



## International Journal of Applied Dental Sciences

ISSN Print: 2394-7489  
ISSN Online: 2394-7497  
IJADS 2023; 9(3): 151-153  
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[www.oraljournal.com](http://www.oraljournal.com)  
Received: 02-04-2023  
Accepted: 03-05-2023

**Dr. Gayathrie B**  
No: 49/1, BD Estate, Timarpur,  
Delhi, India

**Dr. Parvinder Sharma**  
No: 49/1, BD Estate, Timarpur,  
Delhi, India

**Dr. Aishwarya Pandey**  
No: 49/1, BD Estate, Timarpur,  
Delhi, India

**Dr. Nikita Sindhu**  
No: 49/1, BD Estate, Timarpur,  
Delhi, India

**Dr. Abhishek Singh**  
No: 49/1, BD Estate, Timarpur,  
Delhi, India

**Corresponding Author:**  
**Dr. Gayathrie B**  
No: 49/1, BD Estate, Timarpur,  
Delhi, India

### Benefits of yoga in dentistry

**Dr. Gayathrie B, Dr. Parvinder Sharma, Dr. Aishwarya Pandey, Dr. Nikita Sindhu and Dr. Abhishek Singh**

DOI: <https://doi.org/10.22271/oral.2023.v9.i3c.1796>

#### Abstract

Yoga offers a holistic approach to healing, promoting balance and harmony within the body. Through physical poses (Asanas), controlled breathing (Pranayama), and meditation, individuals can cultivate a union of mind and body, experiencing transformative benefits. Asanas enhance flexibility and circulation, benefiting people of all ages. Pranayama alleviates stress and fosters inner peace, while meditation promotes relaxation and self-awareness. The growing awareness of yoga's health benefits has led to its increased popularity as a means of improving overall well-being.

**Keywords:** Asana, pranayama, mind and body, experiencing

#### Introduction

Yoga offers a comprehensive approach to healing that promotes harmony and equilibrium within the human body. Its profound impact on oral-facial conditions has been well-documented, as it effectively stimulates and relaxes various bodily systems, resulting in reduced inflammation. By fostering balance, yoga plays a crucial role in the prevention and management of such conditions <sup>[1]</sup>.

Yoga encompasses practices that enable control over both the mind and the body. These practices, known as asanas, consist of physical poses, controlled breathing called pranayama, and meditation or moments of profound relaxation. Through these techniques, individuals can cultivate a harmonious union of mind and body, experiencing the transformative benefits of yoga.

Asanas encompass a variety of body postures that contribute to achieving balance and harmony among the internal and external organs of the body, resulting in overall well-being. They play a pivotal role in fostering a healthy body by enhancing flexibility and promoting circulation. Yoga is a practice suitable for individuals of all age groups, offering its benefits to people across the spectrum of life stages.

Pranayama is employed to alleviate the stresses accumulated within the human body. This practice entails mindful, deep breathing that establishes a profound connection between the mind and the body. Through this integration, individuals can attain a state of tranquillity and inner peace. Pranayama serves as a powerful tool in cultivating a sense of calmness and serenity.

Dhyan, also known as Meditation, is a state of mind characterized by the absence of voluntary thoughts or external distractions. Through meditation, individuals gain a heightened awareness and appreciation of their true self. While widely recognized as a spiritual practice, meditation also holds numerous health benefits. It facilitates a profound sense of relaxation, serving as a gateway to inner peace and the expulsion of negativity from our lives. Engaging in meditation is an effective means to attain tranquility of the mind and promote overall well-being <sup>[2]</sup>

Currently, there is a noticeable surge in awareness among individuals regarding the health benefits of yoga. People are increasingly recognizing the positive impact that yoga can have on their well-being.

#### Yoga's impact on Health

Yoga offers a wide range of health benefits, contributing to the holistic well-being of

individuals. One of its primary advantages is stress reduction. When faced with stress, the human body produces detrimental chemicals that can adversely affect various organs. Prolonged exposure to these chemicals can lead to disruptions in metabolism, homeostasis, immune function, and endocrine regulation. This, in turn, can result in conditions such as headaches, diabetes mellitus, gastric ulcers, and hypertension. Recent studies have revealed that yoga has the ability to decrease stress and anxiety, activating neuro-hormonal mechanisms that suppress sympathetic activity and improve autonomic functions [3].

