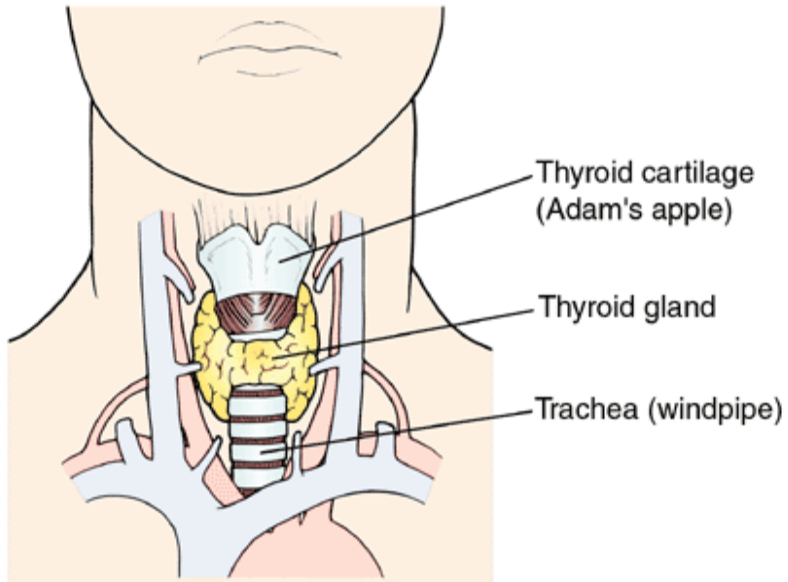
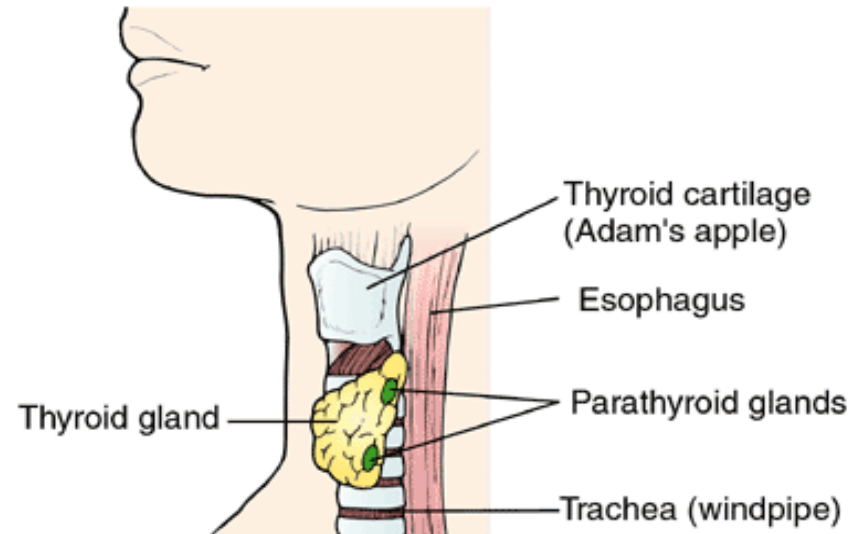


Thyroid Gland

Where to look for Thyroid ?

