# Exploring Integrative Medicine and Nutrition for PTSD

October 21, 2022
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**Psychiatric Times**, Vol 39, Issue 10,

*"Among adults living in the United States, 38% to 40% use complementary and alternative medicine therapies, yet only 42% have told their primary physician that they do so."*

Evidence from a growing number of studies suggests that 38% to 40% of adults living in the United States use complementary and alternative medicine (CAM) therapies,[1] yet only 42% have told their primary physician that they do so.[2] Patients do not disclose their use for numerous reasons. They are not asked about it; they are concerned that their clinician will disapprove; they may not think it is necessary; and/or their clinicians are not interested in or do not know about CAM methods.[3]

Moreover, integrative medicine (IM) appeals to groups like veterans who traditionally avoid or experience dissatisfaction with conventional treatment and are prone to posttraumatic stress disorder (PTSD).[4] Hence, clinicians should disclose their interest and training in IM and ask patients about their health practices.

Integrative medicine and nutrition for the treatment of PTSD is comprised of 18 components (**Table 1**).[5] To best support patients, clinicians should individualize their approach based on patients' needs and preferences.

## Digestion, Nutrition, and PTSD

Stress and trauma affect all aspects of physical function: blood glucose levels, brain metabolism, energy, and altered brain structures where neurons misfire or fail to communicate. When stress dysregulates digestion, it leads to a cascade of events affecting mood, cognition, sleep, and immune function. Parasympathetic activity governs digestion, which explains why in PTSD and complex trauma, there is at least 1 associated digestive problem.

In sympathetic arousal, the head hurts, the stomach aches, and the intestines are too active or immobilized by fear. Irritable bowel syndrome (IBS) often co-occurs with traumatic stress, and chronic gut distress can lead to PTSD.[6] Similarly, there is a causal chain that links childhood abuse, dissociation, and somatization with IBS.[7]

These often-explicable somatic symptoms represent a complex neuroimmunomodulatory communication system between the gut and the brain. Gut bacteria regulate the hypothalamic-pituitary-adrenal (HPA) axis[8] and γ-aminobutyric acid (GABA) via the vagus nerve,[9] which reduces anxiety and depression.

Patients should consider increasing healthy intestinal bacteria by eating fermented foods (eg, yogurt, kefir, kimchee, kombucha, sauerkraut, and stink eggs) or via supplementation

with high-dose probiotics. Probiotics have been associated with pain reduction, suggesting an anti-inflammatory effect.[10]

## Nutraceuticals and Supplements

Nutritional medicine, diet, and nutraceuticals are increasingly used in psychiatry.[11] Vitamin D,[12] omega-3 fatty acids,[13] antioxidants (eg, vitamin C, vitamin E, and zinc), folate, magnesium, and vitamins B6, B9, and B12 can provide core nutritional support for mental health.[14] Phospholipid supplements have been found to reduce circulating cortisol, improve memory, prevent cognitive decline, and improve perceived well being.[15] Phosphatidylserine (PS) and phosphatidylcholine (PC) are concentrated in brain cell membranes and support cell structure and function. PS aids neurotransmitter activity, especially dopamine and acetylcholine, and supports cognitive function.[16]

## Mitochondrial Health

Brain neurons have a high demand for adenosine triphosphate (ATP),[17] and their high oxygen consumption rate leads to free radicals and inflammation, which benefit from antioxidants. Mitochondria may be affected by lack of sleep, pesticides, pollutants, antibiotics, and psychotropic drugs, including selective serotonin reuptake inhibitors (SSRIs).[18] Medications that are commonly prescribed to patients with PTSD (eg, statins, beta-blockers, neuroleptics, and corticosteroids) interfere with mitochondrial function, and mitochondria also suffer degradation as part of the aging process. Mitochondrial biogenesis may benefit from CoQ10, pyrroloquinoline quinone, quercetin, and carnitine.[19]

High-intensity aerobic exercise and photobiomodulation (PBM) also enhance mitochondrial biogenesis. Exercise enhances cognition and neuroplasticity, balances HPA function, reduces inflammatory markers,[20] and increases brain-derived neurotrophic factor (BDNF).[21] Anaerobic exercise builds core muscle strength and lean body mass; increases metabolism, glucose uptake, and energy; and improves sleep and anxiety in individuals with PTSD.[22]

