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.

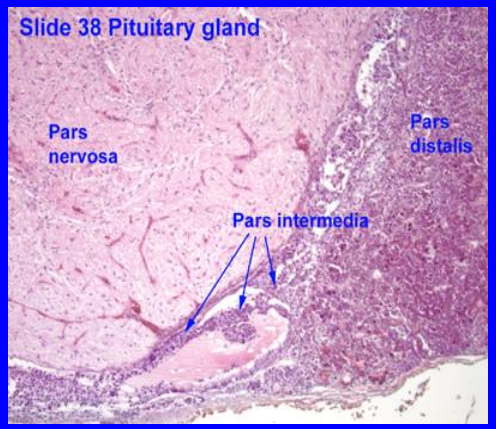
COMPONENTS

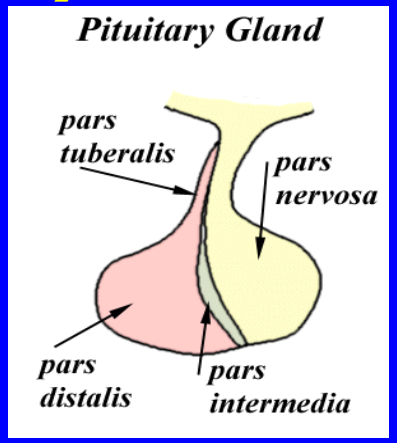
(A) ADENOHYPOPHYSIS CEREBRI:

1- Pars Distalis (pars anterior)

2- Pars Tuberalis

3- Pars Intermedia

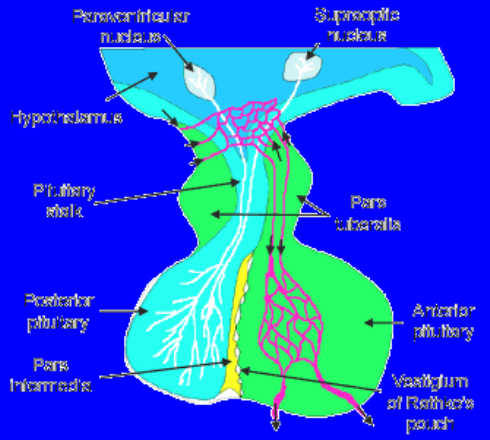




(B) NEUROHYPOPHYSIS CEREBRI:

