Thyroid & Parathyroid Glands

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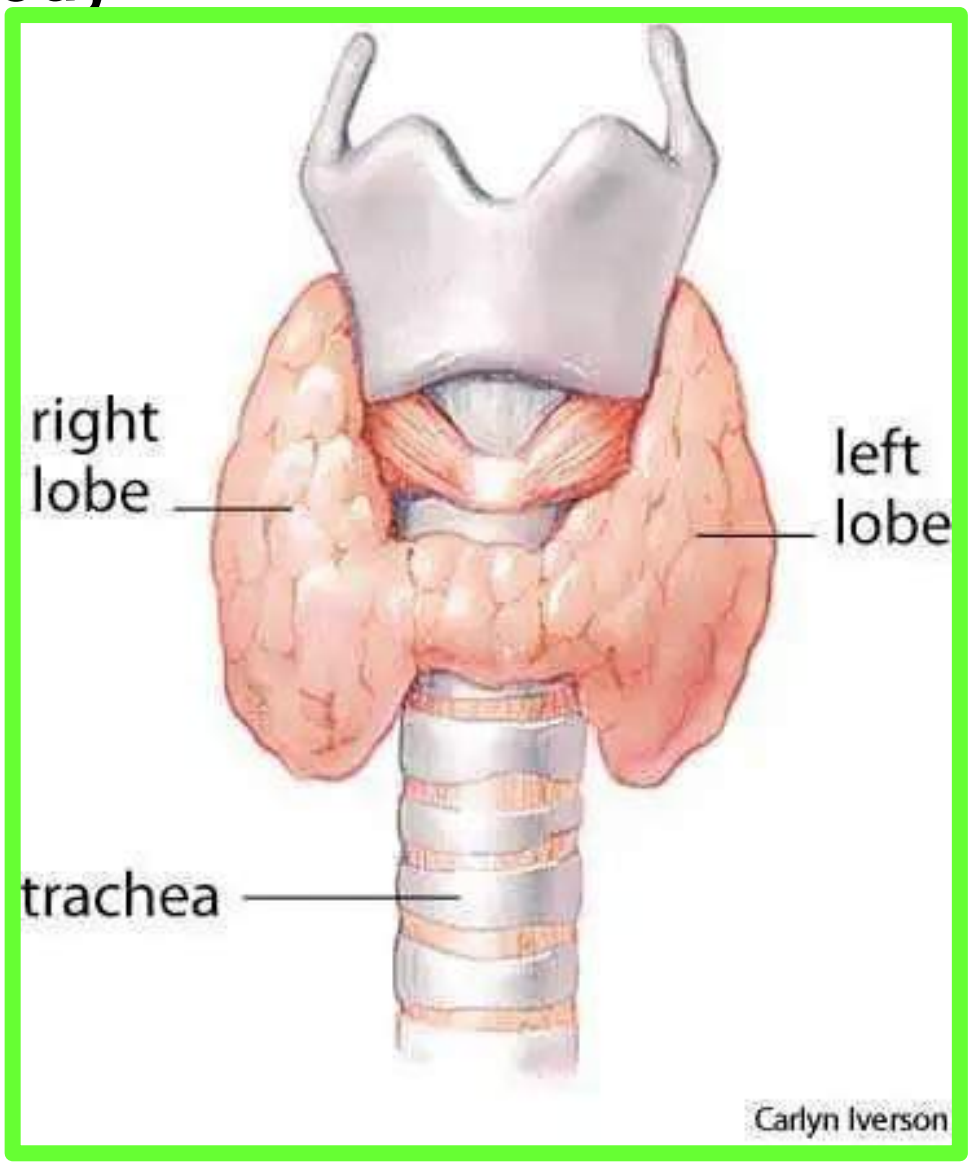
2024 -2025

Monday 5 May 2025

THYROID GLAND

- **Size:** It is the largest endocrine gland in the body
- **Weight:** about 25 gm
- **Shape:** Butterfly



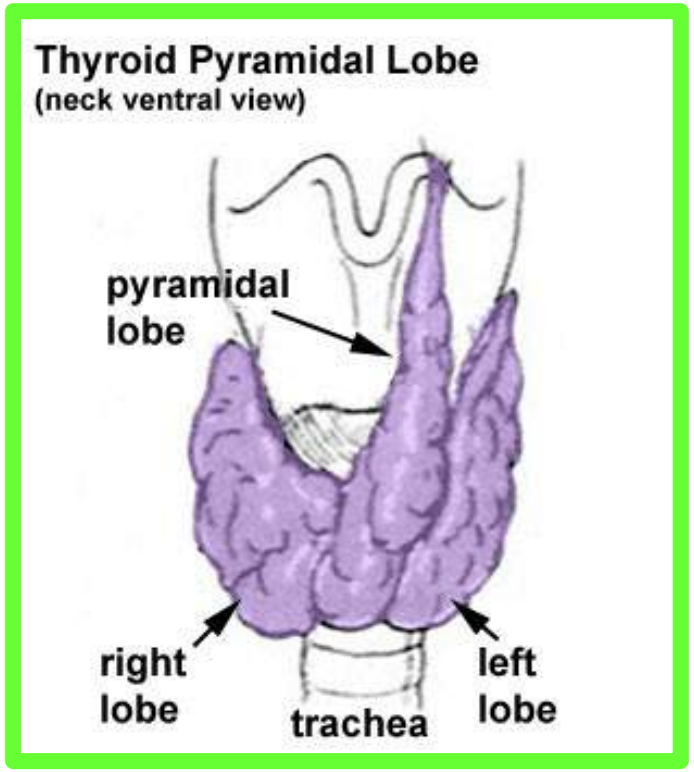
THYROID GLAND

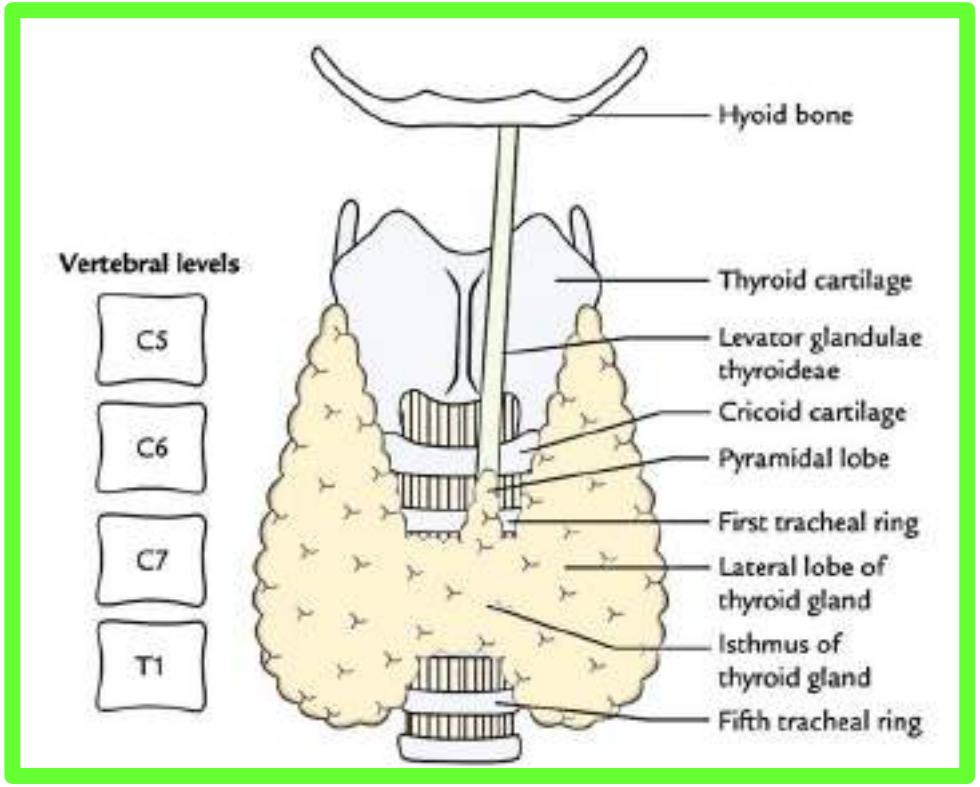
❖**Structure:** It is formed of the following parts:

✓2 lat. Lobes each lobe is pear shaped (apex above)

✓A narrow median isthmus connecting the 2 lat. Lobes

✓A small pyramidal lobe may project upward from the isthmus & may connected to the hyoid bone by a fibromuscular band

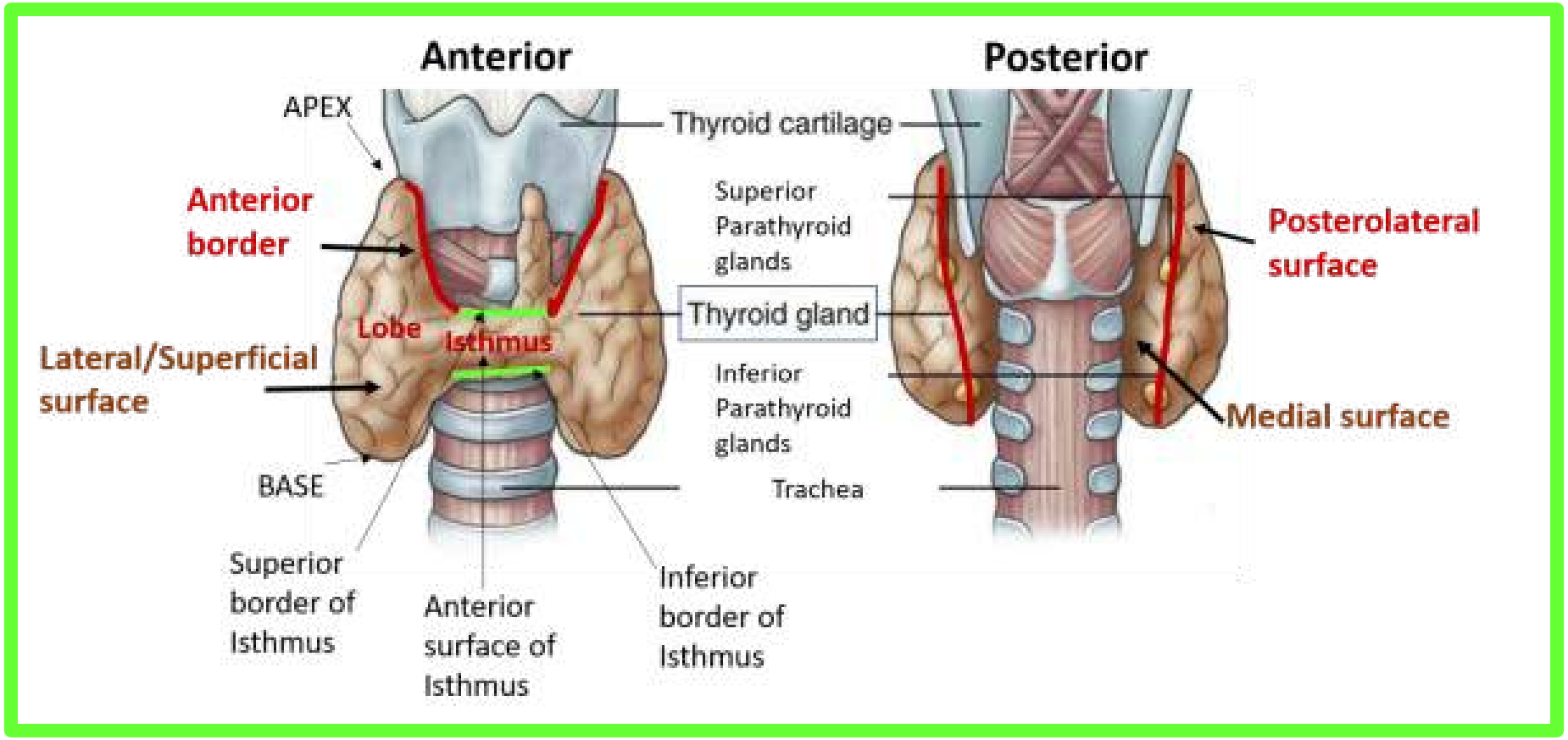




THYROID GLAND

❖**Site & Extension:** It is lies in front & sides of the lower part of the neck

- ✓ The apex of each lat. Lobe rest on the oblique line of the thyroid cartilage
- ✓ The base of each lat. Lobe reaches the level of the 5th or 6th tracheal ring
- ✓ The isthmus crosses the trachea opposite the rings 2, 3 & 4



