

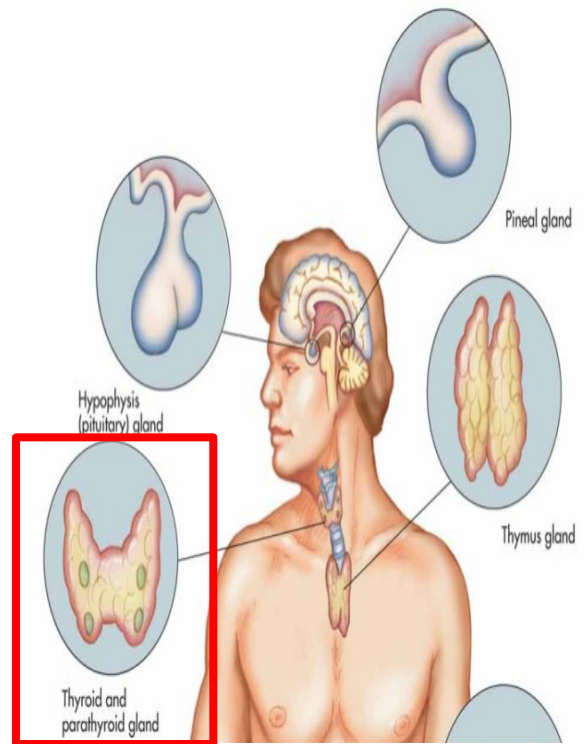


Thyroid & Parathyroid Glands

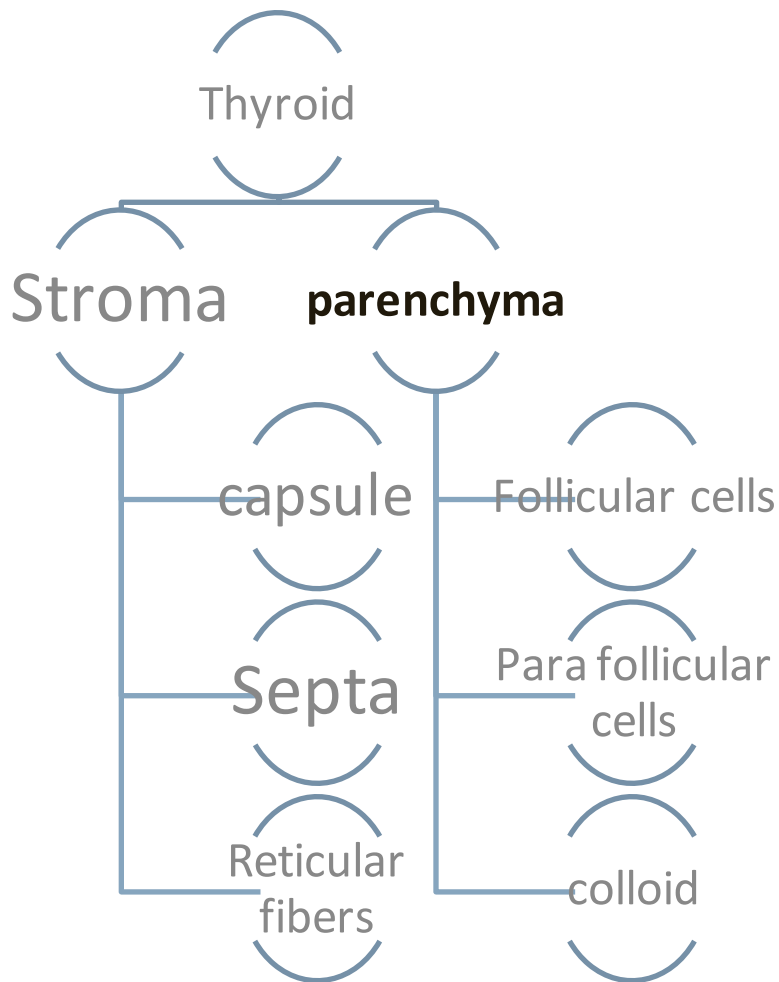
Endocrine Block

OBJECTIVES:

1. Describe the histological structure of thyroid gland.
2. Identify and correlate between the different endocrine cells in thyroid gland and their functions.



THYROID GLAND component



STROMA

1- Capsule

2 - Septa

3- Reticular fibers:

Dense irregular collagenous

- 1 - Thin C.T
- 2 - composed mostly of reticular fibers
- 3 - Highly vascular surrounds each thyroid follicle

Thyroid gland

PARENCHYMA

THYROID FOLLICLES

Are the structural and functional units of the thyroid gland.

