

## **EFFICACY OF YOGIC PRACTICES IN THE MANAGEMENT OF EPILEPSY: A CLINICAL AND NEUROPHYSIOLOGICAL REVIEW**

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### **ABSTRACT**

Epilepsy is a chronic neurological disorder characterized by recurrent, unprovoked seizures resulting from abnormal electrical activity in the brain. Despite advances in antiepileptic therapy, approximately one-third of patients continue to experience uncontrolled seizures, along with psychological distress and reduced quality of life. These challenges have increased interest in complementary and integrative approaches, including yoga. Yoga is a traditional mind–body practice incorporating physical postures, breathing techniques, meditation, and relaxation. Emerging evidence suggests that yoga may influence seizure-related outcomes through autonomic regulation, stress reduction, and neurophysiological mechanisms. This review evaluates the available clinical and neurophysiological evidence regarding the role of yoga in epilepsy. A narrative literature search was conducted using

databases including PubMed, Scopus, and Google Scholar. Relevant studies published in English between 2000 and 2025 were identified based on predefined inclusion and exclusion criteria. The available evidence suggests that yoga may contribute to reductions in seizure frequency, improvements in electroencephalographic activity, autonomic balance, anxiety, and quality of life. Proposed mechanisms include modulation of gamma-aminobutyric acid activity, reduction in cortisol levels, and autonomic stabilization. However, methodological limitations, small sample sizes, and variations in intervention protocols limit definitive

conclusions. Larger, well-designed multicentre studies are required to establish standardized yoga protocols and clarify their role as a complementary approach in epilepsy management.

**KEYWORDS:** Epilepsy, Yoga therapy, Neurophysiology, Seizure disorder, Complementary medicine.

## INTRODUCTION

Epilepsy is one of the most prevalent chronic neurological disorders, affecting individuals across every age group and socioeconomic background worldwide. Is characterized by recurrent seizures due to abnormal increase in electrical activity of neurons in the brain.<sup>[1]</sup> It is estimated by the World Health Organization that there are 50 million people in the world living with epilepsy and that it is one of the leading public health problems of today.<sup>[2]</sup>

The impact of epilepsy on people's lives, not just the attacks, which affects them to such an extent. Many patients live with the constant presence of feelings of anxiety and depression, social alienation and stigmatization, sleep disturbance, learning disabilities and a significant reduction in quality of life.<sup>[3]</sup> While antiepileptic drugs are still the mainstay of treatment, as many as one third of patients continue to have seizures on such drugs.<sup>[4]</sup> Long-term administration of multiple drugs with daytime drowsiness, concentration problems, memory impairment and behavioural problems represent further disadvantages to the existing practice. This has led clinicians and researchers to investigate various complementary and supportive options. Yoga, an ancient Indian holistic health system, has been studied extensively by the scientific community due to its proven impact on physical and mental health.

Yoga, an ancient mind–body practice originating in India, has attracted increasing scientific interest because of its potential effects on physical and psychological well-being. Yogic interventions include Asana (postures), Pranayama (breathing practices), Dhyana (meditation), and relaxation techniques. Evidence suggests that yoga may influence arousal regulation, mood, stress reactivity, and cortical brain activity, all of which may be relevant to seizure susceptibility.<sup>[5]</sup>

Stress is recognized as a potential precipitating factor for seizures in individuals with epilepsy. By promoting relaxation, reducing stress responses, and supporting emotional regulation, yoga may have a potential role as a complementary approach in epilepsy management. In addition, its neurophysiological effects may influence autonomic regulation

and inhibitory neurotransmitter activity, potentially contributing to the stabilization of neuronal excitability.

This review aims to examine the available clinical and neurophysiological evidence regarding the role of yogic interventions in epilepsy and to highlight potential mechanisms and future directions for research in this emerging area of integrative neurological care.

## **MATERIALS AND METHODS**

This paper was compiled through a narrative literature review. A search was conducted of electronic databases, such as PubMed Scopus Google Scholar, ResearchGate, and other general searches, to identify studies published within the time range of 2000-2025. Search terms used included: 'epilepsy', 'yoga', 'yogic practices', 'meditation', 'pranayama', 'EEG', 'neurophysiology' and 'complementary therapy'. Articles were included as the extent of their applicability to yoga-based interventions for epilepsy management.

### **The inclusion criteria were**

- Articles published in English-language, peer-reviewed journals.
- Clinical studies involving patients with epilepsy.
- Studies evaluating the effects of yoga-based interventions.
- Studies investigating the neurophysiological mechanisms associated with yoga.
- Randomized controlled trials, observational studies, review articles, and neurophysiological studies.

Articles that were not scientifically sound or did not report clearly defined outcome measures were excluded. Of the 48 articles screened for relevance, 18 articles were ultimately included in the review.

