003
27. Adan RAH, van der Beek EM, Buitelaar JK, et al. Nutritional psychiatry: towards improving mental health by what you eat. Eur Neuropsychopharmacol. Dec 2019;29(12):1321-1332. doi:10.1016/j.euroneuro.2019.10.011
28. Mikkelsen K, Stojanovska L, Polenakovic M, Bosevski M, Apostolopoulos V. Exercise and mental health. Maturitas. Dec 2017;106:48-56. doi:10.1016/j.maturitas.2017.09.003
29. Goldstein AN, Walker MP. The role of sleep in emotional brain function. Annu Rev Clin Psychol. 2014;10:679-708. doi:10.1146/annurev-clinpsy-032813-153716
30. Ozbay F, Johnson DC, Dimoulas E, Morgan CA, Charney D, Southwick S. Social support and resilience to stress: from neurobiology to clinical practice. Psychiatry (Edgmont). May 2007;4(5):35-
31. Sinha R. Chronic stress, drug use, and vulnerability to addiction. Ann N Y Acad Sci. Oct 2008;1141:105-130. doi:10.1196/annals.1441.030
32. Maslach C, Leiter MP. Understanding the burnout experience: recent research and its implications for psychiatry. World Psychiatry. Jun 2016;15(2):103-111. doi:10.1002/wps.20311
33. Ryu S, Fan L. The relationship between financial worries and psychological distress among U.S. adults. J Fam Econ Issues. 2023;44(1):16-33. doi:10.1007/s10834-022-09820-9
34. Seib C, Whiteside E, Lee K, et al. Stress, lifestyle, and quality of life in midlife and older Australian women: results from the stress and the health of women study. Womens Health Issues. Jan-Feb 2014;24(1):e43-e52. doi:10.1016/j.whi.2013.11.004
35. Chu B, Marwaha K, Sanvictores T, Awosika AO, Ayers D. Physiology, stress reaction. StatPearls [Internet]. StatPearls Publishing; 2024. Accessed September 1, 2024. https://www.ncbi.nlm.nih.gov/books/NBK541120/

36. Guidi J, Lucente M, Sonino N, Fava GA. Allostatic load and its impact on health: a systematic review. Psychother Psychosom. 2021;90(1):11-27. doi:10.1159/000510696
37. Chaby LE, Sheriff MJ, Hirrlinger AM, Braithwaite VA. Can we understand how developmental stress enhances performance under future threat with the Yerkes-Dodson law? Commun Integr Biol. May-Jun 2015;8(3):e1029689. doi:10.1080/19420889.2015.1029689
38. Lu S, Wei F, Li G. The evolution of the concept of stress and the framework of the stress system. Cell Stress. Apr 26 2021;5(6):76-85. doi:10.15698/cst2021.06.250
39. Kivimäki M, Jokela M, Nyberg ST, et al. Long working hours and risk of coronary heart disease and stroke: a systematic review and meta-analysis of published and unpublished data for 603,838 individuals. Lancet. Oct 31 2015;386(10005):1739-1746. doi:10.1016/s0140-6736(15)60295-1
40. Hare DL, Toukhsati SR, Johansson P, Jaarsma T. Depression and cardiovascular disease: a clinical review. Eur Heart J. Jun 1 2014;35(21):1365-1372. doi:10.1093/eurheartj/eht462
41. Dhabhar FS. Effects of stress on immune function: the good, the bad, and the beautiful. Immunol Res. May 2014;58(2-3):193-210. doi:10.1007/s12026-014-8517-0
42. Carabotti M, Scirocco A, Maselli MA, Severi C. The gut-brain axis: interactions between enteric microbiota, central and enteric nervous systems. Ann Gastroenterol. Apr-Jun 2015;28(2):203-209.