Function: Synthesis of thyroid hormones (T4 & T3).

L/M

1) Simple cuboidal Epithelium

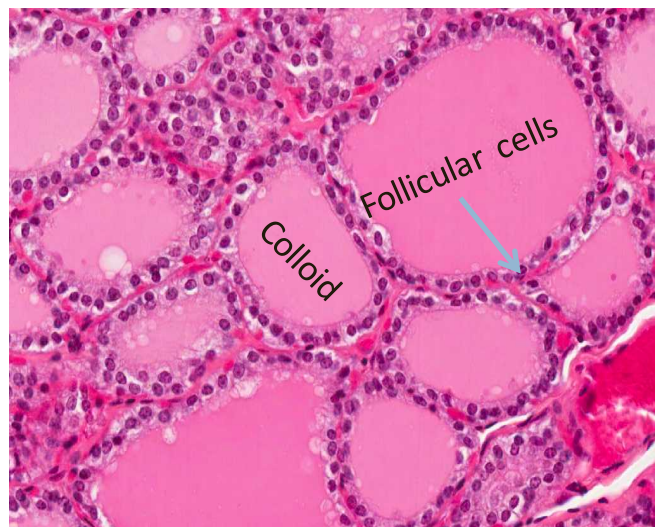
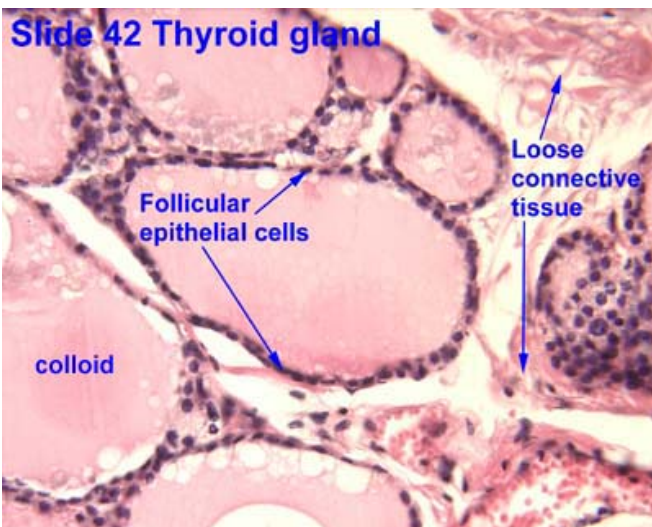
- Round nucleus
- prominent nucleoli.
- Basophilic cytoplasm
- Apical surface reaches the lumen of the thyroid follicle.

2) Colloid : central colloid-filled lumen

E/M:

- Mitochondria.
- RER
- Supranuclear Golgi Complex.
- Numerous apically-located lysosomes.
- Numerous dispersed small vesicles: contain newly formed thyroglobulin.
- Apical short microvilli

Each follicle is surrounded by thin basal lamina.