## **OVERVIEW OF EPILEPSY**

Epilepsy is a neurological disorder characterized by the recurrent occurrence of seizures resulting from abnormal electrical activity in the brain. Seizures may be focal or generalized, depending on the area of the brain involved, and may have genetic, structural, metabolic, infectious, or unknown causes. In addition to their neurological effects, seizures can have significant psychosocial consequences, including stigma, social discrimination, emotional distress, and difficulties in education and employment. Several factors, including stress, sleep deprivation, depression, and emotional distress, may act as potential precipitants of seizures

in some individuals. Therefore, identifying and addressing modifiable seizure triggers may be an important component of comprehensive epilepsy management.<sup>[6,7]</sup> Therefore, identifying and addressing modifiable seizure triggers may be an important component of comprehensive epilepsy management.

## **YOGA AND ITS THERAPEUTIC RELEVANCE**

Yoga is a holistic mind–body practice that integrates physical postures, breathing techniques, meditation, and relaxation. Common yogic practices include Asanas (physical postures), Pranayama (breathing techniques), Dhyana (meditation), and relaxation practices such as Shavasana. These practices may contribute to autonomic regulation, psychological well-being, relaxation, sleep quality, and mental clarity. Yoga has also been investigated as a complementary approach in neurological conditions, including epilepsy.<sup>[8]</sup>

Commonly practiced yogic techniques relevant to relaxation and stress management include:

- Shavasana (Corpse Pose)
- Vajrasana (Thunderbolt Pose)
- Bhujangasana (Cobra Pose)
- Nadi Shodhana Pranayama (Alternate Nostril Breathing)
- Bhramari Pranayama (Humming Bee Breath)
- Meditation and Yoga Nidra (Yogic Sleep)

These practices may primarily support stress reduction, relaxation, and autonomic and neurophysiological regulation, which may be relevant to the management of epilepsy as a complementary approach.

## **NEUROPHYSIOLOGICAL BASIS OF YOGA IN EPILEPSY**

### **Autonomic Nervous System Regulation**

Those with epilepsy have an increased sympathetic tone with decreased parasympathetic tone. The practice of yogic breathing and meditation increases vagal activity and normalizes the autonomic antagonism. An increased parasympathetic predominance may have an inhibitory effect in lowering neuronal excitability plus calming stress-related precipitant of seizure.<sup>[9]</sup>

### **GABAergic Activity**

Gamma-aminobutyric acid (GABA), the brain's most abundant inhibitory neurotransmitter, has decreased GABA activity strongly linked to a greater risk of seizure. Yoga practices have been associated with changes in GABA activity, suggesting a possible role in promoting inhibitory neural processes.<sup>[10]</sup>

### **EEG Changes**

Electroencephalogram evidence points to yoga and meditation to induce an increase in alpha-wave activity and a decrease in abnormal cortical discharges, which are reflects of improved cortical stability and a deeper state of relaxation.<sup>[11]</sup>

### **Stress Reduction**

Stress as a triggering factor for the onset and severity of epileptic episodes has been well documented. Also, yoga has demonstrated to be capable of decreasing Cortisol secretion and decrease states of anxiety. Its ability to decrease circulating stress hormones may help to improve the epilepsy prognosis by providing protection against exacerbation.<sup>[12]</sup>

## **CLINICAL EVIDENCE SUPPORTING YOGA IN EPILEPSY**

### **Reduction in Seizure Frequency**

Several clinical investigations have noted how practicing yoga has led to decreased frequency of seizures in certain epileptic sufferers. Two different kinds of intervention, namely meditation as well as combined yoga exercises administration, have both shown significant benefits when given with daily doses of regular modern epilepsy medication.<sup>[13]</sup>

### **Improvement in Quality of Life**

Yoga has been linked to significant improvements in multiple vital aspects of quality-of-life including sleep quality, emotional functioning, self-esteem, and social functioning. Patients who practice yoga on a regular basis tend to have a greater sense of coping and less anxiety.<sup>[15]</sup>

### **Psychological Benefits**

Anxiety and depression are common comorbidities experienced by many people with epilepsy. The practice of yoga has known relaxative and mindfulness-based effects that improve emotional health and alleviate psychological distress.<sup>[15]</sup> These psychological

benefits are clinically significant, as mental health clearly influences the total epilepsy experience.

### **Pediatric Epilepsy**

Studies conducted in pediatric populations has been promising. In children, yoga interventions have been linked to increased emotional regulation, decreases in seizure activity, and improved attention.<sup>[16]</sup> These findings highlight the importance of exploring yoga in the treatment of children, who have a long-term medication side effect burden.

### **EVIDENCE FROM THE LITERATURE**

The available literature suggests that yoga may have a potential role as a complementary approach in the management of epilepsy. Reported benefits across the available studies include reductions in seizure frequency and improvements in psychological well-being, stress, sleep-related outcomes, and quality of life.

Several studies have also reported changes in physiological and neurophysiological parameters following yoga practice, including improved autonomic balance, increased parasympathetic activity, changes in GABA-related activity, and alterations in EEG patterns. These findings provide possible explanations for the beneficial effects observed with yoga, although the underlying mechanisms are not yet fully established.

Yoga interventions were generally reported to be well tolerated in the available studies, particularly when practiced under appropriate supervision. However, differences in study design, sample size, intervention protocols, duration of practice, and follow-up periods limit direct comparison between studies and make it difficult to draw definitive conclusions. Further well-designed clinical trials with standardized yoga protocols and clearly defined outcome measures are needed to strengthen the available evidence.

