



# Anatomy of the Pituitary Gland

Endocrine block

## Color Index

**Main Text**

**Male's Slides**

**Female's Slides**

**Important**

**Doctor's Notes**

**Extra Info**

[The Editing File](#) 

# Objectives



Describe the position of the pituitary gland.



List the structures related to the pituitary gland.



Differentiate between the lobes of the gland.



Describe the blood supply of pituitary gland & the hypophyseal portal system.

This lecture was presented by :

Prof. Ahmed Fathalla

Dr. Tahani Al Matrafi

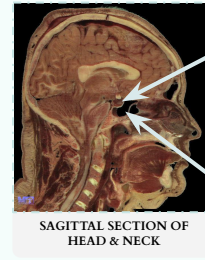


You can find Atlas by [Clicking HERE!](#)

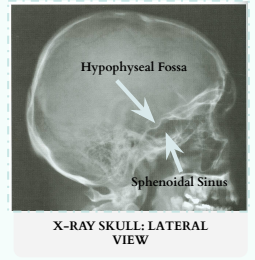
# Pituitary Gland

## Introduction

- Pituitary Gland is also known as **Hypophysis Cerebri**.
- It is referred to as the **master** of endocrine glands.
- It is a small oval structure 1 cm in diameter.
- It **doubles its size during pregnancy**.



Pituitary Gland  
Sphenoidal Sinus



Hypophyseal Fossa  
Sphenoidal Sinus

## Position

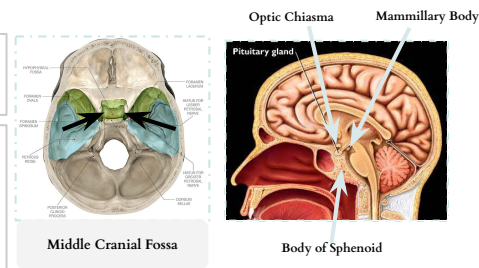
It lies in the **middle cranial fossa**.

It is well protected and **lies in sella turcica (hypophyseal fossa) of body of sphenoid bone**.

Sella turcica = Latin words for Turkish saddle.

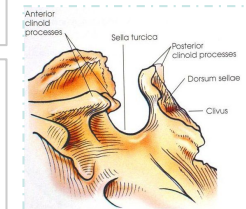
It lies between **Optic chiasma (anteriorly) & Mammillary bodies (posteriorly)**.

It has **diaphragma sellae**, which is a fold of **dura mater covers the pituitary gland & has an opening for passage of infundibulum (pituitary stalk) connecting the gland to hypothalamus**. Pituitary stalk = Neural stalk



Middle Cranial Fossa

Body of Sphenoid



Sella Turcica



Turkish saddle

## Relations

1

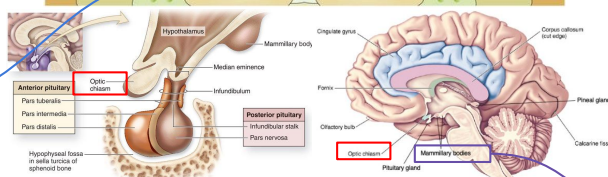
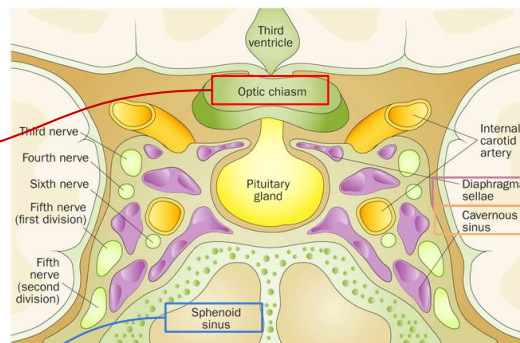
**Anterior**

