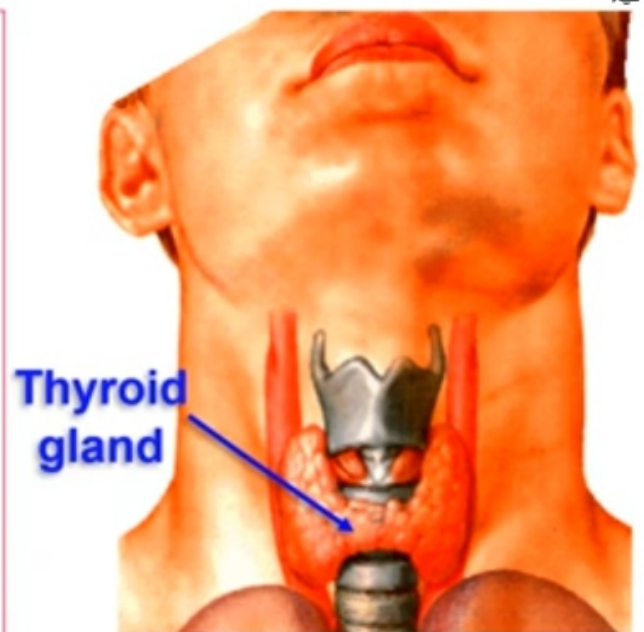
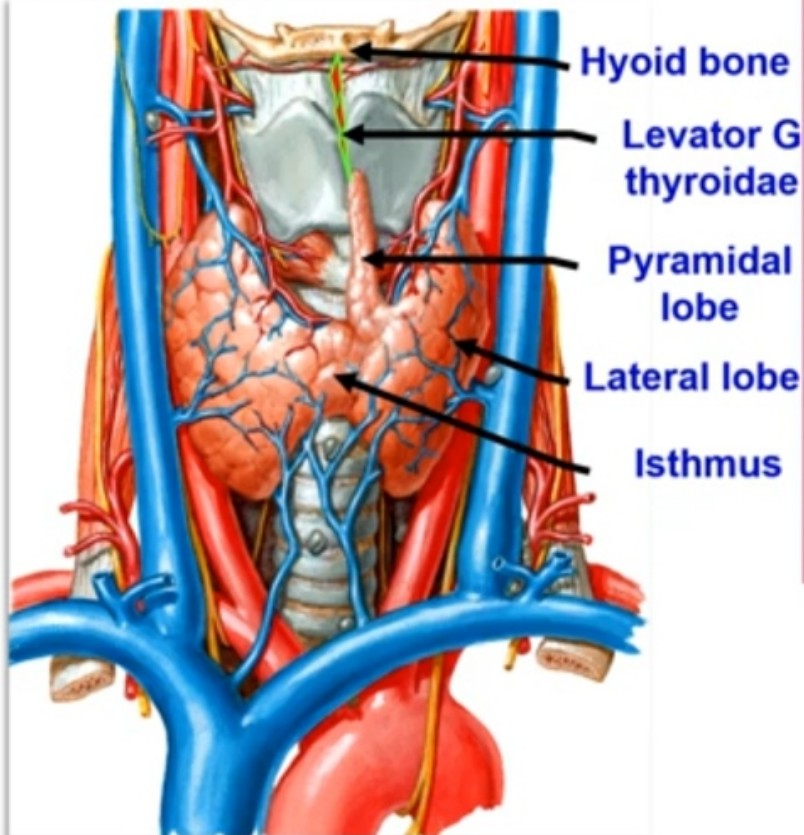


# Thyroid gland



- **Weight** is about 25 grams (slightly heavier in female).
- It is the **largest endocrine gland** in the body
- It lies on the front and sides of the lower part of neck
- It is **highly vascular** endocrine gland
- It produces **thyroxine** and **thyrocalcitonin**, hormones which are essential for metabolism and growth.
- The thyroid takes **iodine** from food to produce thyroid hormones.



