



# The Effectiveness of Yoga in Treatment of Depression

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**Abstract.** Depression is the primary cause of impairment in those under the age of 45 and is a common mental health issue that affects people all over the world. The scientific community is looking for therapies that are less harsh than drugs and more practical than therapy to treat this illness. Yoga, a great gift from the historic Indian culture, is gradually but certainly becoming more widely known. Along with being physically healthy, it is also important to live in harmony with oneself and the rest of the cosmos. Yoga is gaining popularity as a type of psychotherapy for depression, although its therapeutic effectiveness as an activity has also been questioned. This comprehensive review of the English-language literature tries to determine if yoga treatments for the treatment of depression are successful from a bio-psycho-social standpoint. According to the publications, yoga is effective in treating depression because it increases positive biomarkers like GABA levels and lowers stress hormones like cortisol, both of which lift the mood. Yoga may support excellent health and the harmonious functioning of the body and mind when it is frequently performed. Additionally, social support is provided via group yoga therapy, preventing social division. To be widely accepted, however, yoga intervention has to be explored more fully, experimentally, and completely.

**Keywords:** Yoga · Depression · Treatment · Exercise

## 1 Introduction

Depression, also known as major depressive disorder (MDD), is an enfeebling illness characterized by at least one periodic episode of depression lasting at least 2 weeks and associated with marked changes in temper, preferences, pleasure, cognition and vegetative signs [1]. Meanwhile, it is a common disorder worldwide, affecting an estimated 3.8% of the population, including 5.0% of adults and 5.7% of adults over the age of 60. Approximately 280 million people in the world suffer from depression [2].

The most common treatments for depression are drug therapy (antidepressants) such as sertraline (Zoloft) and fluoxetine (Prozac Weekly, Prozac), psychotherapy such as cognitive behavioral therapy, or a mix. These two therapies have been shown to be fruitful in dealing with depression [3]. However, many patients report adverse reactions to antidepressants, such as nausea and weight gain [4]. Additionally, despite the availability of effective therapies for mental illnesses, there are still obstacles to providing appropriate

care, such as a lack of funding, a shortage of qualified medical professionals, and the stigma attached to mental illnesses [5]. Exercise has recently been used in the therapy of depression as a scheduled physical activity. There is a growing recognition that physical activity is both an antidepressant and an effective tool for delaying death [6]. Potential mechanisms explaining its beneficial effects on depression include biological factors of increased turnover of neurotransmitters, endorphins, and decreased cortisol levels, and psychological factors like increased self-efficacy [7].

Among all forms of exercise, yoga stands out and is becoming popular among researchers, doctors, and patients [8]. In this article, yoga is defined as a set of practices derived from the Indian tradition, consisting of a combination of physical postures, breathing exercises, and meditation practices [9]. The term yoga actually means “union”, a union of “body, mind and feelings” that goes far beyond any physical activity and exercise. Positive thinking, harmony, peace, and gratitude in lifestyle are all attainable and maintained gradually through daily yoga practice. These are important elements of physical health. Therefore, yoga is one of the best choices for those who want to maintain overall physical health and mental health. It is considered a holistic health system in itself, as it coordinates the mind and body to work together [10]. In a controlled group study, the effectiveness of yoga has been shown to be much more effective than purely exercise interventions in relieving the symptoms of psychiatric disorders such as depression [11]. Considering the effectiveness of yoga and its accessibility because of its long existence in the public perception and its ease of operation due to its own conditions, the future of yoga is very promising, and more therapeutic yoga classes are being studied. However, there is still a lack of robust, evidence-based research as the backup for a wider embrace of yoga.

Through the analysis of biological, psychological, and social aspects, this study aims to explore the effectiveness of yoga in treating depression from the biopsychosocial perspective. An attempt is also made to explore the achievements of current research and the possible problems that may exist in a specific practice.

## 2 Biological Perspective

The health benefits of exercise have long been recognized, especially for diseases, conditions, and disease states [6]. Exercise, bodybuilding, musculoskeletal and cardiorespiratory functions are highly associated [12]. Yoga as a form of exercise has also proven its steadfast place in mental health care. In addition to affecting clinical symptoms, yoga has been shown to ‘correct’ biological parameterizations that may be abnormal in depression [13]. Several recent studies have examined changes in biomarkers in psychiatric patients who practice yoga. Cortical inhibition, an activity regulated by  $\gamma$ -aminobutyric acid (GABA), has been shown to be dysfunctional in individuals with major depressive disorder and obsessive-compulsive disorder. Comparing yoga intervention with back intervention added to treatment for the same period, 12 weeks of yoga practice was shown by brain magnetic resonance spectroscopy to increase GABA levels in the left hippocampus of healthy subjects. Strengthen and improve the patient’s condition based on mood and anxiety scales [9]. Cortisol, a sign of an engaged stress response system and a measure of neuroendocrine alterations following yoga practice has been the subject

of several experimental research. The majority of research shows that practicing yoga reduces cortisol levels [14–16]. Serotonin (5-hydroxytryptamine), which is known to control excitability, neurogenesis, and neuronal survival in the adult brain, has also been shown to increase in response to yoga. This neuromodulator is assumed to be one of the neuromodulators that facilitates health advantages [17]. Meditation, an intentional and self-regulated focus of attention aimed at relaxing and calming the mind and body, is often present in yoga and serotonin levels are higher in meditators than in non-meditators [18, 19].