Capsule of the thyroid gland

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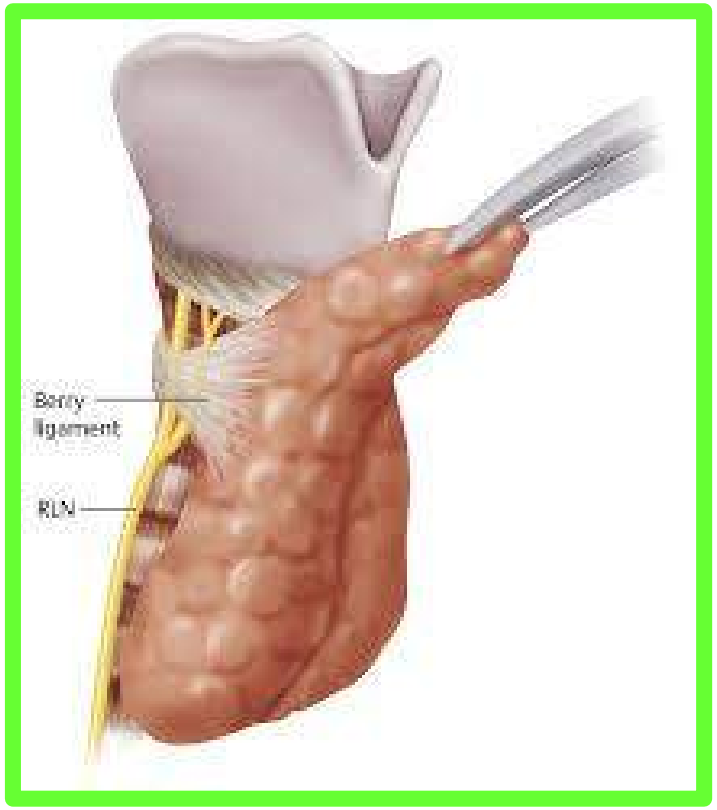
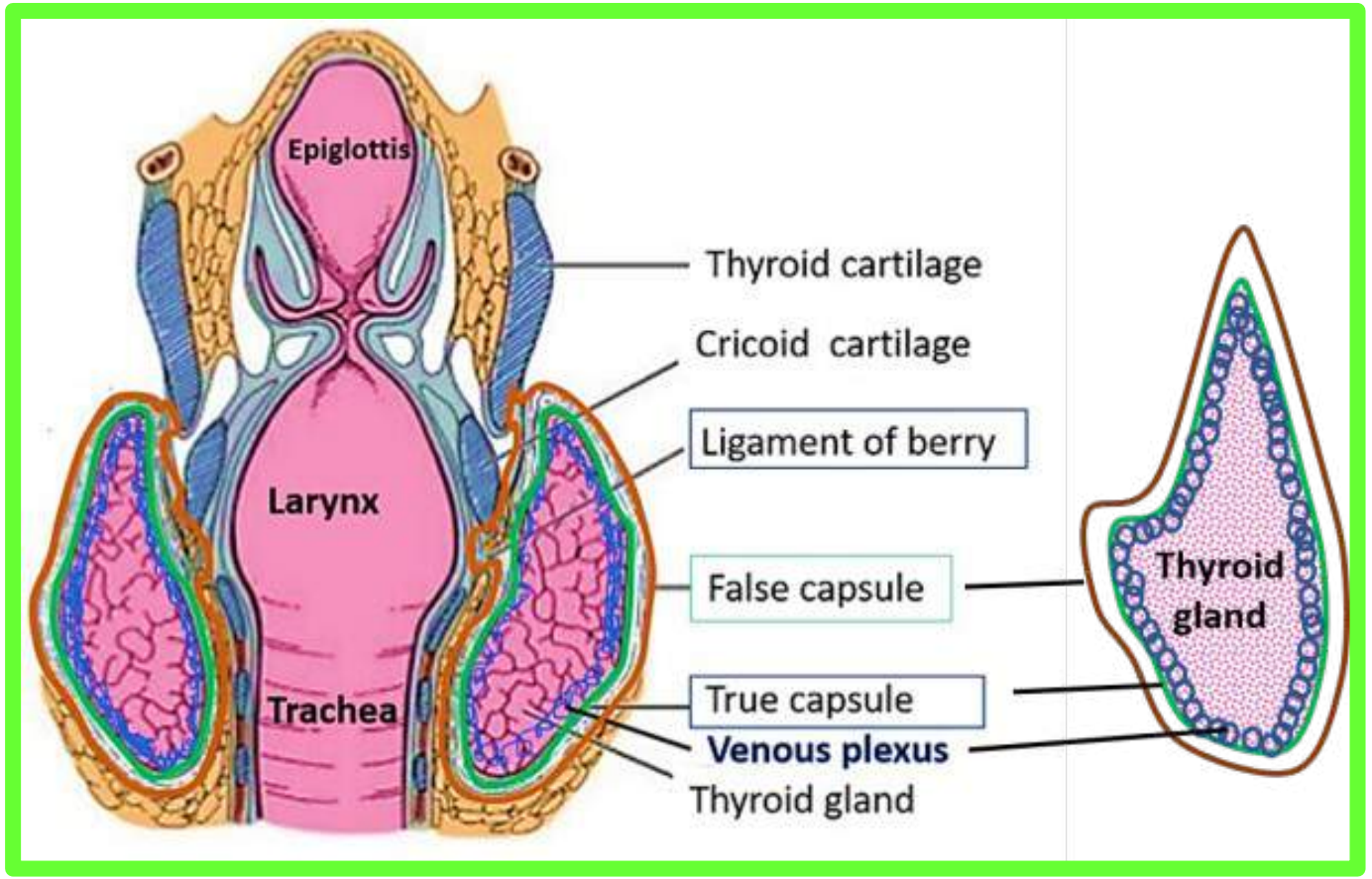
- ❖ **True fibrous capsule** enclosing the gland
- ❖ **False facial capsule** derived from pretracheal fascia

✓ The big vessel of the gland run between the 2 capsule

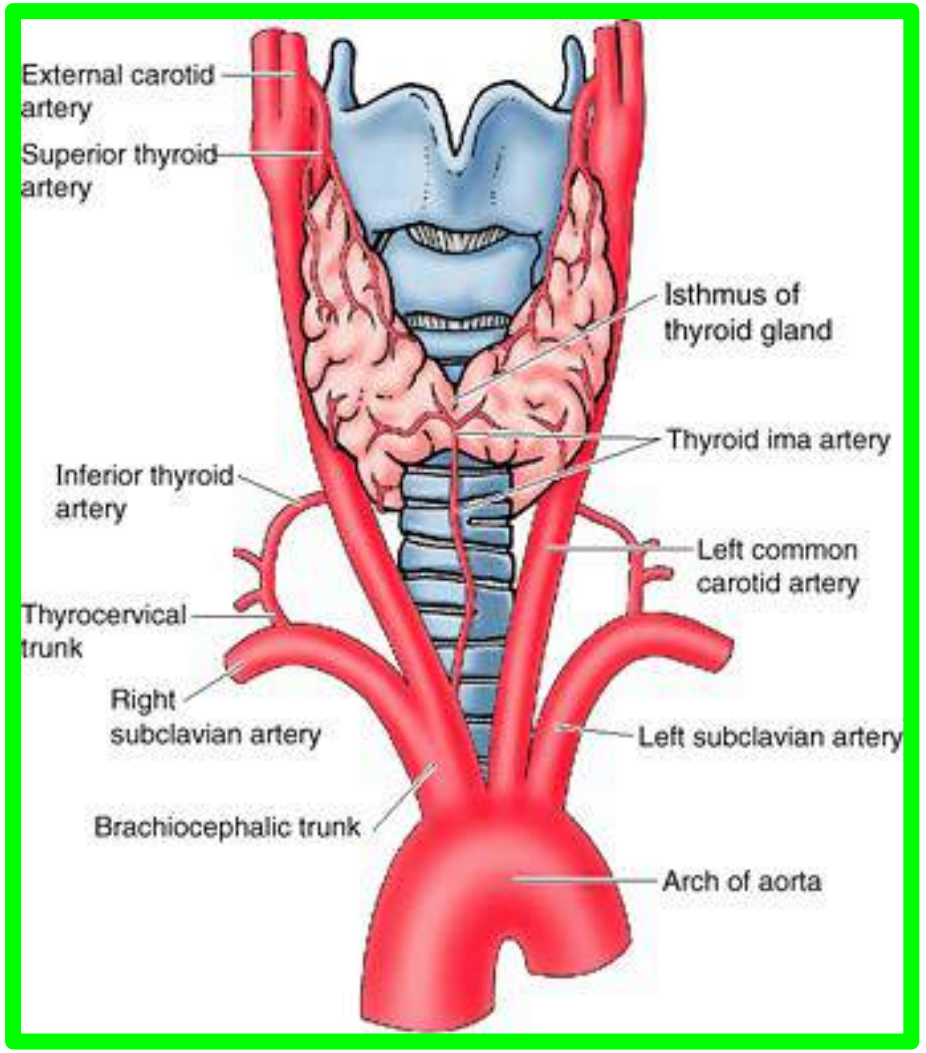
✓ The facial capsule thickened laterally to form suspensory **ligament of Berry** fix the gland to the cricoid cartilage





Arteries of Thyroid Gland.

The rich blood supply of the thyroid gland is from the paired **superior and inferior thyroid arteries**.



