

# PRACTICAL ANATOMY

## Endocrine Block

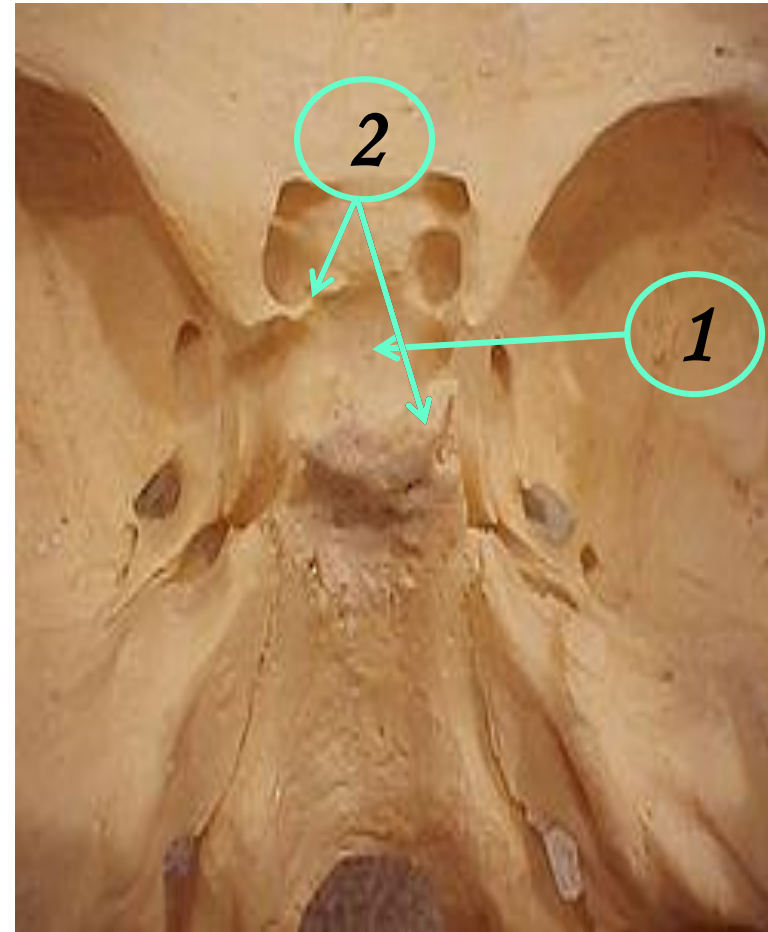
اي كلام باللون الذهبي مأخوذ من التيم وورك فايل (الي يقال انه اكسترا)

# Anatomy Of Pituitary Gland

**Identify the Pointed areas:**

- 1- hypophyseal fossa (Sella turcica).
- 2- anterior & posterior clinoidal process.

The pituitary gland: located in middle cranial fossa and protected in sella turcica (hypophyseal fossa) of body of sphenoid.

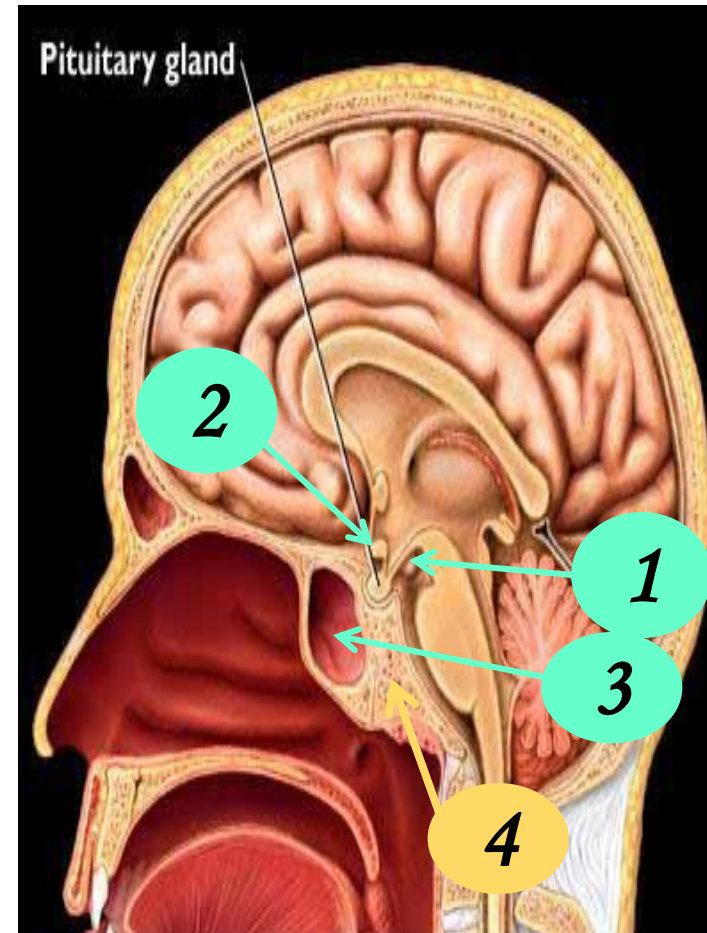


# Relations Of Pituitary Gland

## Identify the Pointed areas:

- 1- mamillary bodies (posteriorly).
- 2-optic chiasma (anteriorly).
- 3-Sphenoidal air sinuses (inferior) .
- 4-body of the sphenoid.

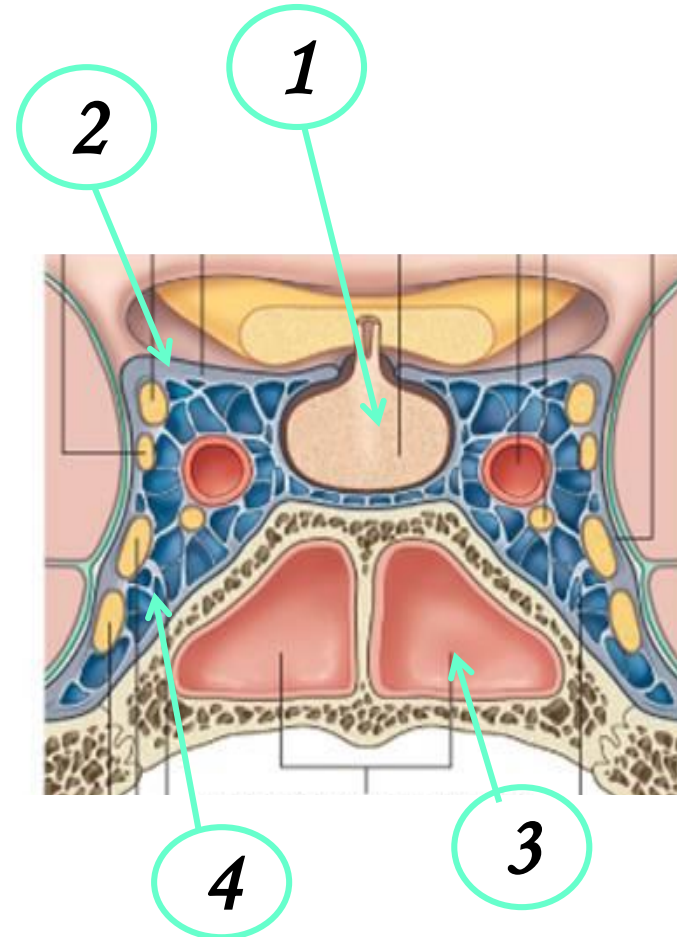
If Pituitary gland became enlarged (e.g adenoma ) it will cause pressure on optic chiasma and lead to Bilateral temporal eye field blindness



# Relations Of Pituitary Gland

**Identify the Pointed area :**

- 1- Pituitary gland.
- 2- Diaphragma sellae (superior).
- 3- Sphenoidal air sinuses (inferior).
- 4- Cavernous sinuses (lateral).

