

# PITUITARY GLAND

## Objectives:

**By the end of this lecture, the student should be able to describe:**

- 1. The microscopic structure of the different parts of the pituitary gland in correlation with their functions.**
- 2. The hypophyseal portal circulation; components and significance.**

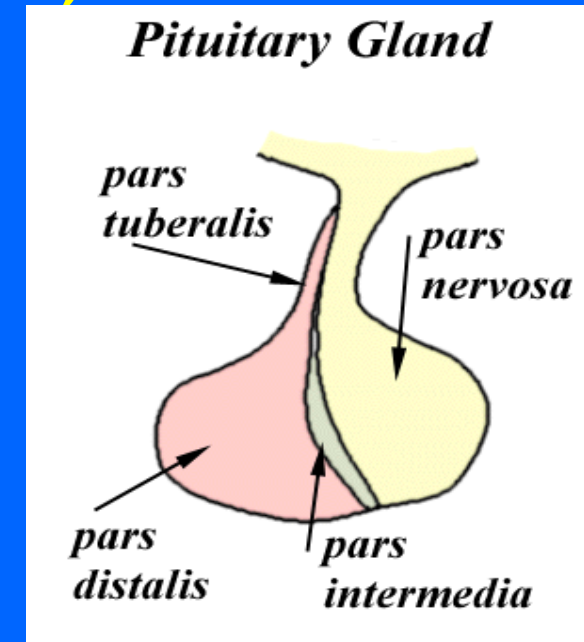
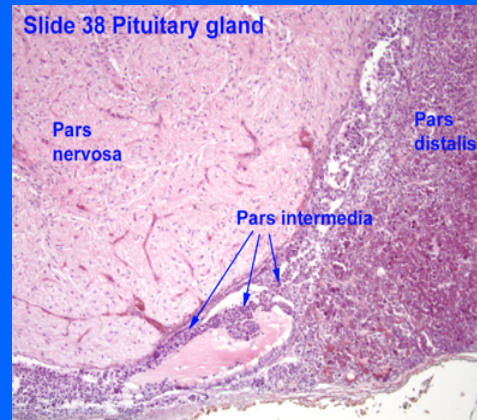
# COMPONENTS

