

# Importance of Ashtanga Yoga for Diabetic Patients in the Era of COVID-19.

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## Abstract

Physical activity is the main component of the triad of diabetic management along with medication and diet. But, it is restricted because of corona virus disease, 2019 (COVID-19). This restriction may deteriorate the health of diabetic person. This has become matter of concern as the disease is fatal for this particular group of patients. Recently, International Diabetes Federation (IDF) recommended yoga for diabetics in this era of COVID-19. Various forms of yoga are in great practice throughout world. Ashtanga yoga is a form of yoga proposed by Patanjali and is basically an integrated approach. It has following eight limbs: yama, niyama, asana, pranayama, pratyahara, dharna, dhyana, and samadhi. In current situations, these eight limbs of Ashtanga yoga could be life saving for patients suffering from diabetes as well as beneficial for the society as it inculcate social values.

**Keywords:** Ashtanga yoga; Diabetes mellitus; COVID-19; Physical activity

## Introduction

Diabetes is a metabolic disorder which is increasing at alarming rate throughout the world. Currently, 5.0 billion people are suffering from diabetes and incidence is expected to rise up to 7.0 billion by 2045.<sup>1</sup> The main prevention and management strategy for diabetes is physical activity.<sup>2</sup> The joint position statement of the American College of Sports Medicine (ACSM) & the American Diabetes Association (ADA) has recommended that moderate to vigorous intensity aerobic exercise of 150 minutes/week, at least 3 times/week, should be performed by diabetic patients.<sup>3</sup> However, aerobic exercises like walking, running etc. have been restricted around the world because of corona virus disease, 2019 (COVID-19) pandemic.

The restriction of activity may deteriorate the health condition of the diabetic patients. Moreover, diabetic are more prone to respiratory infection because of poor immunity.<sup>4</sup> Additionally, it has also been reported that the disease is more fatal for this particular group of patients.<sup>5</sup> A recent meta-analysis revealed that the prevalence of COVID-19 among these patients is high and about 17% percent severe cases of COVID-19 were suffering from diabetes.<sup>6</sup> This is the major concern for patients as well as for health care professionals. In this era, indoor activities / exercise could be life saving for these patients. Recently, International Diabetes

Federation (IDF) has recommended the yoga for diabetic patient in current situations.<sup>7</sup> Even the short duration of tele-yoga session has shown effects on mental, emotional and physical well-being of the person during COVID-19 pandemic.<sup>8</sup>

‘Yoga’ is a kind of physical activity in which additional emphasis is being given on breath regulation and meditation. It is found equal and/or superior to physical activity.<sup>9</sup> Yoga take its origin from the word “yuj” that means “union” or “oneness”, it is basically the union of individual soul with universal soul. It is only possible with the harmony between mental, physical and spiritual aspects of human being. It has various forms like Raja yoga, Hatha yoga and Mantra yoga. Among these Raja yoga is the most widely used form of yoga. Ashtanga Yoga is a form of Raja yoga which was proposed by Patanjali in 200 BC. It has following eight limbs: Yama, Niyama, Asana, Pranayama, Pratyahara, Dharna, Dhyana, and Samadhi.<sup>9</sup> Sawami Charandas has also enlightened about the eight limbic path of yoga in his book “Ashtanga Yoga”.

### Ashtanga Yoga and Diabetes

Ashtanga yoga is basically an integrated approach. Importance of its eight limbs for diabetic person is summarized in Figure 1 and discussed below:

**Yama: ‘Social values’.** Patanjali yoga sutra has described five yamas, which are as follows: Ahimsa, Satya, Asteya, Brahmacharya, and Aparigraha. These yamas direct the person about what a person should do to uplift social values. In today’s fast paced world, people are losing their social values. With the practice of Yama people can uplift these values and make this world a better place to live. Wolf et al in their recent review beautifully discussed the importance of social values in this era of COVID-19. The review mentioned that the compliance to the COVID-19 guidelines will be more among individuals who are more focused towards society, more responsible and concern about the other’s security.<sup>10</sup> Moreover, these yamas are also used to enhance the person’s compliance to the regular exercise which is an important hurdle in home-exercise adherence.<sup>11</sup> Brahmacharya and Aparigraha of Yama are very important as they teach us about the detachment from materialistic world and to avoid excessive accumulation. In Bhagwat Gita, Shri Krishna has also mentioned “The spiritually-minded, who eat food that is first offered in sacrifice, are released from all kinds of sin. Others, who cook food for their own enjoyment, verily eat only sin.” (B.G.3/13) Today, the world is facing the crisis of COVID-19 which may lead to hazardous after effects. Therefore, importance of these social values is very crucial.