The energetic exercises qigong and tai chi have been used with survivors of torture and have improved well-being and the quality of life in individuals with fibromyalgia.[23] Yoga has been found to increase levels of gamma-aminobutyric acid in the brain.[24] In one study, for example, African American female veterans who practiced 10 weekly classes of trauma-informed yoga experienced significant reductions in PTSD symptoms.[25] Research on PBM in individuals with traumatic brain injury (TBI), PTSD, anxiety, and sleep disorders showed improvements following treatment, with a medium to large effect in major depressive disorder.[26-28] One animal study found that PBM treatment applied immediately after a traumatic event can prevent the development of PTSD-like fear.[29]

## Bodywork and Somatic Therapies

There are as many systems of touch therapies as there are psychotherapies. Individuals of all ages are candidates for touch during all stages of their recovery. Different techniques of touch therapies facilitate specific responses. Bodywork and massage are also types of

passive exercise that can help jumpstart activity and movement when the patient is not yet physically active. Stretching, range-of-motion rotations, pressure points, and guided breathing all reduce dissociation and begin the process of inviting individuals back into their bodies.

Massage and bodywork can decrease depression and anxiety; they have been used in children with PTSD following Hurricane Andrew,[30] in female survivors of sexual abuse,[31,32] and in individuals with a history of trauma who are caregivers to patients with dementia.[33] Rocking is a universal behavior that synchronizes the brain, accelerates and improves sleep quality, and increases sleep spindles, which are associated with being able to sleep through environmental noise.[34] Continuous rocking strengthens deep sleep via the neural entrainment and enhances memory consolidation during sleep.[35]

**Sleep**

There is evidence that improving sleep should be a key component in addressing PTSD,[36] and nutritional interventions that target the HPA axis and circadian rhythm may be helpful. Lithium orotate is core support that lengthens circadian rhythm, balancing mood, sleep, and cognitive health. A suggested dose of 10 to 40 mg daily of lithium orotate combined with methyl folate can prove beneficial.[37] Combining bright-light exposure in the morning with vitamin B12 (methylcobalamin) can also help balance the circadian rhythm. Methylcobalamin enhances the light sensitivity of the circadian clock at dosages ranging from 1000 to 6000 mcg daily.[38]

**Botanical Medicines**

Individuals with PTSD may use cannabis to initiate sleep,[39] but the literature on this has mixed results. Generally, high ratios of tetrahydrocannabinol (THC) to cannabidiol (CBD) may exacerbate insomnia, whereas higher CBD or cannabinol (CBN) may aid sleep. Some individuals benefit from a 5-parts CBD/CBN:THC 5:1 or 10:1 ratio. If pain affects sleep quality, THC has a more anti-inflammatory effect, used in a 1:1 or 5:1 ratio.[40,41] Lifetime cannabis use is more than 3 times more likely in individuals with PTSD than in those without.[42] This may be due to the part cannabinoids play in helping the body regulate the extinction of conditioned fear as well as in reducing pain and anxiety.[43,44] Low-dose THC in cannabis appears to have anxiolytic effects, whereas a high dose may be responsible for producing anxiety. Low doses reduce depression; high doses increase depression.[45]

**Adaptogens**

Adaptogens and their active extracts support HPA axis function build endurance, support immune function, and reduce fatigue. Adaptogens increase cellular respiration, aiding mitochondrial function. **Table 2** lists the 3 criteria of adaptogenic herbs.[46] Common adaptogens include Panax ginseng, eleuthero (also known as Siberian ginseng), and licorice root. Ashwagandha is called the queen of Ayurveda and has been used for more than 6000 years to enhance vitality and endurance. Rhodiola (*Rhodiola Rosea*) is the major botanical approved as an adaptogen by the Committee on Herbal Medicinal Products

at the European Medicines Agency. It is a mild antidepressant and a stimulant that has been found helpful in addressing anxiety symptoms. Rhodiola is also anti-inflammatory, and it supports cognitive function. All these qualities make it a good option for supporting individuals with complex trauma and TBI.[47]

**Sedative Botanicals**

Kava is one of the most effective botanical nervines that functions like an anxiolytic. Like benzodiazepines, kava acts on the amygdala, reducing fear and anxiety, and it is also a muscle relaxant that improves cognitive performance.[48] Although kava-containing supplements have been associated with liver injuries, the aqueous extract of kava is safe; it is associated with no serious adverse effects and has no clinical hepatotoxicity.[49,50] Skullcap (*Scutellaria lateriflora*) acts on benzodiazepine receptors, is anti-inflammatory, and may be beneficial for anxious depression.[51]

