

Histology Team 431



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Adrenal gland

It is formed of:

A- Stroma

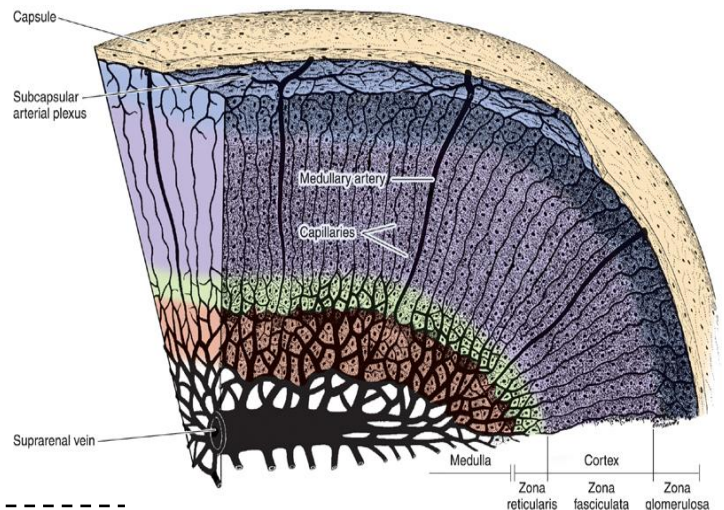
- Capsule
- Septa
- Reticular CT (highly vascular)

B- Parenchyma that is divided into :

1-Cortex, which is composed of:

- ✓ Zona glomerulosa
- ✓ Zona fasciculata. (arranged in fasciculus or rows)
- ✓ Zona reticularis

2-Medulla.



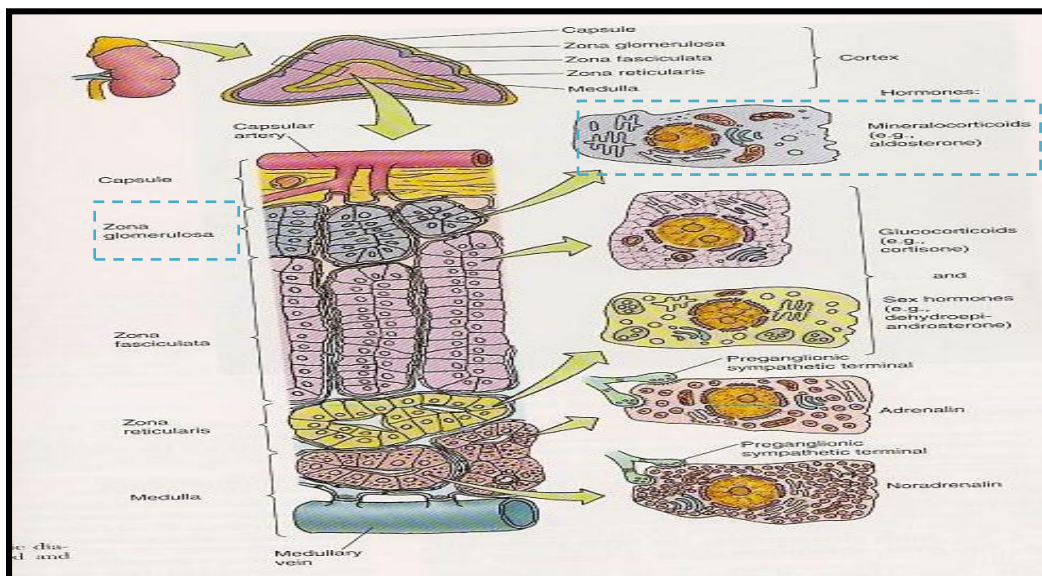
1-Adrenal cortex:

❖ zona glomerulosa (arranged in glomerulus)

-Is formed of clusters of small columnar cells that are rich in SER and mitochondria.

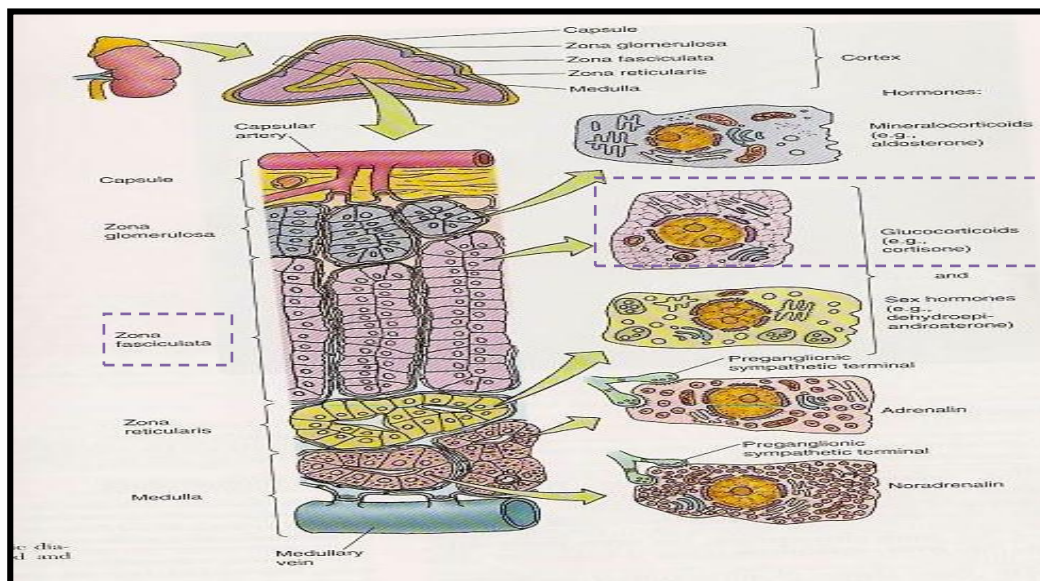
-Produces mineralocorticoids e.g. aldosterone hormone (Reabsorb all the remaining sodium, and passively the chloride, from the lumen of the distal renal tubules into the renal interstitium. In addition, potassium and hydrogen ions are actively secreted into the lumen).

