



## Case Study

### YOGIC MANAGEMENT FOR HYPOTHYROIDISM: A CASE STUDY

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#### ABSTRACT

The thyroid is butterfly shaped gland, and the pituitary gland (another gland located in the brain) regulates it. Hypothyroidism (underactive thyroid) refers to any state in which a person's thyroid hormone production is below normal. In Modern medicine Standard treatment for hypothyroidism involves daily use of the synthetic thyroid hormone levothyroxine (Levothroid, Synthroid, others). A patient might become dependent on these drugs for life. We present a case where a patient was suffering from hypothyroidism for the last 6 months and got positive results by integrated approach with yoga therapy. The Patient was suffering for hypothyroidism with TSH level of 36.6. After the end of the yoga therapy the TSH level was reduced to 5.82. The patient did not undergo treatment with modern medicine.

**KEYWORDS:** Hypothyroidism, IAYT, *Pancha Kosha*.

#### INTRODUCTION

Thyroid disorders are conditions that affect the thyroid gland, a butterfly-shaped gland in the front of the neck. The thyroid has important roles to regulate numerous metabolic processes throughout the body. Different types of thyroid disorders affect either its structure or function. The thyroid gland is located below the Adam's apple wrapped around the trachea (windpipe). A thin area of tissue in the gland's middle, known as the isthmus, joins the two thyroid lobes on each side. The thyroid uses iodine to produce vital hormones. Thyroxine, also known as T4, is the primary hormone produced by the gland. After delivery via the bloodstream to the body's tissues, a small portion of the T4 released from the gland is converted to triiodothyronine (T3), which is the most active hormone. The function of the thyroid gland is regulated by a feedback mechanism involving the brain. When thyroid hormone levels are low, the hypothalamus in the brain produces a hormone known as thyrotropin releasing hormone (TRH) that causes the pituitary gland (located at the base of the brain) to release thyroid stimulating hormone (TSH). TSH stimulates the thyroid gland to release more T4. Since the thyroid gland is controlled by the pituitary gland and hypothalamus, disorders of these tissues can also affect thyroid function and cause thyroid problems.<sup>[1]</sup>

The symptoms of hypothyroidism are depend on the deficiency of thyroid hormone, but can include: Weight gain Increased cholesterol levels, Depression, Fatigue, Hair loss, Memory loss, Dry,

rough skin, Constipation, Swelling of the legs, Decreased concentration, Muscle cramps. Some of the most common causes of hyperthyroidism are Graves' disease, Toxic multinodular goiter, Thyroid nodules that over express thyroid hormone (known as "hot" nodules), Excessive iodine consumption.<sup>[2]</sup>

#### Case History

A lady 46 yrs married non smoker non alcoholic residing in Banashankari Bangalore consulted consulted Dr Vijay at Aryogyadhama clinic at Svyasa Eknath Bhavan Gavipuram on Oct 17 2017. She had undergone Menopause 2 years back. She had family history of brother and sister and father having hypothyroidism. Diet pattern was vegetarian.

#### Complaints

She had weight gain of 6kgs over the period of 6 months, she complained of hair loss, fatigue, puffiness on face, mood swings, drowsiness.

#### Clinical Finding

She had Elevated TSH (thyroid stimulating hormone) levels in the last 6 months. The last test revealed her TSH levels of 37.53.mciu/ml.

Vital Parameters	
Pulse	:65
Respiratory rate	:14
Blood pressure	:130/80
Anthropometric Measurement	
Height	:150 cms
Weight	:58.4 Kg
BMI	:26

## DIAGNOSES AND ASSESSMENT

The case was diagnosed as Hypothyroidism. Though the patient as practicing yoga she was irregular in the last few years. She was undergoing stress due to family issues. As her daughter had gone abroad she was feeling lonely. Though she underwent a thyroid test in Jan 2017 she didn't undergo any treatment. Most likely the cause was due to menopause and stress.