**Detoxification**

In addition to eliminating harmful substance use, detoxification strategies can range from eliminating gluten from the diet to increasing cruciferous vegetables. The association between gluten, depression, and addiction is well established.[52] Cruciferous vegetables enhance P-450 enzymes and aid liver function in individuals in alcohol and drug recovery or who have been exposed to environmental toxins.[53] Detoxification also extends into cultural rituals like sweat lodges, temazcales, and saunas, which may decondition autonomic reactivity, increase adaptive immune function, and enhance bonding and attachment behaviors.[54]

**Psychedelic Medicine**

Psychedelic medicines alter the chemical transmissions and normal functions in the nervous system, leading to altered states and often transcendent or mystical experiences that may have import for the loss of hope, meaning, and purpose experienced by individuals with PTSD. These "psychointegrators" enhance the processing of essential information regarding self, emotions, social relations, and attachment behaviors, and facilitate this integration in the brain.[55] Psychedelics alter functional connectivity and can potentially change the neural connections that keep individuals in chronic pain states.[56] Ayahuasca, N, N-Dimethyltryptamine (DMT), lysergic acid diethylamide (LSD), psilocybin, methamphetamine (MDMA), mescaline (peyote), ketamine, and ibogaine are all subjects of ongoing research in the clinical care for the treatment of depression, addictions, and PTSD-related symptoms.[57]

**Concluding Thoughts**

Psychoeducation is integral to helping patients understand how their symptoms—physical, mental, emotional, and spiritual—arise from their traumatic experiences. The qualities of the clinical relationship—compassion, empathy, and rapport—are the foundation of successful trauma treatment. Next steps might include obtaining a personal consultation in integrative mental health—much as we do when we undergo psychotherapy prior to

becoming a therapist—or exploring studies in integrative medicine for mental health by taking courses or attending conferences.

For those interested in learning more, additional resources can be found via the Leslie Korn Institute for Integrative Medicine, the Integrative Psychiatry Institute, Integrative Medicine for Mental Health, and Psychiatry Redefined.

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## References


1. AARP and National Center for Complementary and Alternative Medicine. Complementary and alternative medicine: what people aged 50 and older discuss with their health care providers. AARP. 2011. Accessed August 19, 2022. https://assets.aarp.org/rgcenter/health/complementary-alternative-medicine-nccam.pdf

2. Jou J, Johnson PJ. Nondisclosure of complementary and alternative medicine use to primary care physicians: findings from the 2012 National Health Interview Survey. *JAMA Intern Med*. 2016;176(4):545-546.

3. Foley H, Steel A, Cramer H, et al. Disclosure of complementary medicine use to medical providers: a systematic review and meta-analysis. *Sci Rep*. 2019;9(1):1573.

4. Lake J. The integrative management of PTSD: a review of conventional and CAM approaches used to prevent and treat PTSD with emphasis on military personnel. *Adv Integr Med*. 2015;2(1):13-23.

5. Korn L. *Rhythms of Recovery: Trauma, Nature, and the Body*. Routledge; 2021.

6. Taft TH, Quinton S, Jedel S, et al. Posttraumatic stress in patients with inflammatory bowel disease: prevalence and relationships to patient-reported outcomes. *Inflamm Bowel Dis*. 2022;28(5):710-719.

7. Salmon P, Skaife K, Rhodes J. Abuse, dissociation, and somatization in irritable bowel syndrome: towards an explanatory model. *J Behav Med*. 2003;26(1):1-18.

8. Neufeld KM, Kang N, Bienenstock J, Foster JA. Reduced anxiety-like behavior and central neurochemical change in germ-free mice. *Neurogastroenterol Motil*. 2011;23(3):255-264.

9. Bravo JA, Forsythe P, Chew MV, et al. Ingestion of Lactobacillus strain regulates emotional behavior and central GABA receptor expression in a mouse via the vagus nerve. *Proc Natl Acad Sci U S A*. 2011;108(38):16050-16055.

10. Spiller R, Shanahan F. Gut microbiota and abnormal mucosal neuroendocrine immune activation. In: Mayer EA, Bushnell MC, eds. *Functional Pain Syndromes: Presentation and Pathophysiology*. IASP Press. 2009:337-360.

11. Sarris J, Logan AC, Akbaraly TN, et al; International Society for Nutritional Psychiatry Research. Nutritional medicine as mainstream in psychiatry. *Lancet Psychiatry*. 2015;2(3):271-274.

12. Wentz LM, Eldred JD, Henry MD, Berry-Caban CS. Clinical relevance of optimizing vitamin D status in soldiers to enhance physical and cognitive performance. *J Spec Oper Med*. 2014;14(1):58-66.

13. Alquraan L, Alzoubi KH, Hammad H, et al. Omega-3 fatty acids prevent post-traumatic stress disorder-induced memory impairment. *Biomolecules*. 2019;9(3):100.