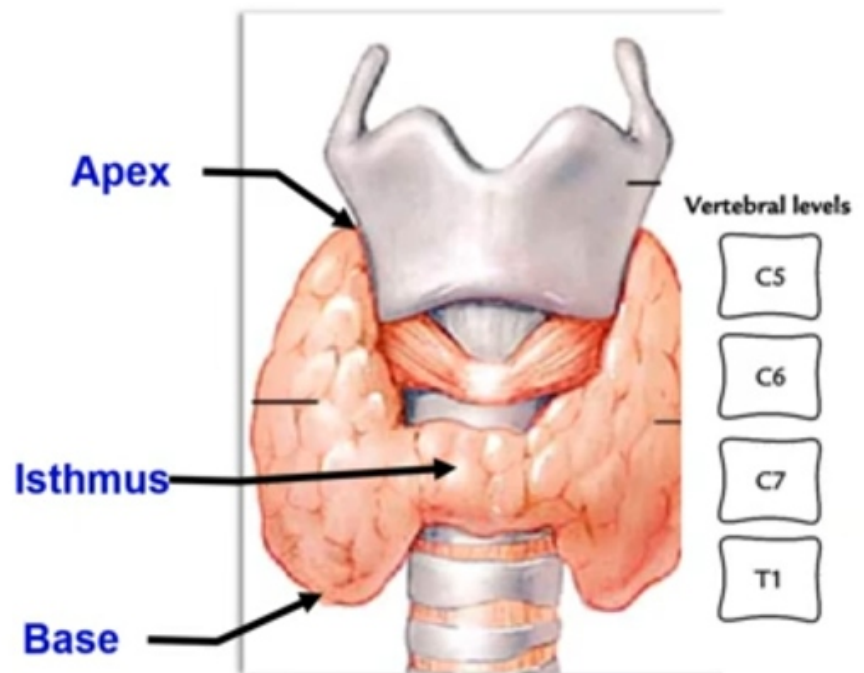


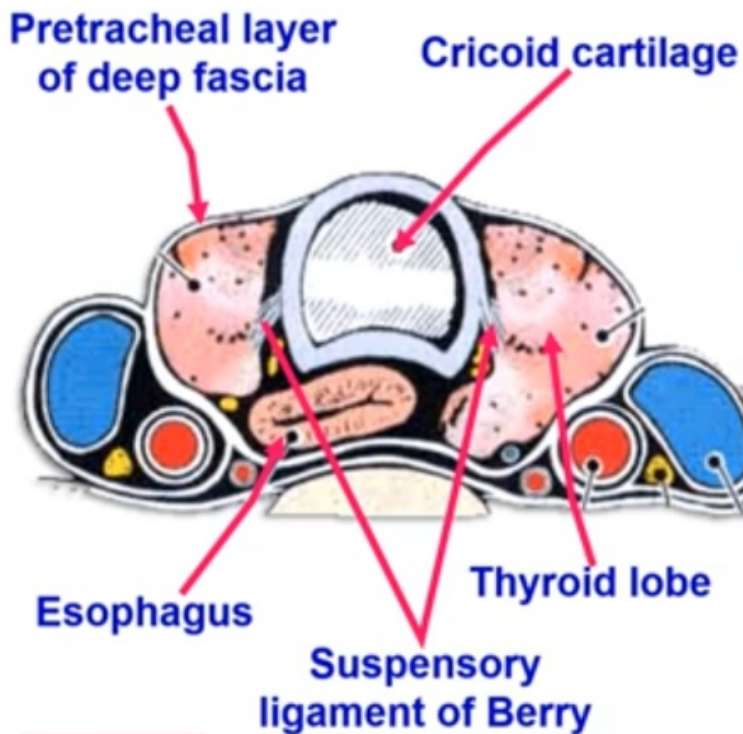
- **Shape:** butterfly, it is formed of:
- **2 lateral lobes:** each lobe is pear-shaped (apex above).
- A narrow median **isthmus** connecting the 2 lateral lobes.
- A small **pyramidal lobe** project upwards from isthmus and connected to hyoid bone by a fibromuscular band called **levator glandulae thyroideae** (remnant of thyroglossal duct).



### • Extensions

1. **Apex** of each lobe directed upward and reaching up to **oblique line of thyroid cartilage**.
2. **Base** reaches the level **5<sup>th</sup>** or **6<sup>th</sup>** tracheal ring.
3. **Isthmus** opposite the **2<sup>nd</sup>, 3<sup>rd</sup>** and **4<sup>th</sup>** tracheal rings.
4. **Posteriorly:** the lateral lobe lies opposite **C 5, 6, 7** and **T1** vertebrae.





T.S.

- **Capsules of thyroid gland**
  - The gland has 2 capsules:
    - (1) **Inner true** capsule (**fibrous**) enclosing the gland.
    - (2) **Outer false** capsule from pretracheal layer of deep fascia.
      - The **false capsule** is thickened forming **suspensory ligament of Berry** which fixes gland to **cricoid cartilage of larynx** that is responsible for **movement of gland up and down** during swallowing.

