



# Yoga and Dental Health: A Review

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Yoga is a holistic healing process which provides overall balance to the human body. Yoga has also proved its worth in prevention and management of various oral-facial conditions by stimulating and relaxing various bodily systems which leads to the decrease in the inflammation in the body. The complete information about yoga in dental health had been collected from various journals for the time period of 1997-2018. Conditions such as oral lichen planus, Myofascial Pain Dysfunction Syndrome (MPDS), xerostomia, aphthous ulcers, bruxism and burning mouth syndrome have been effectively managed by yoga.

**KEYWORDS:** Yoga, Periodontal Disease, Bruxism, Saliva

## INTRODUCTION

“Yoga” is derived from a Sanskrit word “yuj” which means union, or to join, basically joining to one’s own entity.<sup>1</sup> It is defined as the unification of the physical, mental, intellectual, and spiritual aspects of human beings. This science which was pioneered centuries ago brought about a balance in different elements of a human body.<sup>2</sup> In present-day, appreciable amount of consciousness is seen among people regarding health and natural remedies. A recent survey published in Yoga Alliance and Yoga Journal, reported that the total number of Americans practicing yoga has increased from 20.4 million to 36 million between 2012 and 2016. According to yoga statistics in last six months about 15% of Americans have practiced yoga.<sup>3</sup> It has been observed that, when yoga is practiced regularly it cultivates the feeling of calmness thereby helps to promote flexibility, endurance and strength and develops the characteristics of compassion, greater self-control and friendliness.<sup>4</sup>

Yoga involves mind-body techniques known as asanas: the physical pose; controlled breathing pranayama; and Meditation or a brief time of deep relaxation.

Asanas involve different kind of body postures that help to maintain an equilibrium among the internal and external organs of the body bringing about an overall good health. A person of any age group can practice yoga. Asanas or yoga postures help to develop a robust and healthy body by enhancing flexibility and improving circulation.<sup>5</sup>

Pranayama is practised to decrease the stresses in human body and provide a state of lightness to it. In this asana deep conscious breathing is performed. A connection of mind with the body is achieved by it providing a state of calmness and solace.<sup>5</sup>

Dhayan or Meditation is the state of mind where there are no conscious thoughts or vishyas. Meditation helps one to realize his or her self-worth. Though it is recognized mostly as a spiritual practice, it offers many health benefits. It induces a deeper level of relaxation and is an actual key to achieve peace of mind and eliminate negativity from our lives.<sup>5</sup>

## HEALTH IMPACTS OF YOGA

Yoga has various health benefits and works for overall wellbeing of an individual. The first and foremost benefit is that it eliminates stresses. During a stressful event the Human body produces various harmful chemical stimuli that affect various organs. The prolonged exposure to these chemicals leads to various metabolic, homeostatic, immunologic, endocrinal/immunological disturbances. These lead to headache, diabetes mellitus, gastric ulcerations, hypertension, etc. Numerous studies published recently have reported that Yoga reduces the stress and anxiety and triggers the neurohormonal mechanisms by suppressing sympathetic activity thus improving the autonomic functions.<sup>6</sup>

Yoga impedes the sympathetic part of hypothalamus thus altering the human body’s sympathetic reaction



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to a stressful stimuli. Researchers have widely documented that yoga significantly increases the serotonin levels together with decrease in the levels of monoamine oxidase thus resulting in decrease of stresses by significant levels. This enzyme breaks down neurotransmitters and cortisol (stress hormone).<sup>7</sup>

In yoga, a lot of concern is on breathing, which causes the movement of diaphragm, which then stimulates the vagus nerve. The main nerve of the parasympathetic nervous system is vagus, extending from the medulla through the diaphragm to the abdomen. Main functions of this nerve is to, reduce the rate of respiration, lower down the heart rate, lessen the blood pressure, and invigorate the digestive activity.<sup>8</sup>

### IMPACT OF YOGA ON DENTAL HEALTH

Dental diseases mostly result from negligence towards the oral health, lack of the enthusiasm and changing lifestyles. A rapid increase in the rate of psychosomatic disorders has been associated with these changes. These disorders are manifested in the oral cavity in various forms such as oral lichen planus, Myofascial Pain Dysfunction Syndrome (MPDS), xerostomia, aphthous ulcers, bruxism and burning mouth syndrome.<sup>9</sup>

