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## Review Article

## Yoga as a health promotion lifestyle tool

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## ABSTRACT

Yoga is a way of life, which originated thousands of years ago from India. Patanjali described eight steps or "limbs" of Ashtanga Yoga. Yoga has an important role in prevention and treatment of lifestyle-related diseases. One of the important components of yoga is pranayama. Physiologically, the benefits of pranayama can be described by more oxygen availability to all tissues of body by increase in alveolar ventilation and improvement of respiratory muscle's strength and lung volumes by its regular practice.

There are five 'Ts' of NCDs (noncommunicable diseases) which act as risk factors for these diseases. These 'Ts' are: tummy, tobacco, tension, trans-fats, and life full of sedentary activities. Yoga by its very inherent nature is helpful to make the body active, introspective, and calm. It discourages tobacco and trans-fats, thus reducing the risk factors of NCDs. There are enough data that suggest yoga is effective in cardiovascular diseases, stroke, diabetes mellitus and mental disorders, etc. The coronary artery disease risk in the offspring can also be reduced by doing appropriate yogasana and avoidance of smoking by expectant mother. This review also makes it amply clear that yoga is not religion-specific, rather it is for all.

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## 1. Introduction

The word **Yoga** is derived from the Sanskrit word 'Yuj' which means 'to join' or 'unity.' It is described in spiritual terms as the union of the individual consciousness with the universal consciousness. In another term, yoga is the '**union of mind and body**' for balancing and harmonizing the physical and mental functions of body. This is done through the practice of physical

postures (asana), breathing control (pranayama), and meditation.

Yoga originated from India thousands of years ago. It has been described in Bhagavad Gita and Patanjali Darshan.<sup>1,2</sup> Bhagavad Gita defines it as lifestyle with consuming appropriate food, doing appropriate exercise, discharging duties properly, going early to bed, and getting up early. All these comprise yoga and are sure shot way of remaining healthy without suffering. This definition is comparable to an

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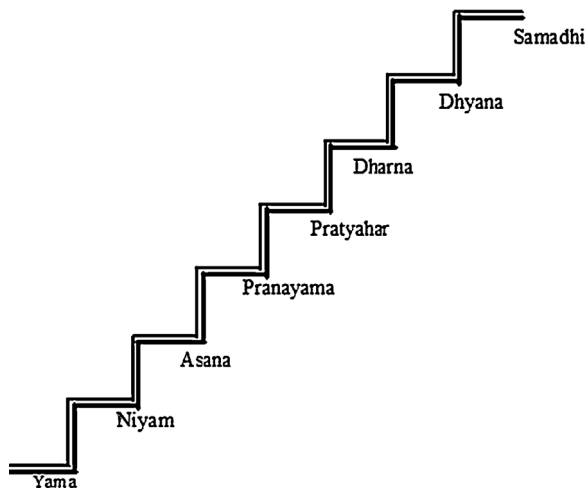


Fig. 1 – Eight steps of yoga.

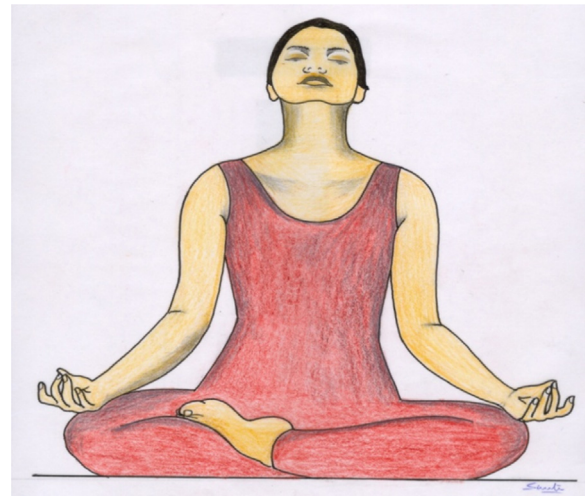


Fig. 2 – Pranayama.

aphorism quoted by Peter McDonald – three best physicians are: the doctor diet, the doctor quiet, and doctor merry man.<sup>3</sup>

Patanjali is known as the father of modern Yoga. He described yoga as *Yogah Chittavritti Nirodah* for the positive effects of yoga on mind in his yoga sutras. It means 'yoga steadies one's mind'. He described Ashtanga Yoga (Fig. 1) as a tree which comprises eight steps, or "limbs" include 'Yama' and 'Niyama' (a code of conduct for an ethical lifestyle), 'Asana' (physical postures), 'Pranayama' (breath control/yogic breathing), 'Pratyahara' (withdrawal of the senses from external objects to increase self-awareness), 'Dharana' (concentration), 'Dhyana' (meditation), and 'Samadhi' (oneness with the object of meditation).<sup>4</sup> Patanjali did not mention about tobacco or smoking because tobacco was unknown and unheard of during that period.

Yoga functioning can be compared with functioning of computer: Yama – software, Niyam – software, Asana – hardware, Pranayam – hardware, Pratyahara – software, Dharana – software, Dhyana – software and Samadhi – software. All limbs of yoga are complementary to each other, as hardware and software in computer are complementary to each other.

Yoga has become a popular method of physical and mental well being and has an important role in prevention of lifestyle-related diseases. It also has a place as adjuvant with the medicines in treating the chronic diseases related with lifestyle like diabetes, cardiovascular diseases, asthma, etc. Yoga has been adapted for use in complementary and alternative medicine in Indian as well as western society.

## 2. Physiological advantages of pranayama/ yogic breathing

Pranayama is of many types like anuloma viloma, suryan bhedan, bhramari, bhastrika, etc. but the core concept of all types is to take a deep (high depth) and slow breath (less rate) (Fig. 2). It conserves energy and recharges the tired cells. As we all know, first 150 ml of air, out of 500 ml tidal volume in each

breath is not used for gaseous exchange called as dead space air. By practice of yogic breathing, there is more alveolar ventilation for the same respiratory minute volume and finally more oxygen is available to all tissues of body during pranayama (example shown in Table 1).

By above observation, alveolar ventilation is significantly high in pranayama/yogic breathing as compared to normal breathing. Therefore, more oxygen can be extracted and available for tissues during yogic breathing. Better oxygen availability to tissue level is very helpful in reducing the tissue stress and daily wear and tear. So Pranayama can help in prevention of NCDs. If a person practices pranayama daily (means inspiration with more depth and less rate consciously), after a time period, he will develop a habit of slow and deep breathing unconsciously throughout the day. By this way, there will be increase in availability of oxygen to tissue not only during pranayama but also throughout the day. Thus, daily practice of pranayama may increase the life span by keeping tissues more healthy for longer time (we know our rishi-munis who lived long life by practicing pranayama).

Yogic breathing also helps in improvement of respiratory muscle's strength and lung volumes, thus further increasing the availability of oxygen to tissues. It was shown that 2 months of pranayama, yoga breathing, and stretching postures are used to increase respiratory stamina, relax the chest muscles, expand the lungs, raise energy levels, and calm the body.<sup>5</sup>

## 3. Yoga: an efficient adjuvant for the management of noncommunicable diseases

Human body is composed of trillions of microscopic cells which are the building blocks of body organs and systems. The cells get tired and exhausted after daily wear and tear and a time comes when they die. The dead cells are to be regenerated or replaced so that our vitality is restored. Exercise and yoga is the most economical and easy method of charging the tired and exhausted cells. It looks anachronistic to think that

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