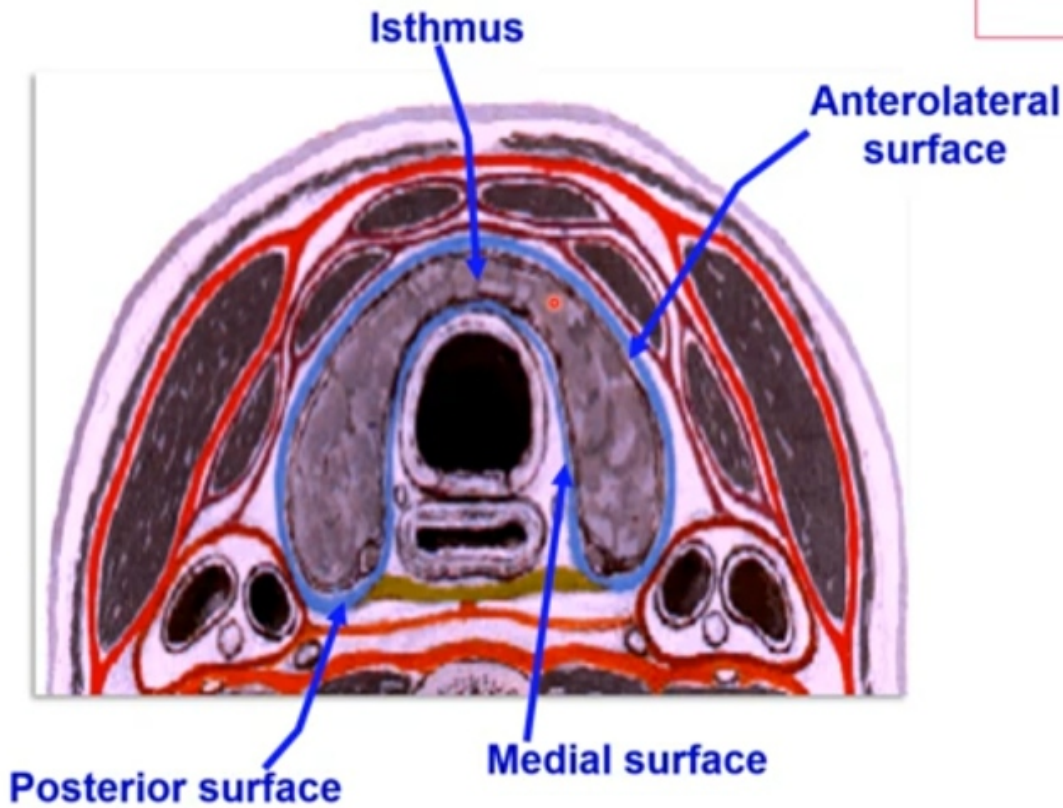


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# Relations of Thyroid gland



## Surfaces



## Anterolateral Relations of thyroid lobe

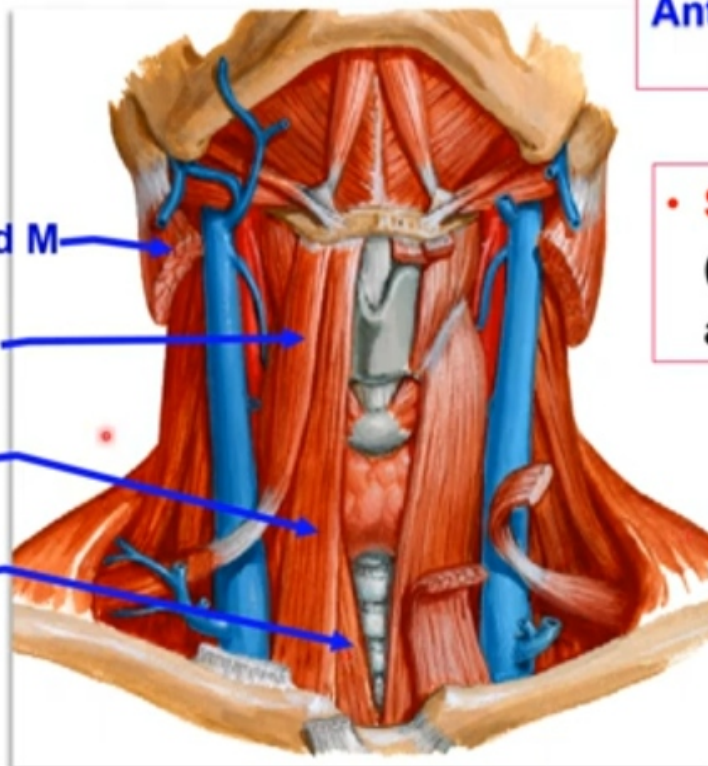
- **Skin**, superficial fascia (containing platysma) and deep fascia

