

HEALTH IN OUR HANDS!

The Arkansas State University Wellness Program Newsletter
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Thyroid Awareness

This month's issue of *Health in our Hands* recognizes thyroid awareness month.

Overview

The thyroid is a butterfly shaped gland located in your neck just above the collarbone. The thyroid gland manufactures hormones that help control the body's metabolism, growth, body temperature, and other hormones. As many as 30 million people in the U.S. have thyroid disease, but many people remain undiagnosed. Women are more common than men to have a thyroid disorder. Thyroid disorders range from a harmless goiter that does not require treatment to life-threatening cancer. A goiter is an enlarged nodule on the thyroid gland. Greater than 90% of nodules are not harmful or cancerous. A thyroid disease causes the body to use energy more quickly or slowly than it should. When too much of a thyroid hormone is being released it is called hyperthyroidism. Hypothyroidism is when there is insufficient hormone production.

Hypothyroidism

Causes: Hypothyroidism can be caused by the treatment of hyperthyroidism. The radioactive destruction of thyroid tissue or the removal of thyroid tissue can cause hormone levels to become too low. Antithyroid antibodies are present in people with type 1 diabetes, lupus, rheumatoid arthritis, chronic hepatitis, and Sjogren's syndrome. These hormones cause the destruction of the thyroid decreasing the production of hormones. The most common cause of hypothyroidism is Hashimoto's thyroiditis. The autoimmune response destroys the thyroid resulting in a decreased manufacturing of thyroid hormone and an increase in TSH (thyroid-stimulating hormone). Hypothyroidism can be present from birth. A decrease in thyroid hormone causes an increase in TSH. The increase in TSH can cause a noticeable goiter.

Symptoms: fatigue, mental depression, sluggishness, feeling cold, weight gain, dry skin and hair, constipation, and menstrual irregularities.

Treatment: This is treated by drug therapy. The patient takes thyroxine (T4). Most often patients will need to be on T4 treatment for the rest of their lives.

Hyperthyroidism

Causes: Hyperthyroidism is caused by Grave's disease, toxic multinodular goiter, subacute thyroiditis, pituitary adenoma, and drug-induced hyperthyroidism. Grave's disease is an autoimmune thyroid condition caused by an abnormal stimulation of thyroid stimulating immunoglobulin (TSI). It can cause goiters in the thyroid. The disease can progress to the eyes causing a "bug-eyed" and frightened look. It can further progress to severe eye pain or eye muscle weakness leading to tearing and double vision. In severe cases there is loss of vision. Graves' can also cause thickened skin over the shins or tops of the feet. Toxic multinodular goiter is when a nodule produces thyroid hormones without concern for the amount of TSH stimulation. This is common in the elderly with a long-lasting goiter. Subacute thyroiditis is a temporary inflammatory

disorder. Inflammation causes an excessive thyroid hormone to be released. Usually 90% of people will return to normal thyroid function without treatment. Pituitary adenoma is a tumor that causes independent TSH production causing overstimulation of the thyroid gland. Drug-induced hyperthyroidism is commonly caused by the heart medication amiodarone.

Symptoms: muscle weakness, trembling hands, rapid heartbeat, fatigue, weight loss, diarrhea or frequent bowel movements, irritability and anxiety, vision problems, menstrual irregularities, intolerance to heat and increased sweating, and infertility.

Treatment: Treatment can include antithyroid drugs such as methimazole or propylthiouracil. Beta-blockers can be used to treat the rapid heart rate, trembling, anxiety, and high amount of heat the body produces with this condition, but they don't block the production of thyroid hormone. Radioactive iodine completely removes thyroid gland function and reduces the chance of hyperthyroidism coming back. However, the patient will have to take thyroid hormone to replace their hormone levels. Another option is surgery, removing the thyroid gland. This is the last option because of the complexity of the surgery.

Goiter

Causes: Goiter or Nodules are caused by external radiation exposure or iodine deficiency.

Treatment: Some of the nodules need to be removed by surgery. If the nodule has fluid in it then it is referred to as a cyst and will need to be drained.

Diagnosis

Thyroid problems can be diagnosed in several ways.

- Blood tests – The amount of thyroid-stimulating hormone, free T4, Triiodothyronine (T3), TSH receptor antibody and antithyroid antibody.
- Nuclear thyroid scan – This uses radioactive iodine and imagining to determine if it is hyperthyroidism or hypothyroidism.
- Ultrasound – This procedure helps to determine the size, number and the type of nodules on the thyroid.
- Fine needle aspiration – A thin needle is inserted into the thyroid gland and a tissue sample is taken usually from a nodule. The tissue is examined under a microscope to look for signs of cancer.
- Computerized axial tomography (CT) scan – Occasionally used to look at a large goiter and assess the narrowing or displacement of the trachea. This is not a routine diagnosis tool.

Prevention

There is no known way to prevent hyperthyroidism or hypothyroidism. Iodine deficiencies are rare in the United States. It is not recommended that a person take supplemental iodine. An adult multiple vitamin supplement contains plenty of iodine.

Radiation will cause benign and malignant thyroid nodules. Individuals should avoid excess radiation of the head and neck. A thyroid shield should be used when dental x-rays are performed.

Seeking Medical Attention

Hypothyroidism and hyperthyroidism develop slowly over a period of weeks or even months. If hypothyroidism is left untreated it can cause effects on the brain, intestinal obstruction, and inability of the heart to beat effectively. When hyperthyroidism is left untreated, it is referred to as thyrotoxic crisis. This is life-threatening because of the effect on the brain and heart. Severe goiter or nodules can cause shortness of breath, extreme pain, problems swallowing, and a high fever.

References

- www.emedicinehealth.com
- www.webmd.com
- www.hormone.org
- www.nlm.nih.gov

Other News

**If you have any suggestions for newsletter topics, please contact Dean Susan Hanrahan at hanrahan@astate.edu.

The Arkansas State University Employee Wellness Newsletter is published monthly during the academic year by the College of Nursing and Health Professions. Health questions can be addressed to Dean Susan Hanrahan, Ph.D., ext. 3112 or hanrahan@astate.edu. Produced by Michelle Williams, graduate student in the College of Nursing and Health Professions, Physical Therapy Program.