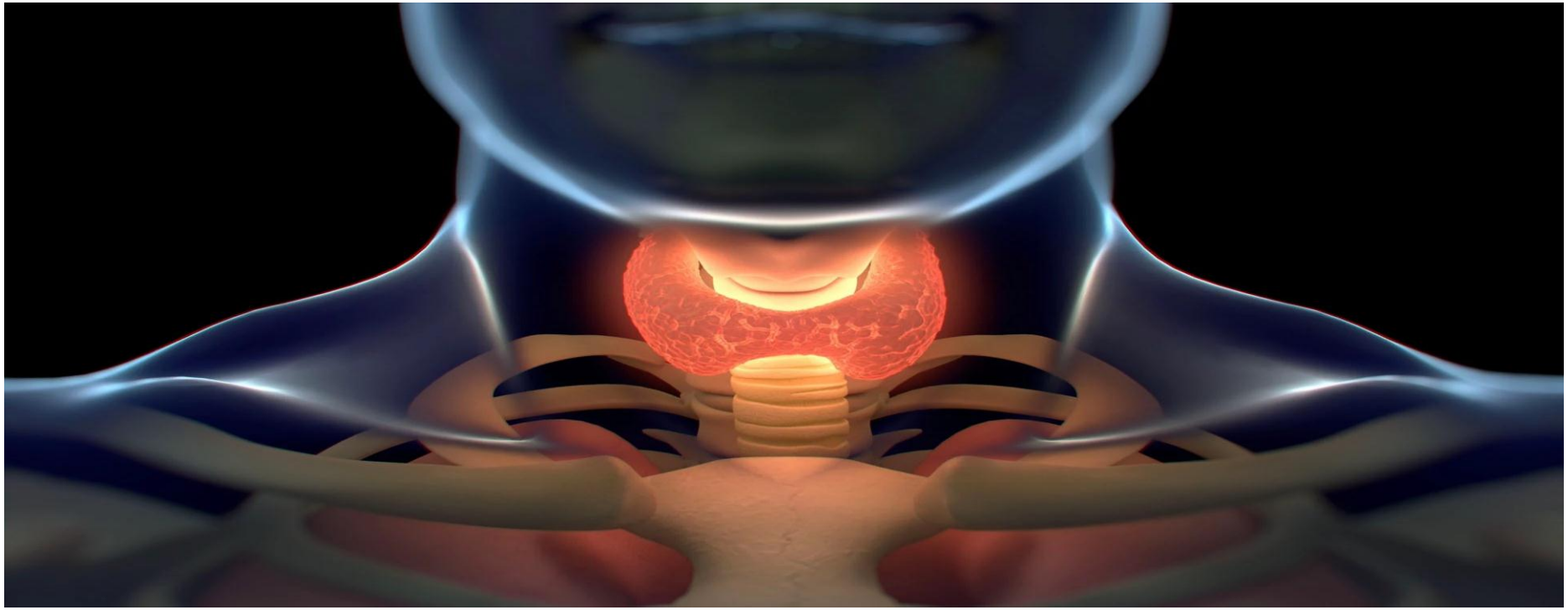
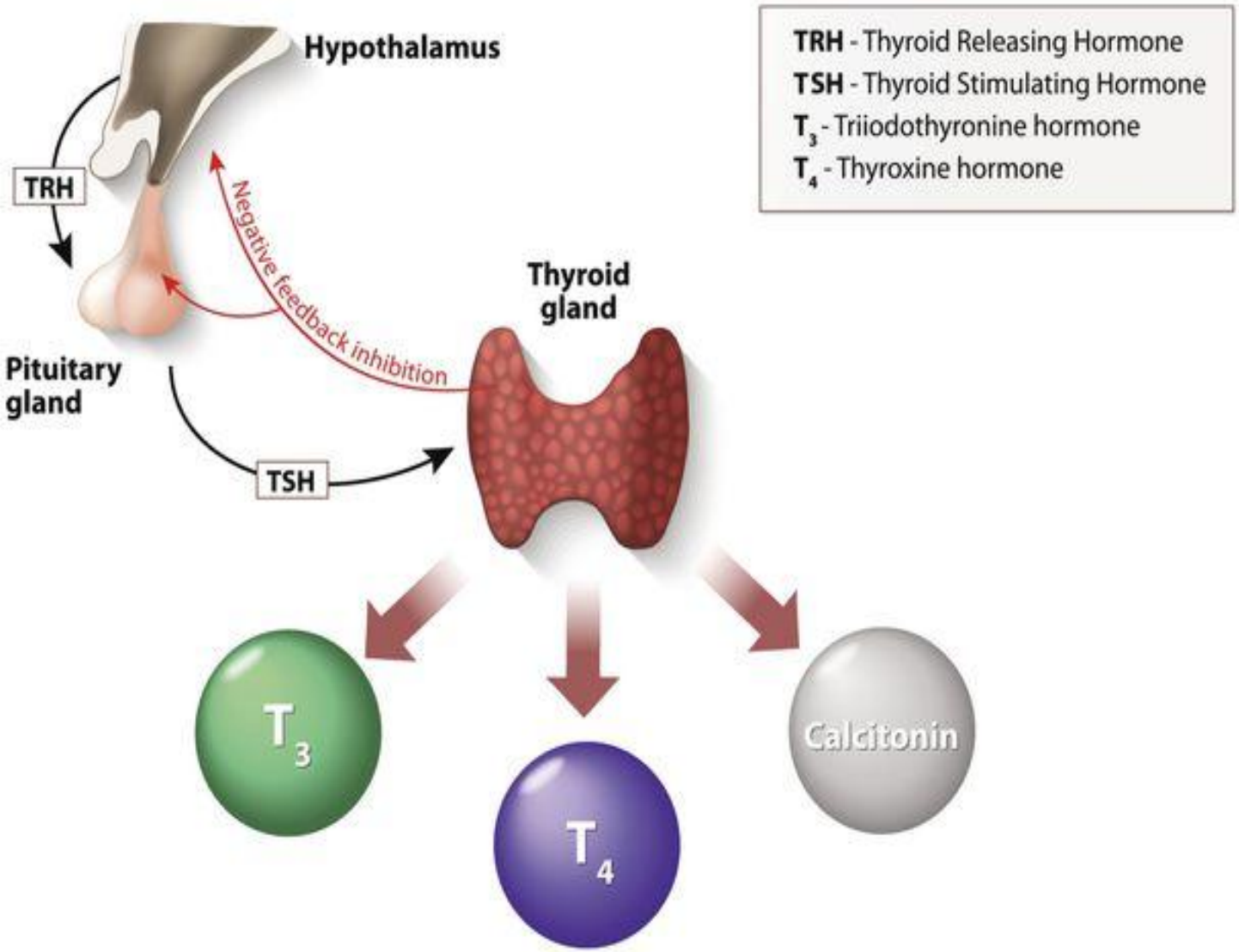