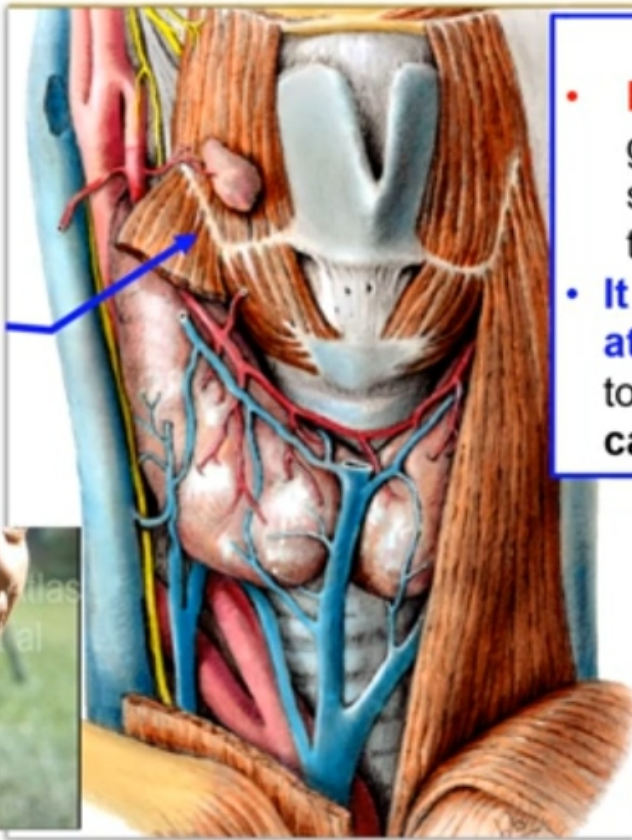
Sternocleidomastoid M

Superior belly of omohyoid M

Sternohyoid M

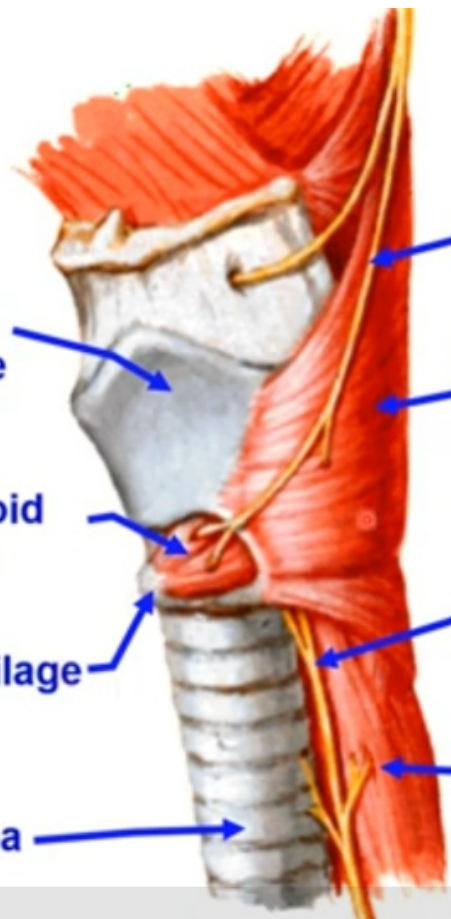
Sternothyroid M





Sternothyroid Muscle

- **Retrosternal goiter**
- **Enlargement of thyroid gland:** The gland may extend down behind the sternum leading to compression on the **trachea and great vessels.**
- **It does not extend upward due to attachment of sternothyroid muscle to oblique line of the thyroid cartilage.**



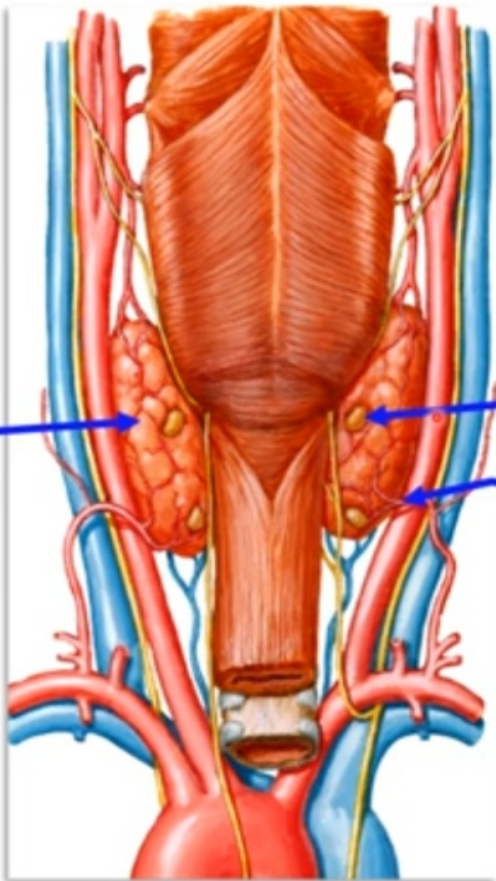
• **Medial Relations of thyroid lobe**

- Thyroid cartilage
- Cricothyroid muscle
- Cricoid cartilage
- Trachea
- External laryngeal nerve
- Inferior constrictor muscle of pharynx
- Recurrent laryngeal nerve
- Esophagus



• **Posterior Relations of thyroid lobe**

- Thoracic duct (on left side).



