

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

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.**

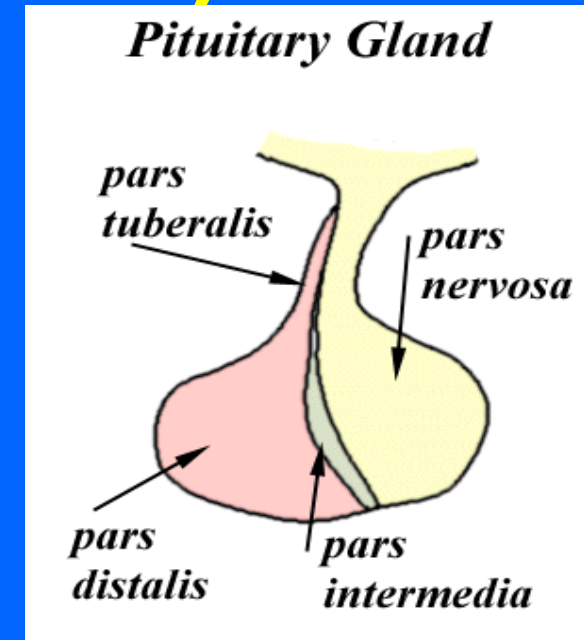
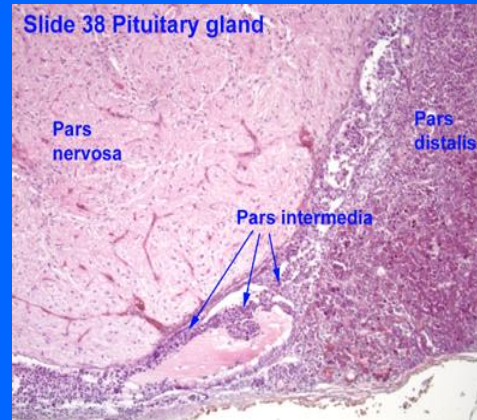
COMPONENTS

(A) ADENOHYPHYSIS CEREBRI:

1- Pars Distalis (pars anterior)