Thyroid Disorder
Hypo and Hyperthyroidism

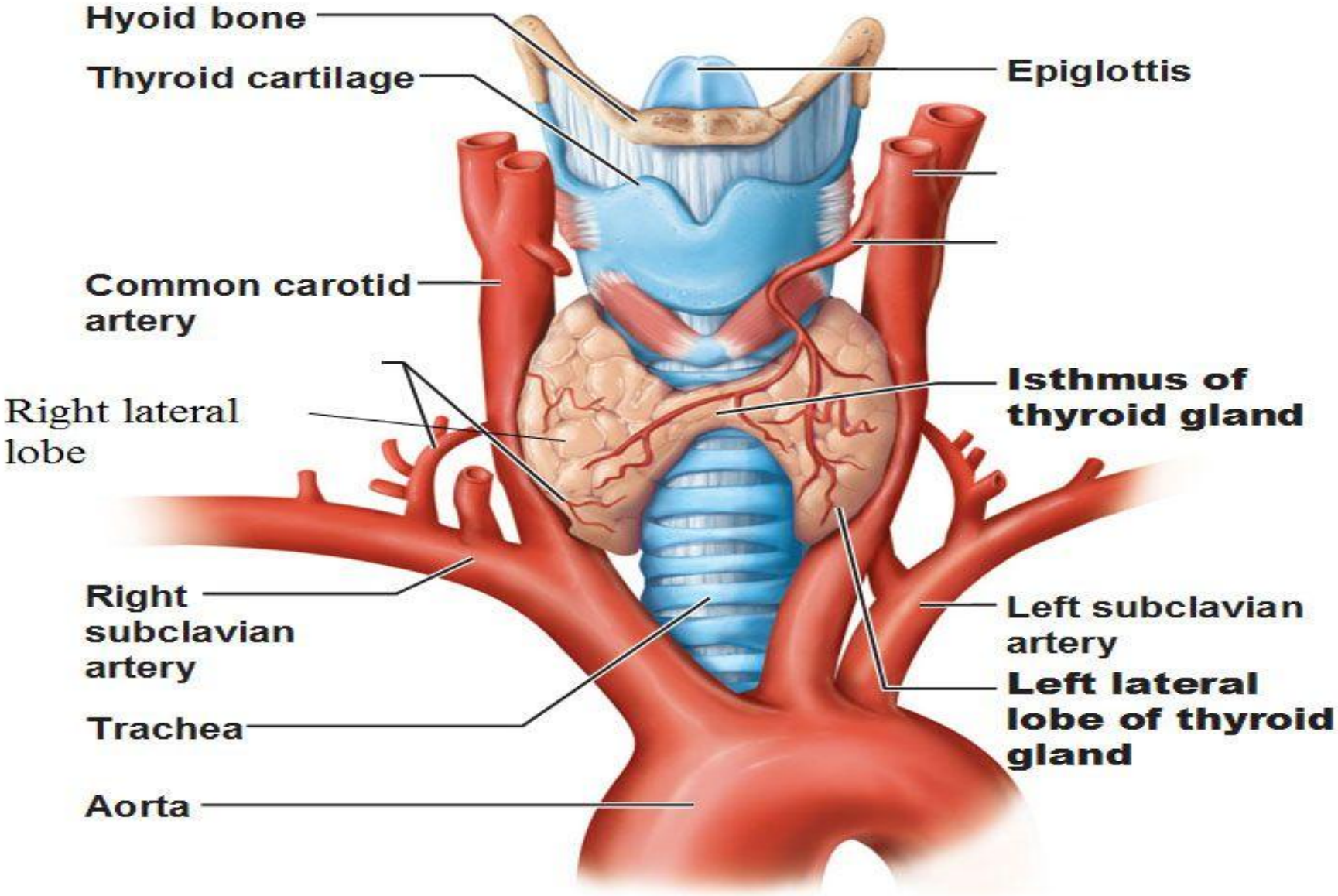
• *Introduction of thyroid gland*

- 2nd largest endocrine gland in body, Small butterfly shaped gland located at base of neck below the sternocleidomastoid muscles.
- Thyroid is controlled by the hypothalamus and pituitary gland.
- The function of thyroid Stimulates & maintains metabolic processes, Produces thyroid hormones T3-triiodothyronine and T4-thyroxine
- These hormones regulate metabolism & affect the growth and metabolic function of other systems in the body.

THYROID HORMONES



The Thyroid Gland

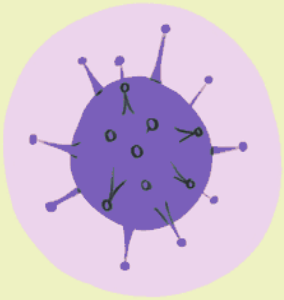


Gross anatomy of the thyroid gland, anterior view

Types of Thyroid Disease



Hashimoto's Disease



Thyroid Cancer



Graves' Disease





Thyroiditis



Toxic Multinodular Goiter

verywell

Hypothyroidism

- **Primary Hypothyroidism**
  - Disease of the thyroid gland

- **Secondary Hypothyroidism**
  - Hypothalamic-pituitary diseases (reduced TSH)

Causes of Hypothyroidism

- **PRIMARY**

1. **Congenital**
2. **Defects of hormone synthesis:** Iodine deficiency ,Antithyroid drugs and Other drugs.
3. **Autoimmune:** Atrophic thyroiditis, Postpartum thyroiditis.
4. **Iatrogenic:** Radioactive iodine therapy, External neck irradiation and post-surgery

SECONDARY

1. Hypopituitarism: tumors, pituitary surgery or irradiation, trauma, genetic forms of combined pituitary hormone deficiencies
2. Isolated TSH deficiency or inactivity
3. Hypothalamic disease: tumors, trauma, infiltrative disorders, idiopathic