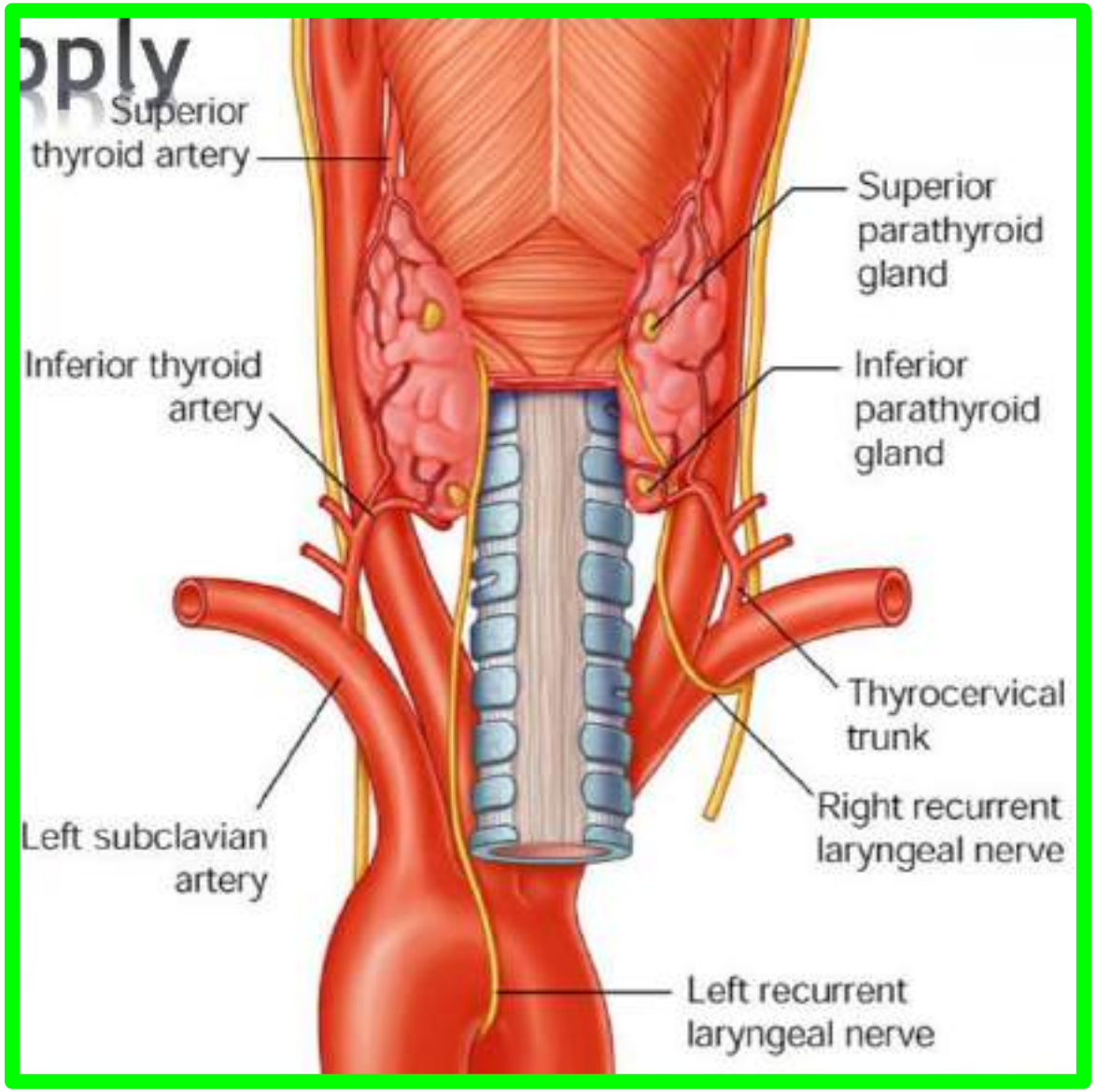
- ❖ Usually, the first branches of the **external carotid artery**:

- ✓ **the superior thyroid arteries**, descend to **the superior poles of the gland**, pierce the pretracheal layer of deep cervical fascia, and divide into **anterior** and **posterior branches**

Arteries of Thyroid Gland.

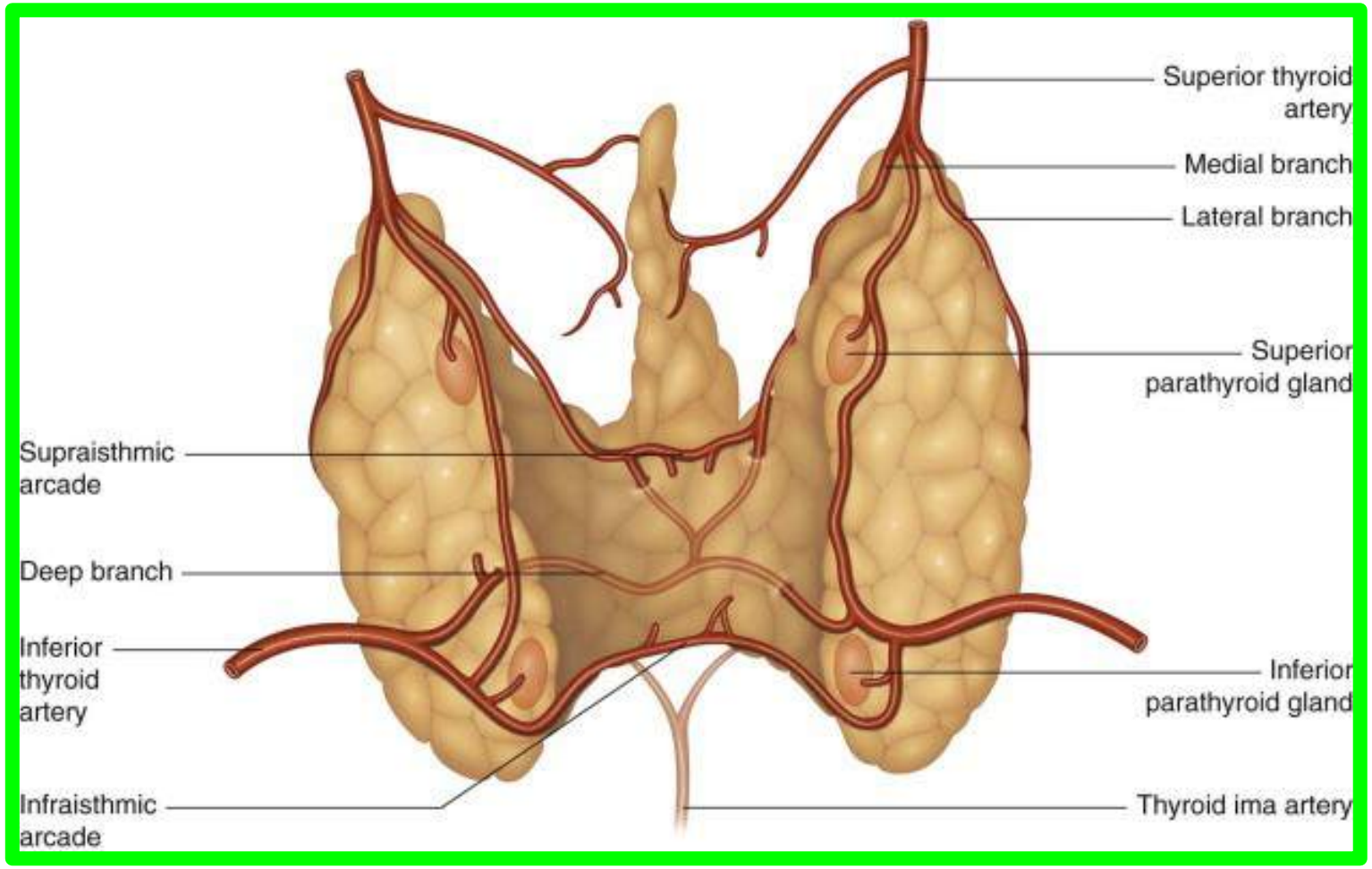
✓ **The inferior thyroid arteries:**

The largest branches of the thyrocervical trunks, arising from the subclavian arteries, run superomedially posterior to the carotid sheaths to reach the posterior aspect of the thyroid gland.



Arteries of Thyroid Gland.

The right and left superior and inferior thyroid arteries anastomose extensively within the gland, ensuring its supply while providing potential collateral circulation between the subclavian and the external carotid arteries.



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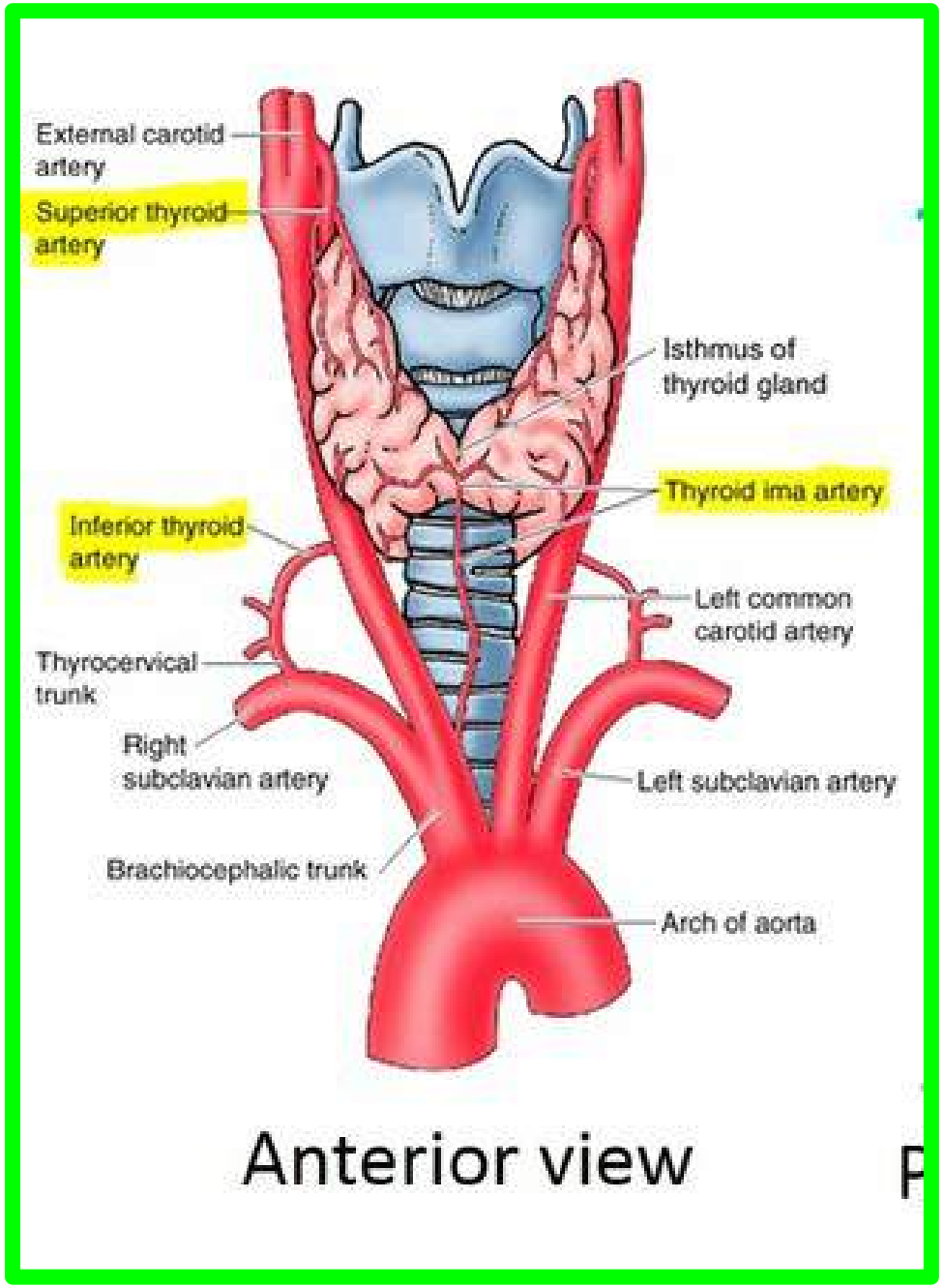
Arteries of Thyroid Gland

(In approximately 10% of people)

- ✓ a thyroid ima artery: may arises from:

- ➢ The brachiocephalic trunk;
- ➢ The arch of the aorta; or from
- ➢ The right common carotid,
- ➢ The right subclavian, or
- ➢ Internal thoracic arteries



Arteries of Thyroid Gland.