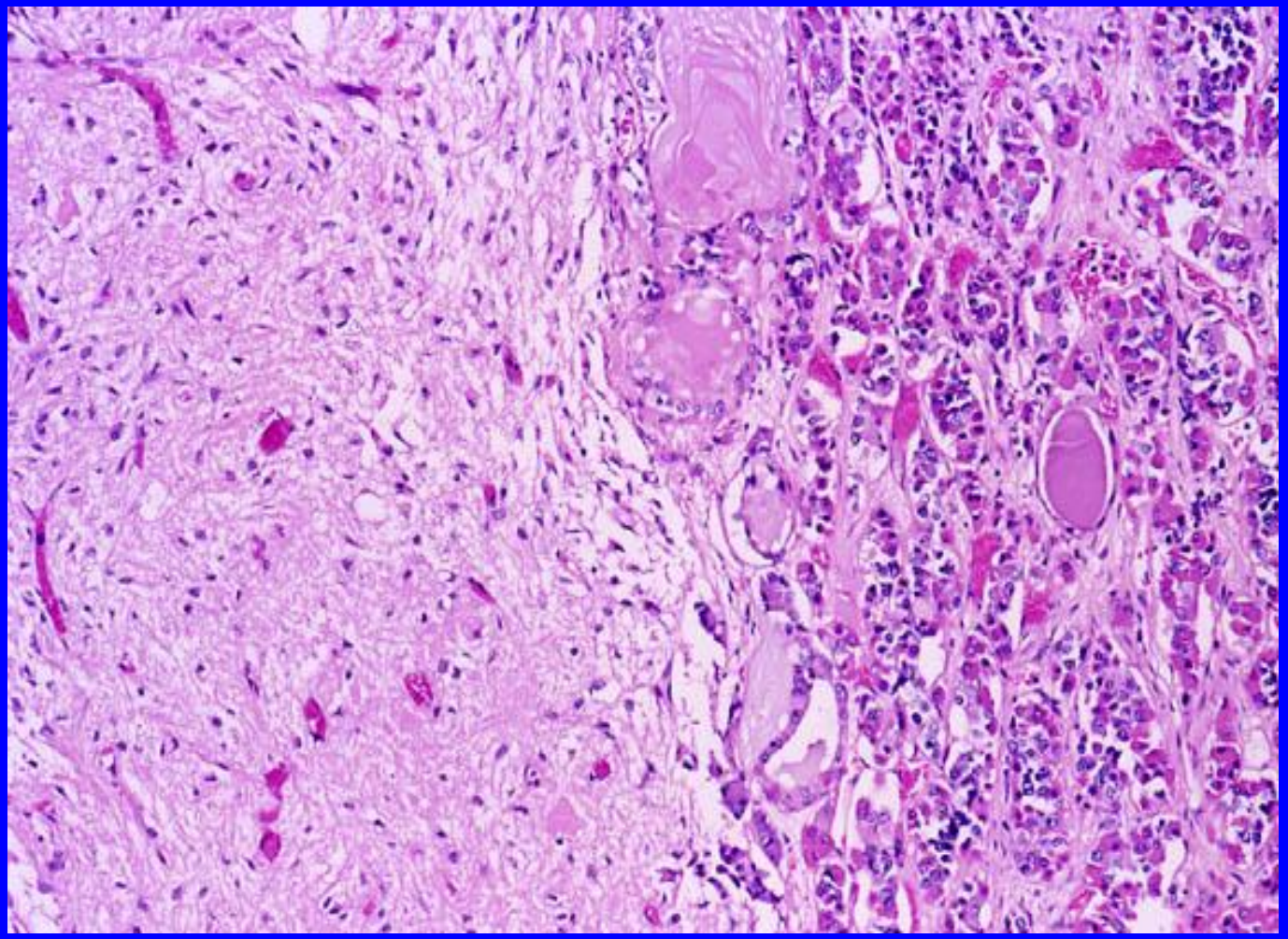
1- Median eminence

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



3- Pars Nervosa

PITUITARY GLAND



NEUROHYPOPHYSIS
(A) PARS NERVOSA

CONTENTS:

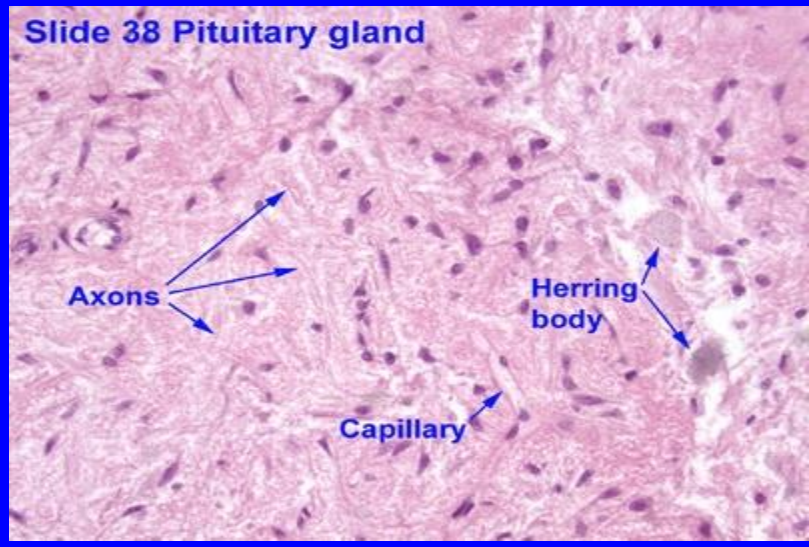
1- Unmyelinated **axons** of secretory neurons situated in supraoptic & paraventricular nuclei (i.e. Axons of hypothalamohypophyseal tract).

Function:

Storage & release of:

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

b- Oxytocin; ***by paraventricular nuclei***



2- **Fenestrated blood capillaries.**

3. HERRING BODIES:

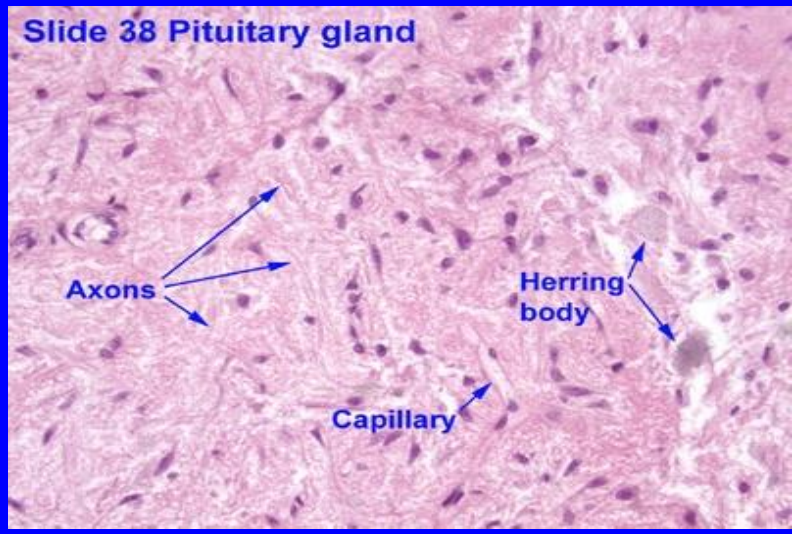
- Are distentions of the axons in p. nervosa.
- Representing accumulation of neurosecretory granules at axon termini and along the length of the axons in p. nervosa.