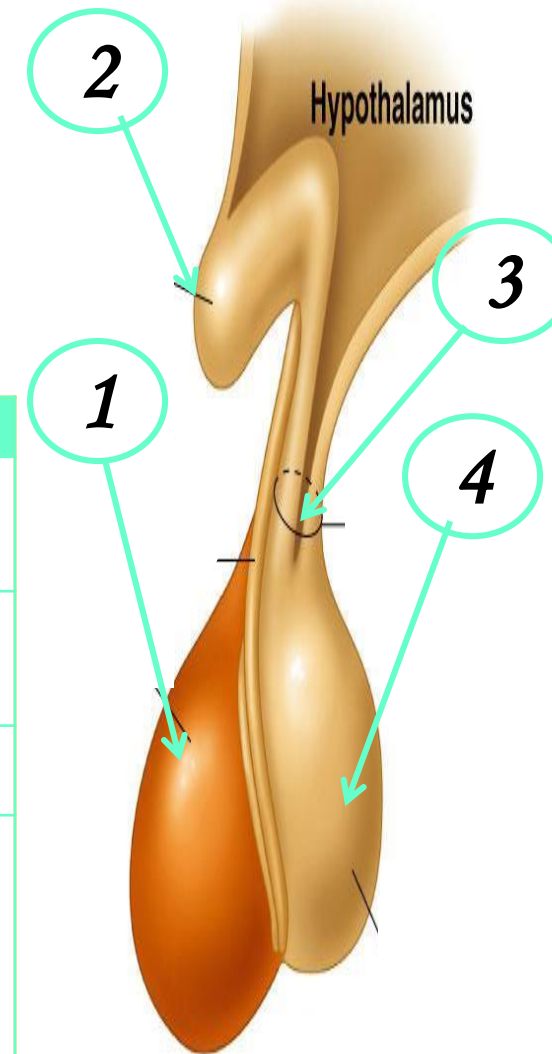


## Identify the Pointed area :

- 1- Anterior lobe(Adenohypophysis)
- 2- optic chiasma
- 3- infundibulum .
- 4- Posterior lobe (Neurohypophysis)

### SUBDIVISIONS OF PITUITARY GLAND

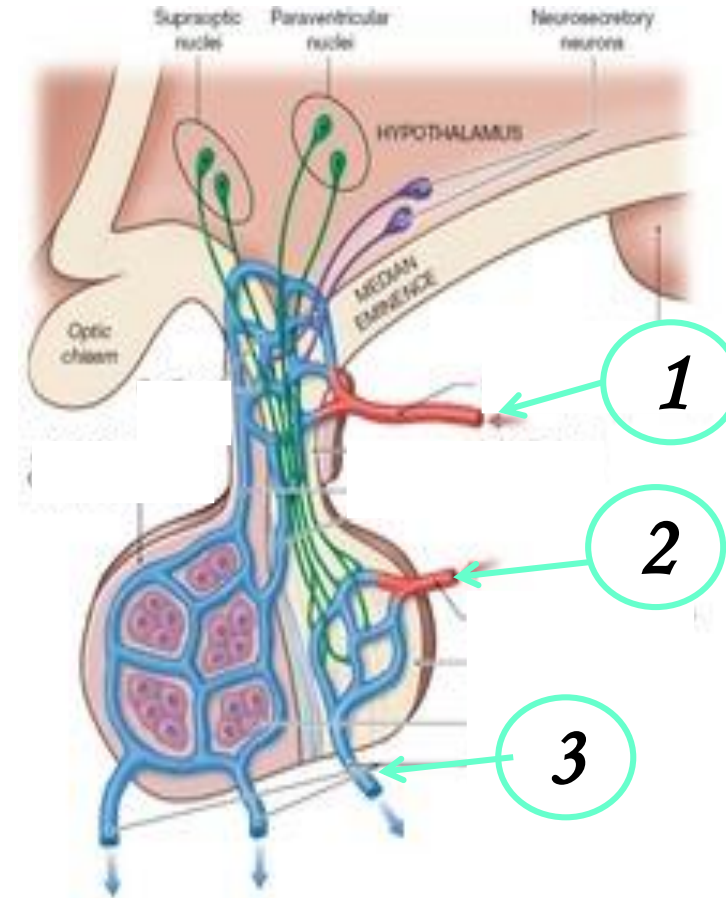
Anterior Lobe(Adenohypophysis)	Posterior Lobe(Neurohypophysis)
The true gland	connected to hypothalamus through hypothalamo-hypophyseal tract
synthesizes & Secretes hormones	Stores hormones secreted by hypothalamic nuclei
Hormone-releasing & inhibiting factors produced by hypothalamus use Hypophyseal Portal System to reach the Anterior lobe of pituitary gland	receives a nerve supply from some of the hypothalamic nuclei (supraoptic & paraventricular) The axons of these nuclei convey their neurosecretion to the Posterior lobe of pituitary gland through Hypothalamo-Hypophyseal tract from where it passes into the blood stream.



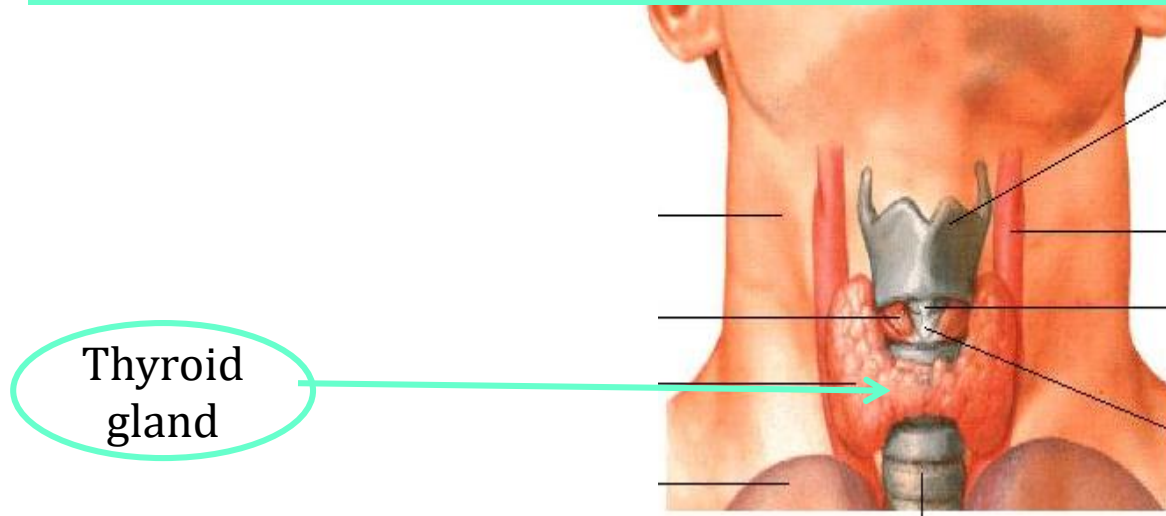
# Blood Supply Of Pituitary Gland

## Identify the Pointed area :

- 1- Superior hypophyseal artery: supplies infundibulum & forms a capillary network from which vessels pass downward & form sinusoids into the anterior lobe of pituitary gland (hypophyseal portal system).
- 2- inferior hypophyseal artery branches of internal carotid artery, supplies posterior lobe of pituitary gland.
- 3- Hypophyseal veins drain into Cavernous Sinuses .



# Thyroid Gland



- Consists of **right & left lobes**, Extend from oblique line to **4<sup>th</sup> or 5<sup>th</sup> tracheal rings**.
- The 2 lobes are connected to each other by a narrow **isthmus**, which overlies the **2<sup>nd</sup> 3<sup>rd</sup> & 4<sup>th</sup> tracheal rings**.
- Each lobe is pear shaped, with its **apex** reaches up to the **oblique line of the thyroid cartilage (2)**.
- It is surrounded by a sheath derived from the **pretracheal layer of cervical fascia**.
- **Its base** lies at the level of **4<sup>th</sup> or 5<sup>th</sup> tracheal rings**.