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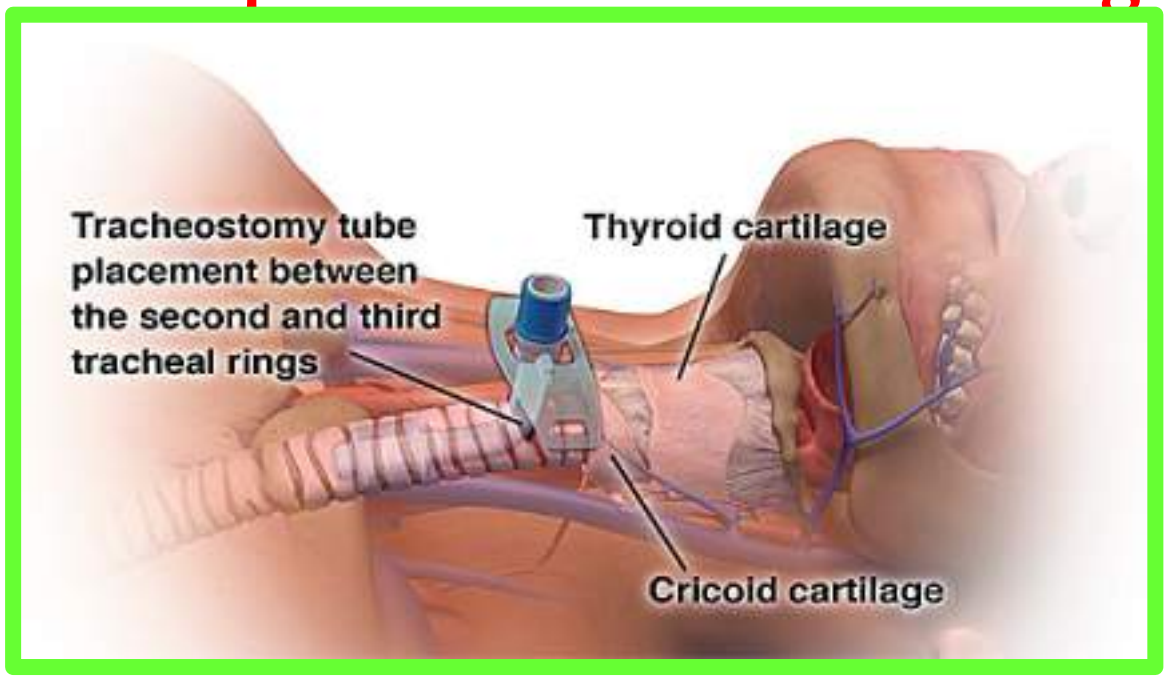
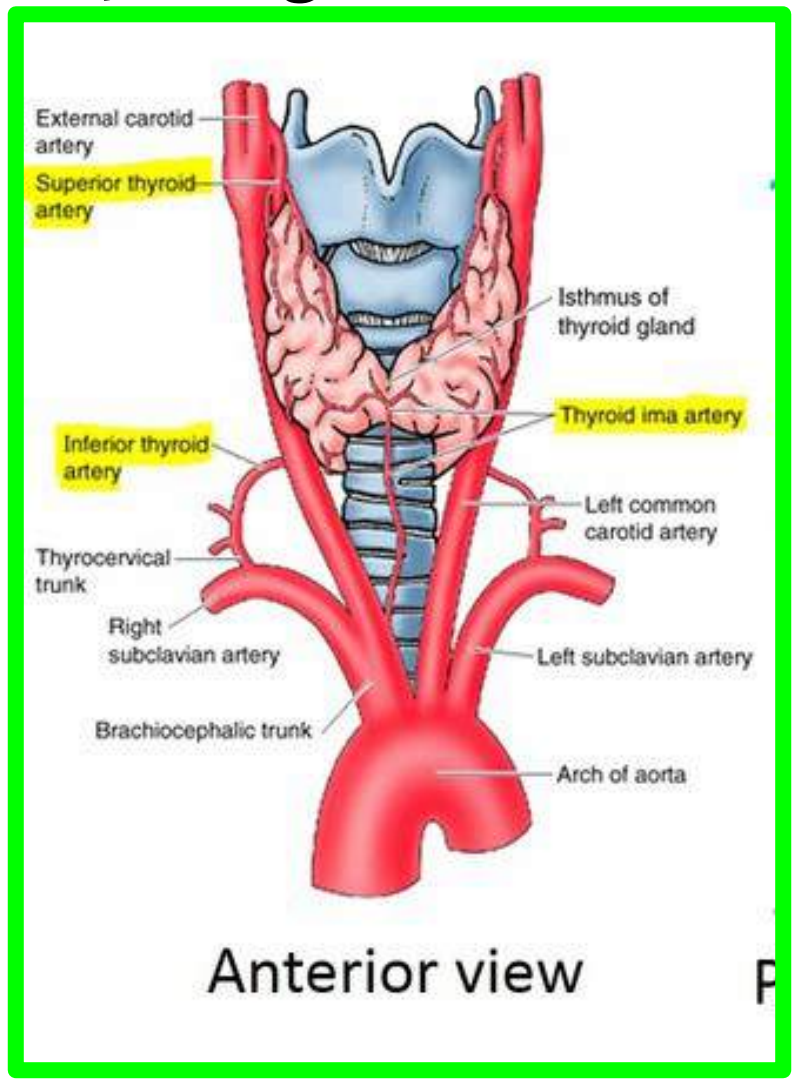
This small artery ascends on the anterior surface of the trachea, which it supplies, and continues to the isthmus of the thyroid gland.

The possible presence of this artery must be considered when performing procedures in the midline of the neck inferior to the isthmus because it is a potential source of bleeding





Veins of Thyroid Gland.

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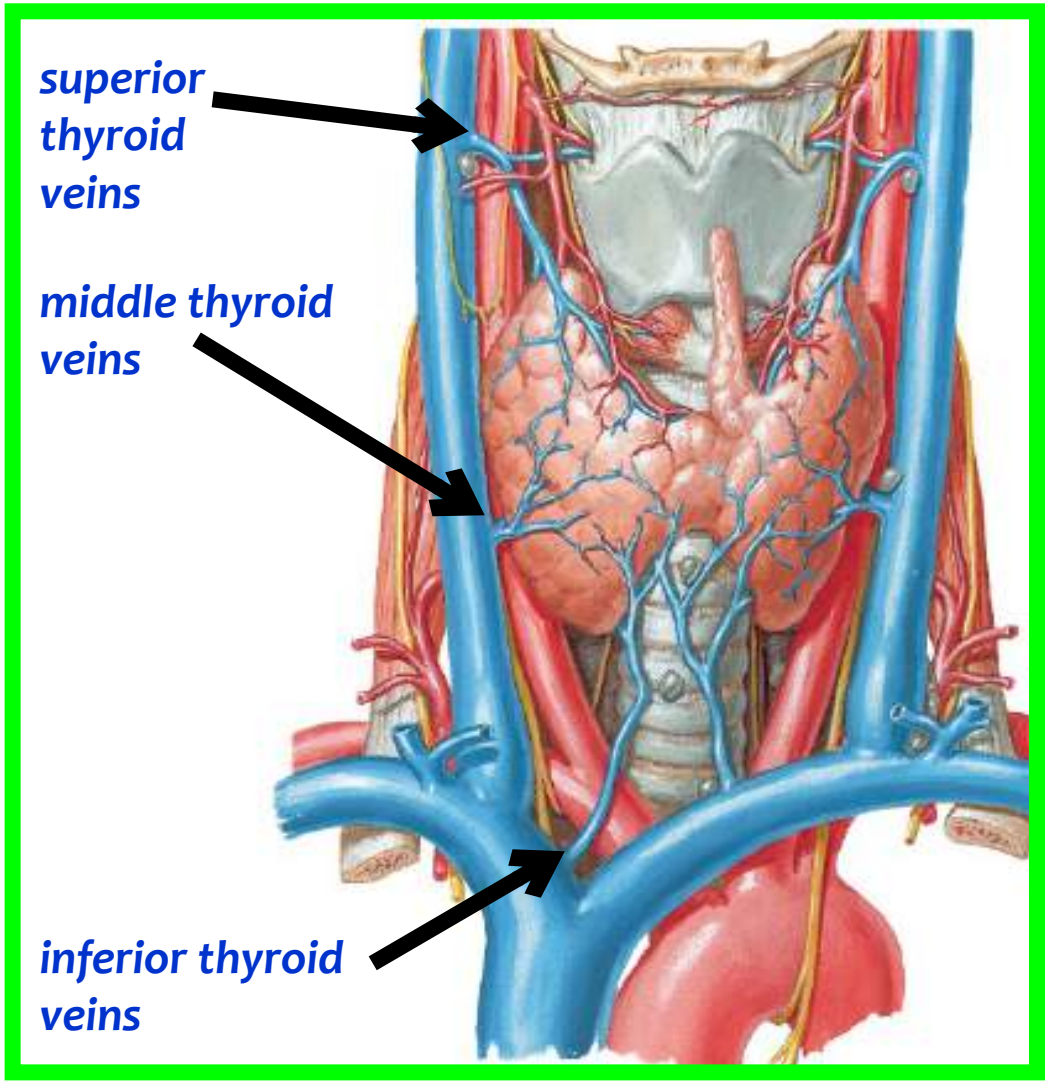
Three pairs of thyroid veins usually drain the thyroid plexus of veins on the anterior surface of the thyroid gland and trachea

❖The superior thyroid veins accompany the superior thyroid arteries and drain the superior poles of the gland.

❖The middle thyroid veins drain the middle of the lobes, and

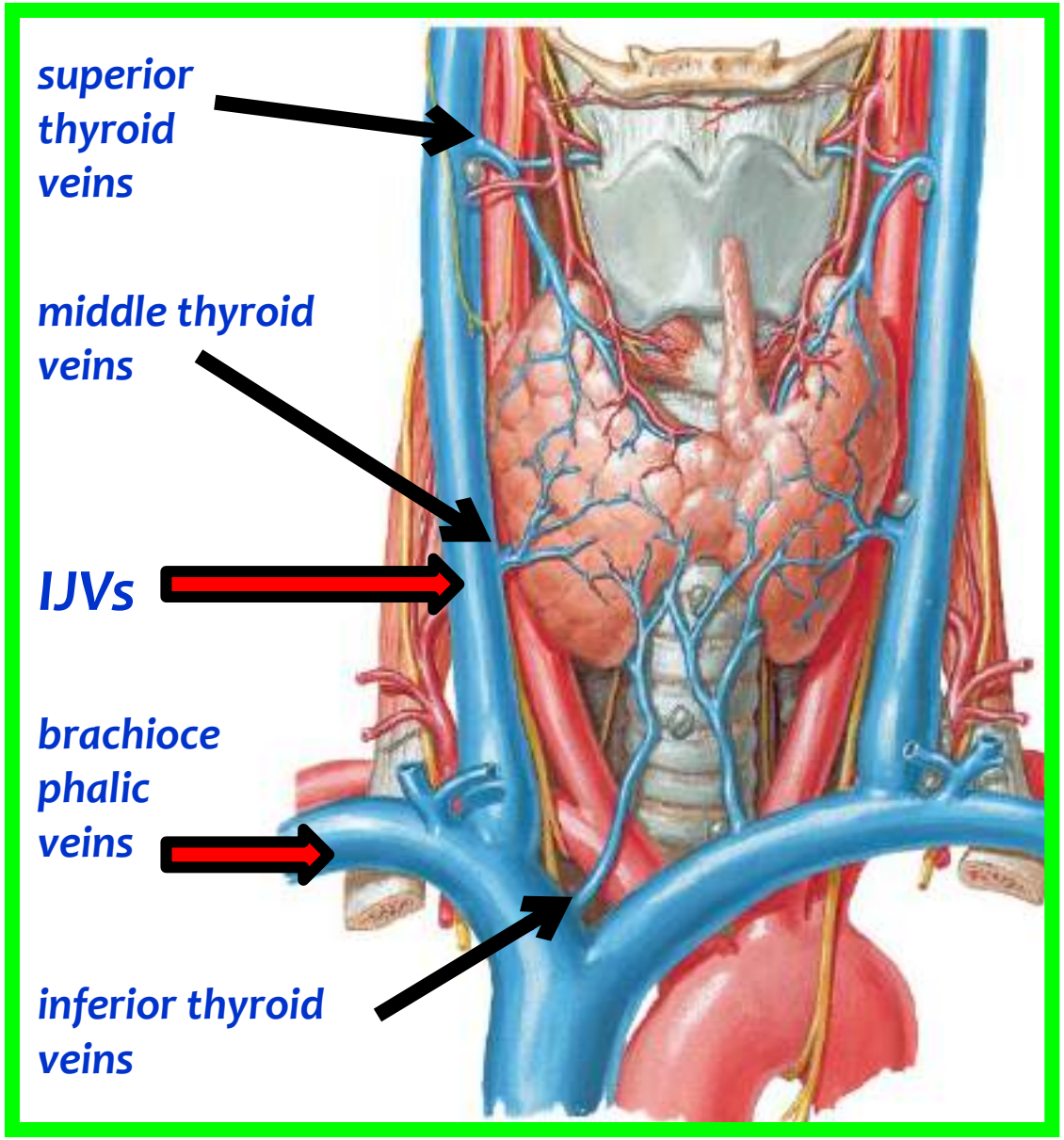
❖The inferior thyroid veins drain the inferior poles.