Risk factor

- Although anyone can develop hypothyroidism, you're at an increased risk if you:

1. Are a woman older than age 60
2. Have an autoimmune disease
3. Have a genetic factor.
4. Have been treated with radioactive iodine or anti-thyroid medications
5. Received radiation to your neck or upper chest
6. Have had thyroid surgery (partial thyroidectomy)

HYPOTHYROIDISM

symptoms


dry hair


loss of eyebrow hair


puffy face


enlarged thyroid


slow heartbeat


arthritis



cold intolerance


depression


dry skin



fatigue



forgetfulness


menstrual disorders


infertility


muscle aches


weight gain


constipation


brittle nails

Hypothyroidism Diagnosis



physical exam



medical history



TSH, Free T4, and TPO antibodies



MRI



ultrasound



verywell

Treatment

- **Replacement therapy with levothyroxine** (thyroxin, i.e. T4) is given for life.
  - given 100 - 150 mg daily is suitable.
  - thyroid function tests after at least 2 months on a steady dose
  - the aim is to restore T_4 and TSH to well within the normal range
  - An annual thyroid function test is recommended .

- Excessive amounts of the hormone can cause side effects, such as:

1. Increased appetite
2. Insomnia
3. Heart palpitations
4. Weakness

Complication

1. Goiter.
2. Heart problems.
3. Mental health disturbance.
4. Peripheral neuropathy.
5. Infertility.
6. Birth defects.

Hyperthyroidism

- Hyperthyroidism - result of excessive thyroid function
- major aetiologies of thyrotoxicosis are hyperthyroidism caused by ***Graves' disease, and toxic adenomas***

Causes of hyperthyroidism

- ***Common***

1. Graves' disease (autoimmune)
2. Toxic multinodular goitre
3. Solitary toxic nodule/adenoma
4. Thyroiditis.

GRAVE'S Disease (symptoms)

