



# INTERNATIONAL JOURNAL OF CREATIVE RESEARCH THOUGHTS (IJCRT)

An International Open Access, Peer-reviewed, Refereed Journal

## Case Study on Patient with Hypothyroidism

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### ABSTRACT:

Hypothyroidism may occur as a result of primary gland failure or insufficient thyroid gland stimulation by the hypothalamus or pituitary gland. It is usually associated with lipid abnormalities. Hypothyroidism is a common endocrine disorder resulting from deficiency of thyroid hormone or, more rarely, from their impaired activity at tissue level. In its clinically overt form, hypothyroidism is a relatively common condition, with an approximate prevalence of 2% in adult women and 0.2% in adult men. Deficiency of the hormone has a wide range of effects because all metabolically active cells require thyroid hormone. Untreated hypothyroidism can contribute to hypertension, dyslipidemia, infertility, cognitive impairment, and neuromuscular dysfunction. The best laboratory assessment of thyroid function is a serum thyroid-stimulating hormone test. Thus a multifactorial and holistic approach is required in successfully managing the condition of hypothyroidism i.e., diet, drugs and yogic exercises all in combination helps in normalizing the thyroid function in hypothyroidism.

**KEY WORDS:** Hypothyroidism, Yoga, Diet, Natural Remedies

### INTRODUCTION:

Hypothyroidism refers to the common pathological condition of thyroid hormone deficiency. If untreated, it can lead to serious adverse health effects and ultimately death. Because of the large variation in clinical presentation and general absence of symptom specificity, the definition of hypothyroidism is predominantly biochemical. Overt or clinical primary hypothyroidism is defined as thyroid-stimulating hormone (TSH) concentrations above the reference range and free thyroxine concentrations below the reference range. Mild or subclinical hypothyroidism, which is commonly regarded as a sign of early thyroid failure, is defined by TSH concentrations above the reference range and free thyroxine concentrations within the normal range <sup>1</sup>. The thyroid is responsible for production and secretion of the thyroxine (T4) and triiodothyronine (T3) hormones and calcitonin throughout the body. Thyroid hormone is regulated by the hypothalamic-pituitary-thyroid axis <sup>2</sup>. The hypothalamus secretes thyrotropin releasing hormone (TRH) in a tropic fashion that activates the anterior pituitary to secrete thyroid stimulating hormone (TSH). TSH targets the thyroid and elevates thyroid hormone production. When adequate thyroid hormones are produced and secreted, the anterior pituitary stops secreting TSH via a negative feedback mechanism <sup>3</sup>.

### Causes of hypothyroidism:

Ninety-five percent of all hypothyroid cases are caused by problems in the thyroid itself, and are classified as primary hypothyroidism. People with autoimmune diseases, such as type 1 diabetes, or a family history of thyroid disease are at increased risk of developing hypothyroidism. In rare cases, problems in specific regions of the brain – the pituitary and hypothalamus – decrease the release of TSH, resulting in diminished secretion of thyroid hormones <sup>4</sup>. Primary hypothyroidism can be caused by many factors such as:

- Iodine intake: The thyroid gland requires a proper amount of iodine to function. Iodine deficiency is the most common cause of hypothyroidism worldwide although too much iodine can also lead to hypothyroidism <sup>5</sup>.
- Autoimmune disease: In iodine-sufficient countries, hypothyroidism is most commonly caused by autoimmunity, where the immune system mistakenly recognizes the thyroid gland as a foreign object and attacks it. This leads to a reduced production of thyroid hormones <sup>6</sup>.

- Surgical or medical treatment: Surgical removal of all or part of the thyroid and radiation therapy is often required in cases such as Graves' disease, nodular goiter, or thyroid cancer. This can result in partial or complete loss of thyroid function. In addition, certain medications such as lithium, amiodarone and interferon alpha may also cause hypothyroidism <sup>7</sup>.
- Congenital hypothyroidism: Some children are born without a thyroid gland or with a malfunctioning thyroid <sup>8</sup>.
- Infectious thyroiditis: A viral infection can also cause inflammation of the thyroid gland, affecting its function <sup>9</sup>.

### Symptoms:

Following symptoms are associated with hypothyroidism <sup>10</sup> :

- Cool, dry, pale skin with decreased sweating
- Hair loss and coarse hair
- Thin and brittle nails
- Puffy eyes due to swelling of the eye lids
- Anemia
- Fatigue
- Decreased heart rate
- Decreased exercise capacity
- Cold intolerance
- Constipation
- Weight gain
- Menstrual irregularity, infertility and miscarriage in women; erectile dysfunction and decreased libido in men
- Cognitive impairment, memory loss
- Joint pain
- Muscle weakness

**Case presentation:** A 53 years old Hindu female housewife suffered from hypothyroidism associated with obesity and joint pains visited yoga and naturopathy centre with the complaints of hair loss, puffy eyes, overweight, joint pain , muscle weakness, cold intolerance, constipation from last 8-9 years and even she was on medicine for thyroid problem and joint pain. While examine her weight is 130 kg and blood pressure is 140/86 mmHg.