**Identify the pointed areas :-**

1-sternohyoid muscle

2-thyroid cartilage

3-sternothyroid muscle

4-cricoid cartilage

5- thyroid gland

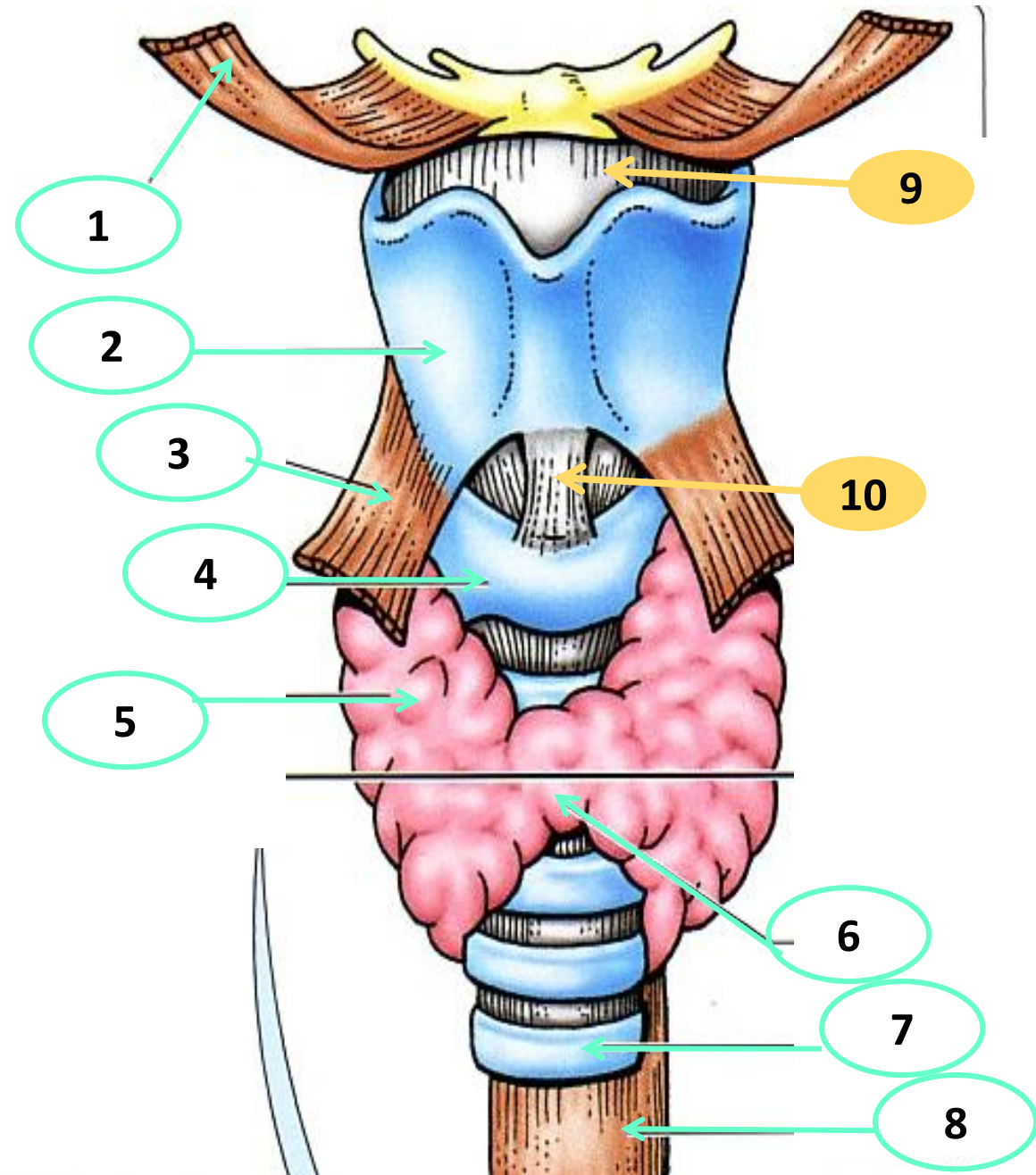
6-isthmus

7-trachea

8-esophagus

9-Thyrohyoid membrane

10-Cricothyroid ligament



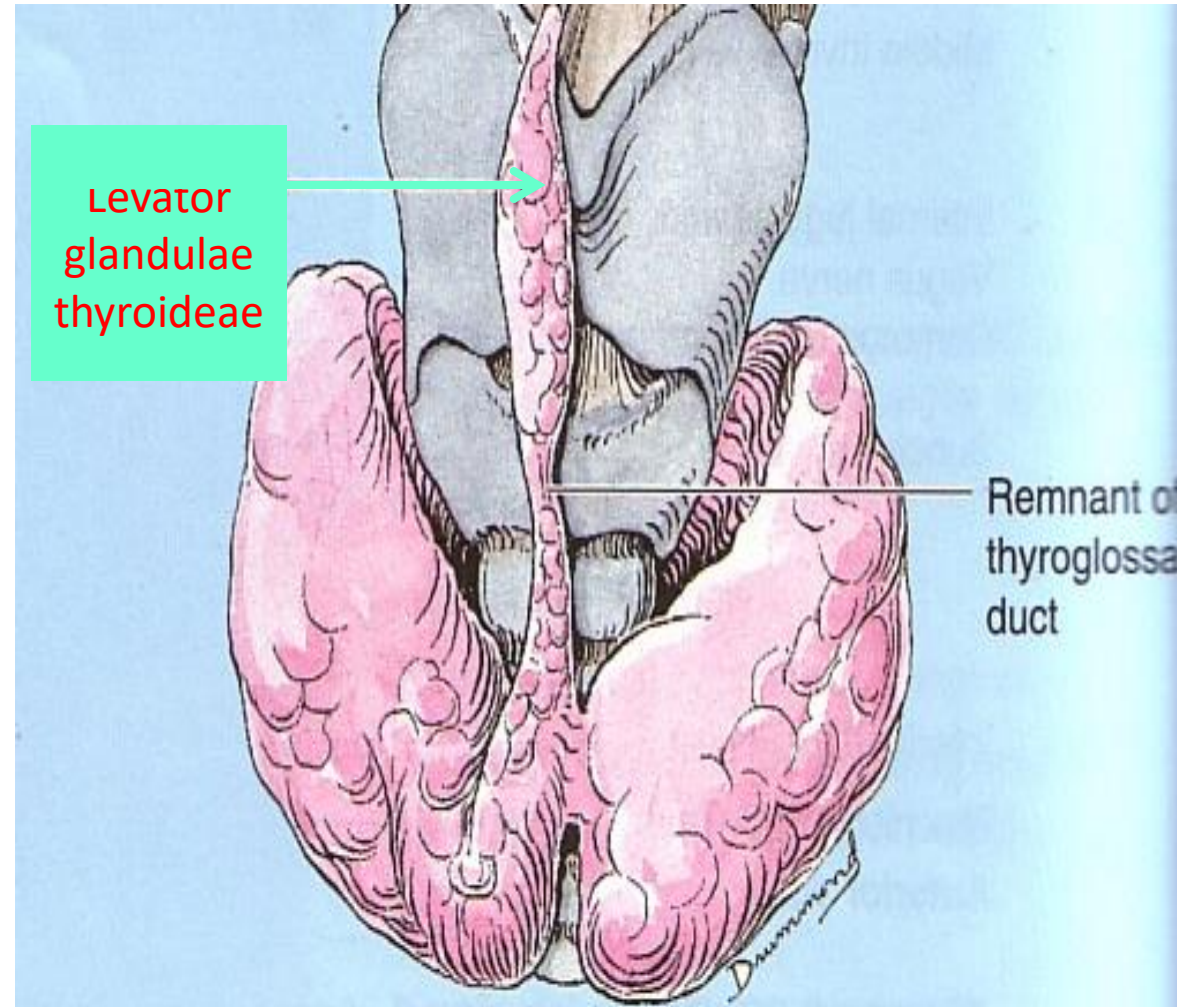


# Levator Glandulae Thyroideae

A small pyramidal lobe is often present which projects from the upper border of the isthmus usually to left of middle line.

Pyramidal lobe is connected to hyoid bone by a fibrous or muscular band called levator glandulae thyroideae.

This represents the fibrosed & obliterated thyroglossal duct.