Anastomosis between superior and Inferior thyroid artery

Parathyroid gland

Inferior thyroid artery



• **Posterolateral Relations of thyroid lobe**



Carotid sheath

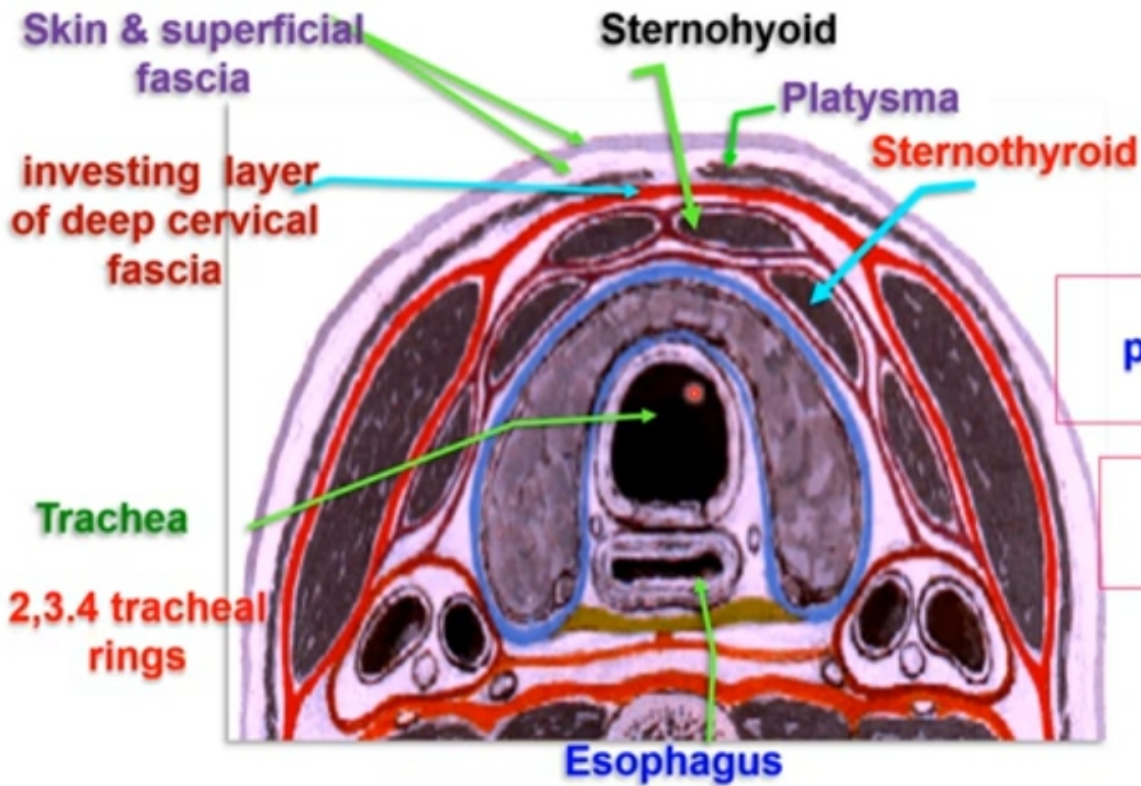
Internal jugular vein

Vagus nerve

Common carotid artery

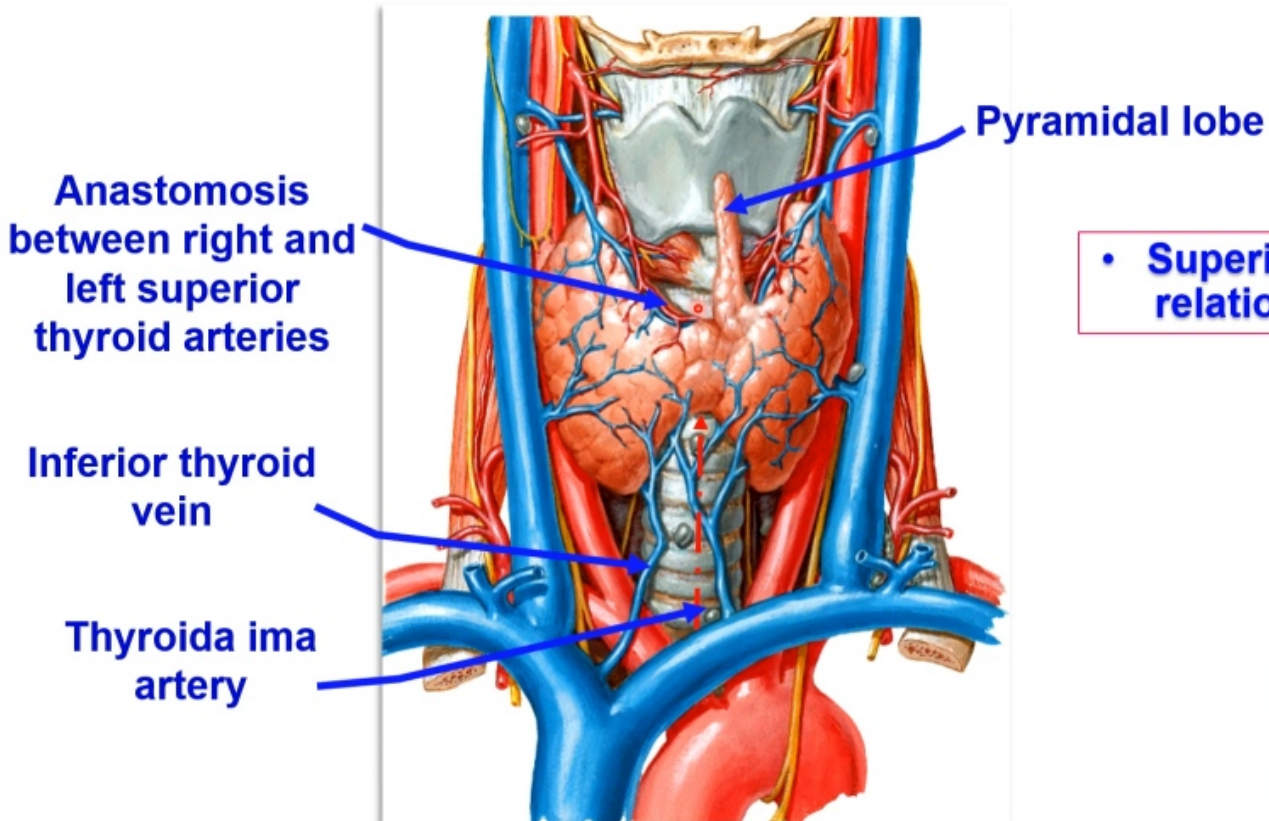
Cervical part of sympathetic trunk





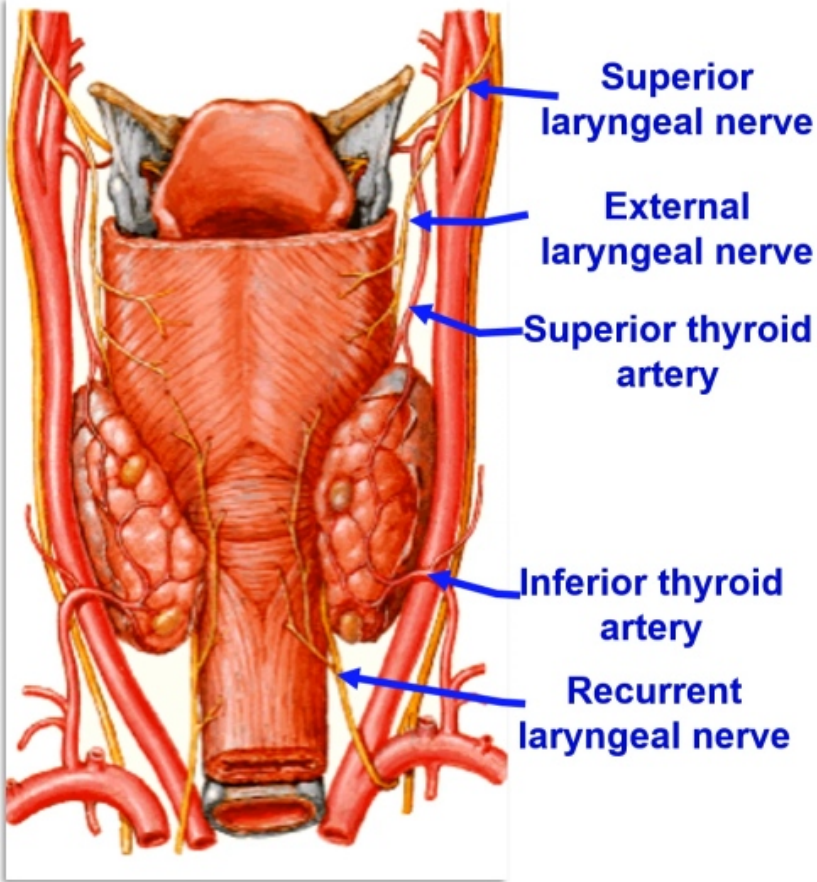
• Anterior and posterior relations of isthmus

Anterior Jugular vein (anterior).



• Superior and inferior relations of isthmus





- **Nerves related to the gland**
  - **External laryngeal nerve:**
    - It descends downwards with superior thyroid artery to apex of lateral lobe.
    - To avoid injury of nerve during thyroidectomy, we must ligate superior thyroid artery **at upper pole** of the gland.
  - **Recurrent laryngeal nerve**
    - It ascends between trachea and esophagus closely related to inferior thyroid artery.
    - To avoid injury of nerve during thyroidectomy, we must ligate the artery **away from the gland**.