Improved physical function is also one of the benefits of a consistent yoga workout. A study involved 16 first-graders from a public elementary school in southern Brazil, one of whom had autism. Two times each week for 45 min, these kids engaged in a 12-week yoga intervention. The kids responded favorably to the yoga training, and their total motor skill scores significantly improved (balance, strength, and flexibility) [20]. There is also an indirect relationship between decreased body function and depression, which suggests that while being a treatment method, yoga intervention may have some preventive effects.

### 3 Psychological Perspective

Following on from the above, physical activity is also incrementally linked to an enhanced mood [21]. The workout reduces stress hormones and stimulates the secretion of endorphins, which help to the degenerate stress level. Also, when it comes to patients' depression, a generally low degree of self-efficacy, an individual's belief that he or she has the ability to act in the manner necessary to achieve a specific goal, was reported [1]. A 3-month community yoga program in a healthy group of 194 participants reported significant pre-post improvements on depression, anxiety, and self-efficacy scales [22]. Such changes are consistent with the need for depressed individuals to improve their self-efficacy.

Besides, yoga is not simply a form of exercise. The practice of yoga is appreciated more broadly and comprehensively, encompassing a wider range of techniques to foster well-being and equilibrium of mind-brain-body functions. These incorporate paths geared toward service, offering, wise discernment, and Meditation, each of which offers practices that alleviate suffering and generate higher levels of consciousness [23, 24]. A regular yoga practice develops a sense of serenity and well-being while promoting strength, endurance, and flexibility. A growing harmony between the inner and outer worlds, where actions begin to image faith, can also be the result of yoga practice. One of the most important outcomes of regular yoga exercise, although difficult to measure, may be a change in self-perception and perspective [25]. In a retrospective study of depressed older adults, a random effects model was used to calculate the effect size. Awareness contemplation interventions showed measurable enhancement for depression compared with the control group. Active meditation interventions can improve the state of depressed older adults and can be used as an adjunct or alternative therapy to depression treatment. These have been proven by reliable evidence [26].

## 4 Social Support

Social support was used as one of the borderline factors to determine major depressive disorder [27]. Even though alienation did not indicate future depression and did not influence the effects of relationship quality, it was noted in a follow-up study comparing 4642 U.S. adults aged 25 to 75 that the risk of depression was significantly higher for those who had baseline social stress, a lack of social support, and poor relationship overall quality [28]. Moreover, exercising in communities can promote human well-being, particularly social support [29]. Additionally, several studies have demonstrated that exercise enhances social connections, quality of life, pressure coping mechanisms, and overall fitness [30]. Thus, one factor in yoga's effectiveness for depression may be the social support provided during group sessions, which may improve some people's coping adeptness. For some people, practicing yoga can become a self-reinforcing behavior that impacts individual and group moods. These behavioral modifications of yoga can help individuals have healthier physical and psychological responses to stress [31, 32].

## 5 Discussion

More in-depth and detailed research is needed on the treatment of depression with yoga. Many experiments and studies do not stratify the level of depression of patients but only find a group of patients diagnosed with depression to give yoga intervention, which to some extent brings instability to the application of the results, that is, the results of such group studies are an average, and when patients with different levels of depression receive yoga treatment, the effect of bias is unclear. Besides, many studies have chosen yoga interventions that are not specific to a particular school of yoga but simply the default yoga class—a mix of hatha yoga, the mainstream, and other classes of yoga [33]. However, it has been shown that the results varied based on the style of yoga. Also, the absence of safety data reporting is one of the greatest drawbacks to yoga-based intervention studies, which in turn shows that there are not many studies that offer constructive comments on the realistic application of yoga [3].

Vulnerabilities that were not addressed by the study will be more apparent in the implementation of yoga sessions for the treatment of depression. In addition to being successful, psychotherapy has low use rates. The stigma attached to seeking therapy may be one explanation for this. According to sociologist Goffman, stigma is referred to as a “damaged identity” and is characterized by a distinct concept connected to an unpleasant attribute. This idea is said to be a barrier to receiving mental health therapy [34–39].

In a study of the stigma associated with depression treatment, estimated through a cross-sectional study of anonymous mail surveys of four depression treatments combined with treatment acceptability among African Americans and whites, stigma increased when the focus of all four depression treatments shifted from the individual to the broader community; a minority reported personal stigma and more than half reported fear of the community and workplace knowing they were receiving treatment [28]. These results mirror previous findings from people with depression, with 24% fearing a negative impact on friends from the stigma associated with depression and 67% worrying about

the negative impact on their employment [40]. Although yoga has a natural camouflage in this regard, and by going to a class with so-called “exercise” rather than “therapy,” the psychological burden on patients may be greatly reduced, patients may still be resistant to the entire treatment because yoga is only embedded as an integral part of the therapeutic process.

## 6 Conclusion

Overall, the articles on the effectiveness of yoga-based interventions suggest that yoga may be an effective tool to alleviate symptoms of depression from the biological, psychological, and sociological perspectives. Yoga, as a perfect balance of body function exercise and the well-being of the mind, increases levels of relevant low physiological indicators and is therefore useful in the treatment of depression. It serves as a form of exercise that also improves the patient’s physical functioning and self-efficacy while providing the opportunity to get along with others, practice their social skills, and feel socially supported. However, future work is needed to investigate further the effects of different schools of yoga on different levels of depression, as the effects may be variable depending on the style of yoga and the patient’s condition. There should also be a greater focus on bringing yoga, or other mind-body fitness programs, to a wider real-life context and being embraced by the vast majority of people.

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