Goitre

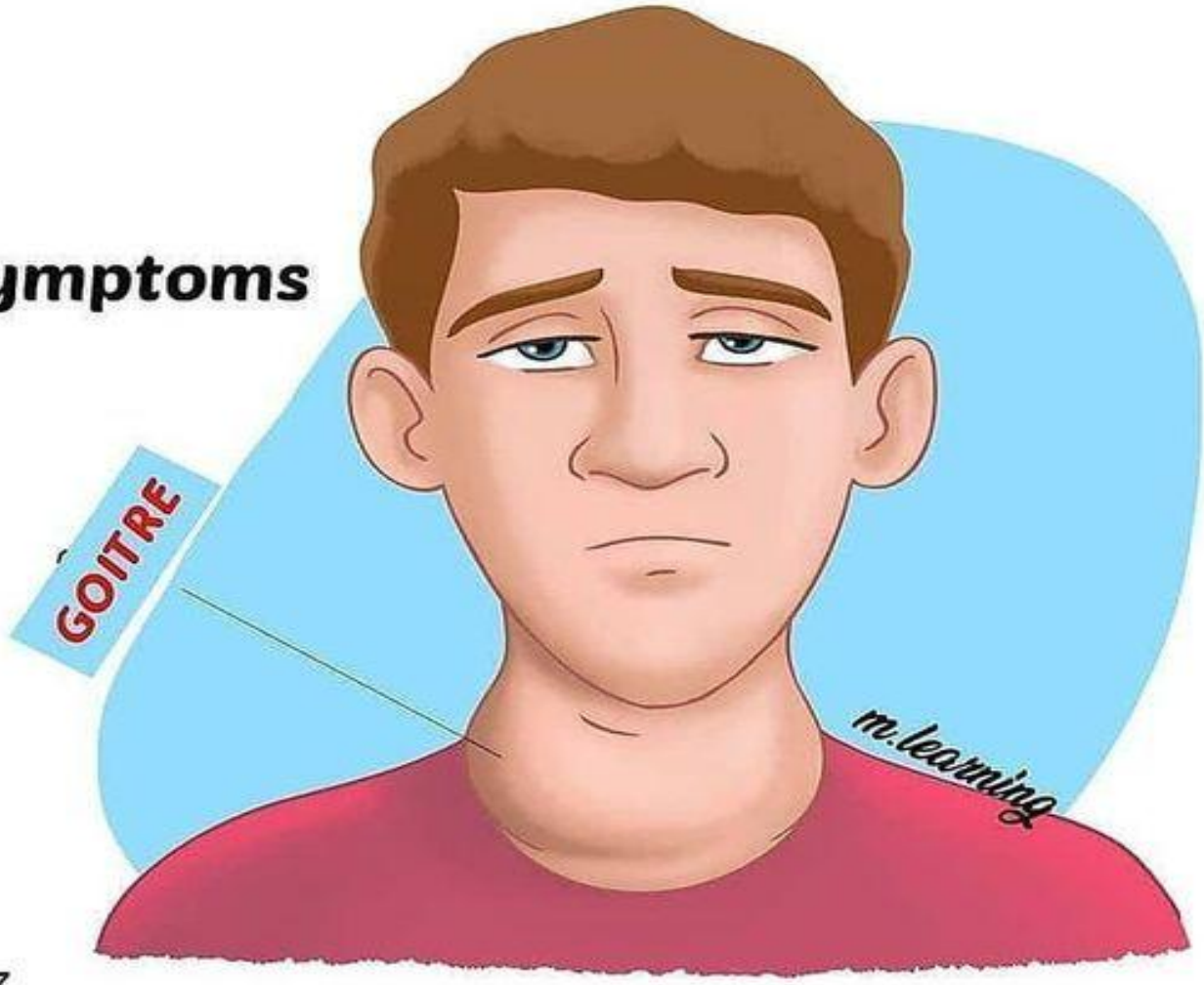
Ophthalmic symptoms

Irritability

Tremors

Restlessness

Excitability



dentalife07

Signs and Symptoms





HYPERTHYROIDISM

symptoms


hair loss


bulging eyes


sweating


enlarged thyroid


rapid heartbeat


nervousness



heat intolerance


irritability


tremor of fingers


