

Scientific Validation of Siddhar Yogam in the Prevention and Management of non Communicable diseases – A Review

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Abstract

Non-communicable diseases are currently one of the greatest challenges facing humanity. The advancements in technology and improvement of living standards have brought about numerous benefits; however, they have also resulted in significant changes to our lives. Maintaining a healthy lifestyle, which includes regular exercise, a balanced diet, and maintaining a healthy weight, is crucial for good health. Striking the right balance between health and modern lifestyle is of utmost importance. Unhealthy habits such as excessive alcohol consumption, smoking, consumption of unhealthy foods, and high stress levels are prevalent in society. The emergence of technologies like the internet and virtual communication networks presents new challenges to our physical and mental well-being, as they can be misused or overused. Unhealthy habits can lead to various diseases. In the field of medicine, the Siddha system primarily focuses on disease prevention, with "yogam" being one of the hallmark principles of siddha. *Thirumoolar* has detailed several yogasanas in *Thirumanthiram*. These *yogasanam* plays a important role in the developing and maintaining wellness of the body and soul.

Keywords: Siddha system, Yoga, benefits, Yoga asanas, *yogasanam*.

Introduction

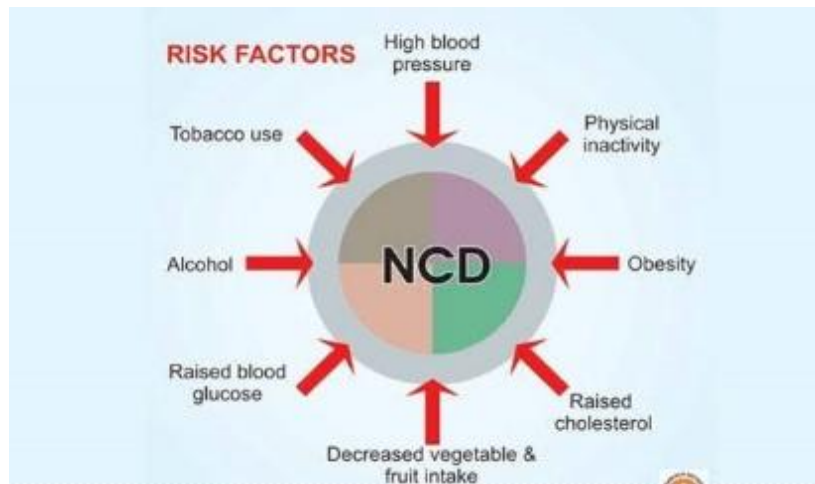
Noncommunicable diseases (NCDs) kill 4 million people each year, equivalent to 74% of all deaths globally. Each year, 17 million people die from a NCD before age 70; 86% of these premature deaths occur in low- and middle-income countries. Of all NCD deaths, 77% are in low- and middle-income countries.

Cardiovascular diseases account for most NCD deaths, or 17.9 million people annually, followed by cancers (9.3 million), chronic respiratory diseases (4.1 million), and diabetes (2.0 million including kidney disease deaths caused by diabetes). Tobacco use, physical inactivity, the harmful use of alcohol, unhealthy diets and air pollution all increase the risk of dying from an NCD. ^[1]

The 21st Century is the era of modernization and the fast lifestyle where everyone is busy updating their modern lifestyle. Everyone is trying to look fashionable and remain updated; this sort of behaviour leads to many problems. Nowadays, people are so busy in their life and routine work they don't focus on their physical activity and diet, leading to deterioration in health and behaviour changes. Most people think that eating junk food (pizza, burger, sawarma, etc.), drinking alcohol, smoking cigarette, etc. makes us modern and give status in society. This sort of lifestyle leads to the introduction of several diseases and complications, such as depression, heart-related problems, anxiety, etc. Due to the modernization of lifestyle, a new group of the disease and infection generates called lifestyle diseases and conditions in the world .^[2,3]

Lifestyle disease is a disease related to the change in people's behaviours and the way they live there life. These are non-communicable diseases that occur due to lack of physical activity, unhealthy food habits, alcohol consumption, drugs, and smoking. Common examples of lifestyle diseases are coronary heart diseases (CHD), type 2 diabetes, chronic obstructive pulmonary disease, and some types of cancer.^[4] Lifestyle diseases are associated with a Non Communicable Disease (NCDs) because they are the result of a combination of factors, including genetics, physiology, environment, and behaviours. An unhealthy lifestyle can contribute to the development of risk factors of non-communicable diseases (NCDs) such as overweight and obesity can lead to NCDs such as diabetes, hyperlipidaemia, cardiovascular diseases (CVDs) and hypertension.^[5]

Risk factors: Figure 1^[6]



Healthy life: figure 2^[7]



Life style diseases: figure 3 [8]



Siddhars have defined *yogam* as an art having eight stages which is one of the *Kaya karpam* methods that preserve physical and mental health.