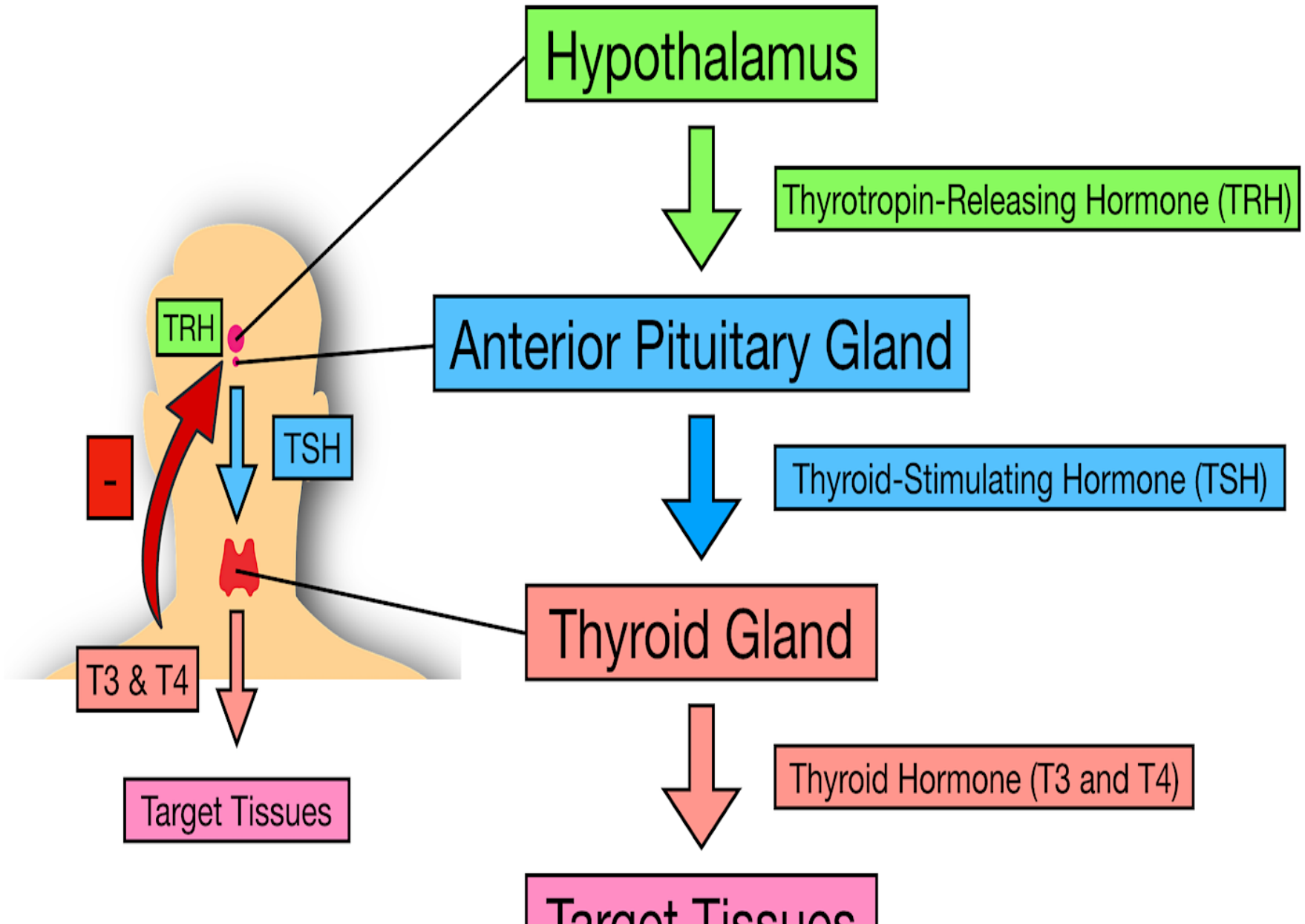


Front View



Side View

Hypothalamic-Pituitary-Thyroid Axis



Hyperthyroidism

- A hyper metabolic biochemical state.
- It is a multi system disease with Elevated levels of FT_4 or FT_3 or both.

Causes of Hyperthyroidism

1. Graves disease which is the common cause of hyperthyroidism.
2. Toxic Single Adenoma.
3. Toxic multinodular goiter.
4. Pituitary tumours – excess TSH.
5. Metastatic thyroid cancers (functioning).
6. Some drugs eg amiodarone.

Clinical Features

Common Symptoms

1. Nervousness.
2. Anxiety.
3. Increased sweating.
4. Heat intolerance.
5. Tremors.
6. Hyperactivity.
7. Palpitations.
8. Weight loss despite increased appetite.
9. Reduction in menstrual flow or oligomenorrhea.