## INTEGRATED APPROACH TO YOGA THERAPY

Yoga is an ancient Indian science and way of life which talks about the origin of diseases. The texts describe the mechanism of how the suppressed emotions (called *adhis*) percolate into the physical body manifesting as diseases (*Adhija vyahdis*). These texts go on to describe the conceptual basis for reversibility of mind body disease (*Prasava-pratiprasava* model) and offer the necessary principles to design specific postures, breathing and meditation techniques for different diseases. Hence, yoga is fast advancing as an effective therapeutic tool in physical, psychological and psychosomatic disorders.<sup>[3]</sup>

Several diseases affect a person's biopsychosocial functioning to a greater or lesser degree. These diseases are known as psychosomatic diseases. Psychosomatic means mind (psyche) and body (soma). A psychosomatic disorder is a disease which involves both mind and body. There is a mental aspect to every physical disease.<sup>[4]</sup>

In the layer of bliss, a human being is the healthiest, with harmony and balance of all sense organs.. the imbalances start at the *Manomaya kosha*, mind layer. likes and dislikes, happiness and sorrow, and love and hatred are some of the dualities that start governing the human actions,. when these imbalances intensify, they result in mental conflicts called "*adhis*". yoga looks at these mental conflicts as uncontrolled speed of thoughts in the mind. the consequence is wrong life style, emotional stress, are all traceable to mind. with the repetition of mental conflicts comes a habituated response of anxiety, depression, or anger ultimately affecting the functioning of various systems.<sup>[5]</sup>

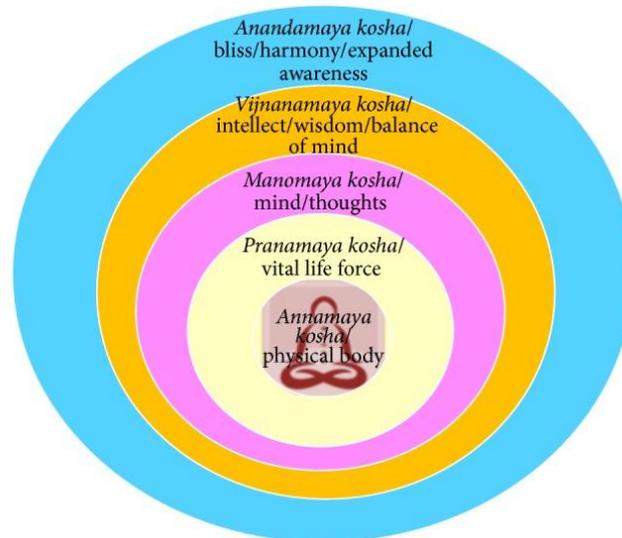


Figure1.Schematic representation of *Pancha Kosha*, five layers of human existence

## INTERVENTION

The integrated *Yoga* therapy practice included *Shithilikarana vyayamas* (loosening practices) followed by *Yogasanas* and relaxation techniques with *Pranayama* and meditation. The concepts used to develop a specific module of an integrated approach to yoga therapy (IAYT) for hypothyroidism were taken from the traditional yoga scriptures (*Patanjali Yoga Sutras, Yoga vasishtha* and *Upanishads*) that highlight a holistic life style for positive health at physical, mental, emotional and intellectual levels.<sup>[6]</sup> Yoga is defined as mastery over the modifications of mind (*Chitta Vritti Nirodhah*-definition of yoga by Patanjali). It helps to remove the

unnecessary surges of neuromuscular activation resulting from heightened stress responses that may contribute to aging.<sup>[7]</sup> The daily routine included a 1:30 h practice as follows.

### IAYT For Hyperthyroidism

**Yogic *Sukshma vyayamas* (loosening and strengthening practices):** These are safe rhythmic repetitive stretching movements synchronized with breathing. These practices mobilizes the joints and prepares the body for *Asanas* practices.

**Relaxation techniques:** IRT (instant relaxation technique) DRT (deep relaxation technique) and MSRT (mind sound resonance technique).These

three types of guided relaxation techniques were interspersed between the physical practices of *Sukshma vyayamas* and *Asanas*.

**Asanas (physical postures):** *Asanas* are featured by effortless maintenance in the final posture by internal awareness. We selected *Asanas* in standing, sitting, prone, inverted and supine position that would relax and stimulate the thyroid gland.

**Pranayama:** The practice of voluntary regulated breathing while the mind is directed to the flow of breath is called *Pranayama*. These practices promote autonomic balance through mastery over the mind. [8]

**Meditation:** *Patanjali* defines meditation (*Dhyana*) as effortless flow of a single thought in the mind without distractions (*Pratyaya ekataanata dhyanam*). This has been shown to offer physiological benefits through alert full rest to the mind body complex. [9]

Lectures and Counseling: Yogic concepts of health and disease, *Yama*, *Niyama*, *Bhakti yoga*, *Jnana yoga* and *Karma yoga* were presented in the theory classes. These sessions were aimed at understanding the need for life style change, weight management and prevent early aging by *Yogic* self management of psychosocial stresses.

