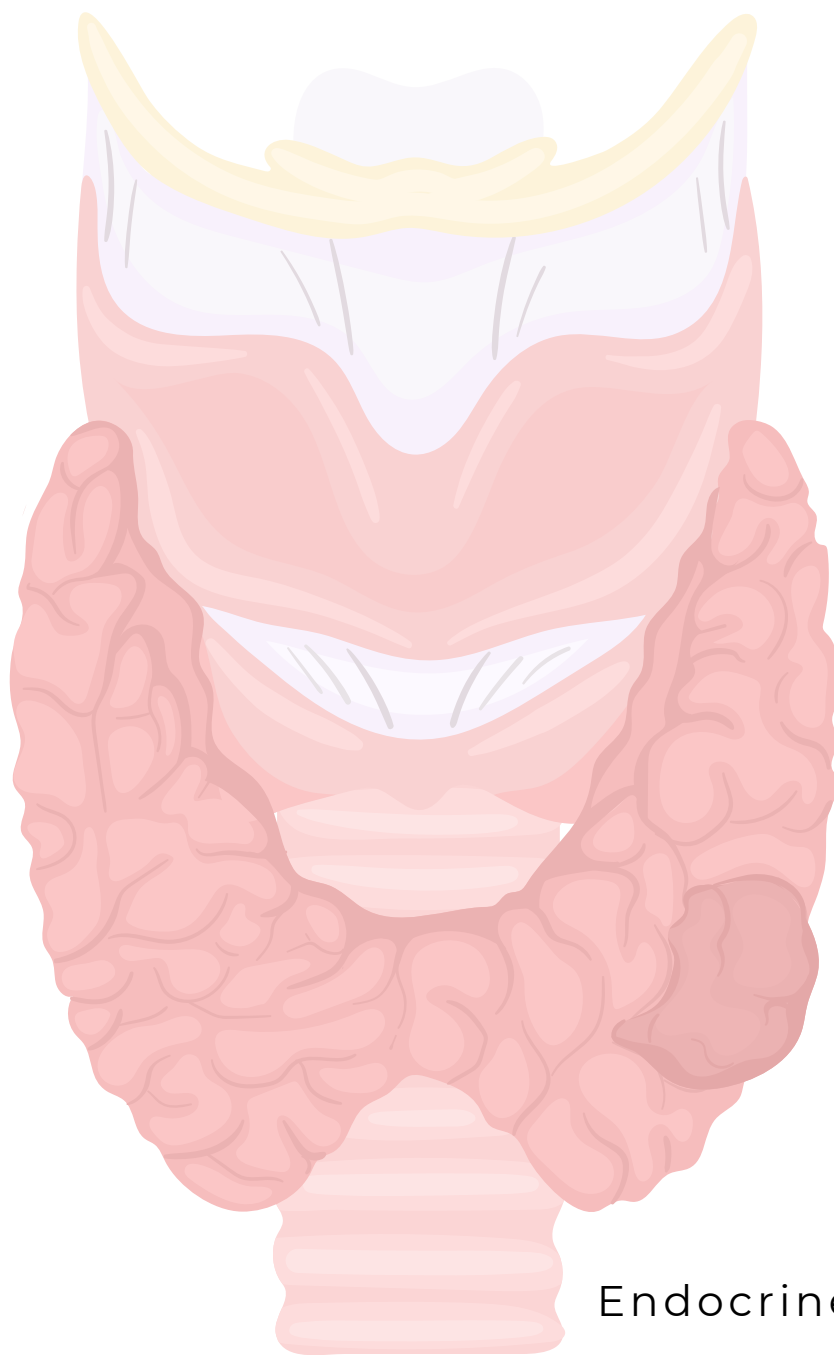


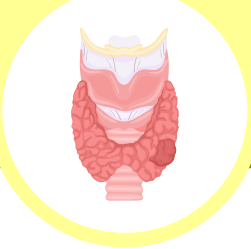
STUDY GUIDE

HYPERTHYROID



Endocrine  NursingSOS

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HYPERTHYROID

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DEFINITION

There is too much thyroid hormone in the body (T4 and T3).

CAUSES

This can be caused by any number of things, but the most common cause is Graves' disease.

PATHOPHYSIOLOGY

Normal Thyroid Function

Thyroid physiology is part of a feedback loop.

Step 1

The hypothalamus releases thyrotropin releasing hormone (TRH)

Step 2

TRH travels down to the anterior pituitary gland and stimulates it

Step 3

The anterior pituitary gland releases thyroid stimulating hormone (TSH)

Step 4

TSH travels down the the thyroid gland and stimulates it

Step 5

The thyroid gland released the active thyroid hormones (T4 and T3)

Step 6

Once there's enough T4 and T3 in the body, the hypothalamus stops releasing TRH

During Hyperthyroidism (Grave's Disease)

During Graves' disease, the body's immune system creates antibodies that attach to TSH receptors. Normally, the immune system isn't supposed to trigger the thyroid gland, but in the case of Graves' disease, the person's body is inappropriately making antibodies that go and trigger more and more thyroid hormone.

Step 1

Antibodies trigger TSH receptors on the thyroid gland

Step 2

The thyroid gland makes T4 and T3

Step 3

The hypothalamus stops releasing TRH, and the anterior pituitary stops releasing TSH

Step 4

There is an increase in T4 and T3, but a decrease in TRH and TSH

SIGNS AND SYMPTOMS



These are all related to an increase in metabolism, everything is speeding up. Think of the body internally running a marathon.