Veins of Thyroid Gland.

- The superior and middle thyroid veins drain into the IJVs, and

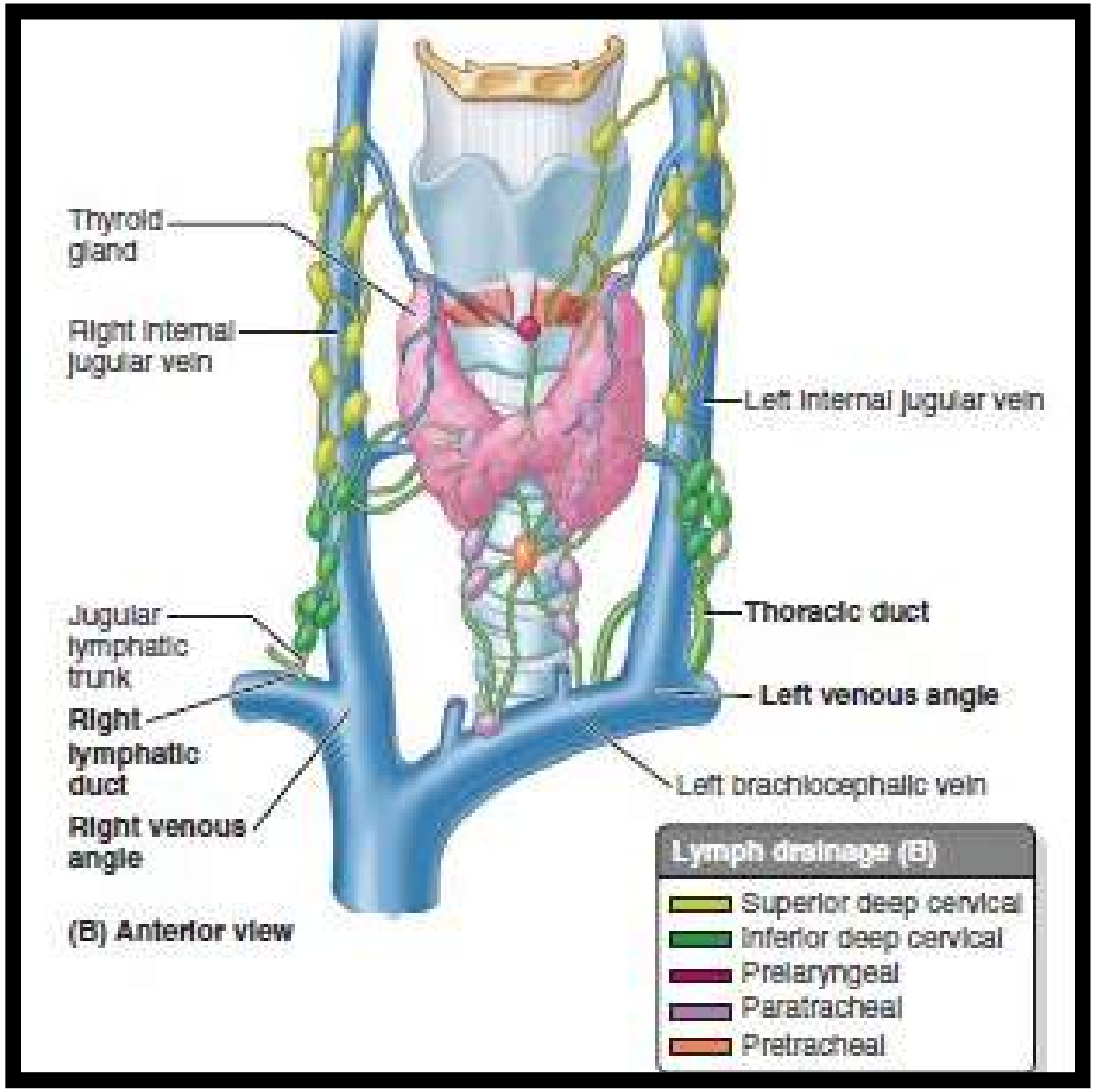
- The inferior thyroid veins drain into the brachiocephalic veins posterior to the manubrium.



Lymphatic Drainage of Thyroid Gland.

The lymphatic vessels of the thyroid gland communicate with a **capsular network of lymphatic vessels.**

From this network, the vessels pass initially to prelaryngeal, pretracheal, and paratracheal lymph nodes, which drain in turn to the superior and inferior deep cervical nodes.



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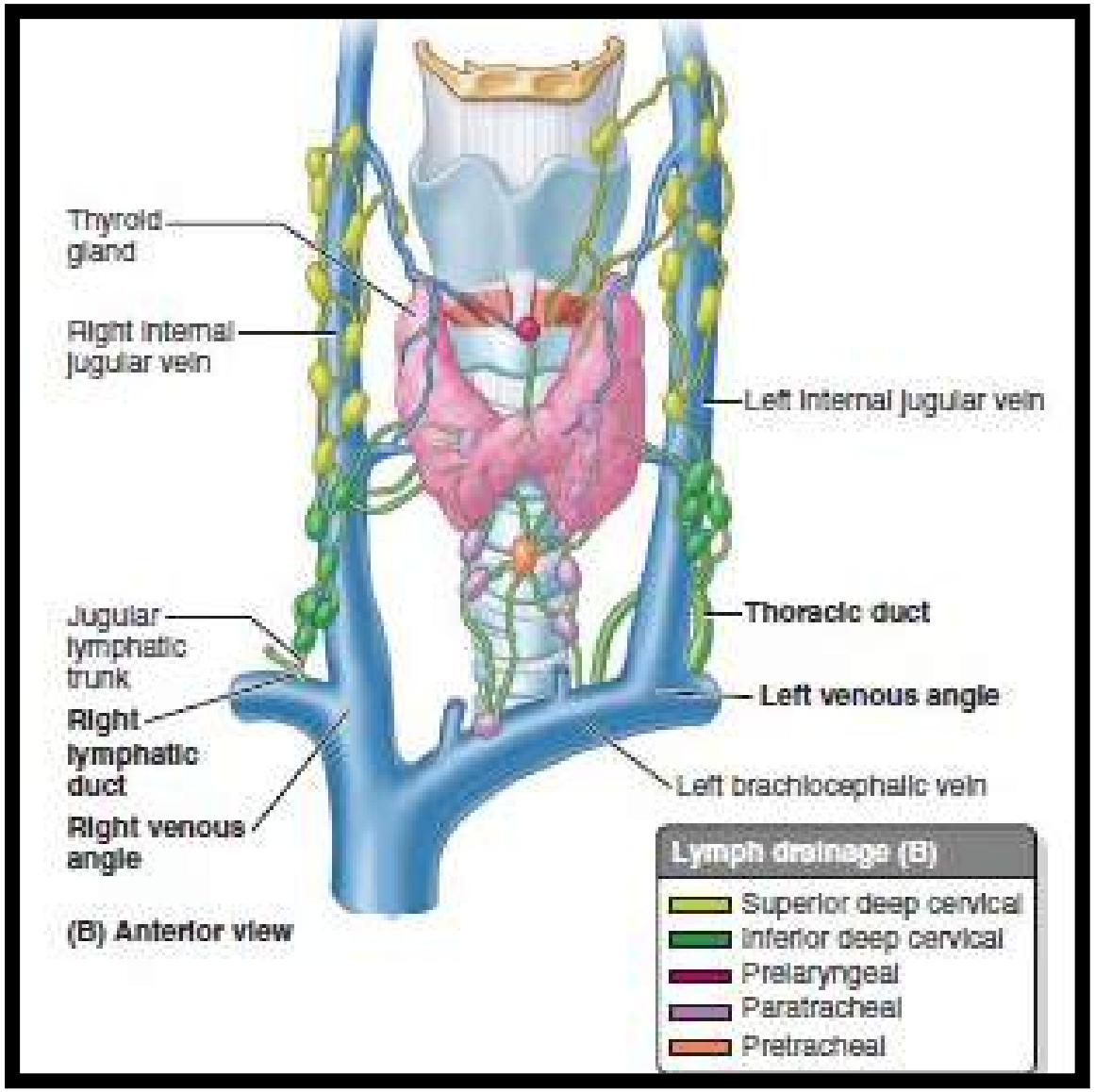
Lymphatic Drainage of Thyroid Gland.

Inferior to the thyroid gland, the lymphatic vessels pass directly to the inferior deep cervical lymph nodes.

Some lymphatic vessels may drain into brachiocephalic lymph nodes or the thoracic duct.