2- Pars Tuberalis

3- Pars Intermedia



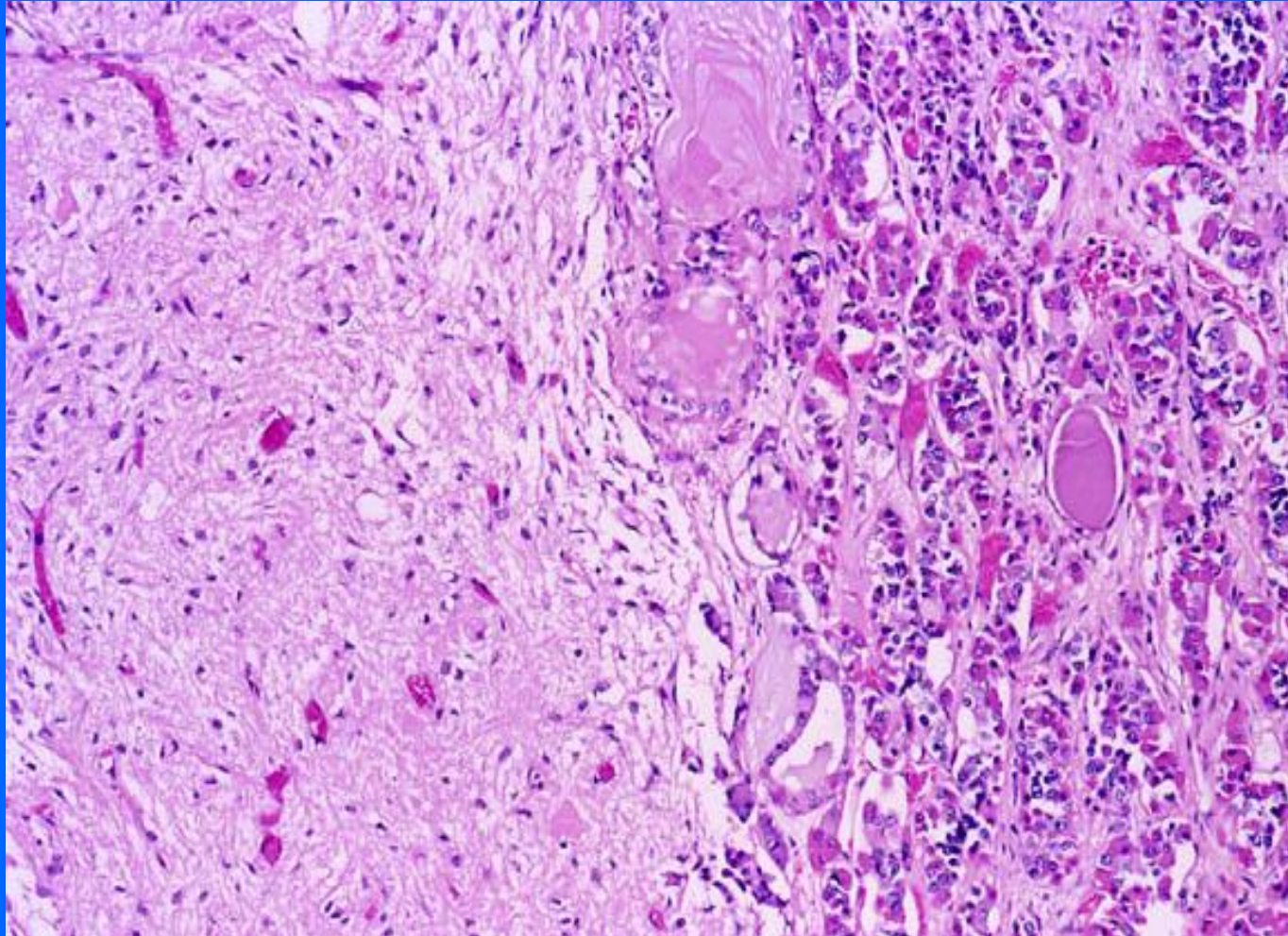
(B) NEUROHYPHYSIS CEREBRI:

1- Median eminence

2- Infundibulum: Neural (Infundibular) Stalk

3- Pars Nervosa

PITUITARY GLAND



BLOOD SUPPLY

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

To median eminence & Neural stalk

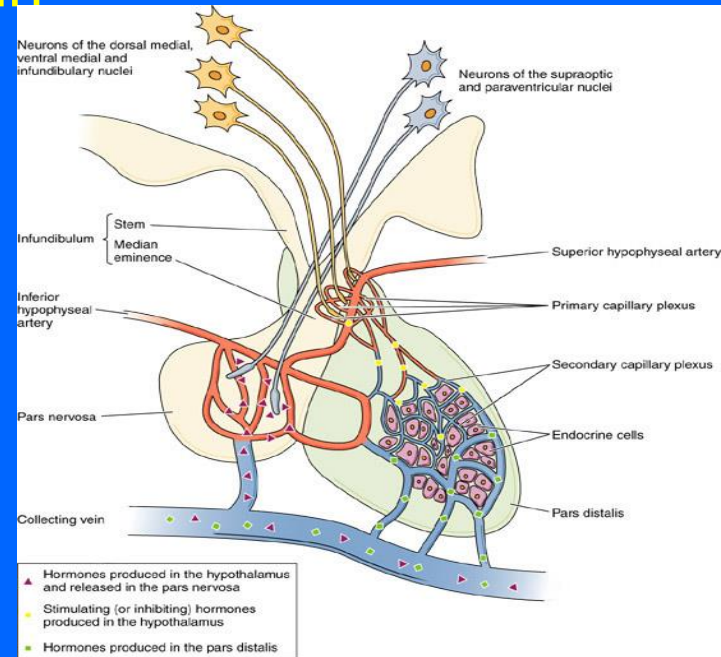
→ **1ry capillary plexus** of fenestrated capillaries

→ **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).