difficulty sleeping


warm moist palms


scant menstrual period


infertility


muscle weakness


weight loss


frequent bowel movements


soft nails

Hyperthyroidism Diagnosis



TSH, T3, and T4 tests



RAI-U



thyroid exam



other imaging tests



verywell

Treatment

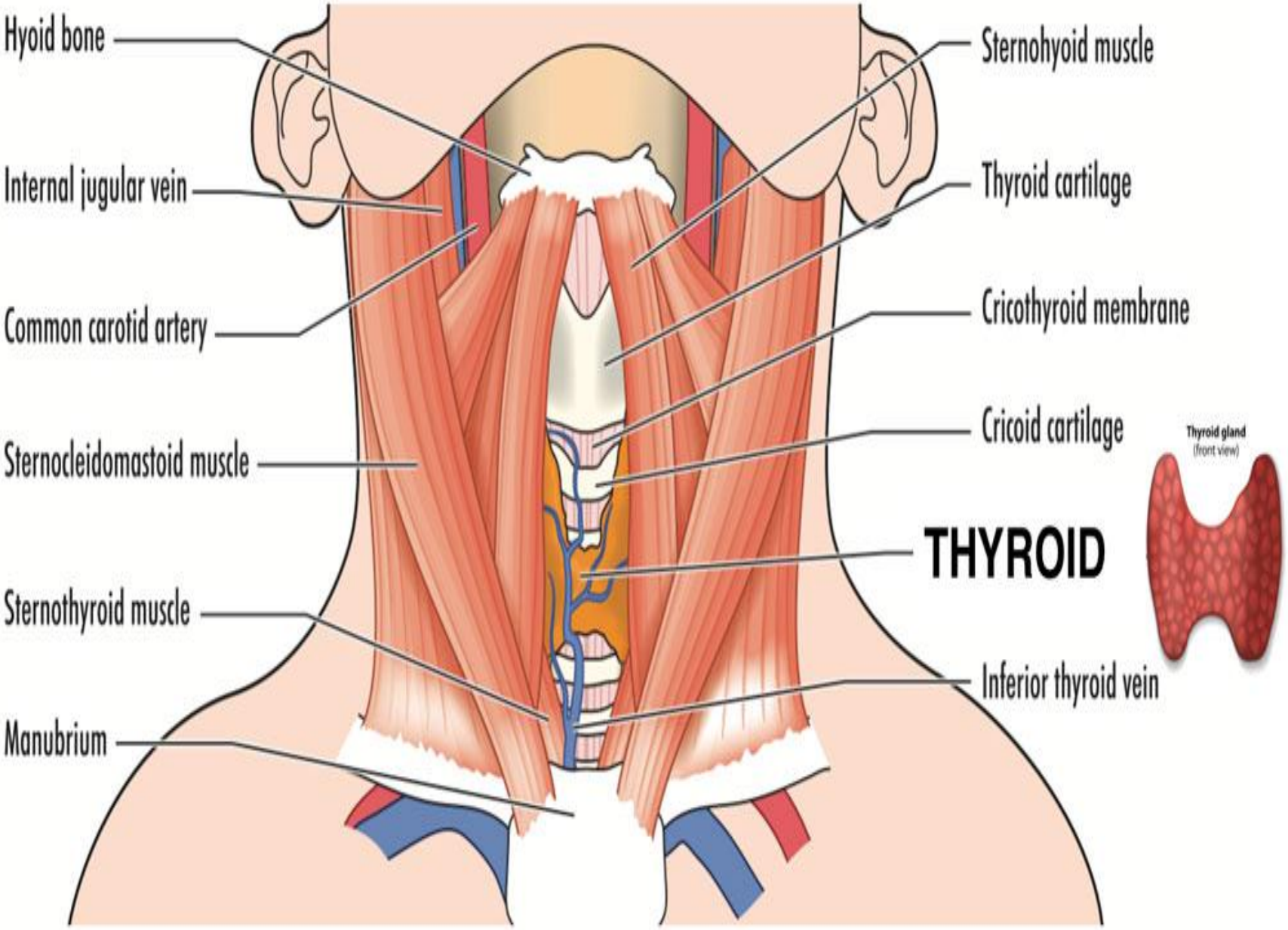
Antithyroid drugs:

1. Carbimazole.
2. Propylthiouracil.

- These drugs inhibit the formation of thyroid hormones
- common side effects - rash, fever, and arthralgia.
- **Radioactive iodine**
- RAI accumulates in the thyroid and destroys the gland by local radiation.
- It takes several months to be fully effective.

Surgery:

1. **Thyroidectomy** is used to treat thyroid disorders, such as cancer, noncancerous enlargement of the thyroid (goiter) and overactive thyroid (hyperthyroidism).
2. **Subtotal thyroidectomy** - Done in toxic thyroid, primary or secondary, and also for toxic multinodular goiter (MNG).
3. **Total thyroidectomy** - Entire gland is removed. Done in cases of papillary or follicular carcinoma of thyroid, medullary carcinoma of thyroid.


Hyoid bone
Internal jugular vein
Common carotid artery
Sternocleidomastoid muscle
Sternothyroid muscle
Manubrium
Sternohyoid muscle
Thyroid cartilage
Cricothyroid membrane
Cricoid cartilage
THYROID
Inferior thyroid vein
Thyroid gland
(front view)

Complications

1. Bleeding.
2. Hoarseness.
3. Parathyroid accidental injury.
4. Laryngeal edema.
5. Tetanus (spasm related to decrease calcium).

Nursing Diagnosis

1. Self care deficit (feeding, bathing and other function) related to loss or impairment of body function.
2. Anxiety related to fear of dying, uncertainly, change in appearance or alter lifestyle.
3. Acute pain related to enlargement of thyroid gland.
4. Imbalance nutrition less than body requirement related to anorexia.

Nursing Management

1. Place in semi-Fowler's position and support head and neck with sandbags or small pillows.
2. Maintain head and neck in neutral position and support during position changes.
3. Give cool liquids or soft foods, such as ice cream or popsicles
4. Administer analgesics and/or analgesic throat sprays and lozenges as necessary.
5. Monitor respiratory rate, depth, and work of breathing and Auscultate breath sounds, noting presence of rhonchi.

- Suction mouth and trachea as indicated, noting color and characteristics of sputum.
- Check dressing frequently, especially posterior portion.
- Monitor vital signs noting elevating temperature, tachycardia, arrhythmias, respiratory distress, cyanosis.
- Identify foods high in calcium and vitamin D.
- Encourage progressive general exercise program.


THANK YOU for LISTENING
A Novel
JULIA WHELAN