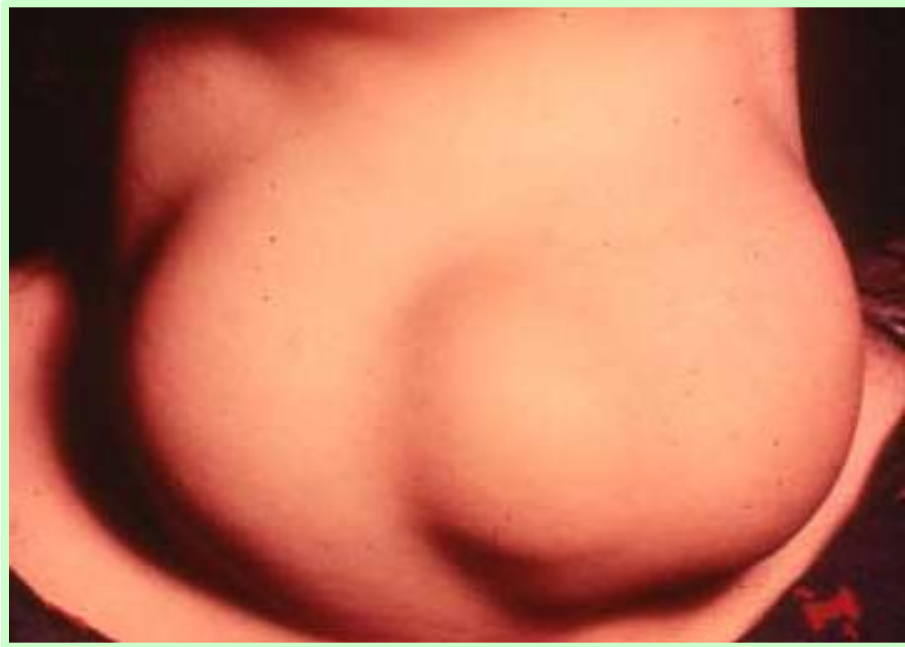
Common Signs

1. Hyperactivity.
2. Sinus tachycardia or atrial arrhythmia, AF, CHF.
3. Systolic hypertension, wide pulse pressure.
4. Warm, moist, soft and smooth skin.
5. Excessive perspiration, palmar erythema.
6. Fine tremors of out stretched hands .
7. Large muscle weakness, Diarrhea.

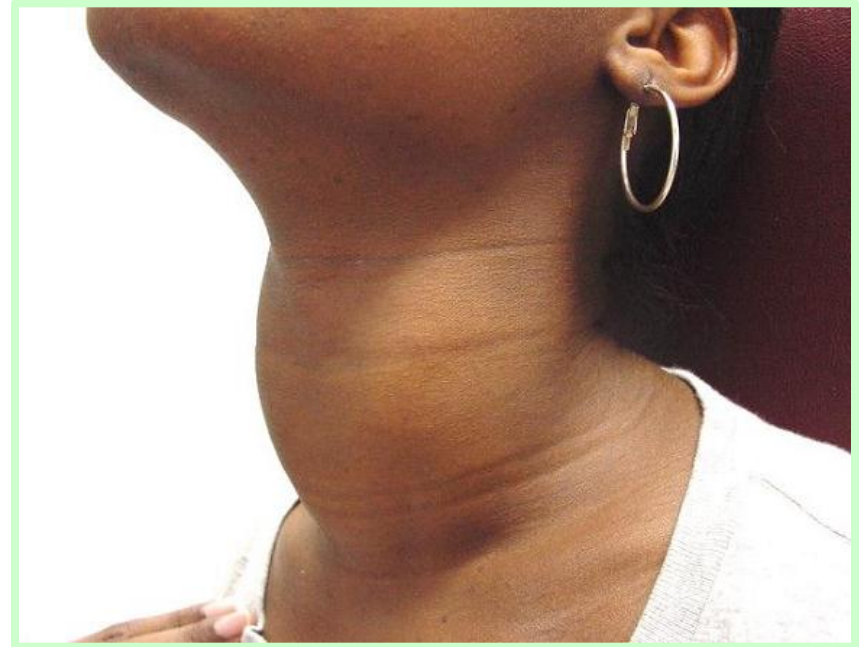
Specific to Graves Disease

1. Diffuse painless and firm enlargement of thyroid gland
2. Thyroid bruit is audible with the bell of stethoscope.
3. Ophthalmopathy – Eye manifestations – 50% of cases
 - periorbital edema, conjunctival edema , poor lid closure, extraocular muscle dysfunction, diplopia, pain on eye movements and proptosis.
4. pre tibial myxedema.
 - Deposition of glycosamino glycans in the dermis of the lower leg – non pitting edema, associated with erythema and thickening of the skin, without pain or pruritus.