4. Pitucytes:

Are glial-like cells in p. nervosa.

Structure:

Have numerous cytoplasmic Processes.



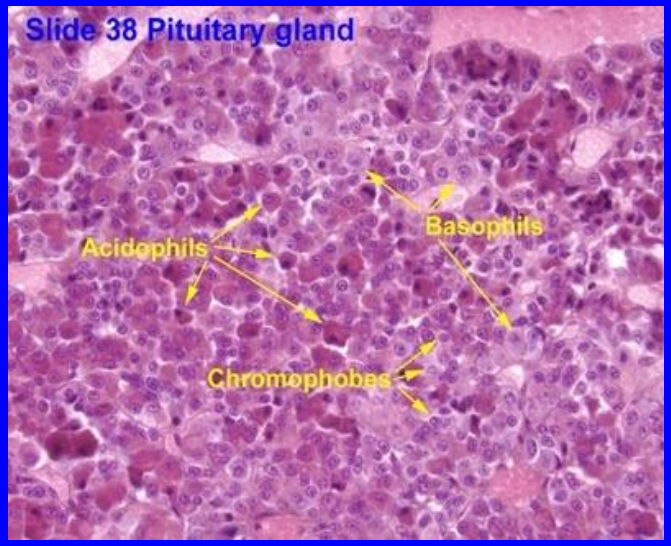
Functions:

Support the axons of the p. nervosa.

N.B. **<u>No secretory or neuronal cells</u>** 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)

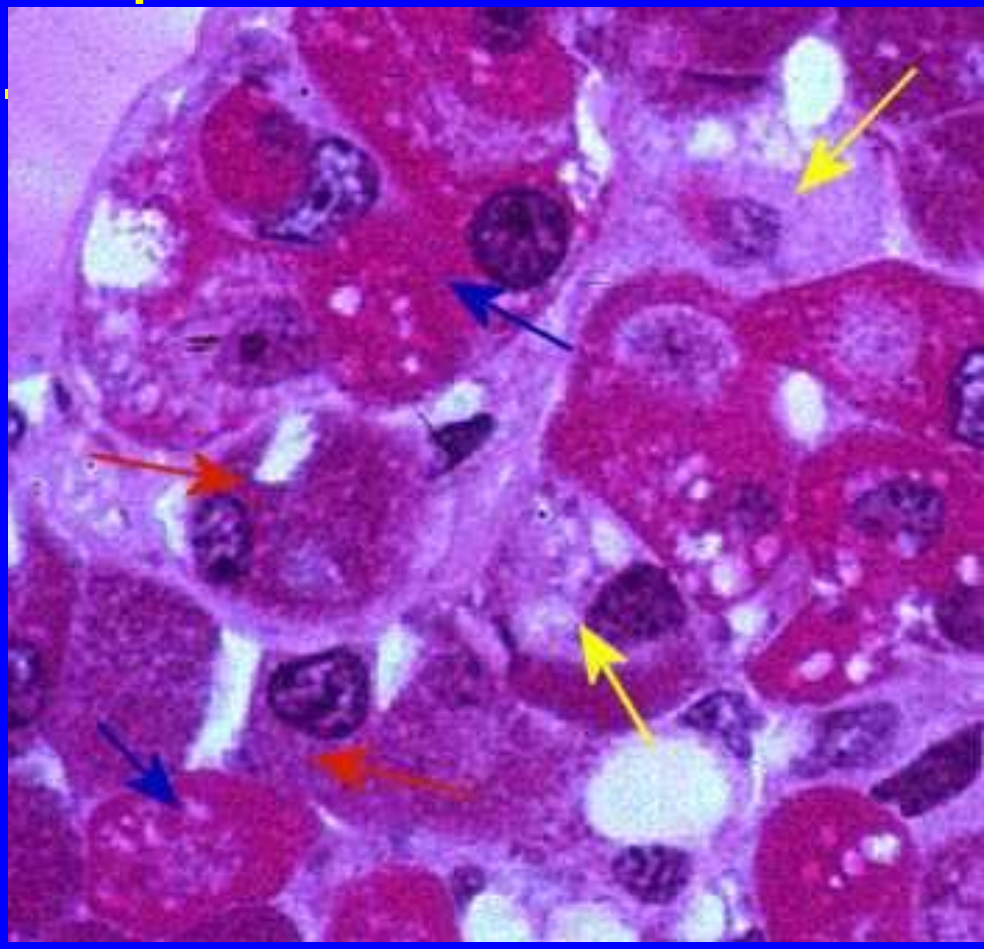
3- Corticotrophs (ACTH cells)

(2) Chromophobes: may represent:

1- stem cells.

2- degranulated chromophils.

3- degenerated cells.



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

BEST WISHES