



HYPOTHYROIDISM

When was the last time you had your thyroid checked? How many times have you thought about that as you get up in the morning with the feeling of tiredness and exhaustion?

“What does the thyroid gland do?” you ask. It is the furnace of our bodies. This small gland regulates energy utilization and heat production. It also facilitates growth.

How is the thyroid gland regulated? There is a circular mechanism in the body that connects the blood levels with parts of the brain. The hypothalamus communicates with the pituitary by releasing TRH (thyrotropin-releasing hormone). Thyrotrophs of the anterior pituitary gland are stimulated by TRH and produce and release TSH (thyroid stimulating hormone). TSH affects the thyroid gland by: 1) increasing iodine uptake in the gland itself; 2) releasing T_4 and T_3 into the blood; and 3) stimulates thyroid cell growth.

Thyroid hormones affect the body in various ways:

1. Cardiovascular Effects – increased heart rate and cardiac output.
2. Gastrointestinal Effects – increased gut motility.
3. Skeletal Effects – increased bone turnover and resorption.



4. Pulmonary Effects – maintenance of normal hypoxic and hypercapnic drive in the respiratory center.
5. Neuromuscular Effects – increased muscle protein turnover and increased speed of muscle concentration and relaxation.
6. Lipids and Carbohydrate Metabolism Effects – increased hepatic gluconeogenesis and glycogenolysis as well as intestinal glucose absorption; increased cholesterol synthesis and degradation; increased lipolysis.
7. Sympathetic Nervous System Effects – increased number of β -adrenergic receptors in the heart, skeletal muscle, lymphocytes, and adipose cells; decreased cardiac α -adrenergic receptors; increased catecholamine sensitivity.

The clinical features of hypothyroidism include:

Children

1. Learning disabilities
2. Mental retardation
3. Short stature
4. Delayed bone age
5. Delayed puberty

Adults

1. Fatigue



2. Cold intolerance
3. Weakness
4. Lethargy
5. Weight gain
6. Constipation
7. Myalgias
8. Arthralgias
9. Menstrual irregularities
10. Hair loss
11. Dry, coarse cold skin
12. Coarse thin hair
13. Hoarse voice
14. Brittle nails
15. Periorbital, peripheral edema
16. Delayed reflexes
17. Slow reaction time
18. Orange skin hue
19. Bradycardia
20. Pleural, pericardial effusions



Many times the clinical features of low thyroid exist despite having blood tests that reflect TSH or T₄ or T₃ levels in a normal reference range. Abnormal thyroid function can occur even in patients with these clinically normal measurements. Many suffer from severe non-thyroidal systemic illness.

Anyone who suffers from chronic Lyme Disease, severe fatigue, Fibromyalgia, Autoimmune Disease, malabsorption, eating disorders, liver disease and protein-calorie malnutrition are candidates for this form of Euthyroid Sick Syndrome.