14. Du J, Zhu M, Bao H, et al. The role of nutrients in protecting mitochondrial function and neurotransmitter signaling: implications for the treatment of depression, PTSD, and suicidal behaviors. *Crit Rev Food Sci Nutr*. 2016;56(15):2560-2578.

15. Jäger R, Purpura M, Kingsley M. Phospholipids and sports performance. *J Int Soc Sports Nutr*. 2007;4:5.

16. Glade MJ, Smith K. Phosphatidylserine and the human brain. *Nutrition*. 2015;31(6):781-786.

17. Jardim FR, de Rossi FT, Nascimento MX, et al. Resveratrol and brain mitochondria: a review. *Mol Neurobiol*. 2018;55(3):2085-2101.

18. Kramer P, Bressan P. Our (mother's) mitochondria and our mind. *Perspect Psychol Sci*. 2018;13(1):88-100.

19. Bersani FS, Mellon SH, Lindqvist D, et al. Novel pharmacological targets for combat PTSD-metabolism, inflammation, the gut microbiome, and mitochondrial dysfunction. *Mil Med*. 2020;185(Suppl 1):311-318.

20. Hegberg NJ, Hayes JP, Hayes SM. Exercise intervention in PTSD: a narrative review and rationale for implementation. *Front Psychiatry*. 2019;10:133.

21. Jiménez-Maldonado A, Rentería I, García-Suárez PC, et al. The impact of high-intensity interval training on brain derived neurotrophic factor in brain: a mini-review. *Front Neurosci*. 2018;12:839.

22. Whitworth JW, Nosrat S, SantaBarbara NJ, Ciccolo JT. Feasibility of resistance exercise for posttraumatic stress and anxiety symptoms: a randomized controlled pilot study. *J Trauma Stress*. 2019;32(6):977-984.

23. Wang C, Schmid CH, Rones R, et al. A randomized trial of tai chi for fibromyalgia. *N Engl J Med*. 2010;363(8):743-754.

24. Streeter CC, Whitfield TH, Owen L, et al. Effects of yoga versus walking on mood, anxiety, and brain GABA levels: a randomized controlled MRS study. *J Altern Complement Med*. 2010;16(11):1145-1152.

25. Zaccari B, Sherman ADF, Febres-Cordero S, et al. Findings from a pilot study of Trauma Center Trauma-Sensitive Yoga versus cognitive processing therapy for PTSD related to military sexual trauma among women veterans. *Complement Ther Med*. 2022;70:102850.

26. Lamartiniere R, Bergeron R, Aung-Din R, et al. Photobiomodulation treatment for brain disorders: posttraumatic stress disorder (PTSD) and dementia. In: Hamblin MR, Huang YY, eds. (Eds). *Photobiomodulation in the Brain: Low-Level Laser (Light) Therapy in Neurology and Neuroscience*. Academic Press; 2019:589-597.

27. Maiello M, Losiewicz OM, Bui E, et al. Transcranial photobiomodulation with near-infrared light for generalized anxiety disorder: a pilot study. *Photobiomodul Photomed Laser Surg*. 2019;37(10):644-650.

28. Cassano P, Petrie SR, Mischoulon D, et al. Transcranial photobiomodulation for the treatment of major depressive disorder. the ELATED-2 pilot trial. *Photomed Laser Surg*. 2018;36(12):634-646.

29. Li Y, Dong Y, Yang L, et al. Photobiomodulation prevents PTSD-like memory impairments in rats. *Mol Psychiatry*. 2021;26(11):6666-6679.

30. Field T, Hernandez-Reif M, Hart S, et al. Effects of sexual abuse are lessened by massage therapy. *J Bodyw Mov Ther*. 1997;1(2):65-69.

31. Price C. Body-oriented therapy in recovery from child sexual abuse: an efficacy study. *Altern Ther Health Med*. 2005;11(5):46-57.

32. Price C. Dissociation reduction in body therapy during sexual abuse recovery. *Complement Ther Clin Pract*. 2007;13(2):116-128.

33. Korn L, Logsdon RG, Polissar NL, et al. A randomized trial of a CAM therapy for stress reduction in American Indian and Alaskan Native family caregivers. *Gerontologist*. 2009;49(3):368-377.

34. Bayer L, Constantinescu I, Perrig S, et al. Rocking synchronizes brain waves during a short nap. *Curr Biol*. 2011;21(12):R461-R462.

35. Perrault AA, Khani A, Quairiaux C, et al. Whole-night continuous rocking entrains spontaneous neural oscillations with benefits for sleep and memory. *Curr Biol*. 2019;29(3):402-411.e3.