## (A) ADENOHYPHYSIS CEREBRI:

### 1- Pars Distalis (pars anterior)

2- Pars Tuberalis

3- Pars Intermedia



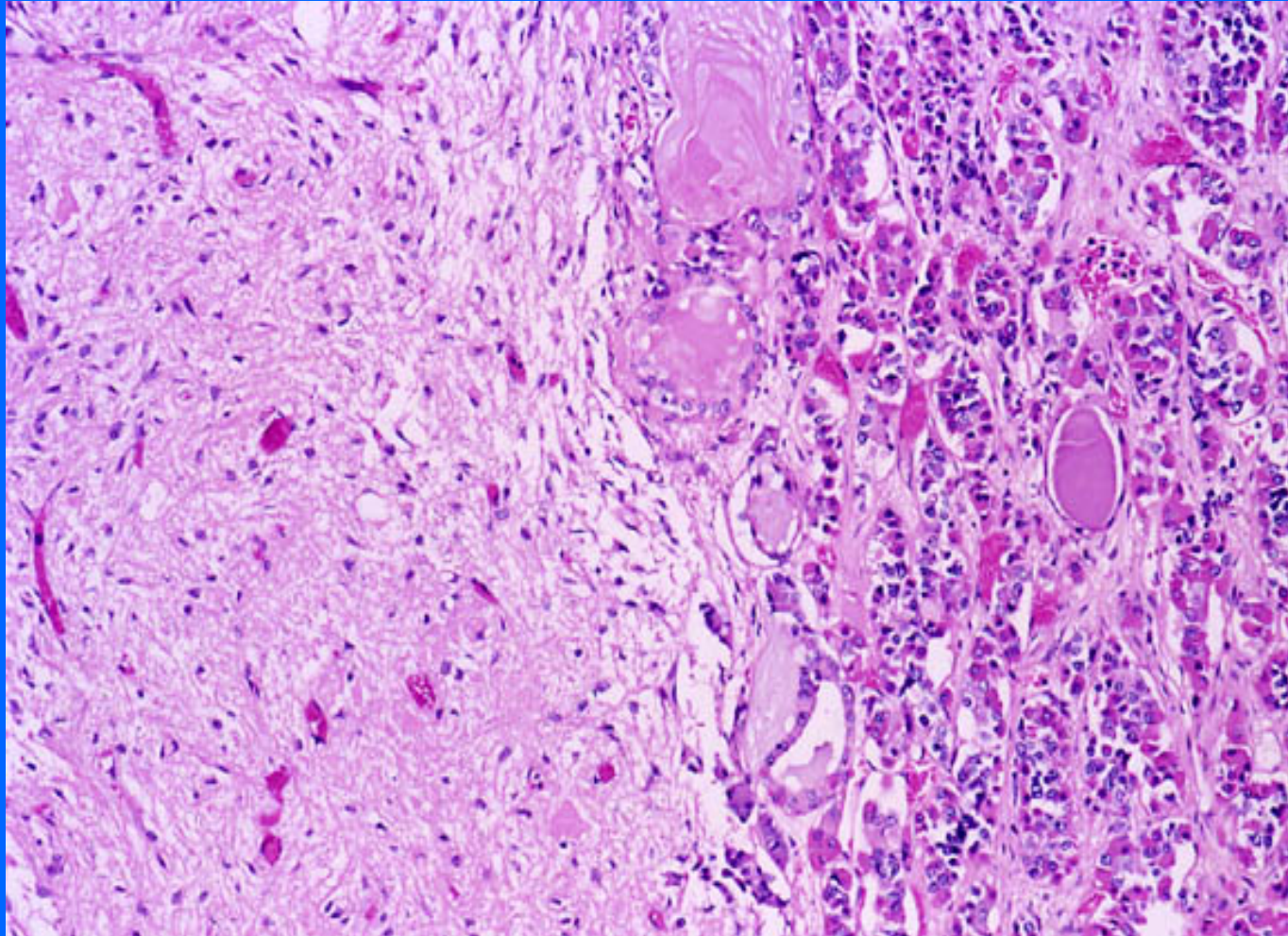
## (B) NEUROHYPHYSIS CEREBRI:

1- Median eminence

2- Infundibulum: Neural (Infundibular) Stalk (stem)

3- Pars Nervosa

# PITUITARY GLAND



# BLOOD SUPPLY

## (1) Sup. Hypoph. Arteries (Rt & Lt):

To median eminence & Neural stalk

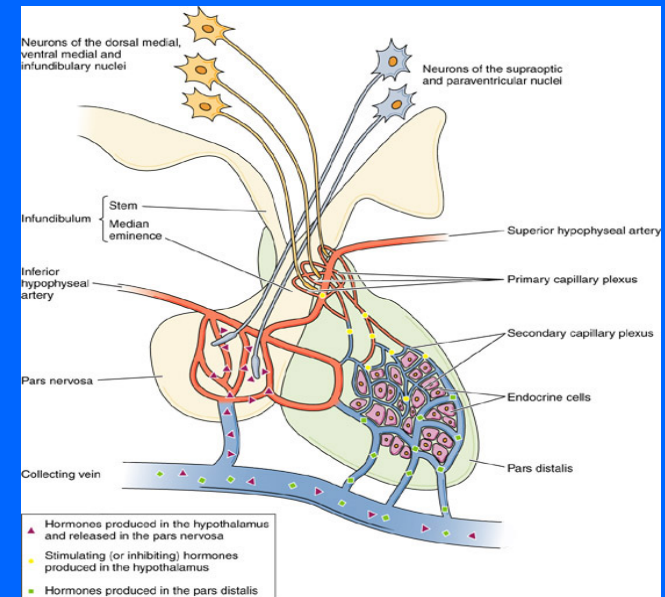
→ **1ry capillary plexus** of fenestrated capillaries

→ **Hypophyseal portal Veins (or venules)**

→ **2ry capillary plexus** of capillaries in adenohypophysis

### [ Hypophyseal Portal System ]

It carries neurohormones from median eminence to adenohypophysis.



## (2) Inf. Hypoph. Arteries (Rt & Lt):

Mainly to pars nervosa, They are **Not participating** in hypophyseal portal circulation.