# Relation of The Thyroid

## **Anterolaterally:** (4 S).

1. Sternothyroid.
2. Sternohyoid.
3. Superior belly of omohyoid
4. Sternomastoid.

## **Posteriorly:**

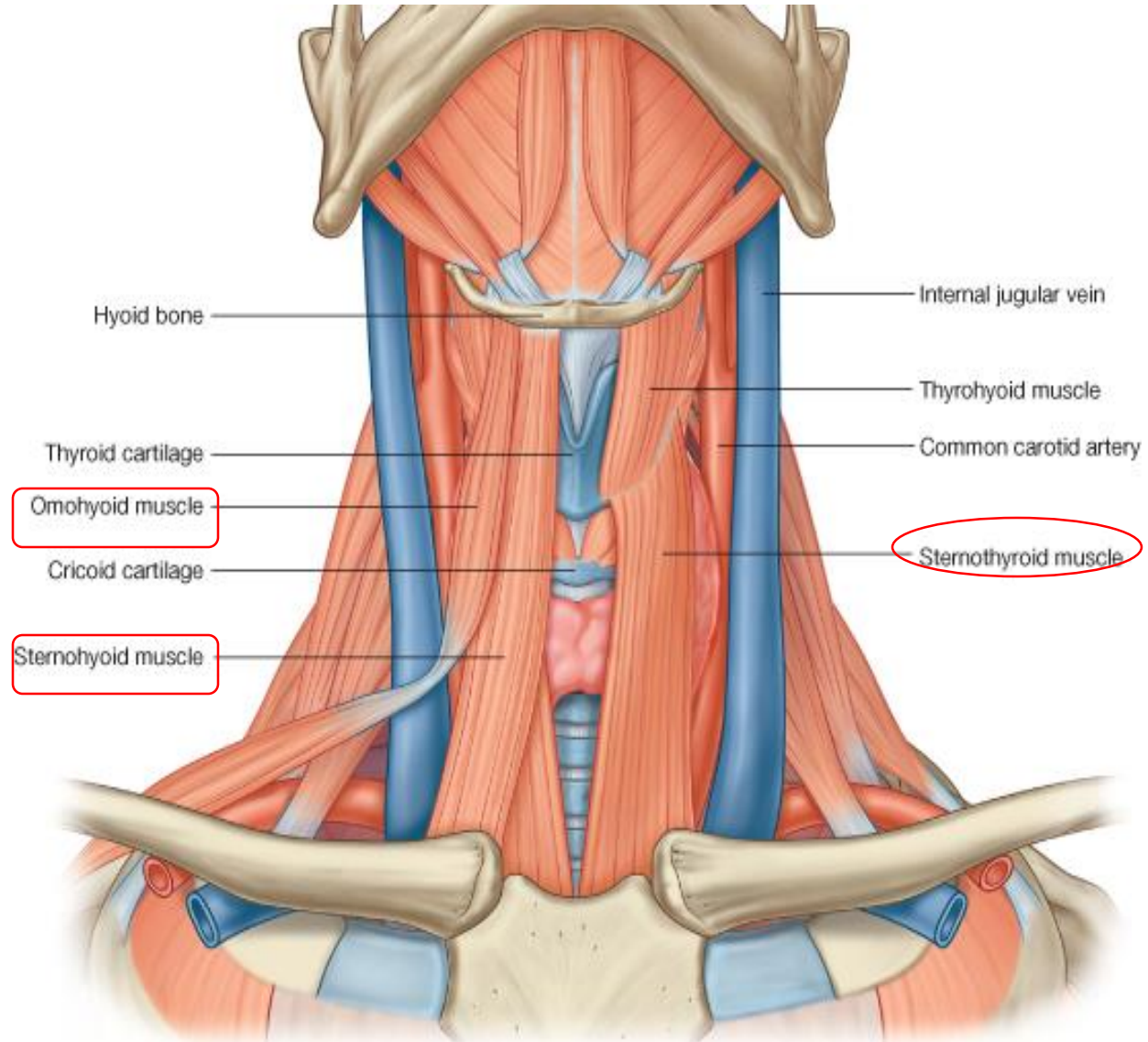
Carotid sheath & its contents.

## **Medially:**

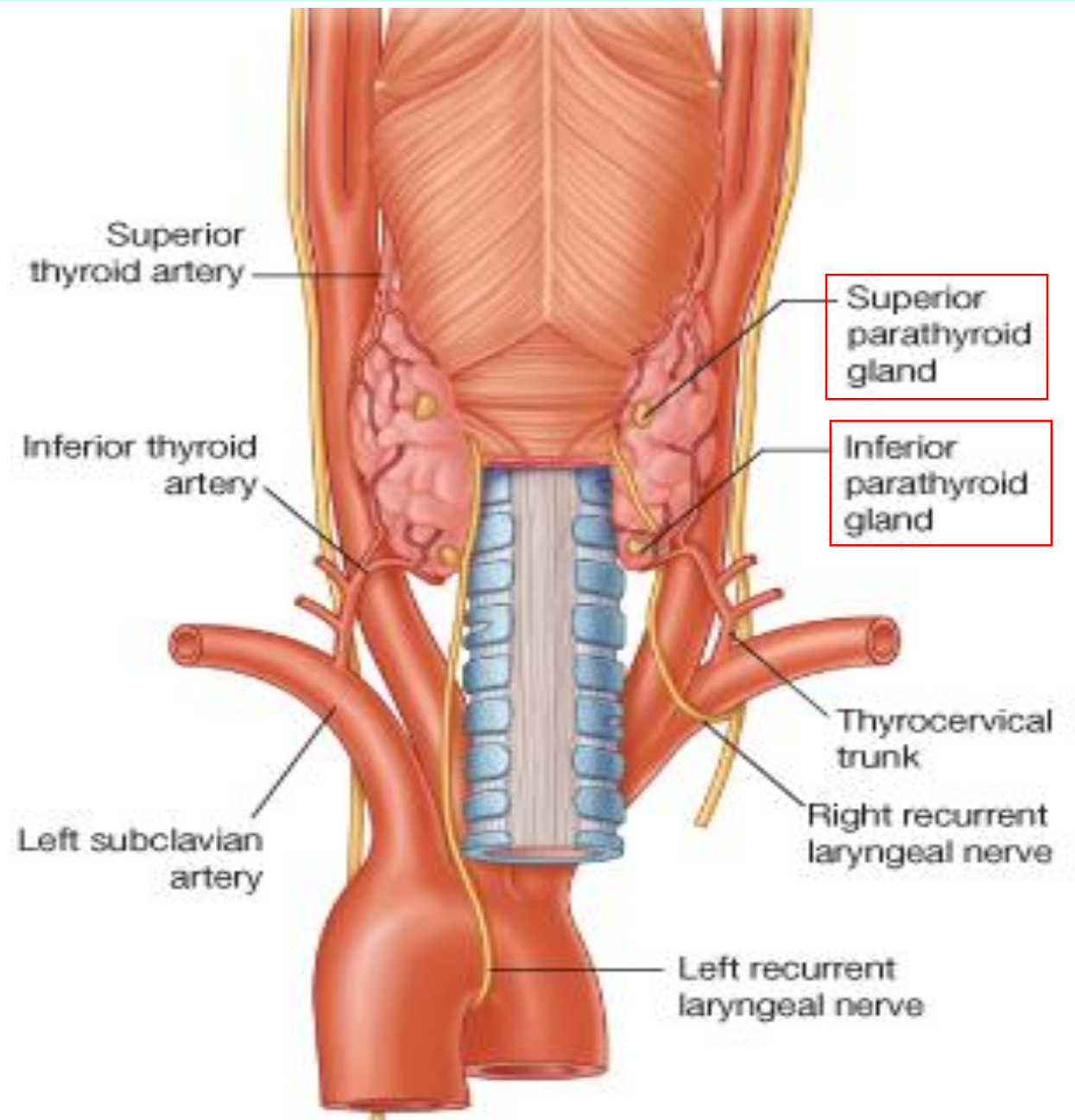
**Above:** Larynx & pharynx .

## **Below:**

- Trachea & esophagus(Recurrent laryngeal nerve in between).
- Cricothyroid muscle & external laryngeal nerve



The rounded **posterior border** is related to the **superior & inferior Parathyroid glands**.