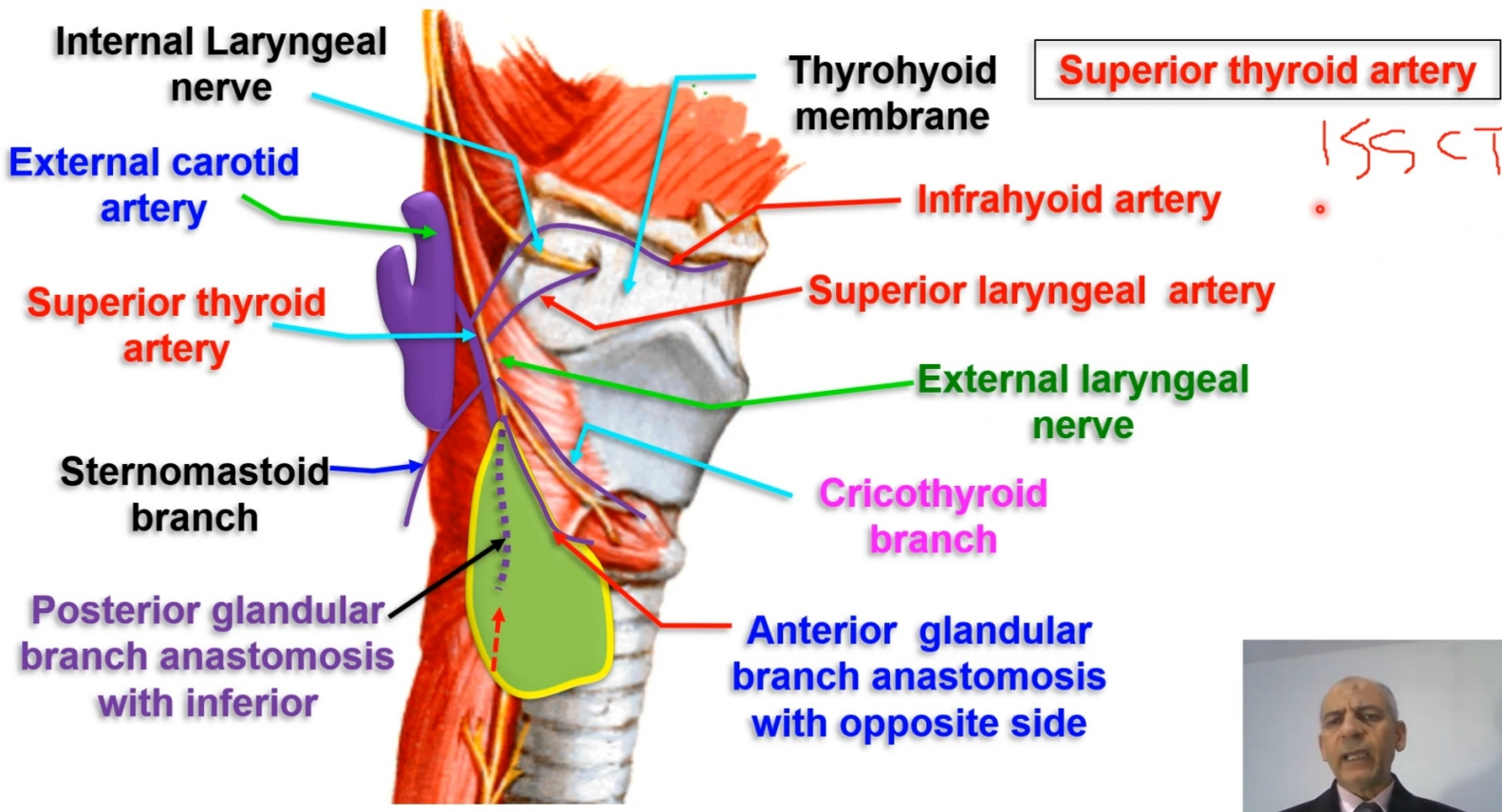


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# Blood supply of Thyroid gland



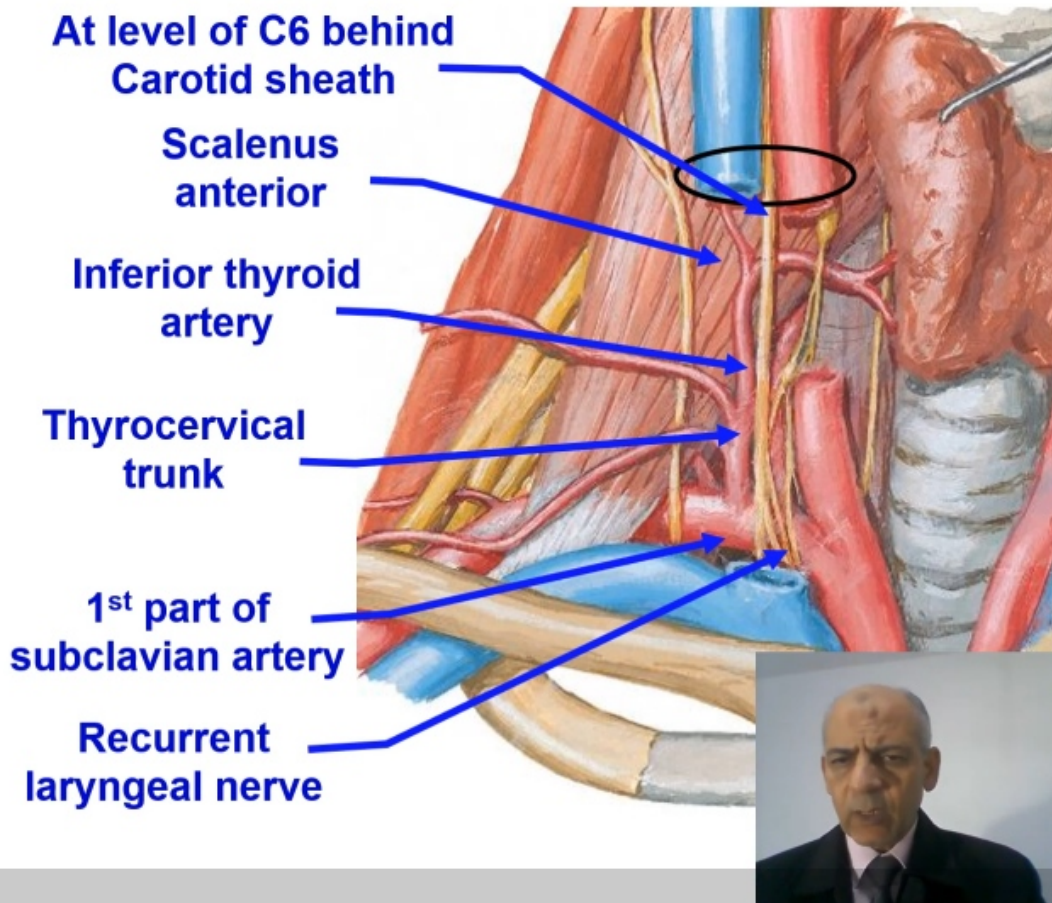




• **Superior thyroid artery**

- **Origin:** from the external carotid artery.
- **Course :** it descends downwards and medially deep to the infrahyoid muscles to the apex of the lateral lobe. It is accompanied by **external laryngeal nerve**.
- **Branches:**
  - 1) **Infrahyoid artery:** along lower border of hyoid bone to the infrahyoid muscles.
  - 2) **Branch** to the **S**ternomastoid muscle.
  - 3) **Superior laryngeal artery:** pierces thyrohyoid membrane with internal laryngeal nerve to the larynx.
  - 4) **Cricothyroid artery:** to the cricothyroid muscle.
  - 5) **Terminal branches**
    - (a) Posterior glandular branch anastomoses with inferior Thyroid artery.
    - (b) Anterior glandular branch anastomoses with opposite one on upper border of isthmus.