Yoga exerts an influence on the human body's response to stress-inducing stimuli. Literature suggests that yoga can elevate serotonin levels while reducing monoamine oxidase levels, resulting in a substantial decrease in stress levels [4].

Breathing holds significant importance in yoga as it engages the movement of the diaphragm, which in turn stimulates the vagus nerve. The vagus nerve, a crucial component of the parasympathetic nervous system, extends from the medulla to the abdomen through the diaphragm. It plays a vital role in regulating various bodily functions, including reducing respiration rate, lowering heart rate, decreasing blood pressure, and enhancing digestive activity [5].

### **Revitalizing dental health through the practice of yoga**

Neglecting oral health, lack of motivation, and changing lifestyles contribute to the prevalence of dental diseases. These changes have also been linked to a significant rise in psychosomatic disorders. In the oral cavity, these disorders manifest in various forms, including oral lichen planus, myofascial pain dysfunction syndrome (MPDS), xerostomia (dry mouth), aphthous ulcers, bruxism (teeth grinding), and burning mouth syndrome [6,7].

### **Enhancing Periodontal Health through Yoga**

Biologically, stress can directly influence periodontal health, while lifestyle changes can have indirect effects. Individuals experiencing stress often neglect oral hygiene practices. Moreover, heightened cortisol levels in stressed individuals can lower their pain threshold. However, regular practice of yoga has been shown to significantly reduce levels of interleukin-6 and tumor necrosis factor  $\alpha$ , effectively managing stress-related dental disorders. Certain studies demonstrated that yoga can improve periodontal conditions by alleviating stress, a significant factor in determining the outcomes of periodontal treatment [8,9].

### **Yoga's Potential in Treating Myofascial Pain Dysfunction Syndrome**

Myofascial Pain Dysfunction Syndrome (MPDS) is a condition characterized by disruptions in the stomatognathic system, resulting in jaw pain, muscle spasms, and limited jaw movements. Conventional treatments for MPDS involve the use of muscle relaxants, nonsteroidal anti-inflammatory drugs (NSAIDs), and specific therapeutic exercises. However, the efficacy of these modalities is often limited. Encouragingly, several studies conducted in various populations have demonstrated the beneficial effects of yoga in the treatment of MPDS [10,11].

Asanas (yoga postures) and pranayama (controlled breathing) play a vital role in increasing blood flow to specific areas of the body, thereby activating the Parasympathetic system. This activation stimulates the nerve plexus and endocrine system, influencing the flow of neurons. The deep breathing exercises in yoga induce relaxation in skeletal muscles, promoting a

state of calmness. Through the practice of asanas and pranayama, the neuroendocrine system is triggered to initiate the relaxation response, promoting balance in physiological systems and reducing myofascial tension. Furthermore, combining meditation with pranayama and asanas equips individuals with effective tools to cope with chronic pain, as well as to alleviate symptoms of depression and anxiety [11].

### **Yoga for Bruxism: Stress Reduction and Dental Health**

Bruxism is a condition characterized by unconscious clenching, grinding, or bracing of the teeth, typically occurring during sleep. Several theories have been proposed to explain the factors contributing to bruxism, including peripheral activity related to teeth and occlusal interferences, central activity involving neurotransmission from the brain to chewing muscles, and psychosocial activity associated with stress. Recent studies have identified stress as one of the primary factors leading to bruxism. Over time, bruxism can lead to dental issues such as attrition, abrasion, tooth fracture, headaches, tooth sensitivity, and temporomandibular disorders.

Recent research has shown that regular practice of yoga can significantly reduce stress levels, including the release of stress hormones. By incorporating yoga into their routine, individuals may experience a decrease in stress, which could potentially alleviate bruxism symptoms and reduce the associated dental problems [13].