MNG and Graves



Huge Toxic MNG



Diffuse Graves Thyroid

Ophthalmopathy in Graves



Periorbital edema and chemosis

Severe Exophthalmia



Thyroid Dermopathy



Pink and skin coloured papules, plaques on the shin

Diagnosis

1. Typical clinical presentation.
2. Markedly suppressed TSH ($<0.05 \mu\text{IU/mL}$).
3. Elevated FT_4 and FT_3 (Markedly in Graves).
4. ECG to demonstrate cardiac manifestations.

Treatment Options

1. Symptom relief medications eg β – blockers and good hydration.
2. Anti Thyroid Drugs – ATD.
 - Methimazole, Carbimazole.
 - Propylthiouracil (PTU).
3. Radio Active Iodine treatment.
4. Thyroidectomy – Subtotal or Total.
5. Hypoparathyroidism is one of the complications of thyroidectomy .

Hypothyroidism

- **Etiology:**

- Primary:

- Hashimoto's thyroiditis with or without goiter.
 - Radioactive iodine therapy for Graves' disease.
 - Subtotal thyroidectomy for Graves' disease or nodular goiter.
 - Excessive iodine intake.
 - Subacute thyroiditis.

- Secondary: Hypopituitarism.

- Tertiary: Hypothalamic dysfunction (rare).

- Peripheral resistance to the action of thyroid hormone.

Hypothyroidism

- **Clinical features**

- Cardiovascular signs:
 - Bradycardia
 - Low voltage ECG
 - Pericardial effusion
 - Cardiomegaly
 - Hyperlipidemia
- Constipation, ascites
- Weight gain
- Cold intolerance
- Rough, dry skin
- Puffy face and hands
- Hoarse, husky voice
- Yellowish color of skin due to reduced conversion of carotene to vitamin A
- Respiratory failure
- Menorrhagia, infertility, hyperprolactinemia

- Renal function:
 - Impaired ability to excrete a water load
- Anemia:
 - Impaired Hb synthesis
 - Fe deficiency due to:
 - Menorrhagia
 - Reduced intestinal absorption
 - Folate def. due to impaired intestinal absorption
 - Pernicious anemia
- Neuromuscular system:
 - Muscle cramps, myotonia
 - Slow reflexes
- CNS symptoms:
 - Fatigue, lethargy, depression
 - Inability to concentrate

Myxedema



Hypothyroidism

- **Diagnosis:**

- A ↓FT4 and ↑TSH is diagnostic of primary hypothyroidism.
- +ve test for thyroid autoantibodies PLUS an enlarged thyroid gland suggest Hashimoto's thyroiditis .
- With pituitary myxedema FT4 will be ↓ but serum TSH will be inappropriately normal or low.
- Lipid profile.

Management of Hypothyroidism

- Start patient on L-thyroxine .L-thyroxine treats the hypothyroidism and leads to regression of goitre.
- Check TSH level after 4-6 weeks to adjust the dose of L-thyroxine.

nursing Intervention for thyroid Disease Patients

Monitor vital signs carefully (blood pressure, pulse, and body temperature).

Administer of correct prescribed antithyroid medication timely.

Monitor T3, T4, and TSH levels. (These levels help determine the effectiveness of pharmacotherapy). Evaluate serum electrolyte levels, and check for hyperglycemia and glycosuria.

Measure neck circumference daily to check for progression of thyroid enlargement.

Encourage patient to increased fluid intake and inform the need to increase fluid intake to at least 2000 ml. per day unless edema occurs.

Monitor and record patient 's weight, fluid Intake, and urine output.

Consult a dietician to ensured nutritious diet with adequate calories and fluids.

If iodine is part of the treatment, mix it with milk, juice or Water to prevent gastrointestinal distress, and give it through a straw to prevent tooth discoloration .

Provide high fiber food.

Provide stool softeners, fiber and liquids.

Monitor for decreasing symptoms related to hypothyroidism such as fatigue, Constipation, cold intolerance, lethargy depression and menstrual irregularities.

Check patient mental status and give psychological care.

Promote physical comfort and provide extra clothes and blankets.

Avoid high temperature environments.

The patient should report to physician about any abnormal weight gain or loss or change in bowel elimination.

Instruct the patient to check pulse at least twice a week and to stop the thyroid supplements and notify the physician if the pulse is greater.

