



Thyroid diseases occur when the thyroid gland produces too much hormone (hyperthyroidism) or too little (hypothyroidism). There are other conditions where during acute illness, thyroid hormone levels become abnormal but the issue resolves itself when the illness is over. This article will focus on underactive thyroid also known as hypothyroidism.

The thyroid gland is a small gland located in the front of the neck just below the firm prominence commonly referred to as Adam's apple. The gland is shaped like a butterfly and it's normally obviously visible or felt. Its two wings (lobes) are connected by a small bridge-like tissue called the isthmus. When it becomes enlarged for various reasons (some of which will be addressed in the article), it is called goiter.

### **What does the thyroid do in the body?**

The thyroid gland produces hormones that regulate the body's metabolism. The major hormones are thyroxine (T4) and triiodothyronine (T3). Like many other glands in the body, hormone production by the thyroid is under the control of the pituitary gland located in the brain. The pituitary gland produces thyroid stimulating hormone (TSH). TSH production is in turn regulated by another hormone from the hypothalamus called thyrotropin releasing hormone (TRH).

The hormones produced by the thyroid gland regulate body temperature and are involved in the metabolism of proteins, carbohydrates, and fats in the body. Thyroid hormones are extremely important for proper growth and development in infancy. The hormones also contribute to optimal function of muscles, the menstrual cycle, and mood. Calcitonin also produced by the thyroid is involved in the regulation of calcium metabolism.

The most basic nutrients required for proper production of thyroid hormones are iodine and tyrosine. This is the reason why iodide is added to table salt to ensure sufficient availability of

iodine.

### **What are the symptoms of hypothyroidism?**

Early on there may be no symptoms (subclinical hypothyroidism)

Symptoms related to slowing down metabolism: Tiredness, sluggishness, feeling cold a lot (cold intolerance), constipation

Unexplained weight gain, puffy face

Musculoskeletal symptoms: Muscle aches and joint pains

Skin changes: Dry skin, brittle finger nails and hair

Mood problems: Depression

Voice change: Hoarseness

Other changes: High cholesterol level, changes in menstrual cycle, slow heart rate

### **Causes of hypothyroidism**

Sometimes no definite cause for hypothyroidism may be found.

**Autoimmune:** Diseases whereby the body fights itself. Autoimmune destruction of the thyroid gland will lead to loss of production of hormones. This type of hypothyroidism is also common in people who have other autoimmune diseases.

**Following other medical treatment:** Previous treatment for hyperthyroidism with radioactive iodine; radiation therapy involving neck area and certain medications like lithium used in some psychiatric conditions.

**Deficiency of iodine:** As you would recall iodine is required for the production of thyroid hormones. Iodine deficiency will cause underproduction of the hormone thereby causing deficiency.

**Problems from the control center:** Pituitary problems leading to the under production of TSH will in turn give rise to hypothyroidism.

### **How is hypothyroidism diagnosed?**

It takes a simple blood test that can be done in your doctor's office. Blood taken for the thyroid hormones (TSH, T4, T3) is the initial test done. Based on the results, additional testing may be required.

### **Treatment of hypothyroidism**

Hypothyroidism is simply treated by replacing the missing hormone.

### **Take home message**

## THYROID DISEASES Part 1 HYPOTHYROIDISM

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Hypothyroidism can be screened for if you have any of the symptoms described above.

Diagnosis and treatment is very simple and should not be delayed.

Untreated hypothyroidism can lead to severe complications.

Dr. Oluwatoyosi Dairo can be reached at **Amazing Medical Services at 110-16 Sutphin Blvd; Jamaica, NY 11435** or by phone at 718-526-7600.

Disclaimer: This write-up is for informational purposes only and is not intended to replace the advice of your doctor.