Neurological/Mental Status Related

Irritability, moodiness, difficulty sleeping, shakiness and tremors. These symptoms can happen because the body is overstimulated, it just can't settle down.

Weight Loss

The body is basically running a marathon internally, it's using a lot of fat, glucose and calories to keep it functioning.

Feeling Hot, Getting Sweaty, & Heat Intolerance

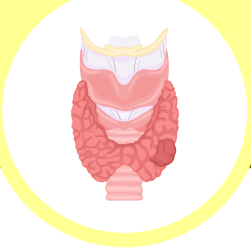
The body is working super super hard, the metabolism is increased, everything is in overdrive, so the body temperature will rise.

Increased Respiratory Rate

The body's metabolism is higher, so the respiratory system is working overtime, therefore, causing an increased respiratory rate.

Increased Heart Rate, Heart Palpitations, and Arrhythmias

The cardiac system is working faster and faster to keep up with the increased metabolism. This can lead to heart palpitations and arrhythmias, along with an increased heart rate.



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Increased Blood Pressure

The cardiac system is kicked into overdrive, so the blood pressure may increase.

Soft Skin & Hair

This happens due to increased blood flow. The cardiac and respiratory systems are in overdrive, they are working super hard and everything is just growing and moving faster.

Diarrhea

The GI system is more stimulated due to the increased metabolism.

Changes in Menstruation

Thyroid hormones can mess with ovulation, so menstruation could be heavy, irregular, or skipped altogether.

Goiter

This indicates enlargement of the thyroid gland. Since the thyroid gland is constantly being stimulated by the body's own immune system, it will enlarge to keep up with making so much T4 and T3.

Bulging Eyeballs (Exophthalmus)

Caused by edema and tissue swelling behind the eye that pushes on the eye farther out of the eye socket.

NURSING ASSESSMENT



Remember how the symptoms will relate back to everything speeding up, so monitoring for that with your assessment is key.

Assess for the Common Signs & Symptoms

Irritability and moodiness, difficulty sleeping, shakiness or tremors, weight loss, feeling warm and getting sweaty (also, intolerance to heat), increased respiratory rate and increased heart rate, cardiac palpitations and arrhythmias, increased blood pressure, soft skin and hair, diarrhea, menstrual changes, a goiter, and bulging eyeballs.

ECG

Cardiac problems are a major concern because the heart and the cardiac nerves are more stimulated, and this can cause arrhythmias. So make sure to keep a close eye on their ECG.

Blood Pressure

Check blood pressure regularly to make sure it's not getting too high.

Daily Weight Checks

Weight loss is a possibility because the patient's metabolism is very high. Check their weight at the same time of day, with the same scale, and having them wear the same clothes.

Palpate Thyroid Gland

Use your fingers and palpate around their neck around the thyroid gland to check for enlargement, lumps, or any other abnormalities.

Draw Labs

Look at their TSH, T4 and T3 levels. During hyperthyroidism, it's common for the TSH levels to be low, and the T4 and T3 level to be high.



Always make sure your patient has a patent (open) airway. Thyroid enlargement and neck swelling can compromise the patient's airway.

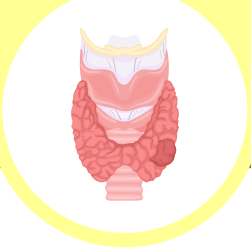
NURSING INTERVENTIONS:

Assess ECG

Hyperthyroidism can cause cardiac arrhythmias, so keep a close eye on their ECG to monitor for cardiac changes.

Monitor Heart Rate

Increased heart rate is a big possibility, and tachycardia is a key symptom of a thyroid storm. So make sure to check their heart rate regularly.



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Monitor Blood Pressure

Blood pressure may increase, and hypertension is a key symptoms of a thyroid storm. So make sure to monitor their blood pressure closely.

Maintain Cool & Calm Environment

Help keep their metabolism slowed down, and keep them as calm as possible.

Encourage Rest

Keep them as calm as possible to help bring their metabolism rate down.

Daily Weight Checks

Check their weight at the same time of day, with the same scale, and having them wear the same clothes. This will help you monitor for weight loss.

Encourage High Calorie (Nutrient Dense) Foods

Help replenish their body of nutrients. The metabolism is so high, that they burn through calories faster.

Medication & Treatment Education

Customize this education based on what medication, treatments, or therapies your patient is having (antithyroid medications, cardiac medications, sub-total thyroidectomy, etc.) Make sure they know what is going on, why it's happening, and what they need to do.

Medication & Lifestyle Audit

Go through their medication list and make sure they aren't on any medications that would speed up their metabolism too much (stimulants, caffeine, etc.)

IV Care

Ensure they have a working IV in place at all times, in case IV medications are needed or an emergency occurs.

Assess for Thyroid Storm

A thyroid storm happens when there is way too much thyroid hormone in the body and their metabolism spikes. This can lead to cardiac arrhythmias, tachycardia, hypertension and fever.



A thyroid storm is a medical emergency. Make sure to regularly check their blood pressure, heart rate, ECG and temperature, to catch it early if it does occur.