# ARTERIAL SUPPLY OF THYROID GLAND

## 1-Superior thyroid artery:

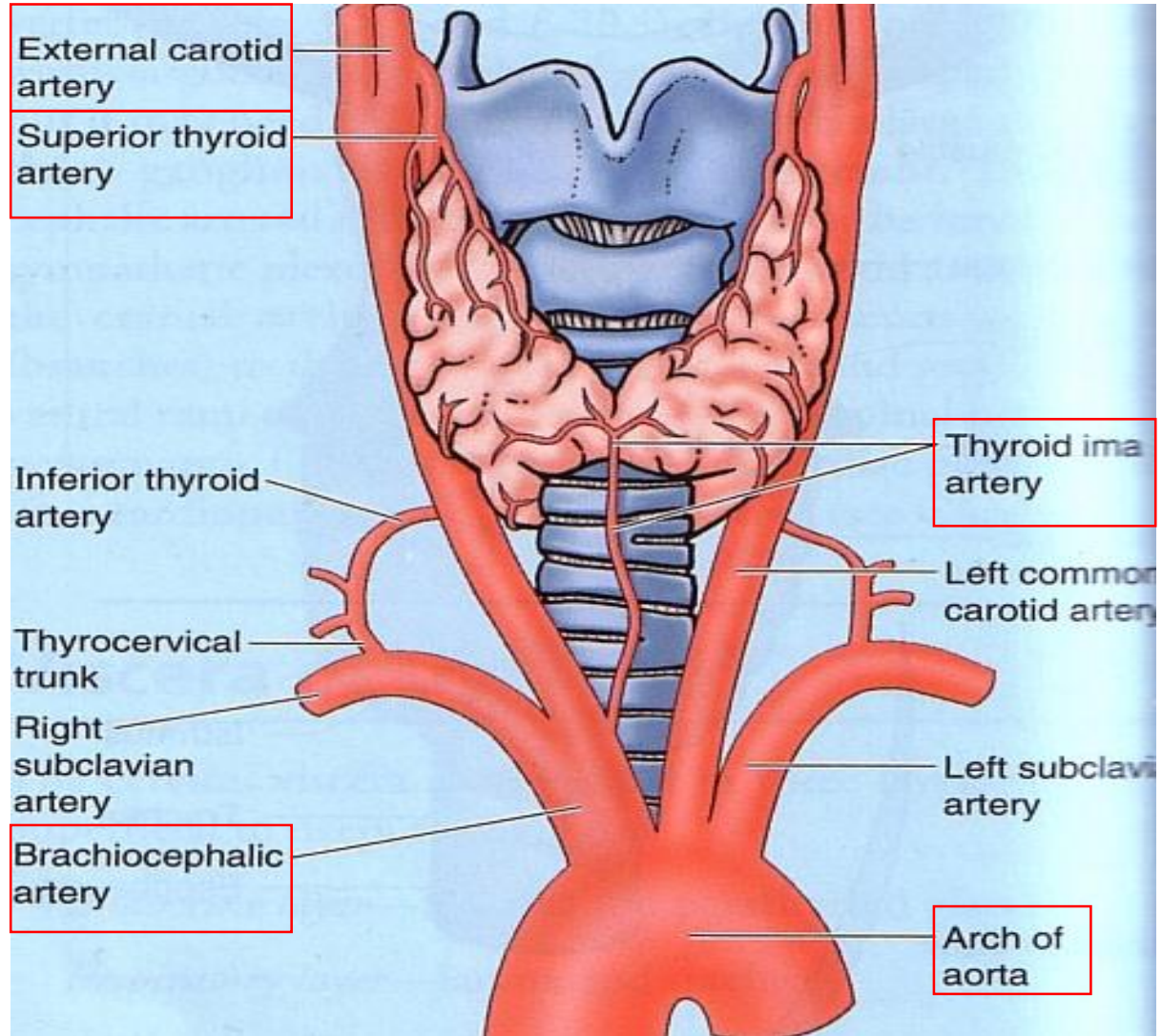
From the **external carotid artery**

-It descends to the upper pole of the lobe, with the external laryngeal nerve.

## 2- Thyroidea ima artery:

If present, it arises from **aortic arch** or from **brachiocephalic artery**.

-It ascends in front of the trachea to reach the isthmus.



### 3-Inferior thyroid artery:

From the **thyrocervical trunk** of **1<sup>st</sup> part of subclavian artery**.

-**The recurrent laryngeal nerve** crosses either in front or behind it.

#### Mention 2 nerves related to the thyroid gland?

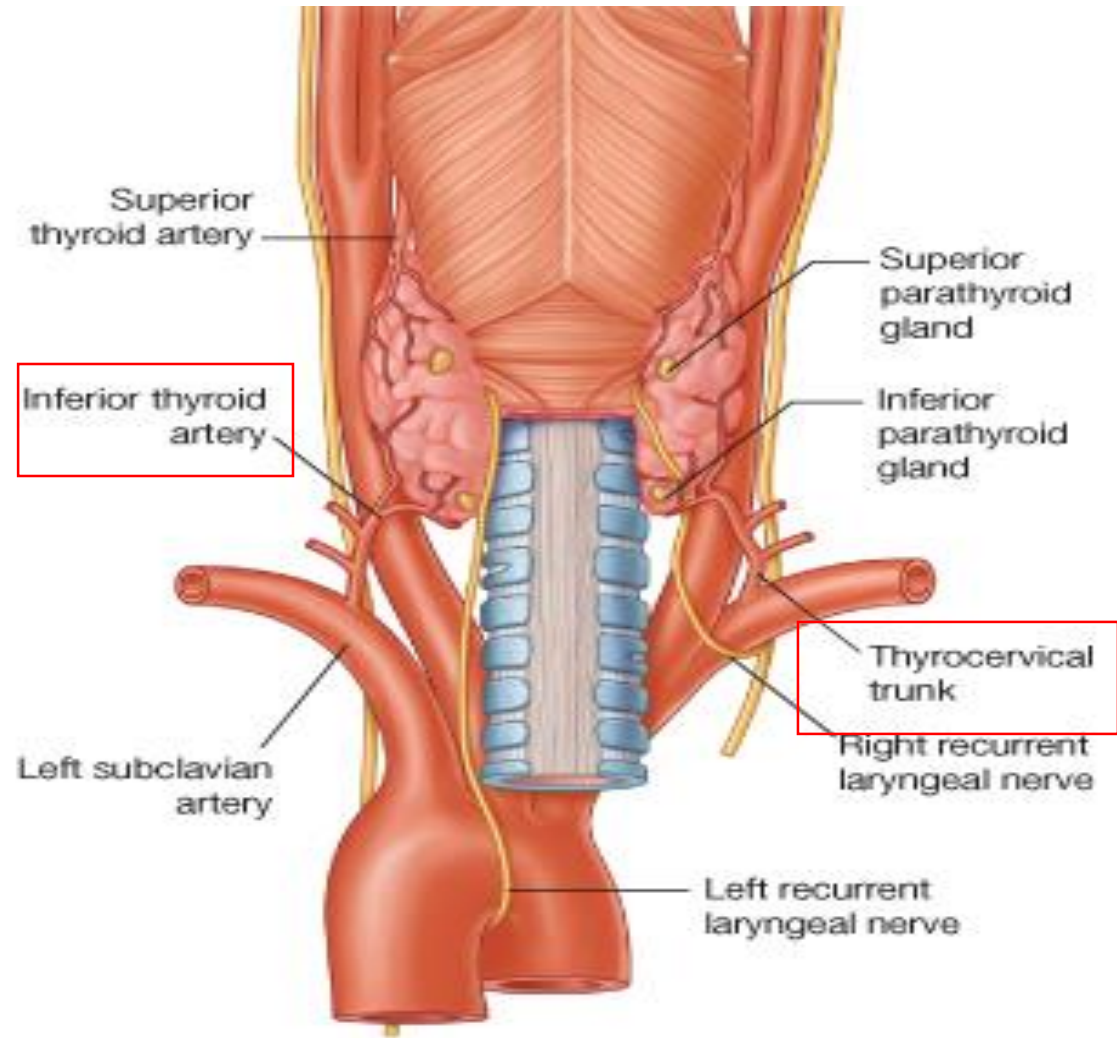
- 1-Recurrent laryngeal nerve.
- 2- External laryngeal nerve.