**Optic chiasma**

5

**Inferior**

**Sphenoidal sinuses**



4

**Superior**

**Diaphragma sellae**

3

**Lateral**

**Cavernous sinuses**

2

**Posterior**

**Mammillary Bodies**

# Pituitary Gland Supply & Drainage

## Pituitary Gland Lobes

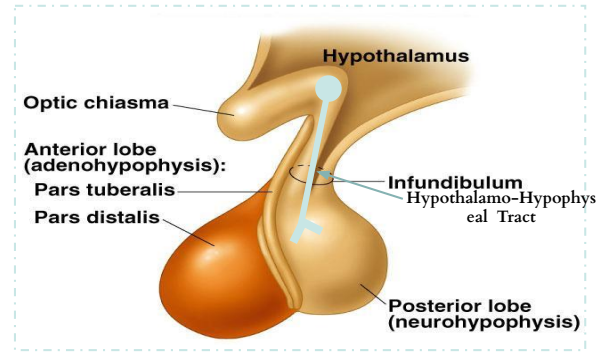
The gland is subdivided into:

### ➔ Anterior Lobe (Adenohypophysis):

- It is the **true gland** which secretes hormones.

### ➔ Posterior Lobe (Neurohypophysis):

- It is connected to the hypothalamus through **hypothalamo-hypophyseal tract**, and stores hormones that had been secreted by hypothalamic nuclei.



## Arterial Supply

Branches from **Internal Carotid Artery**, which are:

### ▶ Superior Hypophyseal Artery:

- ➔ Supplies infundibulum.
- ➔ Forms a capillary network from which vessels pass downward.
- ➔ Forms sinusoids into the anterior lobe of pituitary gland (**hypophyseal portal system**).

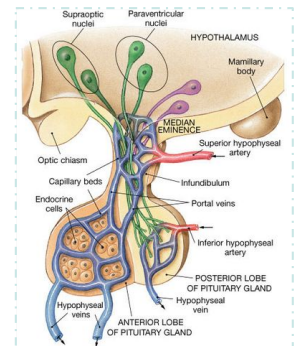
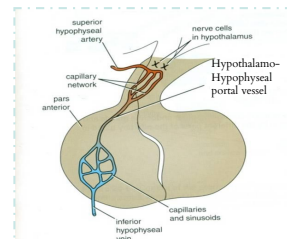
### ▶ Inferior Hypophyseal Artery:

- ➔ Supplies posterior lobe of pituitary gland.
- ➔ Forms a capillary network within its parenchyma.
- ➔ Dysfunction can lead to impaired hormone secretion from the posterior pituitary gland.

## Venous Drainage

The venous blood is drained by the **Hypophyseal Veins**.

They primarily drain **into the cavernous sinuses**, which eventually drain into the internal jugular veins.

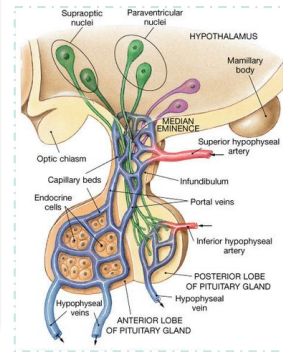
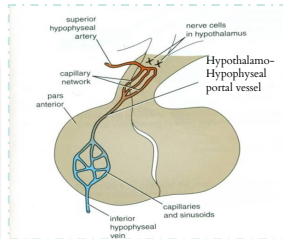


# Pituitary Gland Lobes

## Pituitary Gland Lobes

### Anterior Lobe

► **Hormone-releasing & inhibiting factors** produced by hypothalamus use **Hypophyseal Portal System** of vessels to reach the Anterior lobe of pituitary gland.