43. Herman JP, McKlveen JM, Ghosal S, et al. Regulation of the hypothalamic-pituitary-adrenocortical stress response. Compr Physiol. Mar 15 2016;6(2):603-621. doi:10.1002/cphy.c150015
44. Wolf OT. Stress and memory retrieval: mechanisms and consequences. Curr Opin Behav Sci. 2017;14:40-46. doi:10.1016/j.cobeha.2016.12.001
45. Liu Q, Liu Y, Leng X, Han J, Xia F, Chen H. Impact of chronic stress on attention control: evidence from behavioral and event-related potential analyses. Neurosci Bull. Nov 2020;36(11):1395-1410. doi:10.1007/s12264-020-00549-9
46. Starcke K, Brand M. Effects of stress on decisions under uncertainty: a meta-analysis. Psychol Bull. Sep 2016;142(9):909-933. doi:10.1037/bul0000060
47. Mah L, Szabuniewicz C, Fiocco AJ. Can anxiety damage the brain? Curr Opin Psychiatry. Jan 2016;29(1):56-63. doi:10.1097/yco.0000000000000223
48. Ragen B, Roach A, Chollak C. Chapter 29 - Chronic stress, regulation of emotion, and functional activity of the brain. Stress: concepts, cognition, emotion, and behavior. Elsevier; 2016:241-249. Handbook of stress series; vol. 1.
49. Krkovic K, Clamor A, Lincoln TM. Emotion regulation as a predictor of the endocrine, autonomic, affective, and symptomatic stress response and recovery. Psychoneuroendocrinology. Aug 2018;94:112-120. doi:10.1016/j.psyneuen.2018.04.028
50. Galanakis MJ, Palaiologou A, Patsi G, Velegraki I-M, Darviri C. A literature review on the connection between stress and self-esteem. Psychology. 2016;7(5):687-694. doi:10.4236/psych.2016.75071
51. Repetti R, Wang SW. Effects of job stress on family relationships. Curr Opin Psychol. Feb 2017;13:15-18. doi:10.1016/j.copsyc.2016.03.010
52. Campagne DM. Stress and perceived social isolation (loneliness). Arch Gerontol Geriatr. May-Jun 2019;82:192-199. doi:10.1016/j.archger.2019.02.007
53. Kalish Y, Luria G, Toker S, Westman M. Till stress do us part: on the interplay between perceived stress and communication network dynamics. J Appl Psychol. Nov 2015;100(6):1737-1751. doi:10.1037/apl0000023
54. de Oliveira C, Saka M, Bone L, Jacobs R. The role of mental health on workplace productivity: a critical review of the literature. Appl Health Econ Health Policy. Mar 2023;21(2):167-193. doi:10.1007/s40258-022-00761-w
55. Naidoo U. Eat to beat stress. Am J Lifestyle Med. Jan-Feb 2021;15(1):39-42. doi:10.1177/1559827620973936

56. Grajek M, Krupa-Kotara K, Białek-Dratwa A, et al. Nutrition and mental health: a review of current knowledge about the impact of diet on mental health. Front Nutr. 2022;9:943998. doi:10.3389/fnut.2022.943998
57. Basso JC, Suzuki WA. The effects of acute exercise on mood, cognition, neurophysiology, and neurochemical pathways: a review. Brain Plast. Mar 28 2017;2(2):127-152. doi:10.3233/bpl-160040
58. Schuch FB, Vancampfort D. Physical activity, exercise, and mental disorders: it is time to move on. Trends Psychiatry Psychother. Jul-Sep 2021;43(3):177-184. doi:10.47626/2237-6089-2021-0237
59. Scott AJ, Webb TL, Martyn-St James M, Rowse G, Weich S. Improving sleep quality leads to better mental health: a meta-analysis of randomised controlled trials. Sleep Med Rev. Dec 2021;60:101556. doi:10.1016/j.smrv.2021.101556
60. Goyal M, Singh S, Sibinga EM, et al. Meditation programs for psychological stress and well-being: a systematic review and meta-analysis. JAMA Intern Med. Mar 2014;174(3):357-368. doi:10.1001/jamainternmed.2013.13018