#### Mention 2 muscles related to both isthmus and lobe of the thyroid gland?

- 1- Sternothyroid.
- 2- Sternohyoid.

#### In thyroidectomy operation Mention 2 parts of the deep cervical fascia which should be incised?

- 1-Investing layer.
- 2-Pretracheal layer



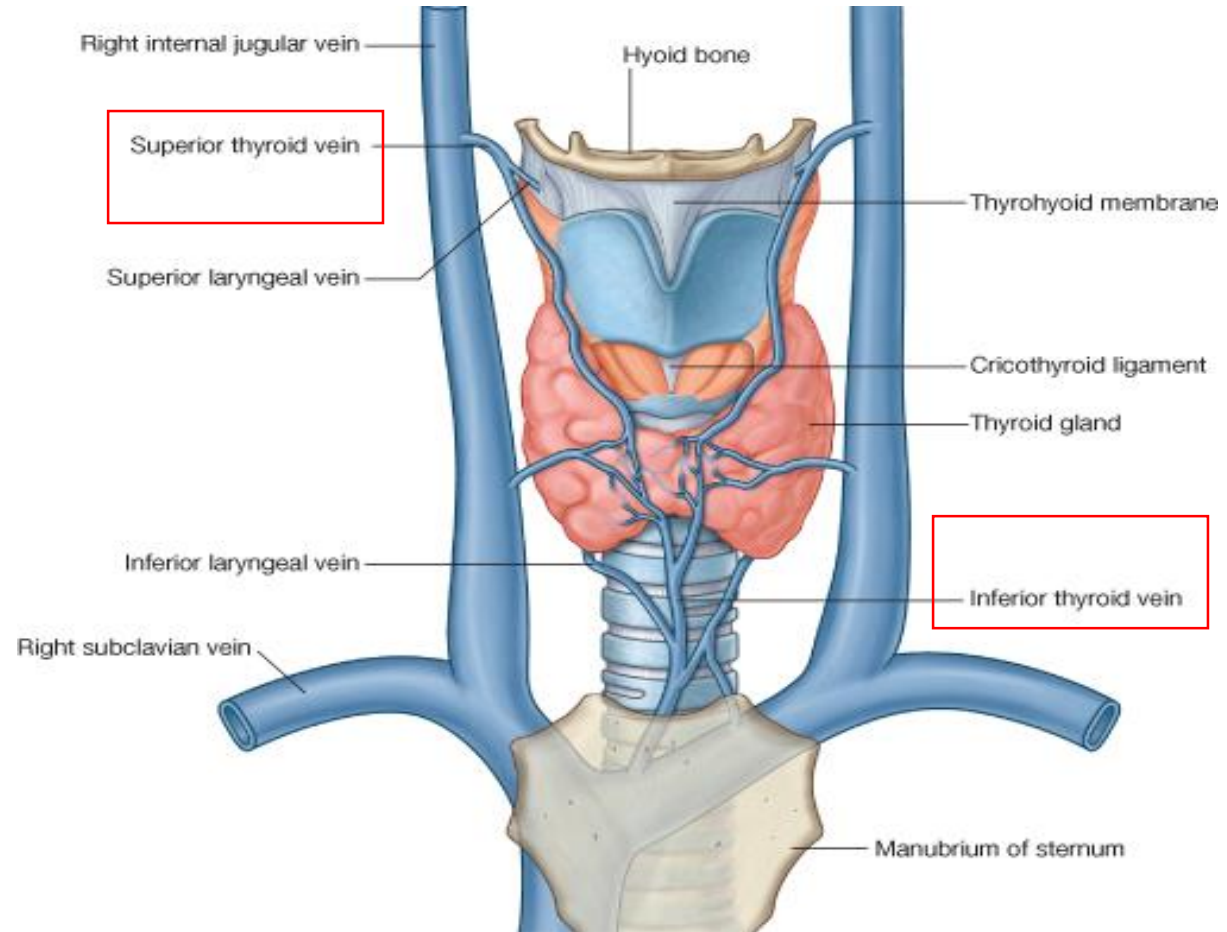
# Veins of Thyroid Gland

**1-Superior thyroid vein & Middle thyroid vein:**

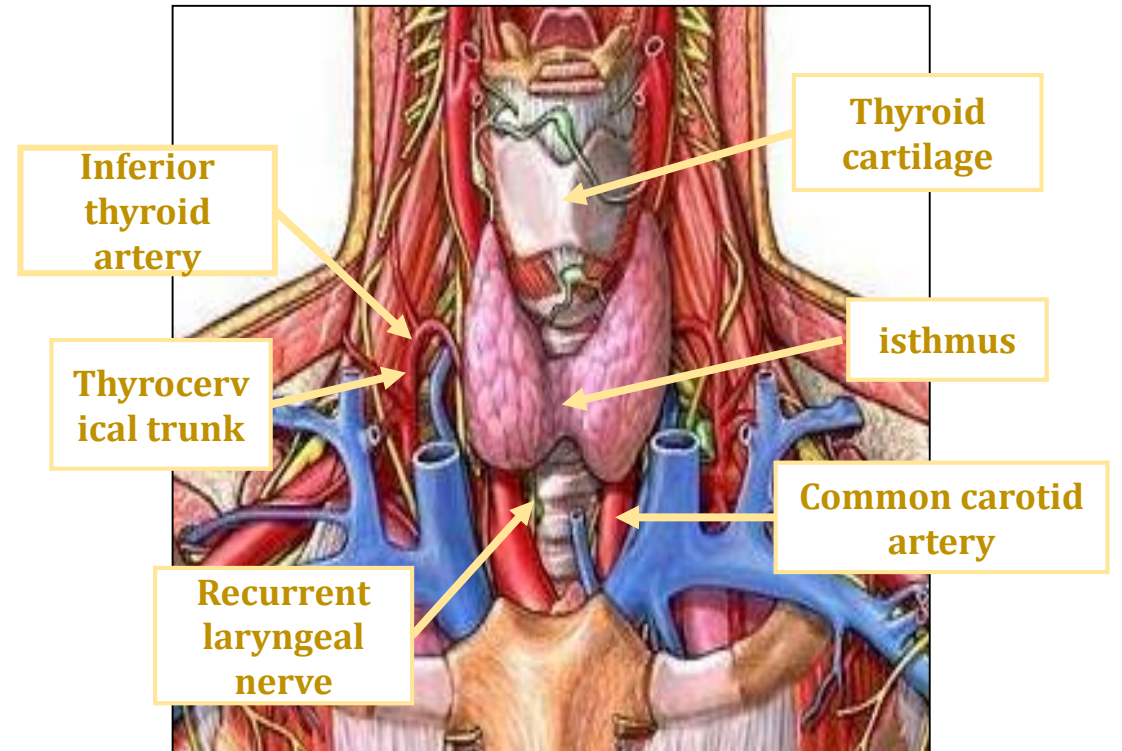
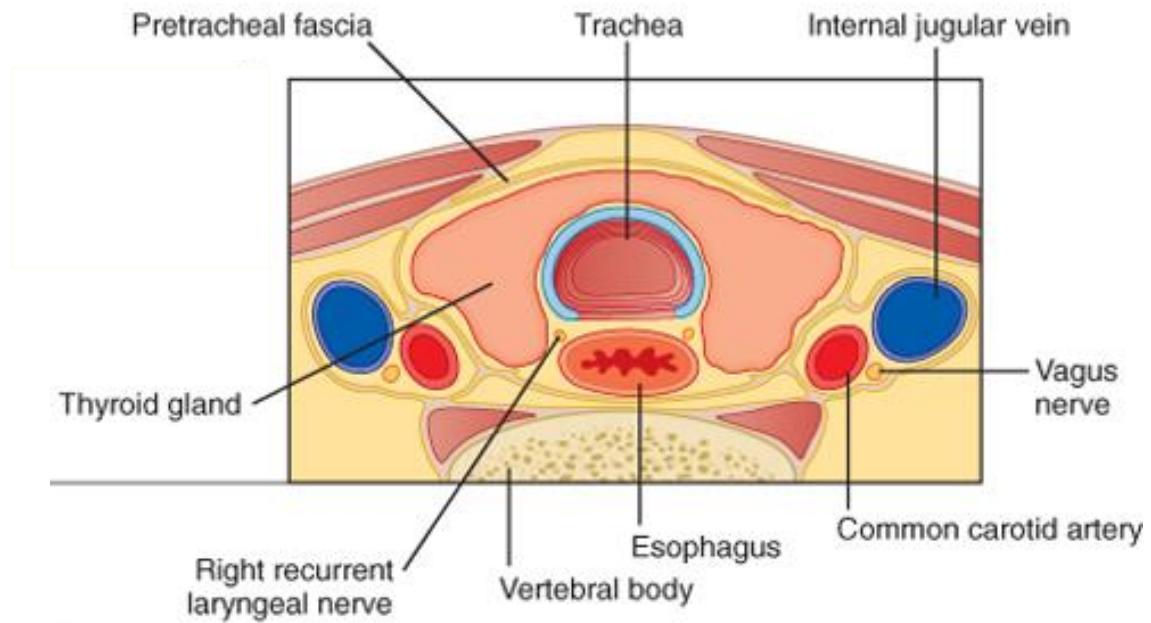
internal jugular vein

