Hyperthyroidism Assessment

Hyperthyroidism is a metabolic imbalance that results from overproduction of the thyroid hormones T4 and T3. Graves' disease, which is an autoimmune disorder, is considered the most common form; however, toxic nodular goiter, thyroiditis, excess iodine intake, pituitary and thyroid tumors have symptoms of elevated thyroid hormone. Overall symptoms of hyperthyroidism relate to increased metabolism. These include heat intolerance, exophthalmos, warm, moist skin, silky hair, tremors, goiter, diarrhea, weight loss, tachycardia, hypertension, and amenorrhea. Diagnosis is suggested by decreased TSH and increased free T4 levels, along with a radioactive iodine uptake test.



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Assessment

Heat Intolerance
Sweating Fire-guy
Due to the increased metabolic rate, patients with hyperthyroidism are intolerant to heat and have a decreased ability to cool the body.

Exophthalmos
Bulging-X-eyes
In Graves’ disease, exophthalmos may be present, which is protruding of the eyeballs beyond their normal protective orbits as a result of tissues and muscles behind the eyes swelling. This may result in dry, sensitive, and excessive tearing or discomfort in the eyes.

Warm, Moist Skin and Silky Hair
Warm and Wet Skin-suit-man with Silky Hair
Thyrotoxic skin is often described as the texture of an infant’s skin: warm, moist, and smooth. Warmth is caused by increased cutaneous blood flow and the moisture is a reflection of the underlying metabolic state. The hair is often fine and soft and may be described as silky.

Tremors
Trimmer
Fine tremors, usually of the hands and fingers may occur along with nervousness, anxiety, and irritability.

Goiter
Goiter-goat
Goiter is defined as having an enlarged thyroid gland. On examination patients will have an enlarged neck, which can cause breathing issues, if the swelling pushes against the trachea. The presence of a goiter indicates a problem with thyroid function but does not indicate whether it is hypersecretion or hyposecretion of thyroid hormone, as goiter can be seen with both hypothyroidism and hyperthyroidism.

Diarrhea
Toilet
An increase in motility of the digestive tract can lead to diarrhea.

Weight Loss
Skinny with Baggy-pants
Increased metabolism results in the body burning more calories and sudden weight loss can occur, even when appetite and the amount and type of food remain the same or even increase. Thus, the patient should be educated to consume a high calorie, high protein diet in order to meet nutritional demands until further treatment takes place.

Tachycardia
Tac-heart-card
Due to increased sympathetic stimulation, patients with hyperthyroidism can have a higher than normal heart rate. Sinus tachycardia initially increases cardiac output and can result in a bounding pulse, systolic murmurs, or dysrhythmias.

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Hypertension

Hiker-BP

Similar to tachycardia, hypertension may occur as a result of increased sympathetic stimulation.

Amenorrhea

Amen-tampon

Hyperfunction of the thyroid can lead to menstrual irregularities including amenorrhea, i.e., the absence of menstrual periods.

Diagnosis

Decreased TSH with Elevated Free T4

Down-arrow Tissue-box and Up-arrow Tea (4) Fork

The most common and reliable laboratory tests for thyroid function are thyroid stimulating hormone (TSH) and free thyroxine (T4). In most cases of hyperthyroidism, TSH levels will be decreased, and free T4 is elevated. In some cases like subclinical hyperthyroidism, however, free T4 may be normal.

Radioactive Iodine Uptake (RAIU)

Radioactive-guy with Iodine Uptake-tube

When blood tests indicate hyperthyroidism, a RAIU test may be ordered to help determine why the thyroid is overactive as this test differentiates Graves’ disease from other forms of thyroiditis. For this test, a small, oral dose of radioactive iodine is taken. Over time the iodine collects in the thyroid gland as the thyroid uses the iodine to produce hormones. One will be checked after 2, 6, or 24 hours to determine how much iodine the thyroid gland has absorbed. The patient with Graves’ disease shows a diffuse, homogeneous uptake of 35-95%, while the patient with thyroiditis shows an uptake of less than 2%.

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