

Q. What is yoga?

A. The practice of yoga originated in India thousands of years ago. Traditionally, the practice of yoga encompasses ethical living, spiritual practice, physical activity, breathing exercises, and meditation (Cramer, Lauche, Langhorst, & Dobos, 2013). In the United States, yoga has become a popular mind-body intervention, promoted to improve both physical and mental well-being. Various types of yoga are practiced, characterized by different emphases on aerobic exercise, stretching, alignment, and mindfulness. The most commonly practiced type of yoga in America is hatha yoga, which involves physical postures and can include meditation and breathing control (Uebelacker & Broughton, 2016).

Q. What are the potential mechanisms of action underlying yoga?

A. There have been different hypothesized mechanisms by which yoga might potentially influence major depressive disorder (MDD). For instance, yoga may help individuals sustain focus on the present moment, which may exert a positive impact on depressive symptoms such as rumination (Meister & Juckel, 2017; Uebelacker & Broughton, 2016). There is also some preliminary evidence that yoga can increase levels of neurotransmitters, including serotonin and dopamine, which play an important role in MDD (Cramer et al., 2013). Preliminary research suggests that changes in cortisol, brain-derived neurotrophic factor, and heart-rate variability may also be involved in the clinical effect of yoga interventions (Meister & Juckel, 2017; Cramer et al., 2013). At the present, however, these mechanisms are supported by limited evidence and are not fully understood.

Q. Is yoga recommended as a front-line treatment for MDD in the Military Health System (MHS)?

A. **No.** The 2016 VA/DoD Clinical Practice Guideline for the Management of Major Depressive Disorder states that there is insufficient evidence to recommend for or against yoga either as a monotherapy or as an adjunctive treatment to pharmacotherapy.

The MHS relies on the VA/DoD clinical practice guidelines (CPGs) to inform best clinical practices. The CPGs are developed under the purview of clinical experts and are derived through a transparent and systematic approach that includes, but is not limited to, systematic reviews of the literature on a given topic and development of recommendations using a graded system that takes into account the overall quality of the evidence and the magnitude of the net benefit of the recommendation. A further description of this process and CPGs on specific topics can be found on the VA clinical practice guidelines website.

Q. Do other authoritative reviews recommend yoga as a front-line treatment for MDD?

A. **No.** Other authoritative reviews have not substantiated yoga for MDD.

Several other recognized organizations conduct systematic reviews and evidence syntheses on psychological health topics using similar grading systems as the VA/DoD CPGs. These include the Agency for Healthcare Research and Quality (AHRQ) and Cochrane.

- AHRQ: A 2015 comparative effectiveness review of nonpharmacological interventions versus pharmacological treatments for MDD in adults found no trials comparing second-generation antidepressants with yoga (Gartlehner et al., 2015). No other reports including yoga as a treatment for MDD were identified.
- Cochrane: No systematic reviews of yoga for depression were identified.

Q. Is there any recent research on yoga as a treatment for MDD?

A. A March 2018 literature search identified one systematic review of yoga as a treatment for MDD published after the earlier literature search was conducted for the 2016 VA/DoD Clinical Practice

Guideline for the Management of Major Depressive Disorder. This systematic review included seven randomized controlled trials (RCTs), with a total of 240 participants, and found some evidence for a positive effect of yoga interventions beyond placebo and comparable effects compared to current evidence-based treatments (Cramer, Anheyer, Lauche, & Dobos, 2017). However, there was a high degree of heterogeneity between the included studies (participants, interventions, control groups), and many of the comparisons made were based on only a single RCT. Due to methodological problems of the included studies, such as small sample sizes and risk of bias, definitive conclusions on the efficacy of yoga for the treatment of MDD cannot be made.

Q. What conclusions can be drawn about the use of yoga as a treatment for MDD in the MHS?

A. Based on the current evidence base, yoga is not recommended as a front-line or adjunctive treatment for MDD in the MHS. Recently, more research has emerged on the use of yoga as a treatment for MDD, but results have been mixed, and methodological flaws in these studies limit the conclusions that can be made. Adequately powered RCTs are needed to establish the efficacy of yoga as a treatment for MDD.

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