### **DISCUSSION**

The evidence reviewed suggests that yoga may serve as a beneficial adjunctive therapy in the management of epilepsy through both psychological and neurophysiological mechanisms. The reported benefits, including reductions in seizure frequency and improvements in mental health and quality of life, support the potential integration of yoga into comprehensive epilepsy care.

One of the primary therapeutic effects of yoga is stress reduction. As stress is a recognized trigger for seizures, yoga may contribute to improved seizure control by reducing sympathetic nervous system activity and promoting emotional stability. Furthermore, improvements in autonomic regulation and neurotransmitter balance may help stabilize neuronal excitability, thereby supporting its potential anticonvulsant effects. In addition to its neurophysiological benefits, yoga appears to enhance emotional well-being, social functioning, and overall quality of life. These improvements are particularly important for individuals with epilepsy, who often experience significant psychosocial challenges. Thus, yoga may address aspects of the disorder that are not fully managed through pharmacological treatment alone.

The available evidence is limited by small sample sizes, short follow-up periods, and variability in yoga intervention protocols. Moreover, large multicentre randomized controlled trials remain scarce. Future research should employ standardized yoga protocols and objective neurophysiological outcome measures to strengthen the evidence base regarding the role of yoga in epilepsy management.

## CONCLUSION

Current evidence suggests that yoga may be a useful complementary approach in the management of epilepsy. The available evidence is still limited by small sample sizes, differences in yoga practices and intervention protocols, and methodological limitations across the available studies. Yoga should therefore be used as an adjunct to conventional antiepileptic treatment and not as a substitute for standard medical care. Further well-designed clinical studies with standardized yoga protocols and appropriate outcome measures are needed to better understand its clinical and neurophysiological effects in people with epilepsy.

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## CONFLICTS OF INTEREST

There are no conflicts of interest.

## REFERENCES

1. Fisher RS, Acevedo C, Arzimanoglou A, et al. ILAE official report: A practical clinical definition of epilepsy. *Epilepsia*, 2014; 55(4): 475-482.
2. World Health Organization. *Epilepsy: A Public Health Imperative*. Geneva: World Health Organization, 2019.
3. Jacoby A, Baker GA, Steen N, et al. The clinical course of epilepsy and its psychosocial correlates. *Epilepsia*, 1996; 37(2): 148-161.
4. Kwan P, Brodie MJ. Early identification of refractory epilepsy. *N Engl J Med.*, 2000; 342(5): 314-319.
5. Streeter CC, Whitfield TH, Owen L, et al. Effects of yoga on mood and brain GABA levels. *J Altern Complement Med.*, 2010; 16(11): 1145-1152.
6. McKee HR, Privitera MD. Stress as a seizure precipitant: Identification, associated factors, and treatment options. *Seizure*, 2017; 44: 21-26. doi: 10.1016/j.seizure.2016.12.009
7. Wassenaar M, Kasteleijn-Nolst Trenité DGA, de Haan GJ, Carpay JA, Leijten FSS. Seizure precipitants in a community-based epilepsy cohort. *J Neurol.*, 2014; 261: 1324-1329. doi: 10.1007/s00415-014-7252-8.
8. Bulaj G, Clark J, Ebrahimi M, Bald E. From precision metapharmacology to patient empowerment: delivery of self-care practices for epilepsy, pain, depression and cancer using digital health technologies. *Front Pharmacol.*, 2021; 12: 612602.
9. Sathyaprabha TN, Satishchandra P, Pradhan C, et al. Modulation of cardiac autonomic balance with yoga therapy in epilepsy. *Epilepsy Behav.*, 2008; 12(2): 245-252.
10. Streeter CC, Jensen JE, Perlmutter RM, et al. Yoga Asana sessions increase brain GABA levels. *J Altern Complement Med.*, 2007; 13(4): 419-426.
11. Panjwani U, Selvamurthy W, Singh SH, et al. Effect of Sahaja yoga practice on seizure control and EEG changes in epilepsy patients. *Indian J Med Res.*, 1996; 103: 165-172.
12. Kamei T, Toriumi Y, Kimura H, et al. Decrease in serum cortisol during yoga exercise. *Percept Mot Skills*, 2000; 90(3): 1027-1032.
13. Lundgren T, Dahl J, Yardi N, Melin L. Yoga for drug-refractory epilepsy: A randomized controlled trial. *Epilepsy Behav.*, 2008; 13(1): 102-108.
14. Woodyard C. Exploring the therapeutic effects of yoga and quality of life. *Int J Yoga*, 2011; 4(2): 49-54.
15. Devinsky O, Spruill T, Thurman D, et al. Recognizing and treating depression in epilepsy. *Cleve Clin J Med.*, 2018; 85(11 Suppl 1): S26-S33

16. Kanhere SV, Ramarao SS, Singh D, et al. Role of yoga therapy in children with epilepsy.  
*J Pediatr Neurosci.*, 2018; 13(2): 121-125