**Niyama: ‘Self-regulation’.** Patanjali enlisted the five constituents of Niyama. These are purity, contentment, austerity, self-education, and surrender to divine. Purity must be both externally and internally. Shankhprakashana is an intestinal cleansing process. It increases the pancreatic production of the insulin and helps in glucose regulation.<sup>12</sup> Contentment describes that one should not desire greater than its need. Diabetic patients can use this constituent for dietary management as diabetes is a life style disease in which eating habits

affect the state of disease control.<sup>13</sup> With the practice of a good routine a person can prevent various diseases and enhance productivity. A joint position statement by ADA stressed the successful implication of diabetes self-management education and support (DSME/S). This is a cost-less strategy in which patient is educated about the importance of healthy diet, regular physical activity and proper medication for the control of diabetes.<sup>14</sup> With the practice of niyama a person attain self-regulation and can easily implement DSME/S. Fifth constituent of niyama (surrendering the divine) is the only route to the samadhi. A person just by surrendering to divine can attain samadhi which can be called as the gateway to heaven.

Asana: 'Physical postures'. Attainment of various yogic posture/asanas can improve the person's flexibility and balance. Literature suggests that following asanas should be performed by the diabetic person: Standing postures i.e. Ardhakati Chakrasana, Padahastasana, and Parivrtta Trikonasana; Sitting postures i.e. Vakrasana/Ardha and Matsyendrasana; Prone postures i.e. Bhujangasana and Dhanurasana; Supine postures i.e. Sarvangasana, and Matsyasana.<sup>15,16</sup>

Forward bending asanas (postures) stimulate pancreatic functions and increase the production of insulin. Yoga not only increase insulin secretion, but also increases the glucose uptake by muscle. Even 10 minute of seated yoga practice was found beneficial for diabetic persons in reducing fasting blood glucose. Forward bending asanas also help in boosting immunity.<sup>15</sup>, and help person in attaining perfect mind-body balance which ultimately relieve stress. Stress reduction helps in glycemic control among diabetic patients.<sup>17</sup> Diabetics are prone to respiratory infections<sup>18</sup>, therefore, in this current situation of COVID-19 the importance of boosting immunity is very important. Diabetic person should hold any posture for at least for 30 seconds to 1 minute for appropriate benefit.

Pranayama: 'Control of breathing'. By directing the prana (breath) light of chitta is attenuated and we get hold over our actions and achieve a better mind-body balance. As mentioned "They yogi becomes free from old age and appears as if sixteen years of age." (H.P.2/47) This is also documented that pranayama make a healthy interaction between pancreas and pituitary gland, which helps in regulation of blood sugar level.<sup>16</sup> Reduction of blood pressure was also reported among the patients with diabetes with the regular practice of pranayama. It also brings peace and facilitate internal equilibrium. It has also been thought to change certain psychophysiological changes which leads to emotional well-being.<sup>19</sup> Diabetics are also prone to poor pulmonary functions. The practice of pranayama can also improve their pulmonary functions.<sup>20,21</sup> Therefore, diabetic person can improve their pulmonary capacity by Pranayama which is very crucial amidst COVID-19.

Pratyahara: 'Holding over senses'. A focused mind by drawing in senses can perform impossible tasks. Literature has proved that the lack of concentration and cognitive impairment among diabetic patients.<sup>22</sup> By performing pratyahara these patients can improve their concentration and improve their functional productivity.