-Acidophilic cytoplasm.



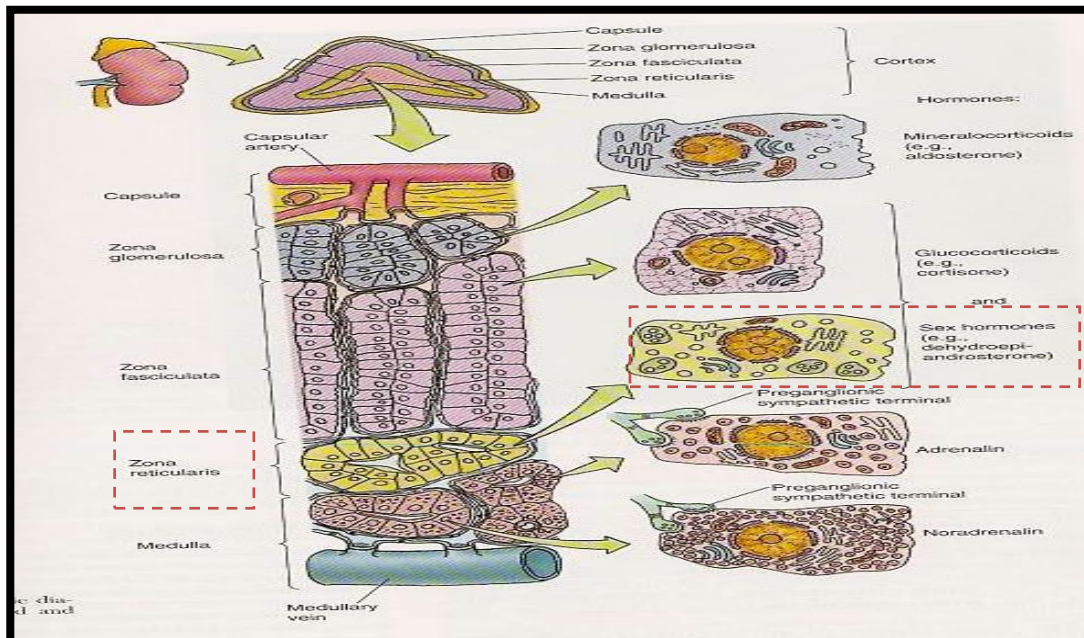
❖ zona fasciculata. (spongiocytes)

- It is the intermediate and the largest layer of the cortex.
- It is formed of columns of large polyhedral cells that are separated by longitudinal sinusoidal capillaries.
- Its cells are rich in lipids so they appear empty in sections (spongiocytes).
- Its cells are rich in mitochondria (with tubular cristae),SER and lipofuscin pigments.
- Its cells secrete glucocorticoids.
- It is regulated by ACTH of pituitary
- Acidophilic cytoplasm.



❖ **zona reticularis.**

- It is the innermost layer of adrenal cortex.
- It is formed of anastomosing cords of deep acidophilic cells.
- Its cells contains few lipofuscin and lipid droplets.
- The cells secrete androgens.
- Acidophilic cytoplasm.



2- Medulla

-It is the central portion of the adrenal gland.

-It is completely invested with adrenal cortex

(Not separated from it by CT. septa)

-It contains:

1-Chromaffin cells (Pheochromocytes):

-Contain granules of catecholamine as that of sympathetic NS.

-They produce epinephrine and norepinephrine.