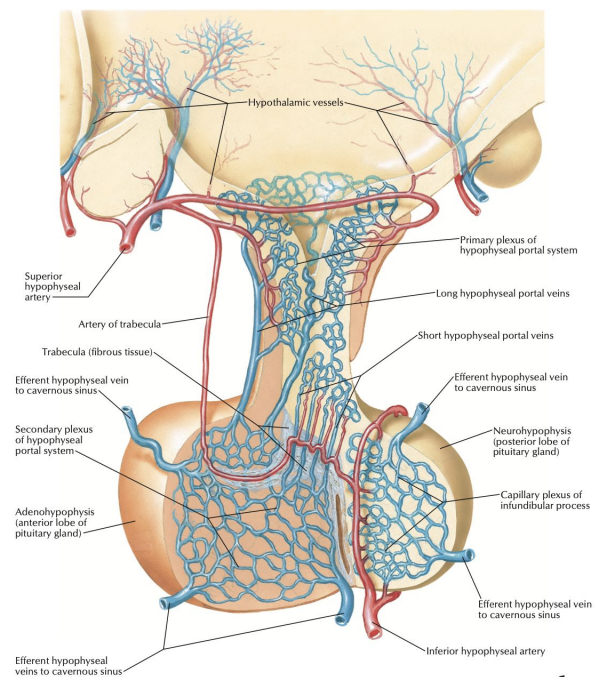
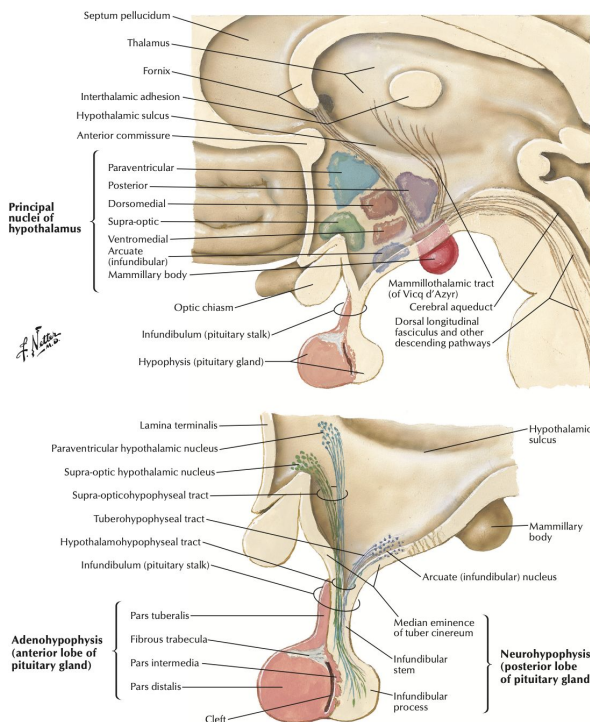
### Posterior Lobe

► The Neurohypophysis receives a nerve supply from some of the hypothalamic nuclei (**Supraoptic & paraventricular**).

► The axons of these nuclei (supraoptic & paraventricular) convey their neurosecretion to the Posterior lobe of pituitary gland through **Hypothalamo-Hypophyseal tract** from where it passes into the bloodstream.

## Pictures

EXTRA





# MCQs

Q1-Which of the following structures covers the pituitary gland and has an opening for the passage of the pituitary stalk?			
A- Optic chiasma	B- Diaphragma sellae	C- Cavernous sinuses	D- Mammillary bodies
Q2-Which of the following structures lies posterior to the pituitary gland?			
A- Diaphragma sellae	B- Cavernous sinus	C- Optic chiasma	D- Mammillary bodies
Q3- A 58-year old patient was diagnosed with a pituitary tumor. CT scan showed downward expansion of the tumor. Which one of the following structures is at risk?			
A- Internal carotid artery	B- Optic chiasma	C- Mammillary body	D-Sphenoidal air sinus
Q4-Which one of the following structures lies lateral to pituitary gland?			
A- Mammillary bodies	B- Optic chiasma	C- Sphenoidal air sinus	D- Cavernous sinuses
Q5-Which hypothalamic nuclei sends its fibers through the hypothalamo-hypophyseal tract to the pituitary gland?			
A- Paraventricular	B- Arcuate	C- Preoptic	D- Suprachiasmatic
Q6-Which one of the following structures is superior to the pituitary gland? (From male's slides)			
A- Optic chiasma	B- Diphragma sellae	C- Mammillary bodies	D-sphenoidal air sinus
Q7- Which one of the following venous sinuses drains hypophyseal veins? (From male's slides)			
A- Superior Sagittal	B- Cavernous	C-Transvers	D- Sigmoid

Answers: 1-B 2-D 3-D 4-D 5-A 6-B 7-B

[For Anki flashcards click here](#)



# Team leaders

---

✦ **Renad M Alshehri**

✦ **Faris Alzahrani**

✦ **Aseel Alshehri**

# Team Members

---

✦ **Remaz Almahmoud**

✦ **Moath Alhudaif**

✦ **Aljoharah Alkhalifah**

✦ **Mohammed Alarfaj**

✦ **Noura Alateeq**

✦ **Faisal Alshowier**

✦ **Bayan Abdullah**

✦ **Khalid Alsobei**

✦ **Wajd Almutairi**

✦ **Amira Abdulaziz**