**Table 2. Timeline of case**

11 Oct 2017	Patient visits <i>Aroghyadhama</i> for consultation
31 Oct 2017	Patient undergoes TSH Test
6 Nov 2017	Patient Starts IAYT (Integrates Approach to <i>Yoga</i> therapy)
23 Nov 2017	Shows marked improvement in TSH levels
31 Jan 2018	Completes <i>Yoga</i> therapy
15 Feb 2018	Undergoes last Test for TSH

## RESULTS

**Table 1. Before yoga and after *Yoga* comparison of case**

31/10/2017 Before <i>Yoga</i>	TSH	37.53 mciu/ml
23/11/2017 interim reading	TSH	15.67 mciu/ml
15/02/2018 After <i>Yoga</i>	TSH	5.82 mciu/ml

## DISCUSSIONS

Thyroid disorder has indeed become a household name these days, close behind hypertension and diabetes. According to the American Thyroid Association (ATA), around 20 million people in the US have some form of thyroid disorder and at least 60 percent of those who do are not even aware of it! Also, the prevalence of the condition is believed to be higher in women than men. [10]

*Yoga* poses like shoulder stand (*Sarvangasana*), plow pose (*Halasana*), fish pose (*Matsyasana*), camel pose (*Ustrasana*), cobra pose (*Bhujangasana*), bridge formation pose (*Sethubandhasana*), shoulder-stand pose, and bow pose (*Dhanurasana*) help balance and regulate the functioning of the thyroid gland. *Ujjayi pranayama* also works wonders by re-balancing metabolism and improving reflex pathways within the throat to cure thyroid imbalance. [11]

We now know that brief, episodic hypoxia gives rise to several adaptive responses. These responses in general prepare the body for better tolerating such hypoxic episodes, and also offer protection against several other types of insults. Indeed, scientists at the erstwhile U.S.S.R. have developed what is known as 'hypoxia therapy' and reaped the benefits of brief intermittent hypoxia for the last several decades. In India, yogic treatment of

various diseases is common. A lesser known but important variety of *Pranayama* is *Kumbaka*, which may be described as breath holding at residual volume. is the easiest way to produce brief, intermittent hypoxia. [12]

It has been shown in rats that the number of Mesenchymal Stem Cells (MSC) in the peripheral blood increases by as much as 15 folds by hypoxia. Hypoxia enhances proliferation of mouse embryonic stem cell-derived neural cells. Since cells cannot circulate in clusters, it is understandable what difficulty the marrow stem cells would encounter had they had to circulate in the blood. That probably explains why some of us are not able to regenerate lost tissues and suffer from such diseases as diabetes mellitus, osteoarthritis of the knees, and idiopathic Parkinson's disease. That the stem cells survive better when cultured in hypoxic environment is now well recognized. Artificial culture of stem cells in different environmental conditions showed that stem cells retain their self-renewing character if cultured under hypoxic conditions, in 2% oxygen as compared with the 20% present in air. [12]

The *Yoga*-based guided relaxation was shown to reduce the sympathetic activity as measured by autonomic parameters, oxygen consumption and breath volume. Medical and pre-medical students showed lesser anxiety and stress during an

examination period after 8 weeks of meditation. Brain imaging studies have shown that meditation shifts the brain activity in the prefrontal cortex from the right hemisphere to the left indicating that the brain is re-oriented from a stressful fight or flight mode to one of acceptance, a shift that may indicate better contentment.<sup>[12]</sup>

### Patients Perceptive

The patient was satisfied with the improvement as the result was achieved without any medication. She was relieved of symptoms like puffiness, fatigue, mood swings.

### CONCLUSION

This IAYT (integrated approach to yoga therapy) was helpful in treating the patient of hypothyroidism. This approach may be taken for further treatment of hypothyroidism.

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#### Cite this article as:

Asima Kumar, Vijay Kumar, Sahana Murthy. Yogic Management For Hypothyroidism: A Case Study. International Journal of Ayurveda and Pharma Research. 2018;6(4):63-66.

**Source of support: Nil, Conflict of interest: None Declared**

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