- **Inferior Thyroid artery**
- **Origin**; a branch of **thyrocervical trunk** from the first part of subclavian artery.
- **Course**: It ascends on **medial** border of the **scalenus anterior**, At the level of the C6 vertebra, it curves medially behind carotid sheath to reach the posterior surface of the thyroid lobe. It is related to **recurrent laryngeal nerve**

## • Inferior Thyroid artery

- **Branches of inferior thyroid artery:**
  - 1) **Muscular branches**: to the infrahyoid muscles.
  - 2) **Ascending cervical artery** to the spinal cord.
  - 3) **Pharyngeal branches**.
  - 4) **Inferior laryngeal artery** accompanies recurrent laryngeal nerve to larynx.
  - 5) **Tracheal branches**.
  - 6) **Oesophageal branches**.
  - 7) **Glandular branches** to the **thyroid gland and parathyroid glands**.
- **Thyroid ima artery is branch from the arch of the aorta**



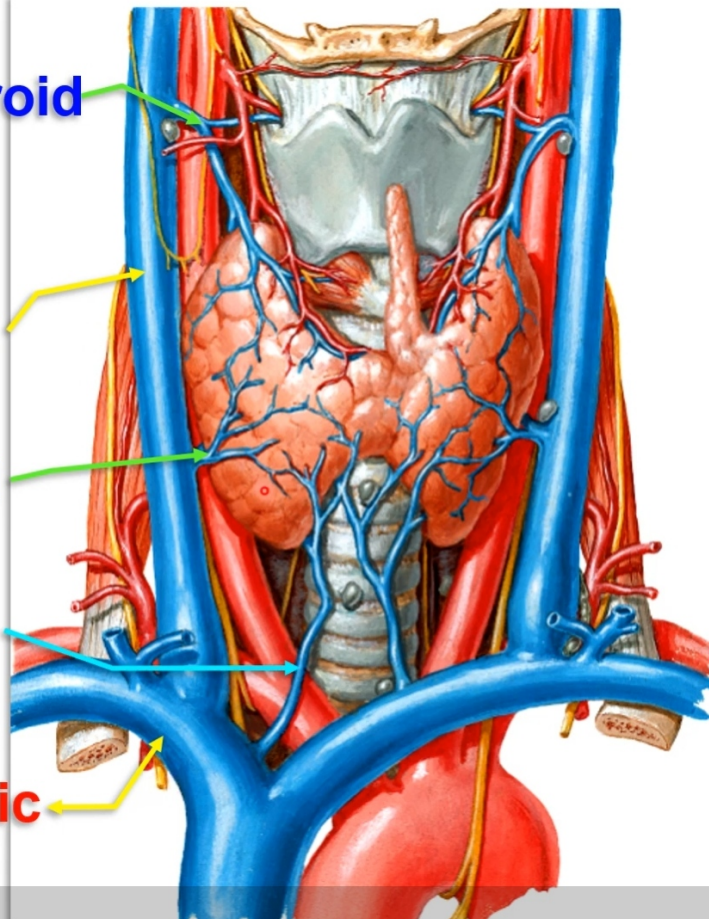
Superior thyroid vein

Internal jugular vein

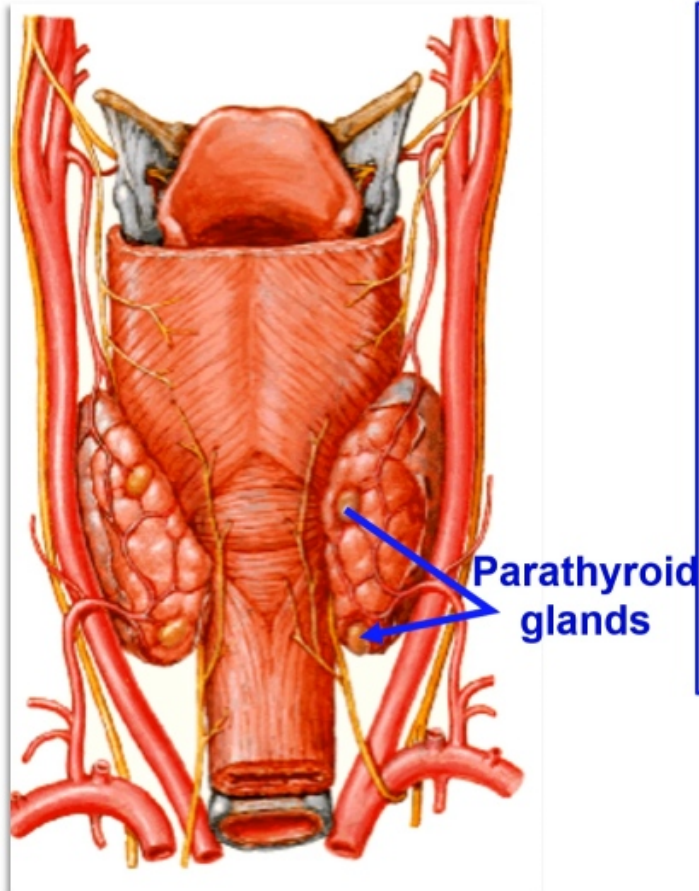
Middle thyroid vein

Inferior thyroid vein

Brachiocephalic vein



## Venous drainage



Parathyroid glands

### - Parathyroid glands

- Four yellowish brown ovoid in the posterior surface of thyroid gland
- They supplied by inferior thyroid vessels.
- **It secretes parathyroid hormones that regulates serum calcium**
- **Subtotal thyroidectomy** must be done to avoid injury of the parathyroid glands
- **If excised during thyroidectomy, reimplantation** in subcutaneous tissue or muscle bed of the forearm or neck