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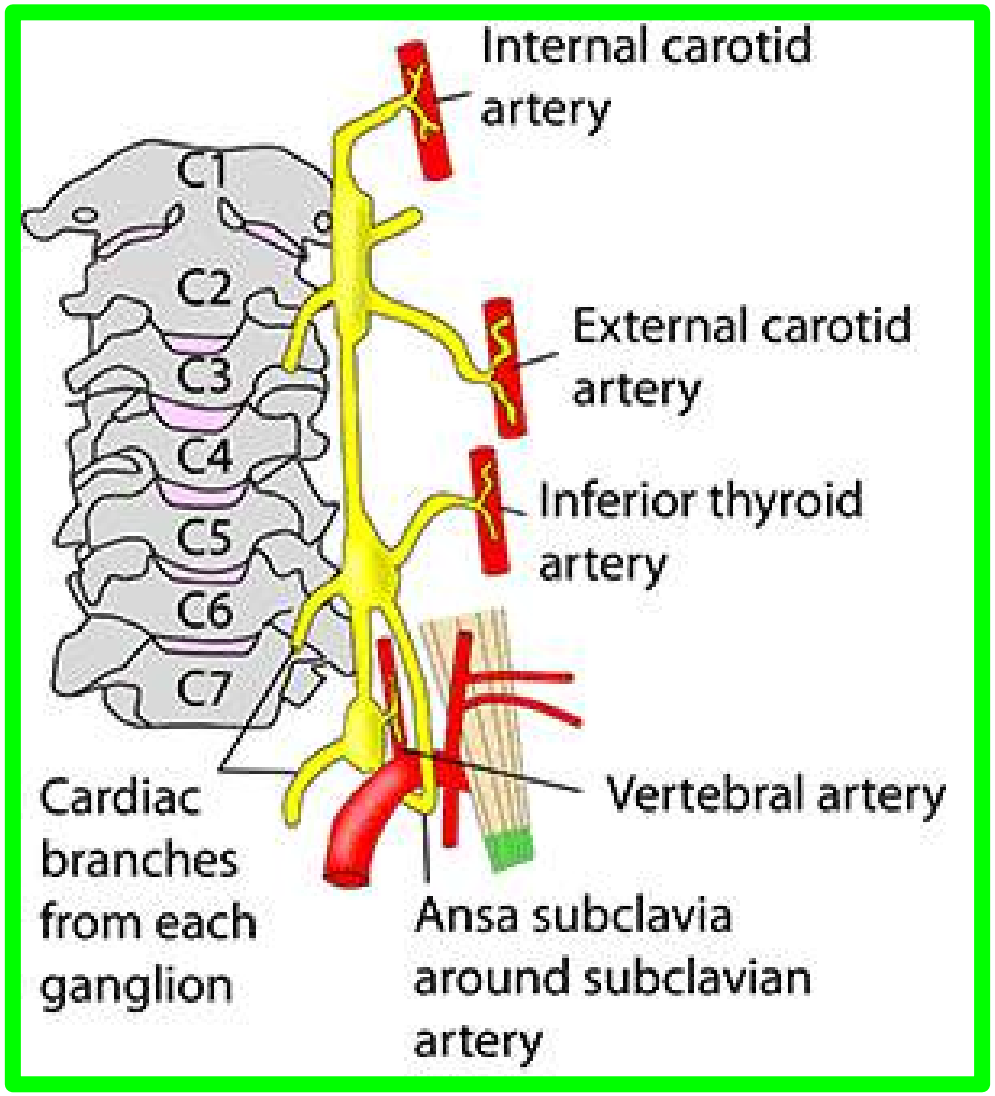
Nerves of Thyroid Gland

The nerves of the thyroid gland are derived from the superior, middle, and inferior cervical sympathetic ganglia

They reach the gland through the cardiac and superior and inferior thyroid periarterial plexuses that accompany the thyroid arteries



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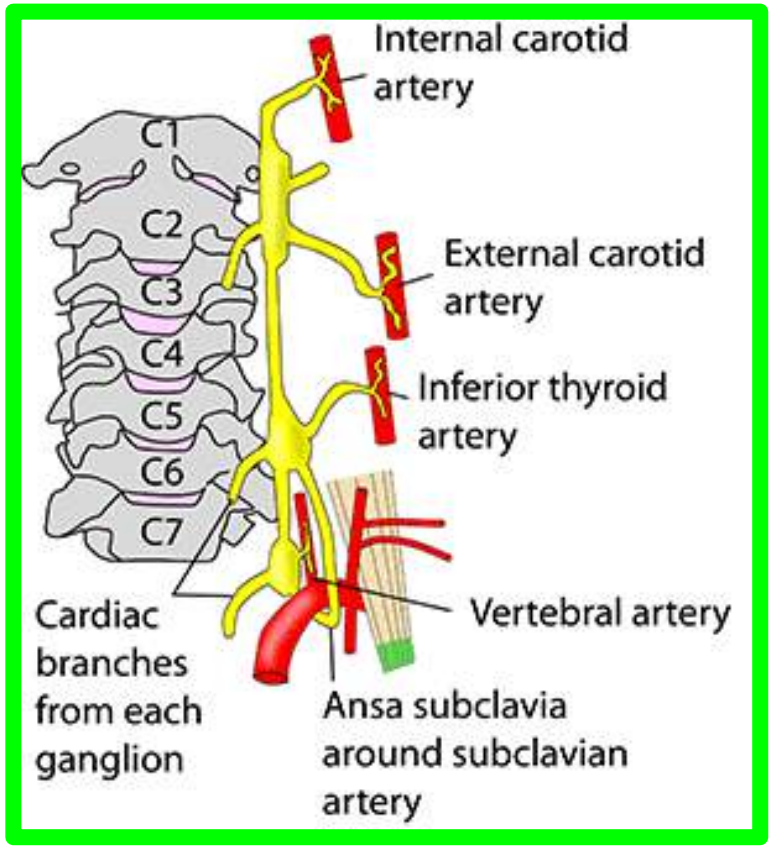
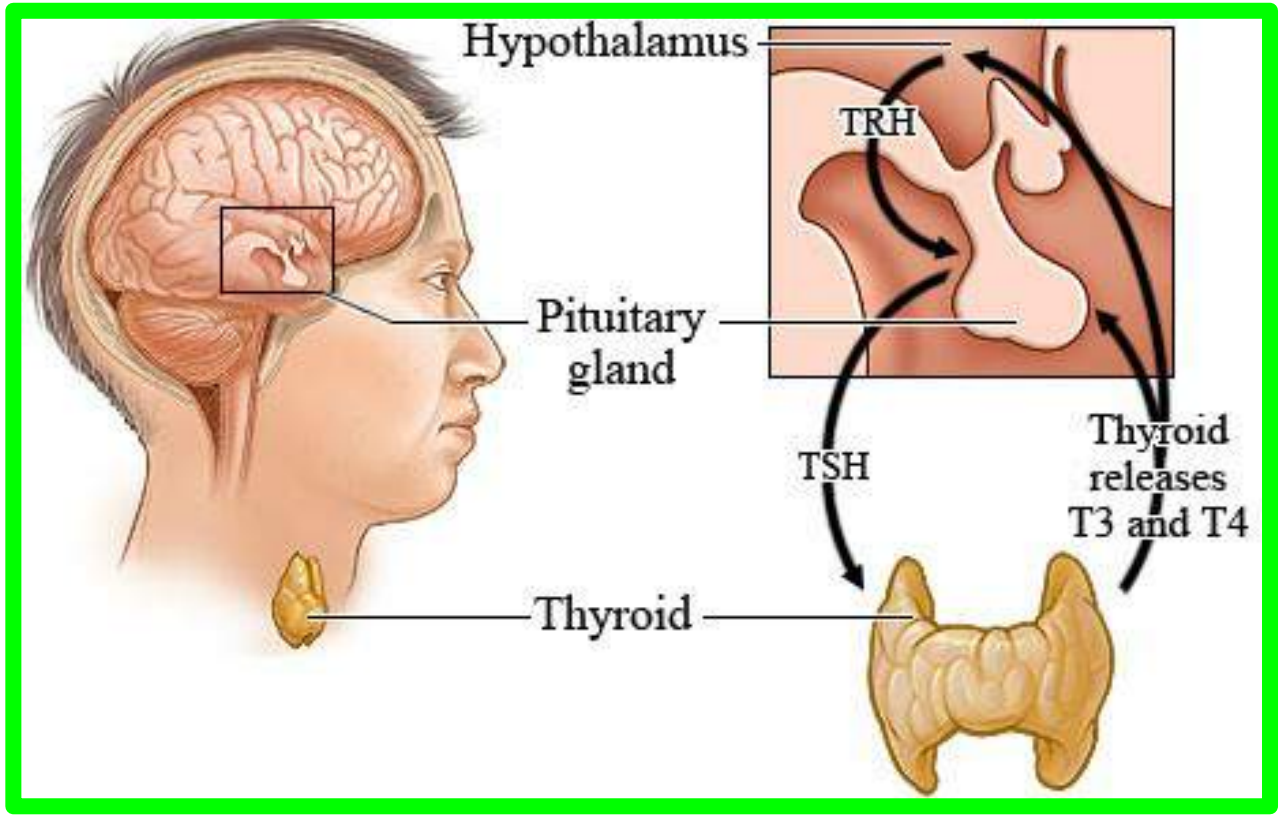
Nerves of Thyroid Gland

- These fibers are vasomotor, causing constriction of blood vessels.
- Endocrine secretion from the thyroid gland is hormonally regulated by the pituitary gland.

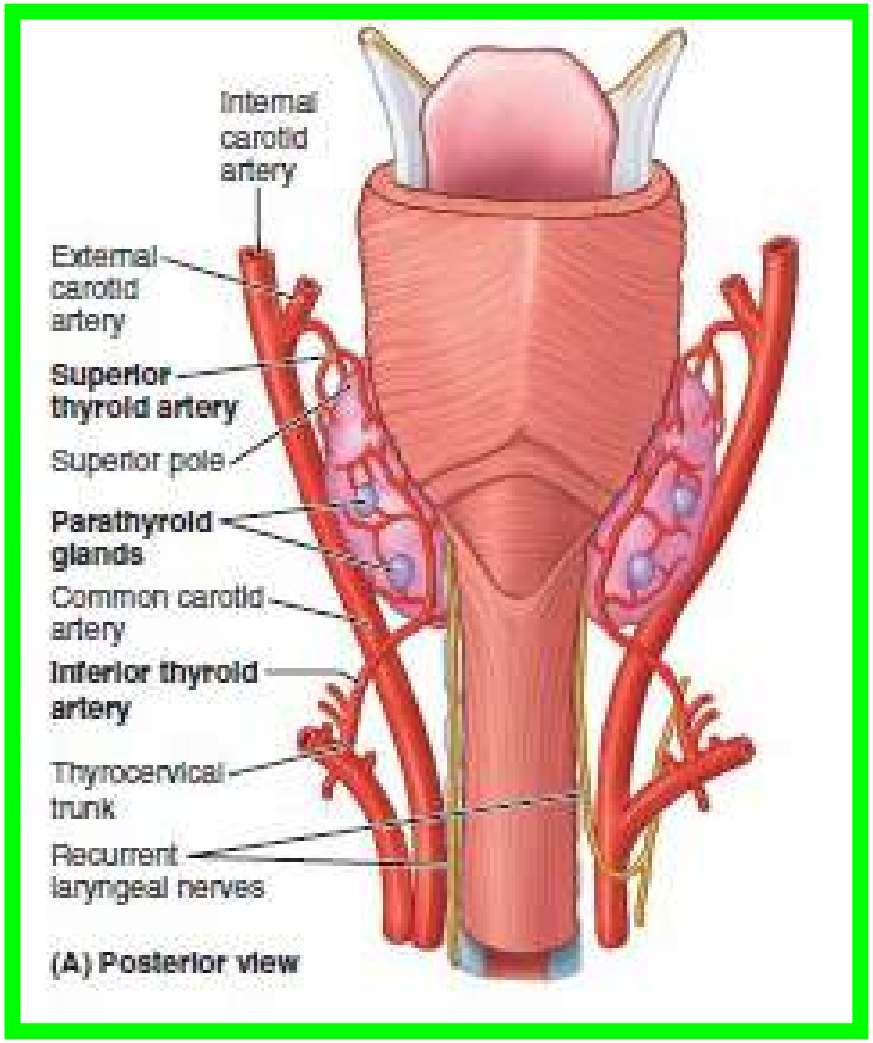




PARATHYROID GLANDS

The small, flattened **oval parathyroid glands** **lie external to the fibrous capsule on the medial half of the posterior surface** of each **lobe of the thyroid gland .**