61. Khoury B, Sharma M, Rush SE, Fournier C. Mindfulness-based stress reduction for healthy individuals: a meta-analysis. J Psychosom Res. Jun 2015;78(6):519-528. doi:10.1016/j.jpsychores.2015.03.009
62. Ma X, Yue ZQ, Gong ZQ, et al. The effect of diaphragmatic breathing on attention, negative affect and stress in healthy adults. Front Psychol. 2017;8:874. doi:10.3389/fpsyg.2017.00874
63. Wickramaratne PJ, Yangchen T, Lepow L, et al. Social connectedness as a determinant of mental health: a scoping review. PLoS One. 2022;17(10):e0275004. doi:10.1371/journal.pone.0275004
64. Yeung JWK, Zhang Z, Kim TY. Volunteering and health benefits in general adults: cumulative effects and forms. BMC Public Health. Jul 11 2017;18(1):8. doi:10.1186/s12889-017-4561-8
65. Curtiss JE, Levine DS, Ander I, Baker AW. Cognitive-behavioral treatments for anxiety and stress-related disorders. Focus (Am Psychiatr Publ). Jun 2021;19(2):184-189. doi:10.1176/appi.focus.20200045
66. Nakao M, Shirotsuki K, Sugaya N. Cognitive-behavioral therapy for management of mental health and stress-related disorders: recent advances in techniques and technologies. Biopsychosoc Med. Oct 3 2021;15(1):16. doi:10.1186/s13030-021-00219-w
67. Norelli SK, Long A, Krepps JM. Relaxation techniques. StatPearls [Internet]. StatPearls Publishing; 2023. Accessed September 1, 2024. https://www.ncbi.nlm.nih.gov/books/NBK513238/
68. Aeon B, Faber A, Panaccio A. Does time management work? a meta-analysis. PLoS One. 2021;16(1):e0245066. doi:10.1371/journal.pone.0245066
69. Häfner A, Stock A, Pinneker L, Ströhle S. Stress prevention through a time management training intervention: an experimental study. Educ Psychol. 2014;34(3):403-416. doi:10.1080/01443410.2013.785065
70. Menhas R, Yang L, Saqib ZA, Younas M, Saeed MM. Does nature-based social prescription improve mental health outcomes? a systematic review and meta-analysis. Front Public Health. 2024;12:1228271. doi:10.3389/fpubh.2024.1228271
71. Bratman GN, Hamilton JP, Hahn KS, Daily GC, Gross JJ. Nature experience reduces rumination and subgenual prefrontal cortex activation. Proc Natl Acad Sci U S A. Jul 14 2015;112(28):8567-8572. doi:10.1073/pnas.1510459112
72. Pratte MA, Nanavati KB, Young V, Morley CP. An alternative treatment for anxiety: a systematic review of human trial results reported for the ayurvedic herb ashwagandha (withania somnifera). J Altern Complement Med. Dec 2014;20(12):901-908. doi:10.1089/acm.2014.0177

73. Tinsley GM, Jagim AR, Potter GDM, Garner D, Galpin AJ. Rhodiola rosea as an adaptogen to enhance exercise performance: a review of the literature. Br J Nutr. Feb 14 2024;131(3):461-473. doi:10.1017/s0007114523001988
74. Jamshidi N, Cohen MM. The clinical efficacy and safety of tulsi in humans: a systematic review of the literature. Evid Based Complement Alternat Med. 2017;2017:9217567. doi:10.1155/2017/9217567
75. Guadagna S, Barattini DF, Rosu S, Ferini-Strambi L. Plant extracts for sleep disturbances: a systematic review. Evid Based Complement Alternat Med. 2020;2020:3792390. doi:10.1155/2020/3792390
76. Ghavami T, Kazeminia M, Rajati F. The effect of lavender on stress in individuals: a systematic review and meta-analysis. Complement Ther Med. Sep 2022;68:102832. doi:10.1016/j.ctim.2022.102832
77. Ghazizadeh J, Sadigh-Eteghad S, Marx W, et al. The effects of lemon balm (Melissa officinalis L.) on depression and anxiety in clinical trials: a systematic review and meta-analysis. Phytother Res. Dec 2021;35(12):6690-6705. doi:10.1002/ptr.7252