The eight steps of *yogam* in a verse of *Thirumanthiram*

*Iyamam Niyamame ennilla adhanam
Nayamuru Piranayam Pirattiyakaram
Sayamigu Dharanai dhiyanam samathi
Ayamurum attanga mavathu mame.*

Theraiyar, one of the *Siddhars*, has preventive measures for promotion of health, Which include observation of certain regimen as mentioned in *Piniyanuga vitti* (Preventive Measures), guidelines that help to prevent diseases. [9]

Yoga is a physical, mental, and spiritual practice originating in ancient India. It includes postures, breathing exercises, and meditation or relaxation. Yoga can be an excellent form of exercise for people with various levels of fitness. It can also help reduce stress levels, improve sleep quality, and relieve muscle pain. [10]

Benefits of yoga:

1. Improved Physical and Mental Health

Researches reveal that Yoga is a highly recommended approach for achieving optimal physical health. As Yoga increases energy levels of body, it is good for counteracting fatigue.

2. Effective Brain Development

Yoga improves the production of FNDC5 proteins and releases it to the bloodstream. This type of protein facilitates existing brain cells to continuously reproduce. Thus, daily Yoga promotes a stronger and healthier brain. Nervous system is kept healthy by this protein.

3. Enhanced Memory

The protein that our body generates during Yoga responds well with the region in the brain that is responsible for memory retention. Thus, Yoga enhances our memory.

4. Better Concentration

According to studies, a 20 minutes Yoga before studying can enhance concentration. Intense Yoga encourages better circulation of the blood from our body to the brain. This, enables active cell growth for cognition and learning.

5. Reduced Stress

Studies revealed that Yoga for students has a positive effect on the nervous system and brain. Yoga stabilizes the blood pressure and keeps the heart rate in control in pressure time.

6. Reduced Eye Strain and Headaches

Yoga allows to take eyes off the books/laptops. Thus, eyes are relaxed for some times. A long

duration study causes headache. Thus, Yoga helps in reducing headache.

7. Increased Motivation and Productivity

Yoga, as a form of study break for students, is found very helping in enhancing the motivation and productivity levels.

8. Better Sleep Quality

Lack of sleep quality can be associated with Hypertension, low academic performance, obesity, and depression, among other health conditions causes lack of sleep quality. Yoga increases the discharge of melatonin, a hormone that manages sleep and nesses. Thus, Yoga results in better sleep quality. ^[11]

Pranayamam:

All organic functions are regulated by Prana, including contraction and expansion of heart, blood flow in vessels, inhalation and exhalation, digestion of food, excretion of toxins, and even powerful mind and brain also. It also regularizes the flow and maintains equilibrium of energy and Prana in our BODY. This also energizes. It brings balance in the autonomic nervous system, including parasympathetic and sympathetic nervous system. This is usually disturbed and imbalanced in neurotic disorders such as anxiety, depression, OCD, phobia, dissociative, ADHD, and stress. Positive thoughts are also generated in place of negative ones due to changes in brain activity. Pranayama increases the level of oxygen in every cell of the body and brain, which purifies the whole physiological and psychological

systems of the human body. Many studies reveal to, serotonin and dopamine are also increased by practice of yogasanas. It works on both psychological and physiological levels. Many studies have proven that meditation is helpful in maintaining the harmony through regulating the central nervous system, HPA axis, glutamate receptors (increase oxytocin), cortisol balance, serotonin, and levels of GABA receptors. These physiological changes induce emotional and behavioral changes reduce the anxiety, and control the mind at pointedness. ^[12]

Yoga asanas to cure the diseases:

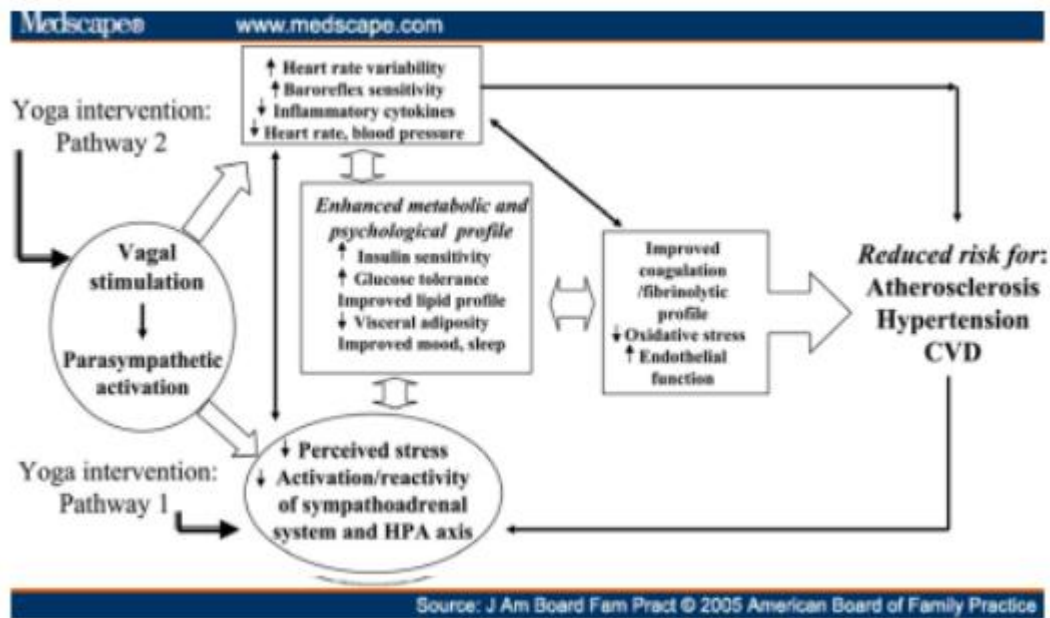
Yoga for Diabetes Mellitus:

Vajrasanam, Vakrasanam, Bhujangasanam, Bawanamukthasanam, Halasanam, Balasanam, Dhanurasanam ..

