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## **Thyroid Disorders – Hyperthyroidism**

### **Thyroid Overview**

The thyroid gland is located in the neck. It is an extremely important part of the endocrine system. It is responsible for many different functions in several systems in the body. Thyroid hormones:

- Promote basal metabolic function; regulate oxygen consumption and heat production
- Affect cardiovascular muscle contraction (heart and circulatory system)
- Stimulate bone resorption and bone formation
- Allow normal glucose metabolism, absorption, and storage
- Helps to make and breakdown essential fatty proteins that make up cholesterol components (lipoproteins)
- Affects the rate of metabolism of many hormones and medications
- Affects fetal development; secreted by the fetus beginning at 11 weeks gestation and facilitates normal fetal growth and development

If you have been told you have hyperthyroidism, it means that you have an *overactive* thyroid. This is determined by a blood test that looks for the amount of TSH (thyroid stimulating hormone) and circulating thyroid hormones (T3 and T4). If your TSH was low, then that means your body is trying to tell your thyroid to secrete *less* hormones because your circulating thyroid hormones (T3 and T4) may be high.

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

There are several classic symptoms of hyperthyroidism that typically occur:

- Anxiety and irritability
- Rapid heart rate and palpitations
- Tremor
- Shortness of breath/increased respiratory rate
- Weight loss
- Diarrhea or increased number of stools per day
- Irregular or lack of menstrual periods
- Excessive sweating
- Intolerance to heat
- Nervousness
- Insomnia

### **What causes hyperthyroidism?**

There are several causes and types of hyperthyroidism. Graves' disease is an autoimmune disorder that causes increased production and release of thyroid hormones. Another type of hyperthyroidism can happen after a viral infection. Some women will develop hyperthyroidism after pregnancy, which eventually resolves in about 70% of postpartum women. Thyroid nodules can also cause hyperthyroidism. Your healthcare provider will be able to determine through laboratory and diagnostic studies which type of hyperthyroidism you have and provide appropriate treatment.

## **How is hyperthyroidism treated?**

Most hyperthyroidism will resolve after 6 – 12 months of treatment. Treatment is aimed at symptom relief and blocking production and conversion of thyroid hormones. Symptom relief is most often treated with beta-blockers, which are cardiovascular drugs that help to slow and regulate the heartrate. Drugs that block the production or the conversion of thyroid hormones include methimazole and propylthiouracil (PTU). Your age and whether or not you are pregnant will guide your provider's treatment plan and medication decisions.

Radioiodine therapy is reserved for patients who are not pregnant and are at least 20 years old.

A surgical approach may be necessary for a very small percentage of patients.

Sometimes, hyperthyroidism is unintentionally converted to hypothyroidism (underactive thyroid) either through your body's progression of thyroid dysfunction or more commonly, medication and treatments for hyperthyroidism. Your TSH and thyroid hormone blood levels will be closely monitored by your provider to ensure the current treatment remains the best option and is still appropriate.

**If you develop any of the following symptoms while under treatment for hyperthyroidism, contact your provider for evaluation:**

- Fatigue
- Intolerance to cold temperatures/always feeling cold
- Hair loss
- Brittle, thin nails
- Chronically dry skin
- Hoarseness
- Puffiness in the face and hands
- Depression
- Irregular and heavy menstrual periods
- Constipation
- Numbness and tingling in the extremities
- Muscle aches
- Low heart rate