**3- Inferior thyroid vein:**

left brachiocephalic vein .



This slide is taken from teamwork file



# PARATHYROID GLAND

## PARATHYROID GLAND:

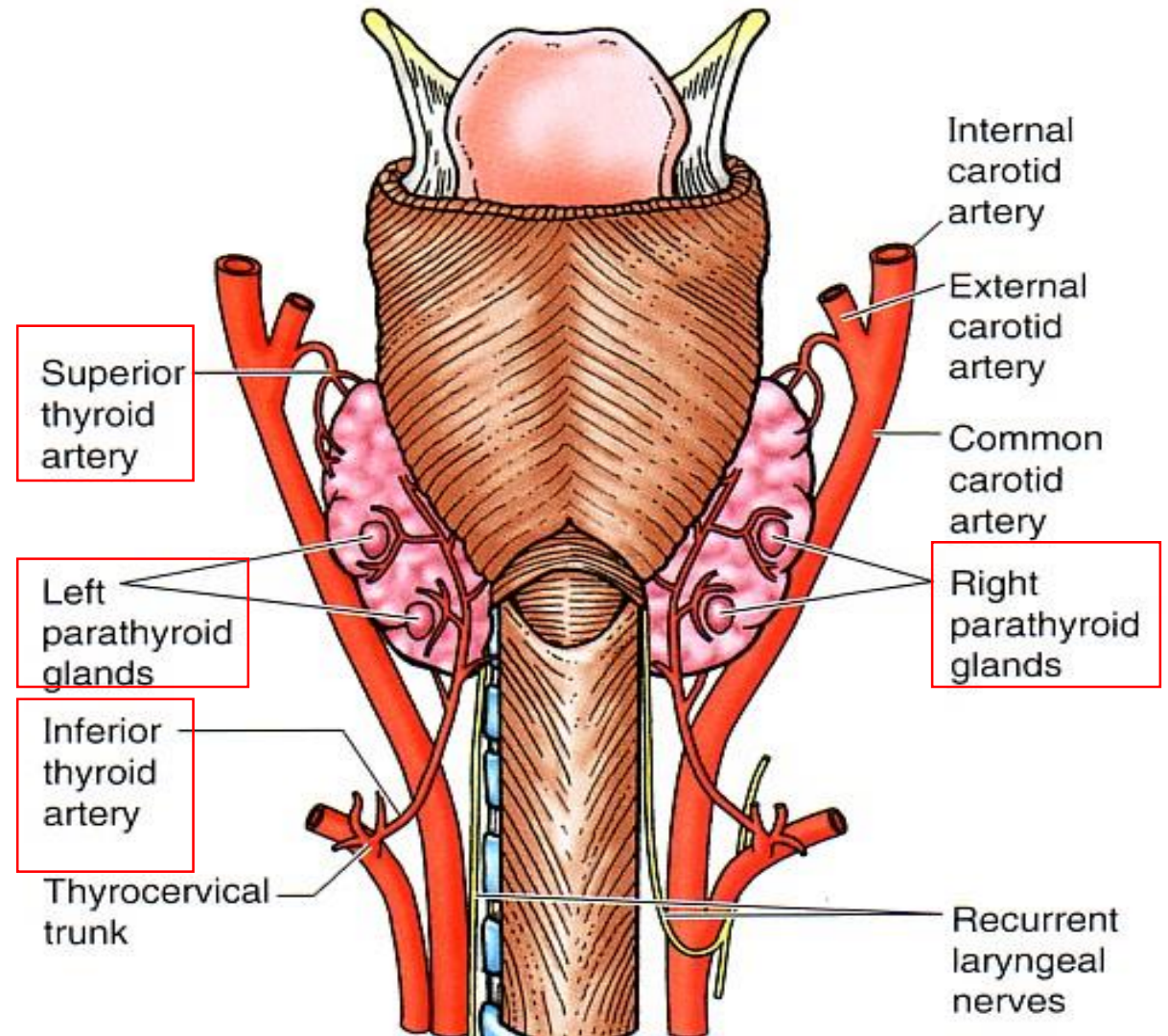
4 small ovoid bodies They lie within the facial capsule of the gland, (between the 2 membranes) or sometimes outside the facial capsule..

- 2 superior parathyroid has a constant position at the middle of the posterior border of the gland.
- 2 inferior parathyroid usually at the level of the inferior pole.

-They are supplied by **superior & inferior thyroid arteries.**

-Their veins are drained to **superior, middle and inferior thyroid veins.**

-Nerves supply: Superior & middle cervical sympathetic ganglia (vasomotor)(There is no known secretomotor innervation)





# Clinical points

- When ligating thyroid arteries during thyroidectomy 2 nerves are at risk: external laryngeal nerve & recurrent laryngeal nerve.
- Superior thyroid artery on each side is related to **the external laryngeal nerve**, which supplies **the cricothyroid muscle**. Damage to external laryngeal nerve results in **an inability to tense the vocal folds and hoarseness**.
- Inferior thyroid artery is closely associated with **the recurrent laryngeal nerve**. Damage to recurrent laryngeal nerve results in **impaired breathing & speech**.

## **Relation to Recurrent laryngeal nerve:**

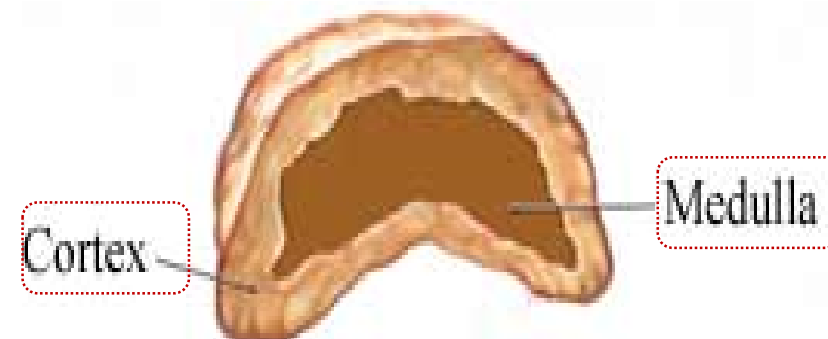
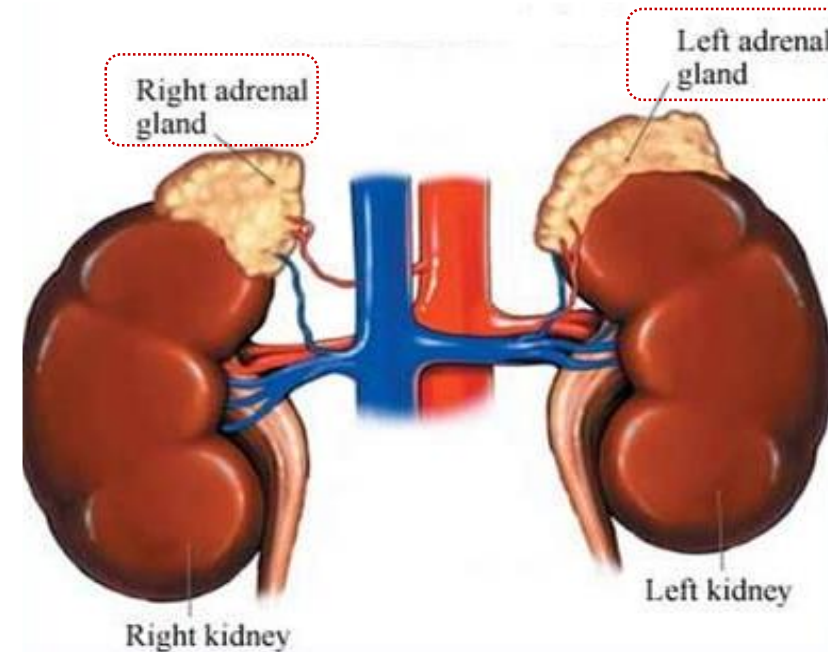
medially: Trachea