**Yoga in periodontal health:** Psychosocial stresses have both direct and indirect effect on periodontal health. It is the biological mechanism which is responsible for the direct effects and indirectly it is affected by the lifestyle changes. The individual under stress is unlikely to pay any heed to the oral hygiene. Even the pain threshold of an individual with high cortisol level is reduced.<sup>10</sup> Yoga, when practiced regularly results in fall of the inflammatory cytokines levels such as interleukin-6 and tumor necrosis factor  $\alpha$ . Thus yoga aids in prevention of the dental disorders related to the stress, it also helps in improving the motivation for mechanical plaque control. A study by Sudhanshu et al. shows that in spite of the fact that yoga has no direct role in improving periodontal disease, it accelerates the treatment outcomes by combating the stress which is a major factor affecting the treatment of periodontal disease.<sup>11</sup>

**Yoga and Myofascial pain dysfunction syndrome (MPDS):** It is a disorder in which disturbance occurs in stomatognathic system, resulting in pain, muscle spasms and difficulty in jaw movements. Wide range

of treatment modalities are there for MPDS, depending on the biologic model, which involves drugs such as muscle relaxants, nonsteroidal anti-inflammatory drugs [NSAIDs], and certain therapeutic exercises but none of these modalities are helpful in effectively treating the patient. There have been several studies performed in different population in which it was observed that Yoga was very helpful in the treatment of these disorders.<sup>12,13</sup>

Asanas and pranayama increase the blood flow to the area thus activating the Parasympathetic system, which stimulates nerve plexus and the endocrine system thereby affecting the neuronal flow. Deep breathing exercises in yoga relax majority of the skeletal muscles. Asanas and pranayama led to initiation of a relaxation response in the neuroendocrinal system thus balancing the physiological system which further decreases the myofascial tension. Further Meditation with pranayama and asanas helps the individuals to compact chronic pain, reduce depression and anxiety effectively.<sup>13</sup>

**Yoga in bruxism:** The American Academy of Orofacial Pain in 2008 defined bruxism as a diurnal or nocturnal parafunctional activity that includes unconscious clenching, grinding or bracing of the teeth.<sup>14</sup> Various theories have been put forward regarding the factors which might be responsible for bruxism. They include the peripheral, connected to teeth occlusion interferences, central, connected to neurotransmission from brain to chewing muscles and psychosocial, associated to stress. According to recent studies, stress has an important role in the pathogenesis of bruxism, and it is a useful indicator of stress. Over time bruxism can result in various dental problems like: Flat teeth, Chipped teeth, Broken teeth, Cheek damage, Headaches, Jaw misalignment, Jaw pain, Neck pain, Tooth sensitivity, Worn tooth enamel.

Recent Studies have documented that practicing yoga regularly can significantly decrease stress (stress hormone).<sup>15</sup>

**Yoga and salivation:** Saliva contains antibacterial enzymes that break down food and make it easier to swallow and helps washing away bacteria and food debris. When there is decrease in salivary flow, bacterial growth speeds up, thus causing "morning breath". A dry mouth creates an environment suitable for bacterial growth. Chronic dry mouth can cause

dental caries, diseases of gums and plaque build up. Proper breathing techniques prevent the drying of mouth and throat. It also results in stimulation of the salivary glands. Yoga (Pranayamas) help breathing properly and certain yoga poses also helps in increased saliva production.<sup>10</sup>

**Yoga and inflammation:** Researchers are of the opinion that yoga helps reduce body inflammation by relieving stress. The pro-inflammatory cytokines besides being inflammation markers are also detrimental to health, thus being both cause and effect of inflammation. Severe stress causes an increase in plasma levels of these cytokines. It reduces Immunoglobulin- A (IgA) levels leading to immune deficiency and increased vulnerability to infections. This can further cause chronic gingival inflammation with bleeding gums and foul smell. Since yoga involves mild to moderate physical exercise (Asanas) and relaxation techniques (pranayama and meditation), its regular practice can reduce the resting levels of inflammatory cytokines like TNF- $\alpha$  and IL-6. Yoga reduces the oxidative stresses of life to the tune of 20% in yoga practitioners which in turn reduces gingival inflammation leading to healthy gums. Hence yoga is helpful in prevention and treatment of gum diseases and achieving good healthy gingiva. Yoga helps improve body immunity and defense. Yoga helps reduce oxidative stress in type 2 diabetes. This helps to improve the symptoms of gingival inflammation that is bleeding from gums which leads towards a healthy gingiva.<sup>10</sup>

## CONCLUSION

Yoga is emerging as an alternate medical therapy in controlling, preventing and managing various health related problems thus reducing our dependency on the drugs. Various studies have been conducted using yoga as an alternate therapy for preventing and managing chronic oral health conditions. Thus, yoga should be regularly practiced for improving physical, emotional, mental, and spiritual dimensions of the individual.

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