### **Impact of Yoga on Saliva**

Saliva plays a crucial role in oral health by containing antibacterial enzymes that break down food particles, facilitating the process of swallowing and reducing bacterial accumulation. It effectively flushes away food debris and helps maintain a healthy bacterial balance. However, when salivary flow decreases, a condition known as xerostomia or dry mouth can occur, leading to accelerated bacterial growth and resulting in halitosis or bad breath. Long-term xerostomia can contribute to dental caries and periodontal problems. By incorporating proper breathing techniques, yoga can help prevent dryness of the mouth and throat, promoting salivary stimulation and maintaining optimal oral health.

### **Impact of yoga on inflammation**

Recent studies have shown that practicing yoga can have a positive impact on reducing body inflammation by relieving stress. When we experience stress, pro-inflammatory cytokines are released, leading to a decrease in Immunoglobulin-A (IgA) levels. This immune deficiency increases susceptibility to infections and can result in chronic gingival inflammation accompanied by halitosis. However, regular yoga practice, which includes gentle physical exercises and relaxation techniques, has been found to regulate pro-inflammatory cytokine levels. In fact, yoga has been shown to reduce oxidative stress by approximately 20%, leading to a decrease in gingival inflammation. Therefore, incorporating yoga into one's routine can contribute to the preservation of gingival health [8].

### **Role of yoga in mitigating the professional demands of dentistry**

Dentistry is a profession that involves prolonged periods of static positions and limited mobility, which can lead to pain and internal injuries among dentists. As a result, dentists are at a higher risk of developing postural and musculoskeletal problems. Furthermore, dental students experience high levels

of stress throughout their curriculum. This can be attributed to the complexity of dental procedures, the pressure to minimize errors, concerns about their future career, excessive workload, and limited leisure time. Dental professionals also face various occupational hazards, including cervical spondylosis, thoracic kyphosis, tendonitis, arthritis, varicose veins in the lower limbs, reduced eyesight due to continuous concentration in the oral cavity, and contact dermatitis from exposure to hazardous dental materials. To prevent such injuries, it is crucial for dental professionals to prioritize improving their posture and maintaining their physical well-being.

**Table 1:** enumerates the different asanas and its beneficial effects on human body

Asana	Use
Bhujangasan	Makes the spine flexible, revitalizes the spinal cord
Padmasana	Helps in maintaining an upright, healthy, and flexible Spinal Cord
Sirshasana	Improves balance and posture of the body and can reduce the production of stress hormone
Vajrasana	Aids in managing varicose veins. This asana helps reduce blood backflow to the lower limbs

**Table 1: Asanas and its use in human body**

Various studies conducted by researchers such as Vicente Pedro (1987) and Bhushan (1998) have shown a notable decrease in anxiety levels among individuals who regularly practice yoga. In the context of medical and dental students, studies have revealed a high incidence of stress and anxiety. Piazza-Waggoner *et al.* (2003) investigated the impact of yogic breathing on dental students during pediatric patient management and found no significant reduction in stress levels. However, Srivastava *et al.* (2004) reported a significant decrease in anxiety levels among MBBS students who practiced yoga. Neelam S (2009) conducted a study on the effect of yoga on academic performance and stress, observing that students who practiced yoga performed better academically. Additionally, Delmonte (1987) suggests that meditation can enhance psychological well-being. Malathi *et al.* (2000) noted a significant improvement in the general well-being of participants after four months of regular yoga practice [14, 15].

### Conclusion

Yoga is gaining recognition as an adjunctive therapy for controlling, preventing, and managing a wide range of health issues, thereby reducing reliance on medication. Incorporating daily yogic practices can help effectively manage various chronic oral health conditions. This makes yoga beneficial for patients undergoing dental treatments as it aids in stress reduction. Furthermore, dental professionals can also experience advantages from yoga, including improved balance, posture, and stress relief. By embracing yoga, both patients and dental professionals can benefit from its positive impact on oral health and overall well-being.

### Conflict of Interest

Not available

### Financial Support

Not available

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### How to Cite This Article

Gayathrie B, Parvinder Sharma, Pandey A, Sindhu N, Singh A. Benefits of Yoga in Dentistry. *International Journal of Applied Dental Sciences.* 2023;9(3):151-153.

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