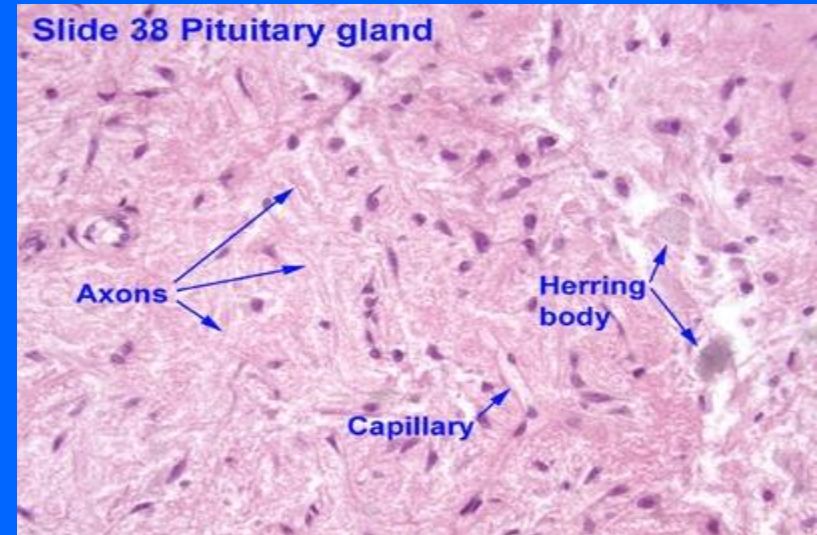
Function:

Storage & release of:

a- Vasopressin (ADH); *by supraoptic nuclei*

b- Oxytocin; *by paraventricular nuclei*

2- Fenestrated blood capillaries.



3. HERRING BODIES:

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

4. Pitucytes:

Are glial-like cells in p. nervosa.

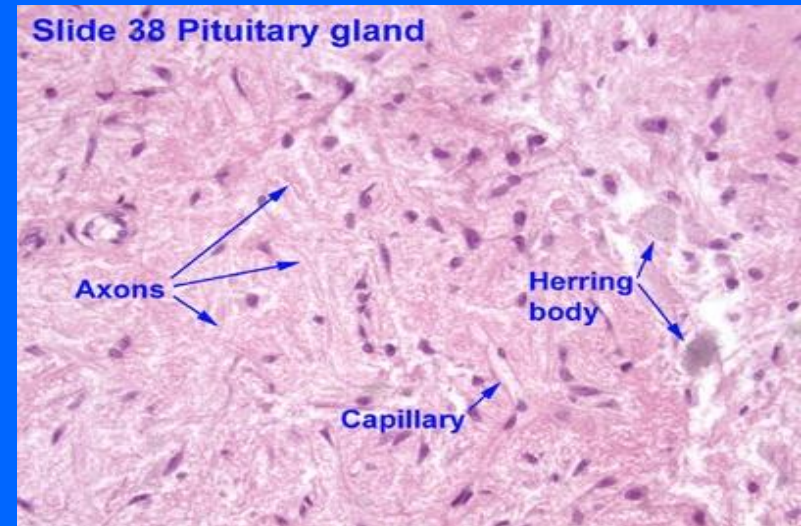
Structure:

Have numerous cytoplasmic Processes.

Functions:

Support the axons of the p. nervosa.

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



PARS DISTALIS:

Types of parenchymal cells:

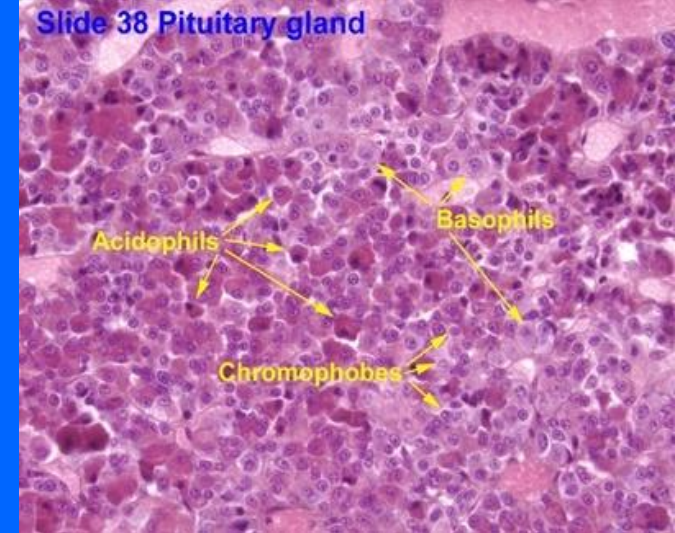
(1) Chromophils:

a- Acidophils:

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

b- Basophils:

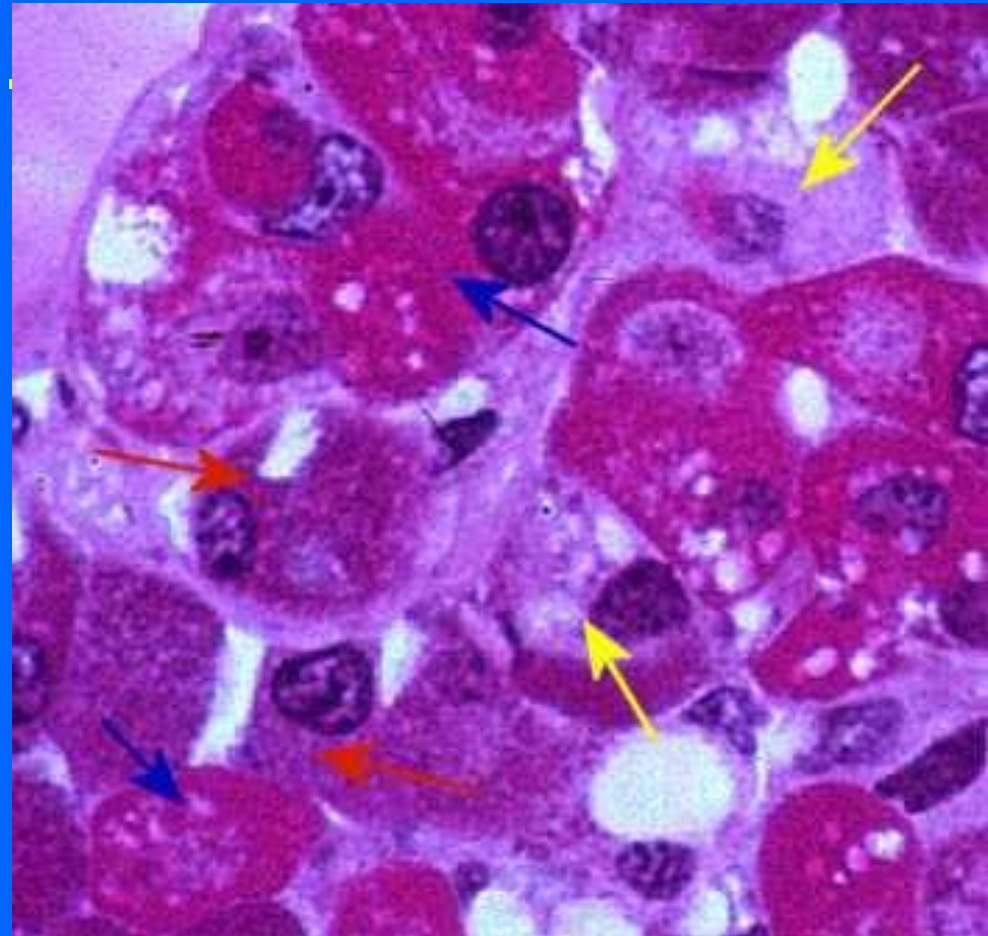
- 1- Thyrotrophs (TSH Cells)
- 2- Gonadotrophs (Gonadotropic cells) (FSH, LH)
- 3- Corticotrophs (ACTH cells)



(2) Chromophobes: may represent:

- 1- stem cells.
- 2- degranulated chromophils.
- 3- degenerated cells.

Blue arrow: acidophils
Red arrow: basophils
Yellow arrow: chromophobes



BEST WISHES

