

Pituitary gland

[Endocrinology Block | Histology]

Editing File

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- Main text
 - important
 - female slides
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 - Extra

Objectives:

- 01** Describe the microscopic structure of the different parts of the pituitary gland in correlation with their functions.
- 02** Describe the hypophyseal portal circulation; component and significance.



This lecture was presented by:
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Pituitary gland (Hypophysis)

COMPONENTS:

(A) Anterior Pituitary: ADENOHYPHYSIS CEREBRI:

(B) Posterior Pituitary: NEUROHYPHYSIS CEREBRI:

1- Pars Distalis (pars anterior)

Most dilated part

2- Pars Tuberalis

Most dilated terminal part

3- Pars Intermedia

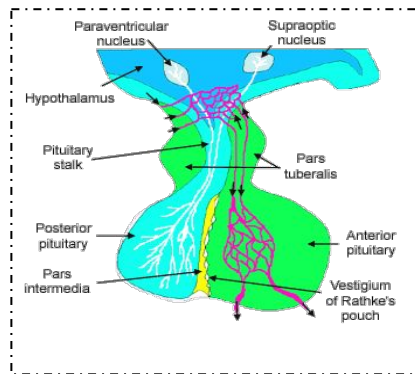
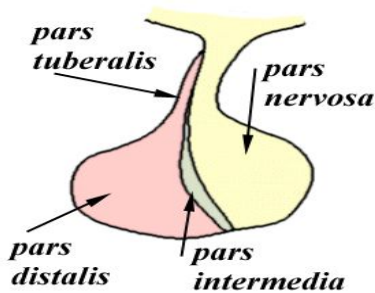
Remnant of Rathke's pouch

1- Median eminence

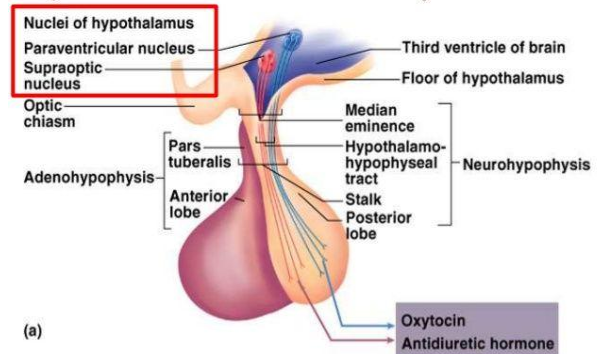
2- Infundibulum: Neural (Infundibular) Stalk (stem)

3- Pars Nervosa

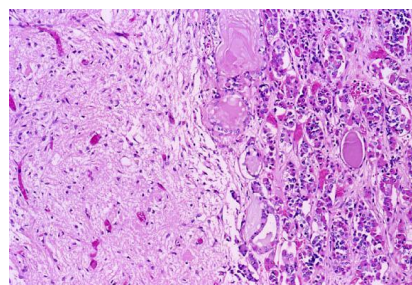
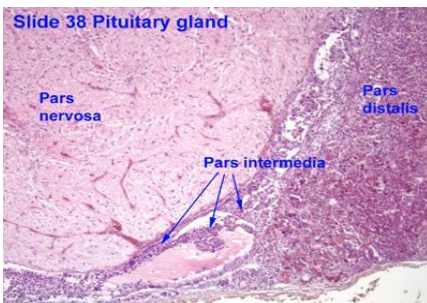
Pituitary Gland



§ The Posterior Pituitary



Pituitary gland (Under Microscope) :



(A) Adenohypophysis: Pars distalis

> Types of parenchymal cells:

01 chromophils: 48% love stain / color

*Acidophils: pink

1-Somatotrophs (GH Cells) Growth Hormone
soma=body (this hormone affect the body size).

2-Mammotrophs (prolactin cells):
NB; They Increase during lactation
Prolactin =responsible for milk formation
oxytocin =stimulate smooth muscles contraction (milk ejection)

*Basophils: blue

1-Thyrotrophs (TSH Cells)
Stimulates thyroid gland

2-Gonadotrophs (Gonadotropic cells FSH ,LH) Stimulates sex gland

3-Corticotrophs (ACTH Cells)
Stimulates adrenal gland (adrenal cortex)

TSH: Thyroid-Stimulating Hormone
FSH: Follicle-Stimulating Hormone
LH: Luteinizing Hormone
ACTH: Adrenocorticotrophic Hormone