78. Rawji A, Peltier MR, Mourtzanakis K, et al. Examining the effects of supplemental magnesium on self-reported anxiety and sleep quality: a systematic review. Cureus. Apr 2024;16(4):e59317. doi:10.7759/cureus.59317
79. Hidese S, Ogawa S, Ota M, et al. Effects of L-theanine administration on stress-related symptoms and cognitive functions in healthy adults: a randomized controlled trial. Nutrients. Oct 3 2019;11(10):2362. doi:10.3390/nu11102362
80. Li JJ, Dou KF, Zhou ZG, et al. Role of omega-3 fatty acids in the prevention and treatment of cardiovascular diseases: a consensus statement from the Experts' Committee of National Society of Cardiometabolic Medicine. Front Pharmacol. 2022;13:1069992. doi:10.3389/fphar.2022.1069992
81. van Ballegooijen AJ, Pilz S, Tomaschitz A, Grübler MR, Verheyen N. The synergistic interplay between vitamins D and K for bone and cardiovascular health: a narrative review. Int J Endocrinol. 2017;2017:7454376. doi:10.1155/2017/7454376
82. Li Z, Shang W, Wang C, Yang K, Guo J. Characteristics and trends in acceptance and commitment therapy research: a bibliometric analysis. Front Psychol. 2022;13:980848. doi:10.3389/fpsyg.2022.980848
83. Ruotsalainen JH, Verbeek JH, Mariné A, Serra C. Preventing occupational stress in healthcare workers. Cochrane Database Syst Rev. Apr 7 2015;2015(4):CD002892. doi:10.1002/14651858.CD002892.pub5
84. Malik K, Dua A. Biofeedback. StatPearls [Internet]. StatPearls Publishing; 2023. Accessed September 1, 2024. https://www.ncbi.nlm.nih.gov/books/NBK553075/
85. Malhotra A, Baker J. Group therapy. StatPearls [Internet]. StatPearls Publishing; 2022. Accessed September 1, 2024. https://www.ncbi.nlm.nih.gov/books/NBK549812/
86. Richardson KM, Rothstein HR. Effects of occupational stress management intervention programs: a meta-analysis. J Occup Health Psychol. Jan 2008;13(1):69-93. doi:10.1037/1076-8998.13.1.69
87. Saper R. Integrative medicine and health disparities. Glob Adv Health Med. Jan 2016;5(1):5-8. doi:10.7453/gahmj.2015.133
88. Mahindru A, Patil P, Agrawal V. Role of physical activity on mental health and well-being: a review. Cureus. Jan 2023;15(1):e33475. doi:10.7759/cureus.33475
89. Irish LA, Kline CE, Gunn HE, Buysse DJ, Hall MH. The role of sleep hygiene in promoting public health: a review of empirical evidence. Sleep Med Rev. Aug 2015;22:23-36. doi:10.1016/j.smrv.2014.10.001

90. Kiecolt-Glaser JK. Stress, food, and inflammation: psychoneuroimmunology and nutrition at the cutting edge. Psychosom Med. May 2010;72(4):365-369. doi:10.1097/PSY.0b013e3181dbf489
91. Häfner A, Stock A. Time management training and perceived control of time at work. J Psychol. Sep-Oct 2010;144(5):429-447. doi:10.1080/00223980.2010.496647
92. Kossek EE, Ruderman MN, Braddy PW, Hannum KM. Work–nonwork boundary management profiles: a person-centered approach. J Vocat Behav. 2012;81(1):112-128. doi:10.1016/j.jvb.2012.04.003
93. Anwer S, Manzar MD, Alghadir AH, Salahuddin M, Abdul Hameed U. Psychometric analysis of the perceived stress scale among healthy university students. Neuropsychiatr Dis Treat. 2020;16:2389-2396. doi:10.2147/ndt.S268582
94. Regehr C, Glancy D, Pitts A. Interventions to reduce stress in university students: a review and meta-analysis. J Affect Disord. May 15 2013;148(1):1-11. doi:10.1016/j.jad.2012.11.026