**Intervention:** Patient practiced yoga therapy session of one hour for 6 days per week for one and half month including loosening exercises, Asanas, pranayama's, meditation and Kriyas and with that she followed proper diet and natural remedies as prescribed.

**Duration:** 45 days

**Frequency:** One hour Yogic practices for 6 days a week followed by proper Diet and natural remedies.

**Yogic Intervention:**

**Kriyas-** Sutra neti, Jalneti, Vamana weekly once.

**Suryanamaskara** - 3 sets followed by deep relaxation technique (DRT)

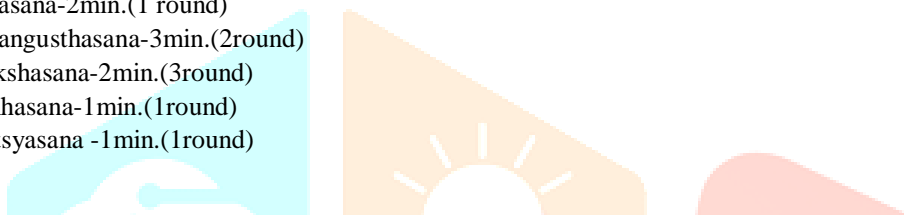
**Special technique** - Mind Sound Resonance Technique (MSRT) once in a week.

**Sukshma Vyayama-Sithilikarna vyayama:**

Hands in and out breathing, hands stretch breathing, Kapola shakti vikasaka(for cheeks/mouth), Griva shakti vikasaka(for neck), Anguli shakti vikasaka(for fingers)

**Yogasanas:** 20 Minutes

1. Trikonasana – 2min.(3round)
2. Adho Mukha Virasana- 1 min.(1 round)
3. Bhujangasana- 2min.(3 round)
4. Paschimottanasa- 1min.(1round)
5. Gomukhasana- 2min. (3round)
6. Vipritakarni asana- 3min.(2round)
7. Savasana-2min.(1 round)
8. Padangusthasana-3min.(2round)
9. Vrikshasana-2min.(3round)
10. Simhasana-1min.(1round)
11. Matsyasana -1min.(1round)



**Pranayama:** 15min. (3min.each pranayama)

Anulom-vilom pranayama

Suryabhedhi pranayama

Bhramari pranayama

Ujjayi pranayama

Bhastrika pranayama

**Bandha-** uddiyana bandha

**Meditation:** Omkara chanting- 5min.

**Relaxation:** Quick Relaxation Technique (QRT)-3min.

**Naturopathy management at home:** Applying hot and cold towels to neck and throat at different times. It helps in stimulating the thyroid function. Alternate 3 minutes hot with 1 minute cold. Repeat 3 times for 1 set. Advised to do 2 to 3 sets per day.

**Dietary Regimen:** foods rich in vit.b12, selenium, zinc, and healthy fats advised to take at home. Healthy fats such as avocado, olive oil, coconut oil, ghee, flax seed, yogurt, cheese, nuts, nut butter, and nut milk. Eat a well-balanced diet full of all the nutrients and vitamins.

VITAMIN B12 supplements such as cheese, milk, peas, asparagus helps in repair of damage caused by disease.

**Foods to avoid:**

Advised to avoid soy and coffee as they reduce the body's ability to use hormone medication. Also, even healthy foods like kale, broccoli and spinach must be consumed in moderate quantities because they are rich in iodine. Avoid gluten-rich foods they increase of autoimmune attacks on the thyroid gland Breads, pastas, seasonings and spice mixes, wheat and barley are some of the examples of foods with high gluten content.

**Objective data:** Patient has followed prescribed yoga practice with lifestyle modification for one and half month. She provided the following information:

- relieve in muscle cramps
- feels lighter and healthy with body flexibility and stability
- improved sleep
- controlled hair loss
- relieve constipation
- reduced weight
- reduced anxiety
- feeling more confident
- increase appetite
- sleep become sound
- relieves digestive problem

**General examination results:**

Weight – 124.5 Kg, BP - 122/80, HR - 76/min

**Thyroid profile:**

TSH- 19.9mIU/L reduces to 4.5mIU/L.

**Discussion:**

A 53 years old female came with the complaints of hair loss, puffy eyes, overweight, joint pain, muscle weakness, cold intolerance, constipation from last 8-9 years. Suryanamsakara and other yogic practices works on thyroid gland powerfully in boosting metabolism. Pranayamas such as Ujjayi is the most effective pranayama for thyroid unbalance as it directly acts on the throat area and has a relaxing and stimulating effect. Case showed remarkable changes in thyroid profile, weight loss and physical signs and symptoms as well as emotional and mental well being than baseline reading.

**Conclusion:**

Regular yogic practices relieves and reduces the symptom with a wonderful sequence that stimulates good blood flow to the thyroid region by incorporating breathing and relaxation techniques that are effective in stress relaxation <sup>11</sup>. Diet and nature cure remedies works over the thyroid region. Pranayama creates deep internal awareness and feeling of deep rest in the thyroid region. Asanas that compress and stretch the throat area are beneficial to the thyroid and helpful for hypothyroidism as they stimulate the blood flow, which provides nourishment to the cells and helps the thyroid to do its work properly <sup>12</sup>.

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