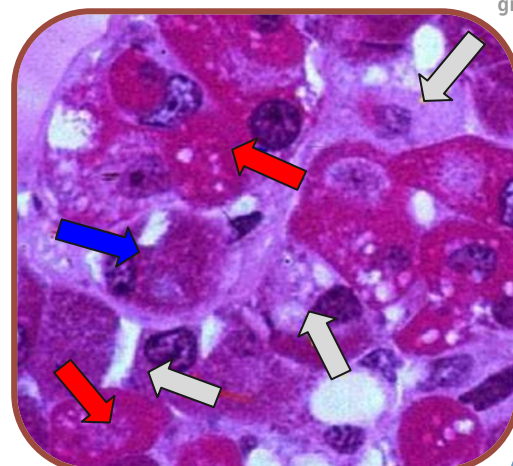
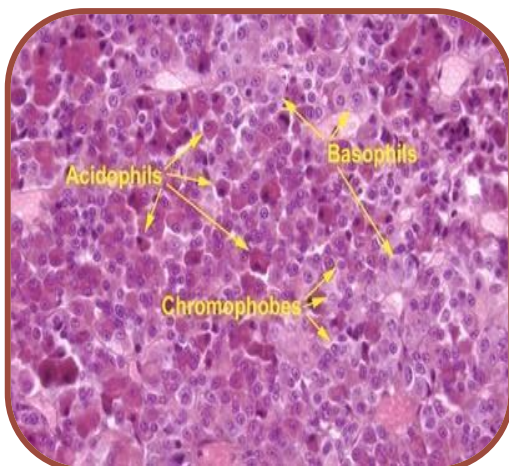
02 *chromophobes: 52% hate stain / colorless

May represent

1- Stem cells

2-Degranulated chromophils

3-Degenerated cells



Red arrow: acidophils
blue arrow: basophils
grey arrow: chromophobes

(B) NEUROHYPOPHYSIS CEREBRI:

CONTENTS of PARS NERVOSA:

1- Unmyelinated axons

- Unmyelinated axons of secretory neurons situated in supraoptic & paraventricular nuclei (i.e. Axons of hypothalamo-hypophyseal tract).
- **Function:** Storage & release of:
 - a- **Vasopressin (ADH)**; by supraoptic nuclei
 - b- **Oxytocin**; by paraventricular nuclei