Dharna & Dhyana: ‘Concentration’ & ‘Meditation’. Dharna means holding the mind on particular object (Concentration). A well-focused mind will always perform well in less time. If a person is able to concentrate for 24 hours then he/she reaches at a state of dhyana. Hence, Dhyana is a state of Meditation or mindfulness. It can be used as a curative therapy to minimize mental fluctuations, reduce stress and anxiety. A recent review very well explained the holistic benefit of meditation over all domains (psychological, biological, and social) of diabetic care.<sup>23</sup> This ultimately lowers the blood sugar and reduce blood pressure<sup>17</sup> Diabetic patients can be advised to visualize pancreas so that they get a hold over its activity.<sup>16</sup> Mindful eating practice was also found beneficial in lowering blood sugar and body weight.<sup>24</sup>

Samadhi: ‘Deep meditative contemplation’. Its attainment leads to ultimate liberation from the cycle of death and birth. Person achieves the supreme bliss. This is the final step which connect the soul with supreme power. It gives the immense pleasure as person detach him/her from all other senses and completely become stress free. Stress is the main causative factor of diabetes. It causes autonomic dysregulation and activate hypothalamus-pituitary-adrenal (HPA) axis.<sup>25</sup> Yoga helps in normalization of hypothalamus-pituitary-adrenal (HPA) axis and relieve stress.<sup>26</sup> Studies claims that stress control can help in the regulation of glucose among diabetic patients.

#### Ashtanga yoga, Spirituality and Health

Yoga is basically the union of mind-body-spirit. As per sage Patanjali’s definition of yoga “yogas chitta vritti nirodha” means “yoga is the removing of the fluctuation of the mind.” Through yoga practice, person gain the mastery over mind. In Ashtanga yoga, initial five limb i.e. yama, niyama, asana, pranayama, and pratyahara can be considered as the foundation for last three limbs i.e. dharna, dhyana, and samadhi. Recent research has shown the benefit of ashtanga yoga among people with post traumatic stress disorder. Ashtanga yoga practice help in changing thinking process and behavior of theses persons.<sup>27</sup> The final stage “Samadhi” is basically the connection of soul with the supreme power. He/She reaches the culmination of spirituality. At this stage, person realizes the complete satisfaction and the meaning of life. This is what Tanyi define about the spirituality, “spirituality is a personal search for meaning and purpose in life.....”.<sup>28</sup>

Bussing et al explored the effect of 6 months of intensive yoga on spirituality. The study confirmed that yoga practice enhance the search for insight and transcendence conviction. Additionally, the study also claimed that yoga help in spirituality development irrespective of the person’s religion.<sup>29</sup> The important factors in spirituality development is the length and consistency of yoga practice as 7-week of yoga intervention in naïve yoga practitioners has not improved the spirituality.<sup>30</sup> Middleton et al also discussed the connection of yoga and spirituality in recent case study.<sup>31</sup>

The connection of spirituality with health is not the matter of debate in current situations. American association of medical colleges (AAMC) also recognized the importance of spirituality into health and define the spirituality as “spirituality is recognized as a factor that contributes to health....expressed in individual’s search for ultimate meaning through participation in religion and/or belief in God, family, naturalism, rationalism, humanism, and the arts. All these factors can influence how patients and health care professionals perceive health and illness and how they interact with one another.”<sup>32</sup> Hence, Ashtanga yoga induced spirituality can be a coping strategy to fight against the diabetes mellitus and COVID-19 as well.

## Conclusion

Ashtanga yoga can help the diabetic patients to build mentally, spiritually, physically, and socially. Swami Swatmarama also mentioned-"Whether young, old or too old, sick or lean, one who discards laziness, gets success if he practices Yoga."(H.P.1/67) It is a holistic approach. It can be a preventive as well as curative therapy for diabetic patients as not only it builds immunity against COVID, but also regulates hyperglycemia and controls various complications from diabetes like blood pressure and dyslipidemia etc. It will also give immense peace to the person that will help in the relief of stress and anxiety. As mentioned-“Through practice of Ashtanga Yoga, impurity is overcome and wisdom is attained thus enduring capacity to make distinctions are achieved. (P.Y.S.2/28)". Hence, diabetic person should practice Ashtanga yoga to live a healthy life in this era of COVID-19.

Conflict of interest: NIL

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Figure legend:

Figure 1. Benefits of Ashtanga yoga for patients with diabetes