- **Most people have four parathyroid glands.**
- **Approximately 5% of people have more; some have only two glands.**

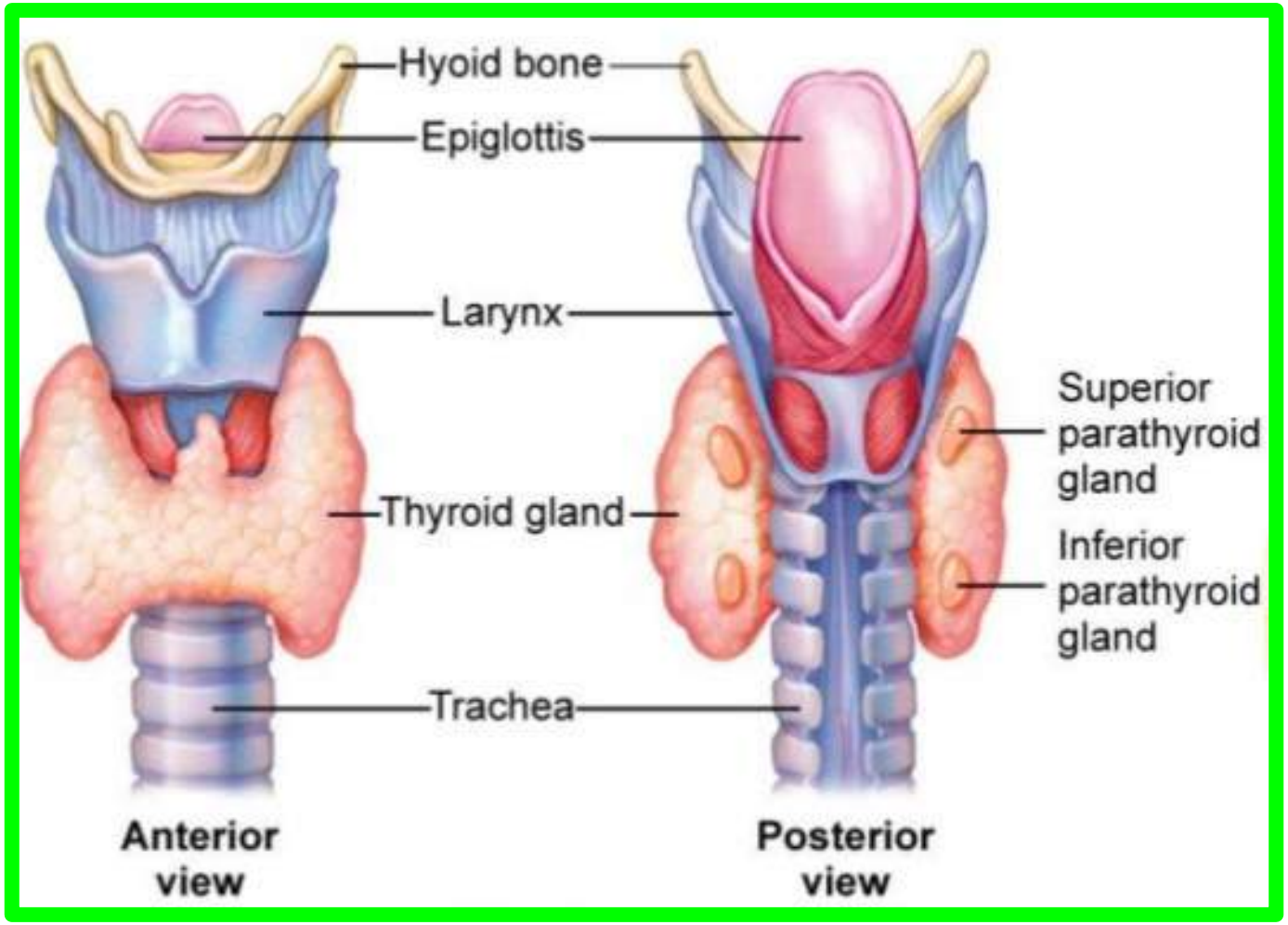


PARATHYROID GLANDS

The two superior parathyroid glands are usually at the level of the inferior border of the cricoid cartilage.

✓**The inferior parathyroid glands are usually near the inferior poles of the thyroid gland,**

✓**but they may lie in a variety of positions.**

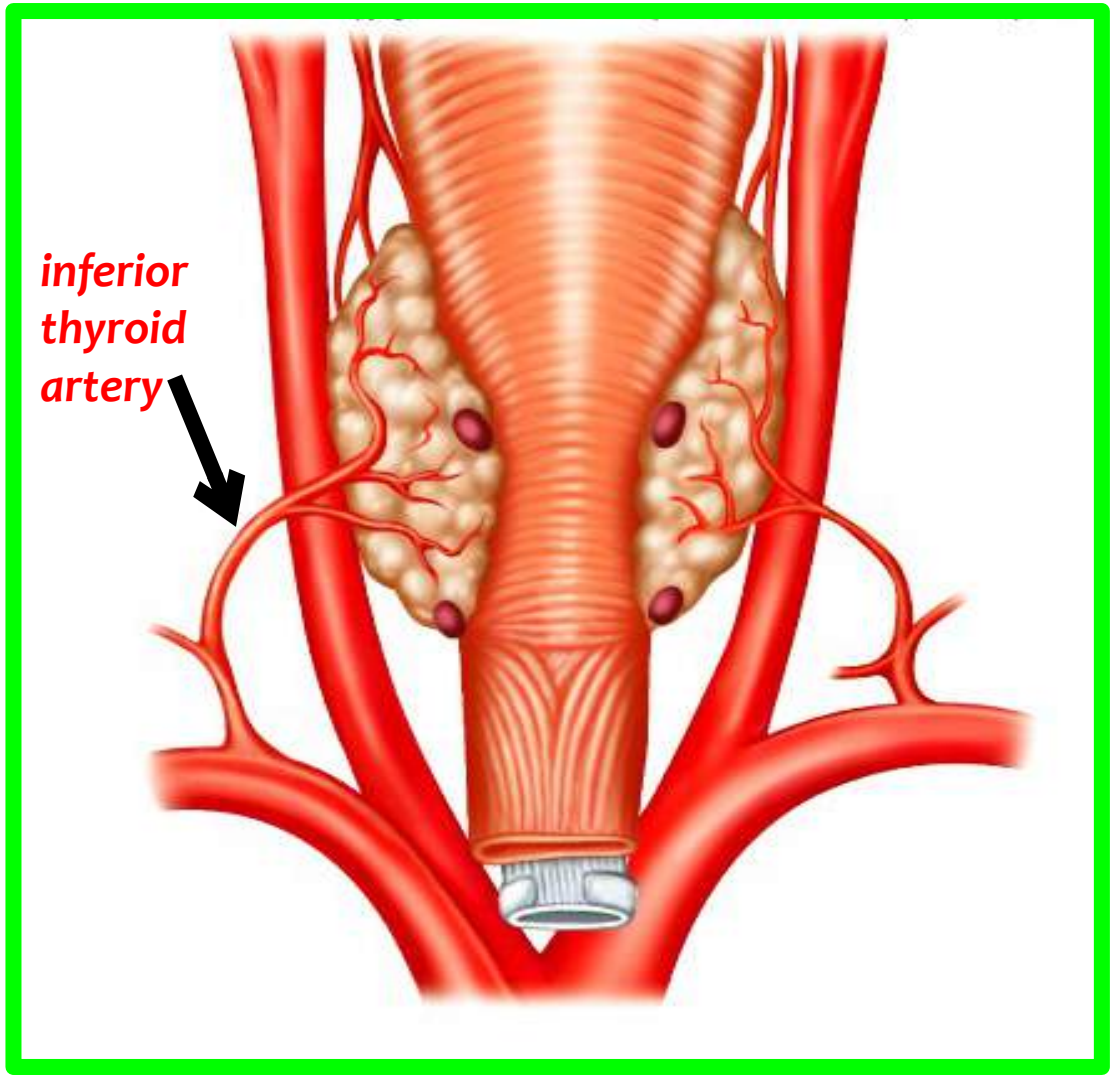


Vessels of Parathyroid Glands

The inferior thyroid arteries supply both the superior and the inferior parathyroid glands;

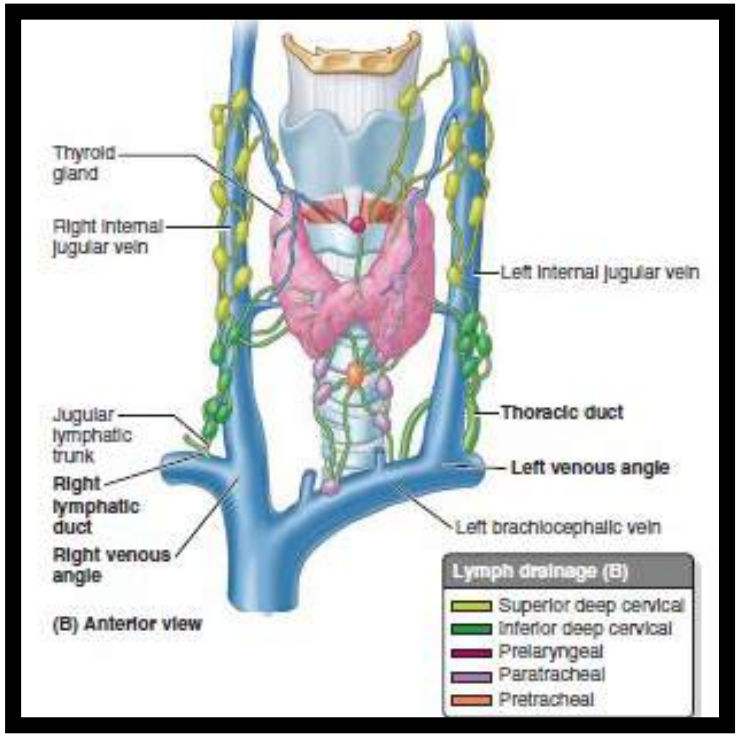
however, these glands may also receive branches from:

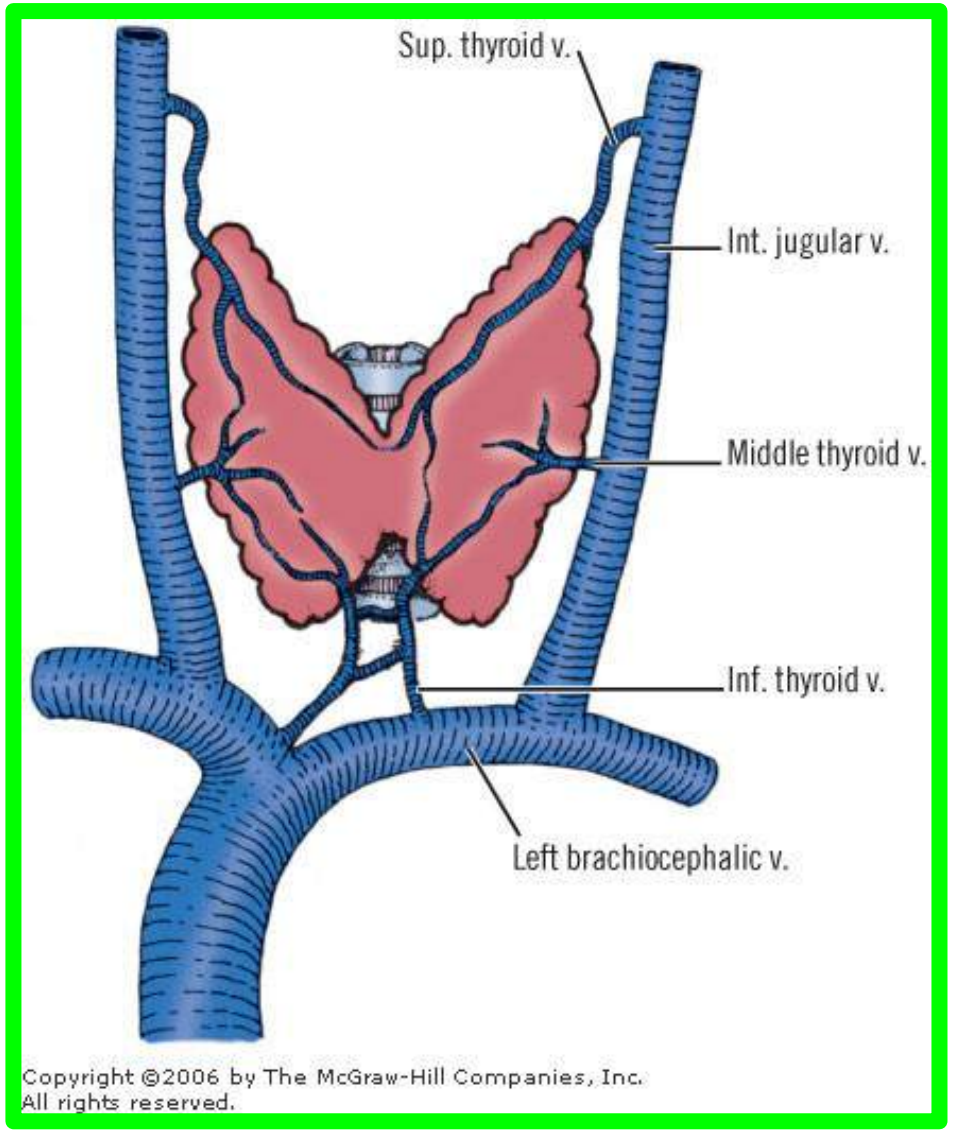
- **the superior thyroid arteries,**
- **the thyroid ima artery, or**
- **the laryngeal,**
- **tracheal, and**
- **esophageal arteries**



Vessels of Parathyroid Glands

- The parathyroid veins drain into the thyroid plexus of veins of the thyroid gland and trachea.
- The lymphatic vessels from the parathyroid glands drain with those of the thyroid gland into the deep cervical and paratracheal lymph node





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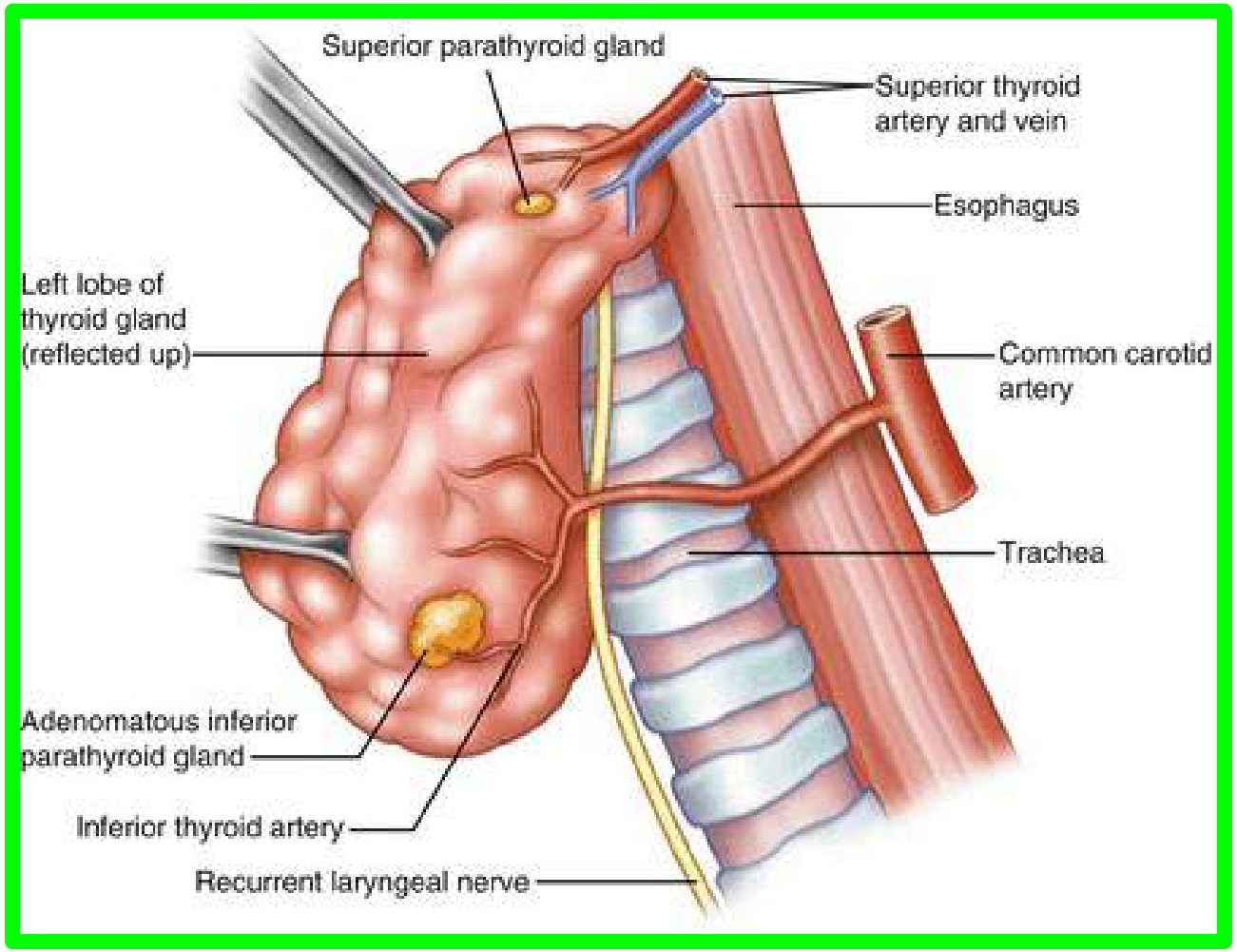
Nerves of Parathyroid Glands

The nerves of the parathyroid glands are derived from thyroid branches of the cervical sympathetic ganglia.

The nerves are vasomotor but not secretomotor because these glands are hormonally regulated

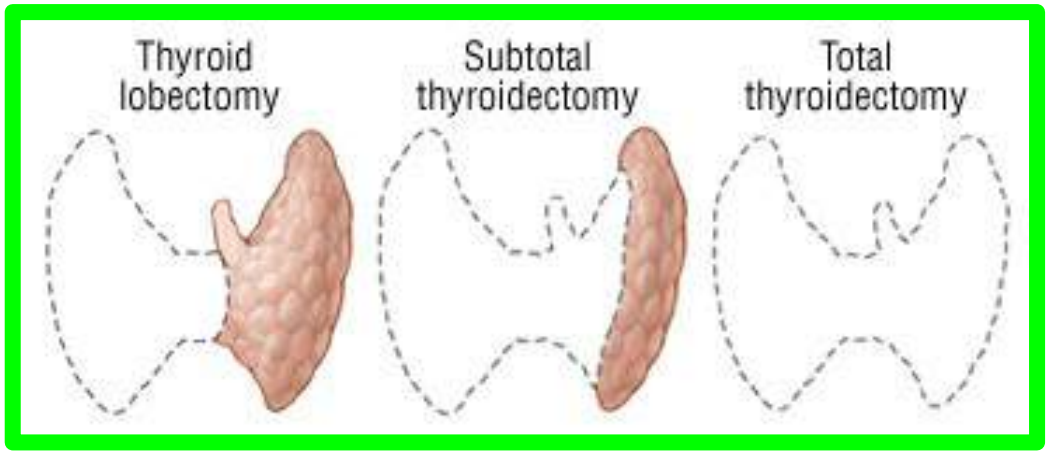


Thyroidectomy

During a thyroidectomy (e.g., excision of a malignant thyroid gland), the parathyroid glands are in danger of being inadvertently damaged or removed.

These glands are safe during subtotal thyroidectomy because the most posterior part of the thyroid gland usually is preserved.

Variability in the position of the parathyroid glands, especially the inferior ones, puts them in danger of being removed during surgery on the thyroid gland.



Thyroidectomy

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If the parathyroid glands are inadvertently removed during surgery, the patient suffers from tetany, a severe convulsive disorder.

The generalized convulsive muscle spasms result from a fall in blood calcium levels. Hormone replacement therapy is required.

Accessory Thyroid Tissue

Accessory thyroid tissue may develop in the neck lateral to the thyroid cartilage usually, the tissue lies on the thyrohyoid muscle.

A pyramidal lobe, an extension of thyroid tissue from the superior aspect of the isthmus, and its connective tissue continuation may also contain thyroid tissue.

Although the accessory tissue may be functional, it is usually too small to maintain normal function if the thyroid gland is removed.

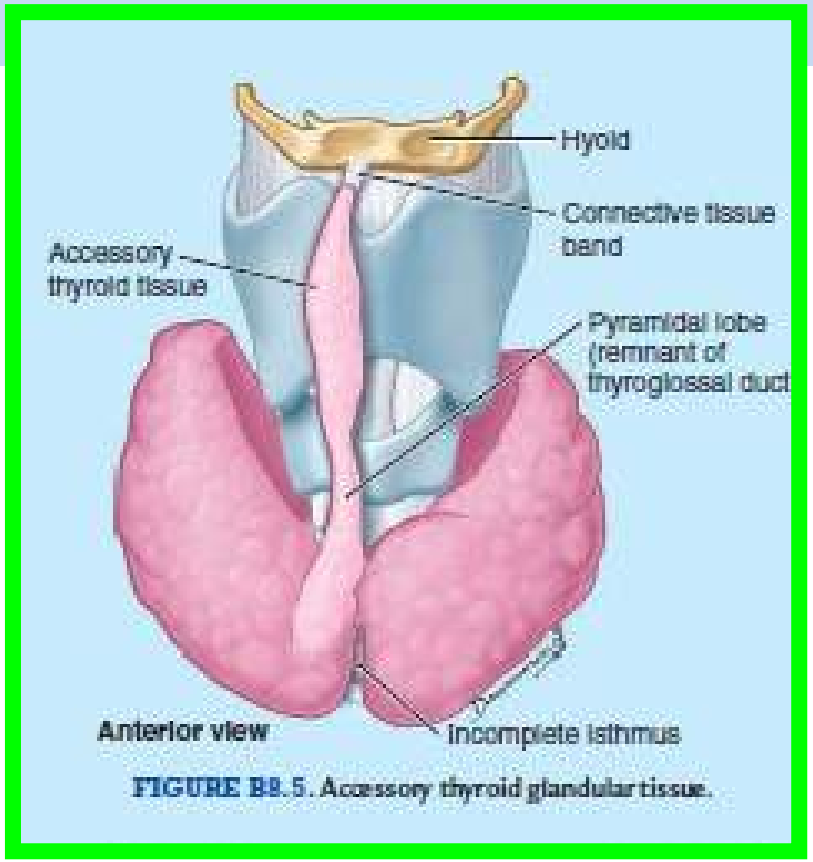

FIGURE B8.5. Accessory thyroid glandular tissue.


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