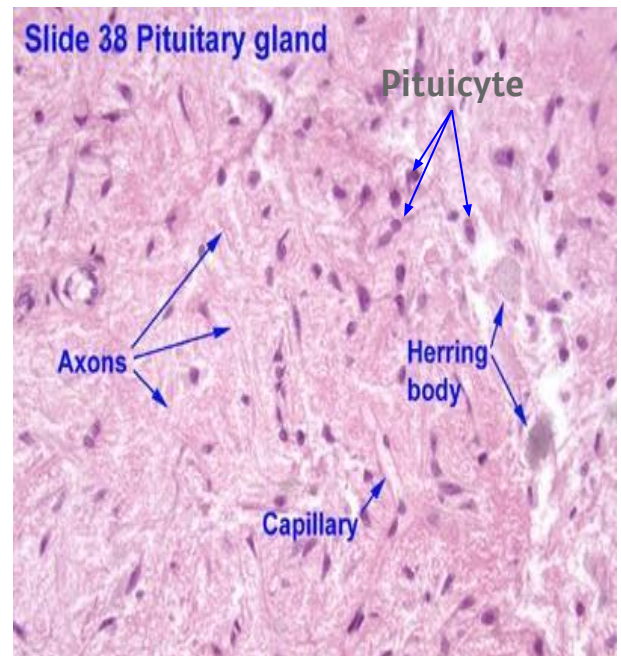
2- Fenestrated blood capillaries

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. Pituicytes

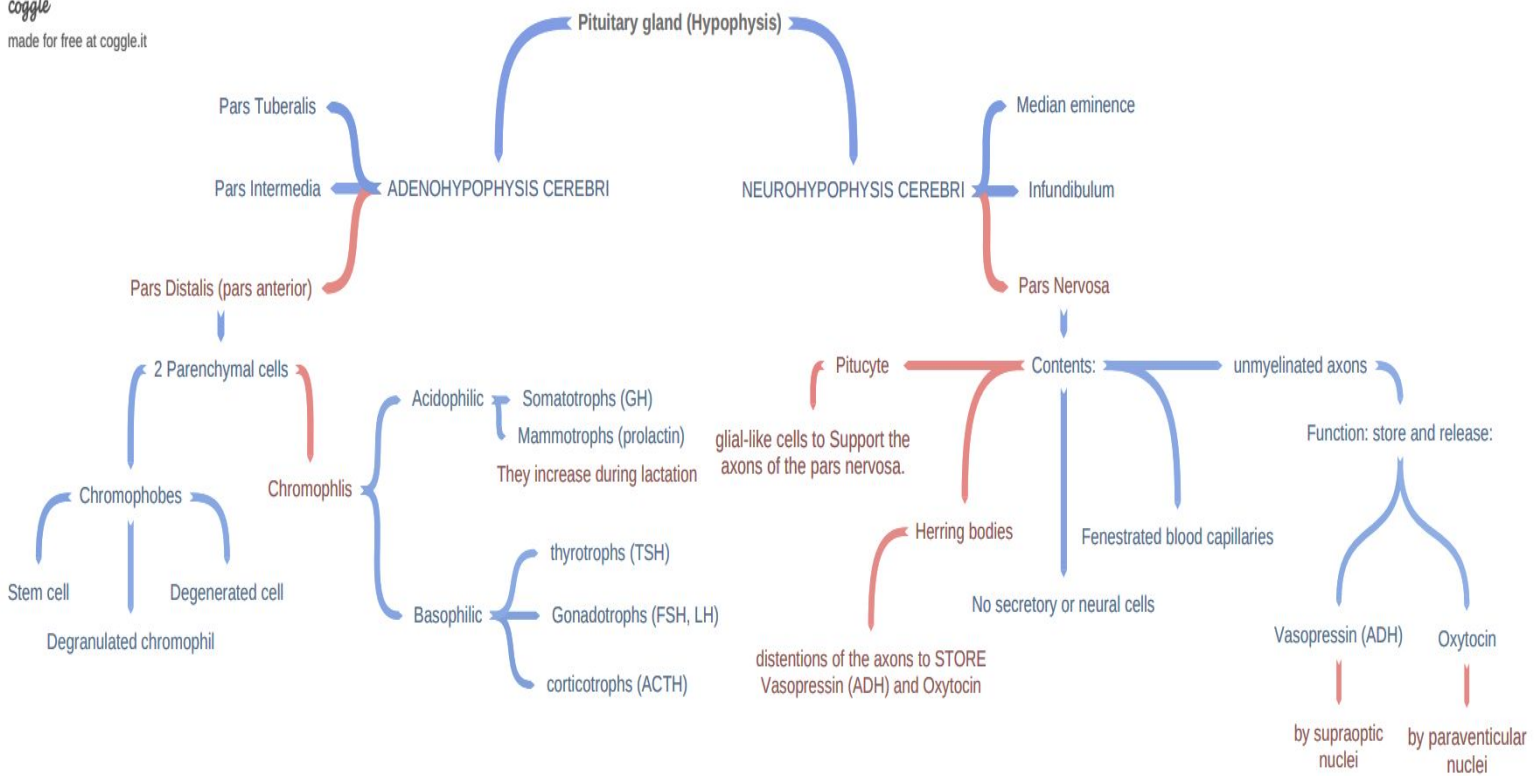
- Are glial-like cells in p. nervosa
- Structure:
Have numerous cytoplasmic Processes
- Functions:
Support the axons of the pars nervosa.
- Mechanical and nutritional support



N.B. No Secretory or Neuronal cells in pars nervosa compared to p.distalis

Summary:

coggle
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MCQs

01 What cell type secretes prolactin?

A- Mammotrophs	B- Thyrotrophs	C- Corticotrophs	D- Somatotrophs
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02 Which of the following store Oxytocin?

A- Somatotrophs	B- Pituicytes	C- Herring bodies	D- Median Eminence
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03 Which of the following structures found in pars nervosa?

A- Portal circulation	B- Myelinated axons	C- Cell bodies of nerve cells	D- Pituicyte
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04 Which one of the following is secreted by Gonadotrophs?

A- ACTH	B- LH	C- GH	D- PRL
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05 Which one of the following cells secrete vasopressin hormone?

A- Gonadotrophs	B- Paraventricular nuclei	C- Somatotrophs	D- Supraoptic nuclei
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Answer key:
1-A, 2-C, 3-D, 4-B, 5-D

Leaders



Mohammed Alqutub



Waad alqahtani

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- **Nazmi M Alqutub**
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