36. Baddeley JL, Gros DF. Cognitive behavioral therapy for insomnia as a preparatory treatment for exposure therapy for posttraumatic stress disorder. *Am J Psychother*. 2013;67(2):203-214.

37. Korn L. *Nutrition Essentials for Mental Health: A Complete Guide to the Food-Mind Connection*. W. W. Norton & Company; 2016.

38. Kelly G. The coenzyme forms of vitamin B12: toward an understanding of their therapeutic potential. *Altern Med Rev*. 1997;2(6):459-471.

39. Bonn-Miller MO, Babson KA, Vandrey R. Using cannabis to help you sleep: heightened frequency of medical cannabis use among those with PTSD. *Drug Alcohol Depend*. 2014;136:162-165.

40. McDonagh MS, Morasco BJ, Wagner J, et al. Cannabis-based products for chronic pain: a systematic review. *Ann Intern Med*. 2022;175(8):1143-1153.

41. Kesner AJ, Lovinger DM. Cannabinoids, endocannabinoids and sleep. *Front Mol Neurosci*. 2020;13:125.

42. Orsolini L, Chiappini S, Volpe U, et al. Use of medicinal cannabis and synthetic cannabinoids in post-traumatic stress disorder (PTSD): a systematic review. *Medicina (Kaunas)*. 2019;55(9):525.

43. Kamprath K, Romo-Parra H, Häring M, et al. Short-term adaptation of conditioned fear responses through endocannabinoid signaling in the central amygdala. *Neuropsychopharmacology*. 2011;36(3):652-663.

44. Marsicano G, Wotjak CT, Azad SC, et al. The endogenous cannabinoid system controls extinction of aversive memories. *Nature*. 2002;418(6897):530-534.

45. Rodriguez Bambico F, Katz N, Debonnel G, Gobbi G. Cannabinoids elicit antidepressant-like behavior and activate serotonergic neurons through the medial prefrontal cortex. *J Neurosci*. 2007;27(43):11700-11711.

46. Brekhman II, Dardymov IV. New substances of plant origin which increase nonspecific resistance. *Annu Rev Pharmacol*. 1969;9:419-430.

47. Darbinyan V, Aslanyan G, Amroyan E, et al. Clinical trial of Rhodiola rosea L. extract SHR-5 in the treatment of mild to moderate depression. *Nord J Psychiatry*. 2007;61(5):343-348. Published correction appears in Nord J Psychiatry. 2007;61(6):503.

48. Spinella M. Herbal medicines and sleep. In: Lader M, Cardinali DP, Pandi-Perumal SR (Eds). *Sleep and Sleep Disorders: A Neuropsychopharmacological Approach*. Springer; 2004.

49. Bian T, Corral P, Wang Y, et al. Kava as a clinical nutrient: promises and challenges. *Nutrients*. 2020;12(10):3044.

50. Sarris J, Kavanagh DJ, Byrne G, et al. The Kava Anxiety Depression Spectrum Study (KADSS): a randomized, placebo-controlled crossover trial using an aqueous extract of Piper methysticum. *Psychopharmacology (Berl)*. 2009;205(3):399-407.

51. Medina JH, Viola H, Wolfman C, et al. Overview—flavonoids: a new family of benzodiazepine receptor ligands. *Neurochem Res*. 1997;22(4):419-425.

52. Lerner A, Benzvi C. "Let food be thy medicine": gluten and potential role in neurodegeneration. *Cells*. 2021;10(4):756.

53. Hussain J, Cohen M. Clinical effects of regular dry sauna bathing: a systematic review. *Evid Based Complement Alternat Med*. 2018;2018:1857413.

54. Naseba Marsh T, Marsh DC, Ozawagosh J, Ozawagosh F. The sweat lodge ceremony: a healing intervention for intergenerational trauma and substance use. *Int Indig Policy J*. 2018;9(2).

55. Winkelman MJ. The evolved psychology of psychedelic set and setting: inferences regarding the roles of Shamanism and entheogenic ecopsychology. *Front Pharmacol*. 2021;12:619890.

56. Castellanos JP, Woolley C, Bruno KA, et al. Chronic pain and psychedelics: a review and proposed mechanism of action. *Reg Anesth Pain Med*. 2020;45(7):486-494.

57. Jerome L, Feduccia AA, Wang JB, et al. Long-term follow-up outcomes of MDMA-assisted psychotherapy for treatment of PTSD: a longitudinal pooled analysis of six phase 2 trials. *Psychopharmacology (Berl)*. 2020;237(8):2485-2497.