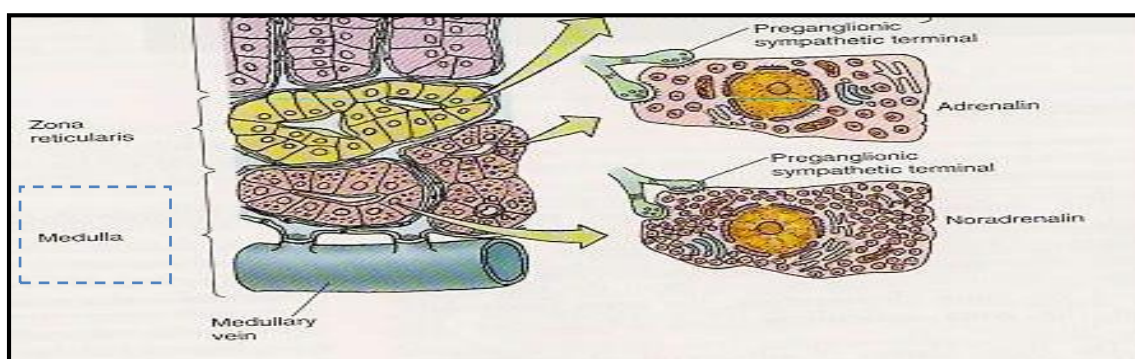
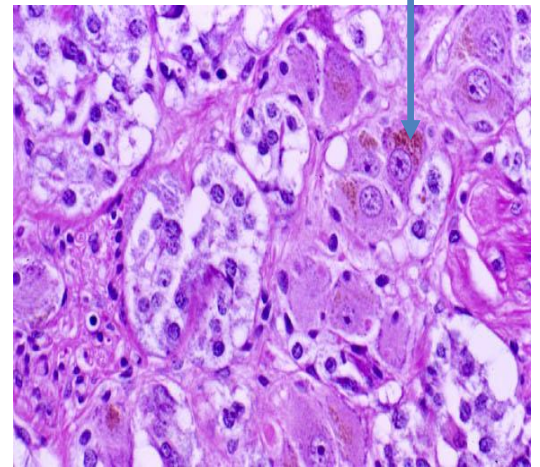
-They stain deep brown with chromic salts.

-Pale basophilic cytoplasm.

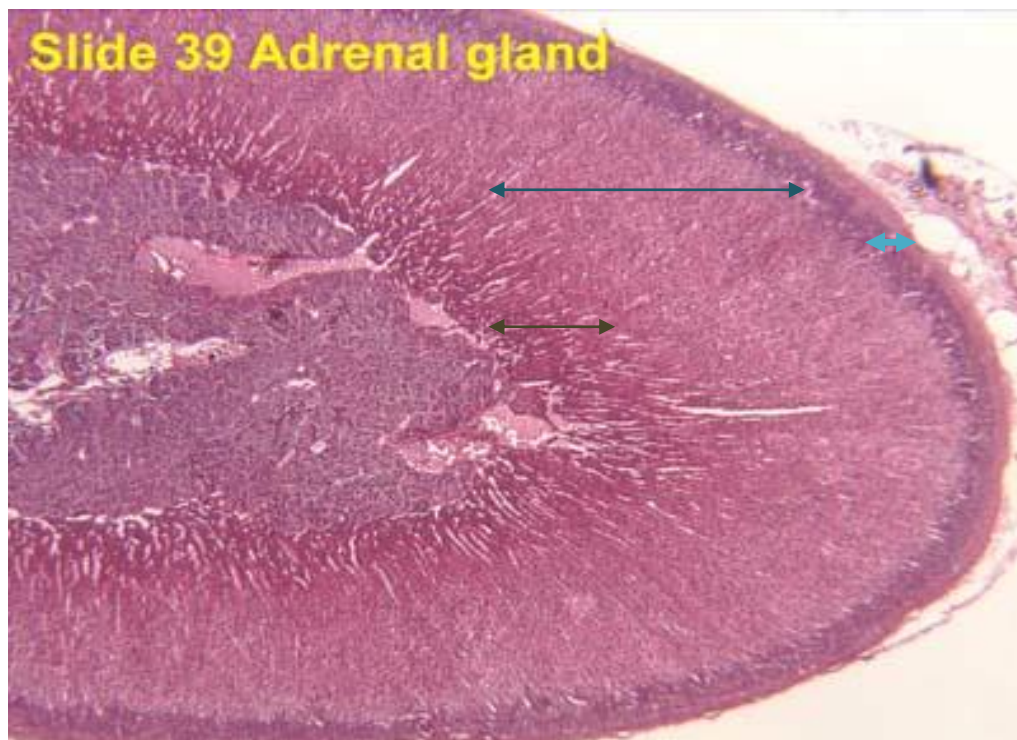
2- Sympathetic ganglion cells :

Relay on chromaffin cells.

Neurons in adrenal medulla



Cortex	
Zona glomerulosa	Produces mineralocorticoids e.g. aldosterone hormone
Zona fasciculata	Secrete glucocorticoids.
Zona reticularis	Secrete androgens.
Medulla	
Chromaffin cells	Produce epinephrine and norepinephrine.



- Zona glomerulosa
- Zona fasciculata
- Zona reticularis

Questions:

1- the cortex of the adrenal gland is composed of:

- a) 2 layers
- b) 3 layers
- c) 4 layers

2- zona reticularis secretes:

- A. Mineralocorticoids
- B. Glucocorticoids
- C. Androgens

3- they are stained deep brown with chromic salts:

- a) Sympathetic ganglion cells
- b) Chromaffin cells
- c) Chromophobes

4- Regarding the medulla:

- A. It's a part of the cortex
- B. It is completely invested with adrenal cortex and not its separated from it by CT. Septa
- C. It is completely invested with adrenal cortex and its separated from it by CT. septa

Answers:

1-B, 2- c, 3- b, 4- b