

PRANAYAMA AND HORMONES IN THE PRESENT SCENARIO

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Abstract

The present-day lifestyle causes a lot of mental stress. The consequence is changes in major hormones that affect health. An attempt is made to understand the definition and importance of pranayama on hormones. The six important hormones include thyroid hormones and melatonin. Male and female hormones like progesterone and testosterone, cortisol, insulin, and estrogen. The source, benefits, and side effects of the changes in these hormones will be discussed. The relevant pranayama will be mentioned. The correlation between pranayama, yoga, meditation, and diet will be discussed in important hormone-related diseases like diabetes and thyroid disorders

Key Words: Pranayama, hormones, health, insulin, diabetes, thyroid, cortisol

1 INTRODUCTION

Pranayama is a Sanskrit term that roughly translates to "mastering the life force." The first Sanskrit word is "prana," which can be translated as "life force," and the second word is "Yama," translatable as "restrain" or "control."

The mystic yogis, who had no idea of the science, learnt to use the power of breathing and developed a complete technique of breathing.

In fact, they considered breathing so important that they named it as one of the eight yoga limbs.

These texts, such as the yoga sutras, have defined pranayama as a requirement of yoga practice.

Pranayama is one of the eight limbs of yoga, and asanas (postures) are another.

Pranayama practices are traced back to the history of yoga, which was first described in old books. This is approximated to be circa 6th and 5th centuries BC[1].

Modern yoga tends more towards the poses, but the earliest literature has minimal reference to the asanas at all [2]. The present-day yoga is more inclined towards the postures, yet the early texts do not refer to the asanas much.

Only after yoga found its way to the West was it turned into a highly one-dimensional theme of asanas.

One of the components of the yogic lifestyle is the pranayama breathing practices, though on a daily basis [3].

Therefore, pranayama is generally referred to as a method of practice, that can be utilized to control prana within the body through our breathing techniques, i.e. to control our breath or practice it in a deep manner.

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However, incorporating these pranayama breathing techniques in everyday life is a true yogic way of life [4]

1.1 The Benefits of Pranayama:

Breathing is a very simplistic form of exercise, and it can have a colossal impact on our overall health as follows:

- Improved cardiac health.
- Reduced chances of getting high blood pressure.
- Improved pulmonary function
- removal of toxins
- improved defence system
- Better psychological focus.

Managing emotional intelligence.

- Checks insulin concentrations to bring the sugar level to zero and hence minimise the risk of diabetes.
- Treat oestrogen level- polycystic ovary syndrome- infertility.

Regulates T3 and T4 in the thyroid hormone level thyroxine →hyper and hypothyroidism [4].

2 HORMONES IN THE HUMAN BODY

Our endocrine system comprises the hormones which are released in the system of glands. This is because excess or lack of a given hormone (or any hormone) released by our glands can affect our inner functions of metabolism, body temperature and reproduction (among many others). Our body consists of a lot of hormones, more than six, but all the hormones are crucial in one way or another, but these six are the hormones that are causing the problems, mostly to the patients. The six hormones include

1 thyroid hormones T3 and T4 2 Melatonin, 3 female and male sexual hormones such as Progesterone and Testosterone, 4 Cortisol, 5 Insulin, 6 Estrogens.

Pranayama. And Thyroid

Thyroid diseases (TD) are health situations of dysfunctional production of thyroid hormones.

Millions of people are affected, and hence, it makes it one of the most prevalent health issues in India. The thyroid hormones are notable and affect the metabolism, the heart, pulmonary system reproductive system, and the cerebral cortex.

Disproportion of these hormones can cause TD, which includes both reduced or increased levels of thyroid hormones, which can have an extreme impact on the health of a person. TD can be a predisposing factor to sexual issues and fertility issues in men.

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Yoga is a religious lifestyle of the Indians that is linked with numerous health advantages. It plays on the brain and, in the process, has an impact on the body and offers a lucrative option in the treatment of thyroid diseases. The supporting pranayama, which is known to be helpful in thyroid issue include Ujjayi pranayama, Kapala Bhati pranayama, Bhramari pranayama and Nadi Shodhana pranayama, these are known to stimulate, calm stress, increase metabolism, and balance energy respectively, though the practitioners may interchange them or vary depending on hyper versus hypothyroidism.

Such processes also come in handy, because they influence the region of the neck, enhance harmonization of hormones, assist in alleviating stress, aid in enhancing blood circulation, and are even effective in supporting thyroid activity, diet and lifestyle modification. They can be used in the betterment of thyroid cases {5} Yoga is capable of restoring the melatonin levels to normal by reducing stress and making the neuroendocrine state more stable [6].

Insulin

Diabetes mellitus (DM) is a chronic disease that is characterized by patients having a high level of blood sugar above the normal level of fasting blood glucose and postprandial blood glucose because of insulin deficiency or inappropriate use of insulin.

In Diabetes mellitus there are three major categories that are: type 1, type 2 and gestational diabetes. Type 2 DM has the highest occurrence, of all the cases of diabetes in adults, which make up about 90 per cent of cases in adults [7].

Diabetes, since it is an enduring condition of the carbohydrates, fats, and proteins, management of diabetes is about the psychological mindset, dieting, and execution of specific sorts of activities, i.e., yoga asana, pranayama, and meditation [8].

It has been established that Pranayama is effective in managing Diabetes. Pranayama reduces the level of blood sugar and blood pressure, weight, and suppresses the emergence of complications [9][10]. These benefits include pranayama such as Kapala Bhati and Anuloma Vilom, which along with lifestyle modifications, physical activities, weight, and food, help in bringing type 2 diabetes to a state of control

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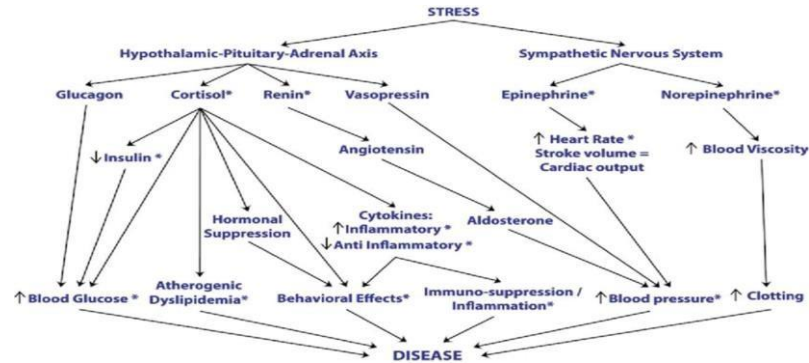


Fig1 flow chart Impact Of Stress On Hypothalamic-Pituitary-Adrenal (HPA) Axis And Sympathetic Nervous System. (Sengupta P. Health Impacts of Yoga and Pranayama: A State-of-the-Art Review. Int J Prev Med 2012; 3:444-58. * Yoga has significant beneficial effects at these levels)

3 CONCLUSION

Pranayama or normal breathing is a way of life. It helps us in present-day life. Even though it was known to our ancient gurus and yogis, we know its importance now. There is an interrelationship between pranayama, yoga, and meditation which helps to improve our health. We should include it as a part of our routine lifestyle for better productivity and vitality.

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