Abdominal stretching during yoga exercises is believed to result in the regeneration of pancreatic cells. ^[13] The various postures during yoga practice help to improve the sensitivity of β -cells to glucose, thereby improving insulin secretion, and increase the blood supply to the muscle and muscle relaxation, thereby improving glucose uptake. Improvements in hormonal homeostasis also improve glycaemic control in people with diabetes mellitus. ^[14]

Yoga for hypertension:

Bhujangasanam, Dhanurasanam, Makrasanam, Savasanam, Naadi sudhi pranayamam, Vajranam, Sukasanam.



[15]

Yoga for Obesity:

*Patchimothasanam, Thirikonasam,
Dhanurasanam, Sedhu bandhasanam,
Matchasanam, Tadasanam, Boomi
namaskaram, Surya namaskaram, Sarvangasam.*

Abdominal obesity has been suggested to be associated with overstimulation of the hypothalamic pituitary-adrenal (HPA) axis due to chronic stress and altering diurnal cortisol secretion. Abnormal regulation of the HPA axis and perceived stress-dependent cortisol levels are strongly related to perturbations of the endocrine axis as well as abdominal obesity with metabolic abnormalities.^[16]

Obesity could be due to some hormonal malfunction of the endocrine glands. There should be a proper balance between metabolic and hormonal function of the body. Yoga has all the therapeutic benefits to reduce obesity and prevent related diseases. Yoganasa is of great benefit for internal cleansing of the entire digestive system. When the inner organic body is clean and healthy, the entire system functions properly. Our bodies are specially intended to get rid of the bodies of excess toxins and fat. Sage *Thirumoolar* advised that one should eat half the stomach, drink water a quarter and leave the rest empty. This will keep the yogi or any human being in harmony and

serenity with the body, mind and the soul. Regular practice of asanas is useful to reduce fat in various parts of our bodies. This will help reduce weight and maintain the body in proper health in the long run.^[17]

Yoga for Cancer:

*Savasanam, Naadi suththi pranayamam,
Gomukasanam.*

Yoga can help people with cancer both mentally and physically, research shows. While it can't fight cancer itself, yoga may ease some side effects of the disease and its treatments. Some studies have found that yoga might:

-) Ease cancer-related fatigue
-) Improve sleep
-) Help with recovery from cancer surgery
-) Reduce depression, anxiety and distress

Yoga is a mind-body practice long thought to help reduce stress and boost immunity. Pranayama, yoganasa can help to prevent cancer and maintenance of a healthy oxygen level in the breathing, the reduction oxidative stress that causes cancer and prevention of onco-genetic mutation in cancer-prone individuals^[18].

Yoga for Anxiety and depression:

Thadasanam, Maharasanam, Savasanam, Vajrasanam, Pranayamam.

It helps to flush out all the negative thoughts and tiredness of the minds.

Observe how deep your inhalation and exhalation is. Hold your breath for a few seconds after exhalation. It aims to focus the mind to achieve relaxation and increase wellness. Anxiety and depression, there is a decrease in neurotransmitters such as serotonin and norepinephrine. Besides, an increased level of cortisol has a role in causing depression by regulating the function of serotonin and norepinephrine. Yoga helps in decreasing the cortisol levels leading to a counter-regulatory effect to reduce the depressive and anxiety symptoms. Meditation can be done for improving the concentration and to stabilize the mind. It has been proven to be a very good solution for stress and anxiety disorders.^[19]

Conclusion and Discussion

Lifestyle diseases are conditions that primarily stem from our daily habits. Unhealthy habits that contribute to a sedentary routine can result in numerous health issues, some of which can be life-threatening non-communicable diseases. Many individuals are unaware that modifying their lifestyle plays a crucial role in the prevalence of chronic diseases, leading to increased morbidity and mortality rates. The purpose of this article is to emphasize the connection between an unhealthy lifestyle and the development of non-communicable diseases. It is imperative to raise public awareness about the advantages of incorporating yoga into a healthy lifestyle. Engaging in yoga practice has been proven to enhance cardiovascular function and reduce cholesterol levels, both of which are factors that can contribute to heart problems such as stroke or heart attack. Additionally, yoga has demonstrated the ability to decrease the likelihood of developing diabetes, arthritis, depression, and anxiety.

Yoga is one way that can promote emotional and physical wellness that could be beneficial to those living with or recovering from cancer. Yoga is a great way to improve your overall health and will most certainly help in the excellent compliment to prevent disease. Yoga serves as a viable means to enhance emotional and physical well-being, thereby potentially offering advantages to individuals coping with or recuperating from cancer.

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