# NEUROHYPOPHYSIS

## (A) PARS NERVOSA

### CONTENTS:

1- Unmyelinated axons of secretory neurons situated in supraoptic & paraventricular nuclei (i.e. Axons of hypothalamohypophyseal tract).

### Function:

Storage & release of:

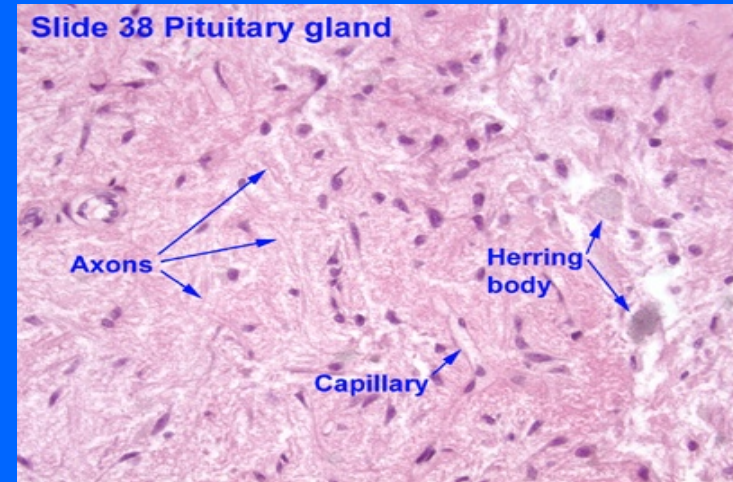
a- Vasopressin (ADH); *by*

*supraoptic nuclei*

b- Oxytocin; *by*

*paraventricular nuclei*

2- Fenestrated blood capillaries.



### 3. HERRING BODIES:

- Are distention of the axons in pars nervosa.
- Representing accumulation of neurosecretory granules at axon termini and along the length of the axons in pars nervosa.

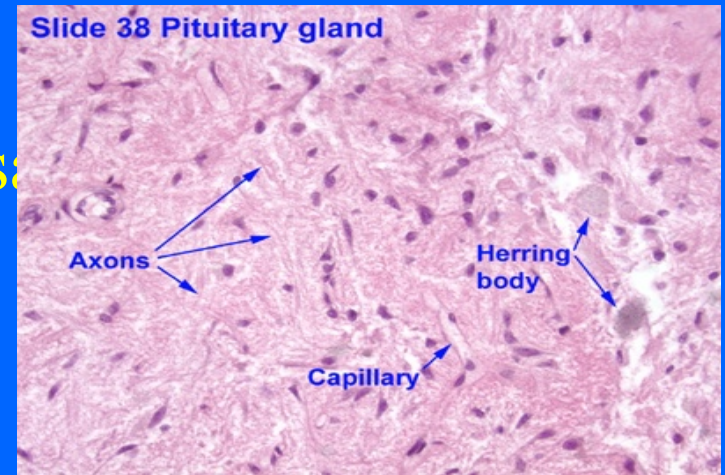
### 4. Pitucytes:

- Are glial-like cells in pars nervosa.
- Have numerous cytoplasmic Processes.

### **Functions:**

Support the axons of the pars nervosa.

N.B. No secretory or neuronal cells in pars nervosa.



# PARS DISTALIS:

## Types of parenchymal cells:

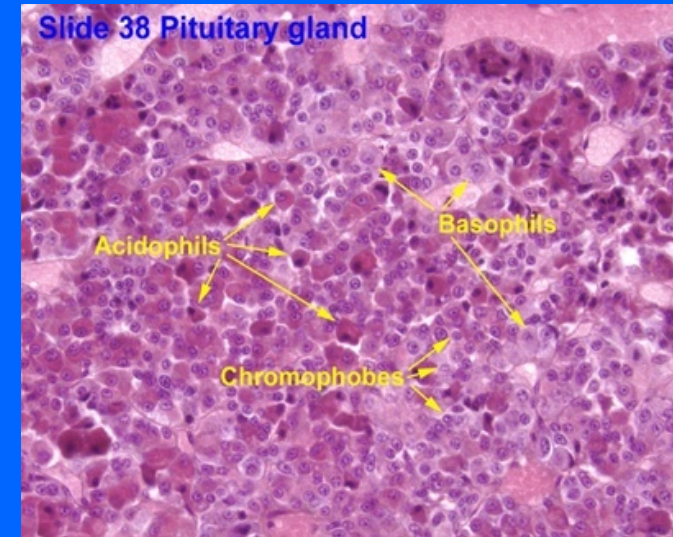
### (1) Chromophils:

#### a- Acidophils:

- 1- Somatotrophs (GH cells).
- 2- Mammotrophs (Prolactin cells):  
Increase during lactation.

#### b- Basophils:

- 1- Thyrotrophs (TSH Cells)
- 2- Gonadotrophs (Gonadotropic cells) (FSH, LH)
- 3- Corticotrophs (ACTH cells)



## (2) Chromophobes: may represent:

1- stem cells.

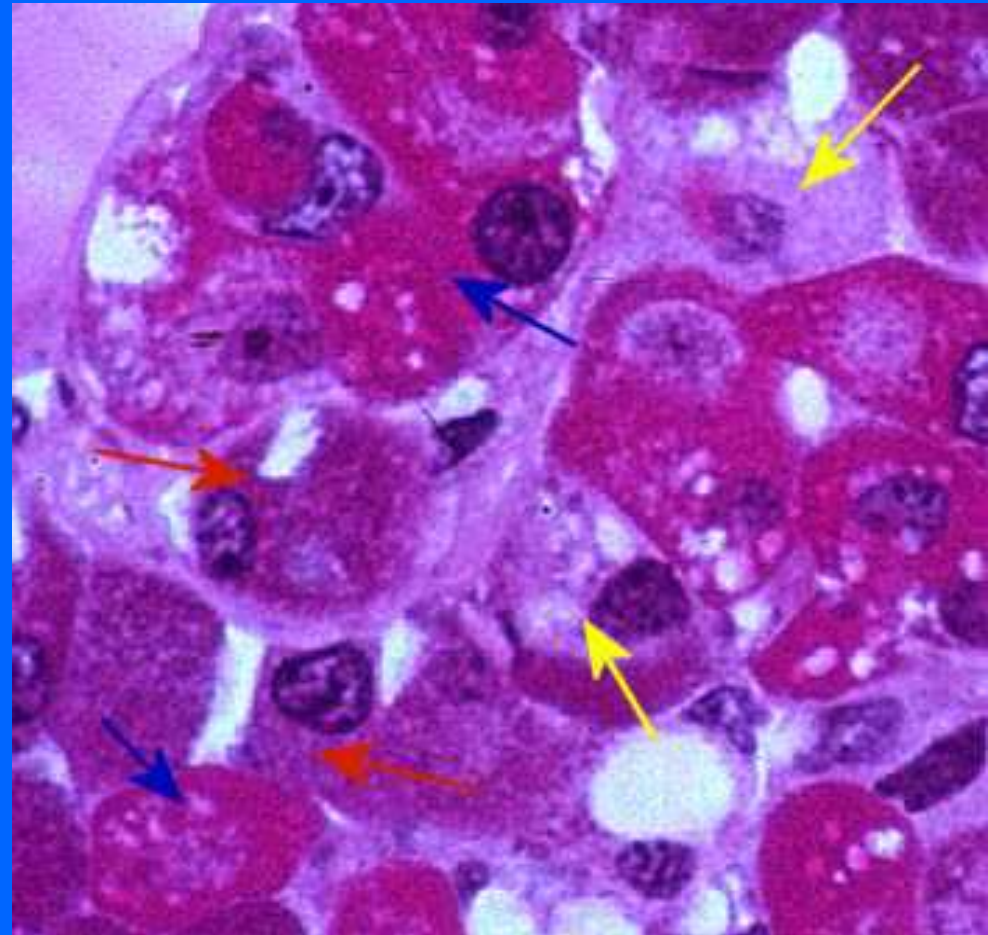
2- degranulated chromophils.

3- degenerated cells.

Blue arrow: acidophils

Red arrow: basophils

Yellow arrow: chromophobes





# BEST WISHES