Laterally: common carotid artery

Superior: thyroid lobe

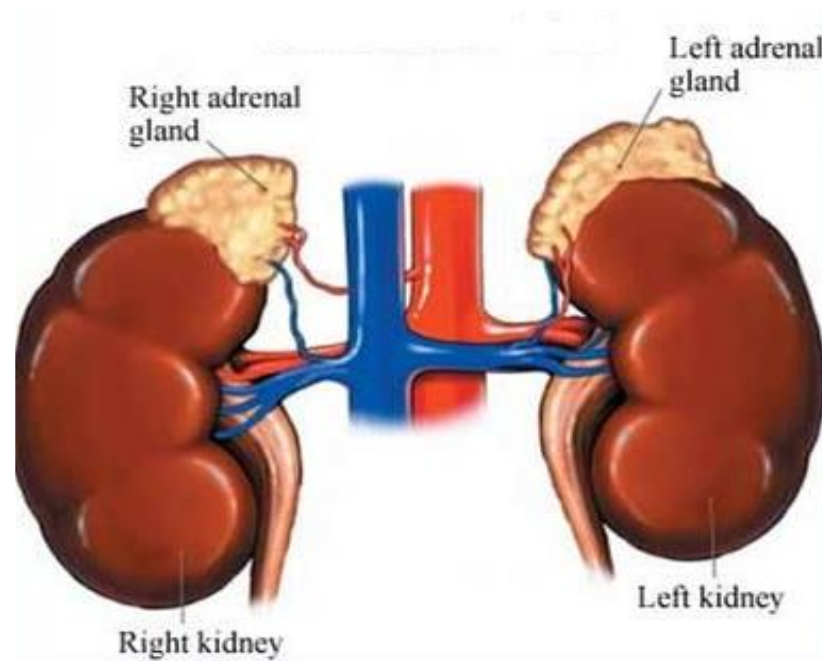
# Anatomy Of Adrenal Gland

- The two suprarenal glands are yellowish **retroperitoneal** organs that lie on **the upper poles of the kidneys** , just above the level of T12.
- They are surrounded by **renal fascia** (but are **separated from the kidneys by the perirenal fat**).
- Each gland has an outer cortex and an inner medulla.



# Relation Of Adrenal Gland

- The **right gland** is **pyramid shaped** and caps the **upper pole** of the right kidney.
- **Relations:**
  - **Anterior:**
    1. right lobe of the liver.
    2. inferior vena cava.
  - **Posterior:** diaphragm.
  - **Medial :** Celiac plexus and ganglia



- The **left gland** is **crescentic in shape** and extends along the **medial border** of the left kidney from **the upper pole to the hilus**.
- **Relations:**
  - **Anterior:**
    1. pancreas
    2. lesser sac
    3. stomach
  - **Posterior:** diaphragm.
  - **Medial :** Celiac plexus and ganglia

# Adrenal gland

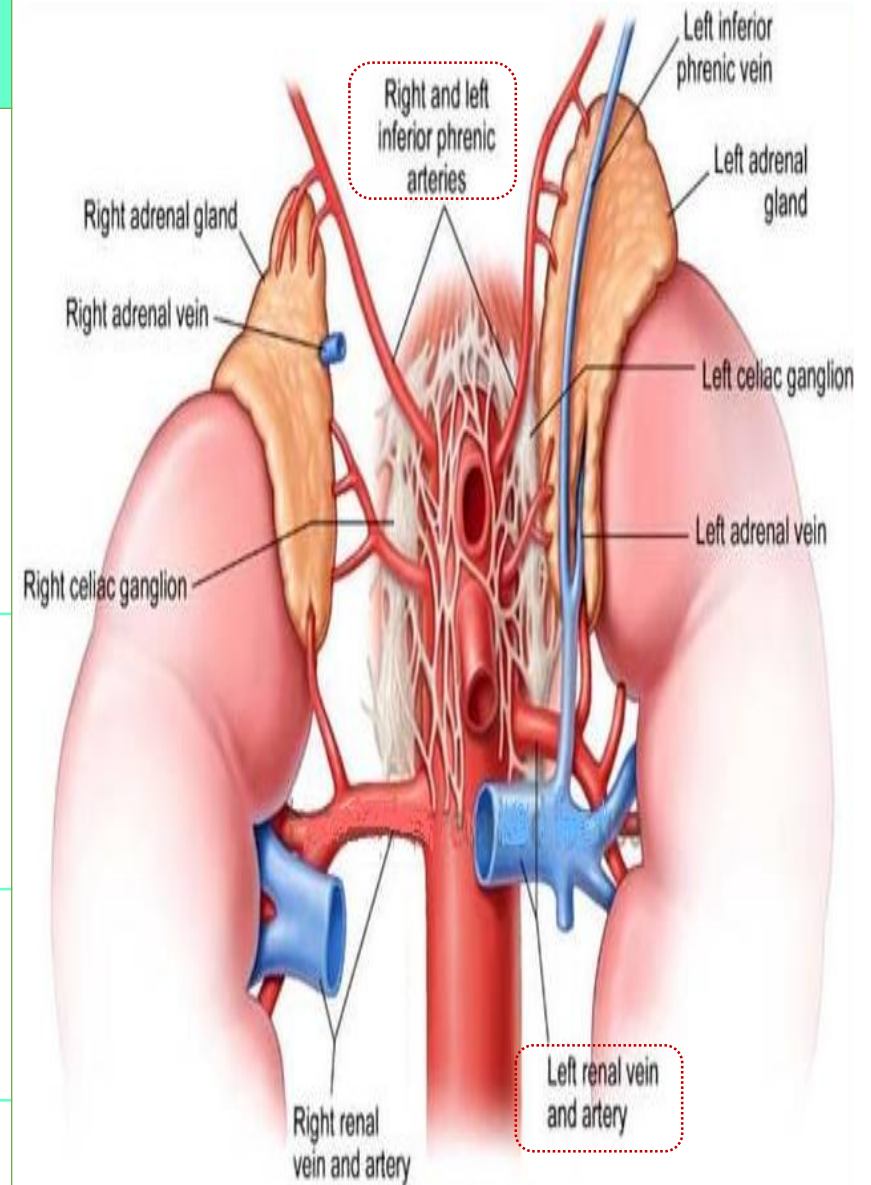
**Arteries** Each gland receives branches from three main arteries:

- Inferior phrenic: gives **Superior suprarenal artery**.
- Abdominal Aorta: gives **Middle suprarenal artery**.
- Renal artery: gives **Inferior suprarenal artery**.

**Veins** A single vein emerges from the hilum of each gland and drains into the Inferior vena cava on the right & Renal vein on the left.

**Nerve Supply** Preganglionic sympathetic fibers derived from the splanchnic nerves. Most of the nerves end in the medulla of the gland.

**Lymph Drainage** The lymph drains into the lateral aortic nodes.



1. Right suprarenal gland
2. Right kidney
3. Duodenum
4. Head of pancreas
5. Body of pancreas
6. Tail of pancreas
7. Left kidney
8. Left suprarenal gland
9. Common bile duct

**Important Picture**