Thyroid gland

PARENCHYMA

PARAFOLLICULAR CELLS *CLEAR CELLS*

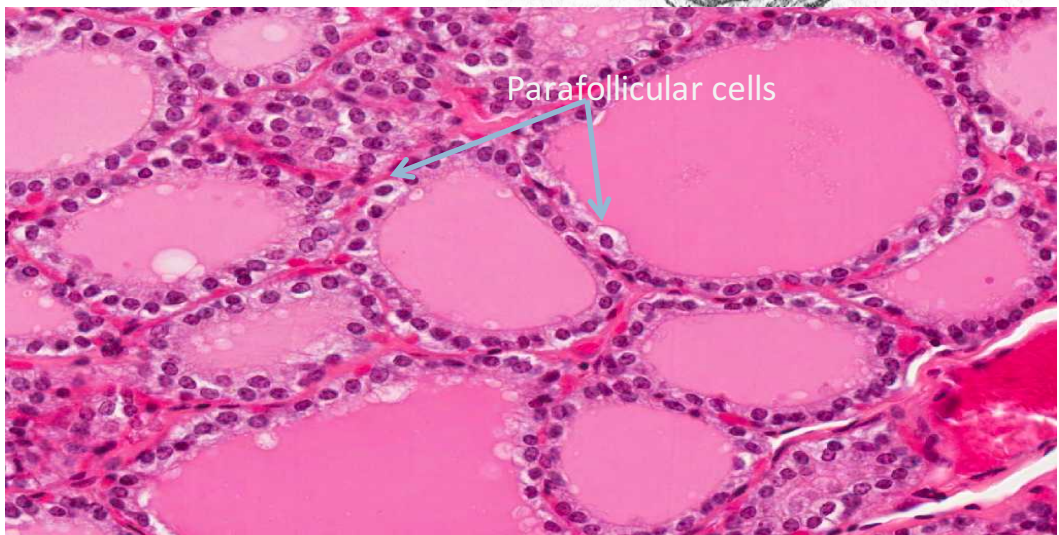
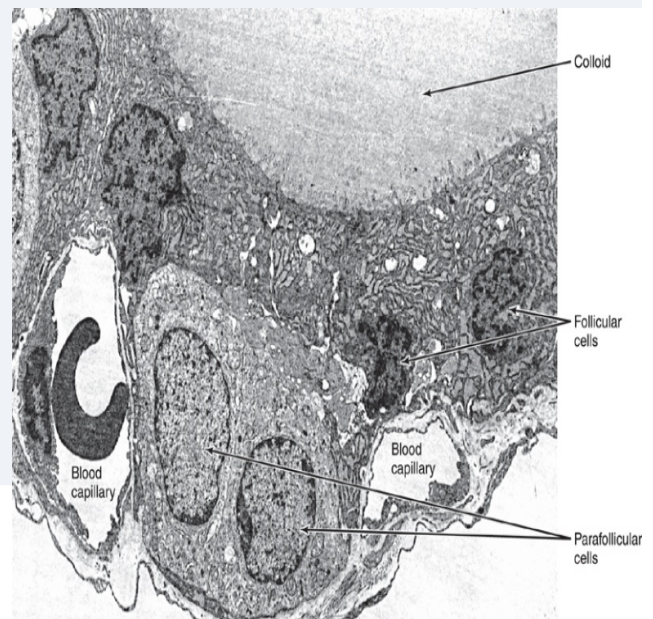
Function: secretion of Calcitonin.

L/M:

- Pale-stained cells
- Found singly or in clusters in between the follicular cells
- Their apices do not reach the lumen of the lumen of the follicle
- larger than follicular cells
- Only 0.1% of the epithelial cells
- Round nucleus

E/M:

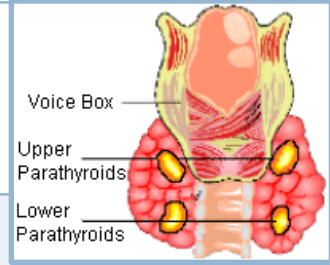
- Mitochondria.
- RER (moderate).
- Well-developed Golgi



Parathyroid gland

Parathyroid Gland

- They are 4 glands on the post. of thyroid gland



Stroma

C.T. stroma in older adults often contains many adipose cells

Parenchyma

The parenchyma is formed of cords or clusters of epithelial cells

- chief cells
- oxyphil cell

with blood capillaries in between. These cells ,surrounded by reticular fibers.

1- capsule

Each gland has its Thin capsule.

Chief cells

Oxyphil cell

2-septa

Thin

- slightly eosinophilic.
- rich in rER
- secrete parathyroid hormone).

- deep eosinophilic
- more numerous mitochondria
- They are of unknown function

3- Reticular C.T.

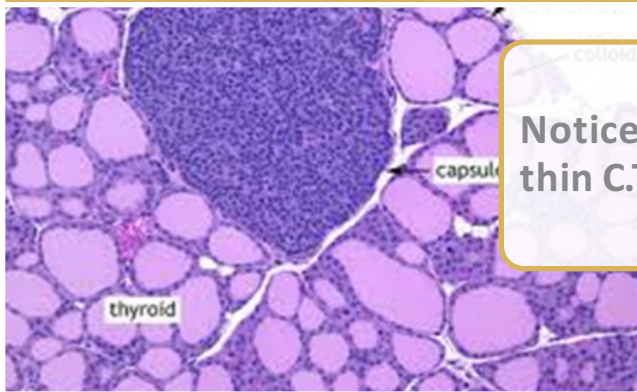
Which decreases calcium.

Oxyphil cells:

- are arranged in groups or clusters or as isolated cells.
- They are less numerous but larger than chief cells.
- **N.B.** (They may be inactivated chief cells).

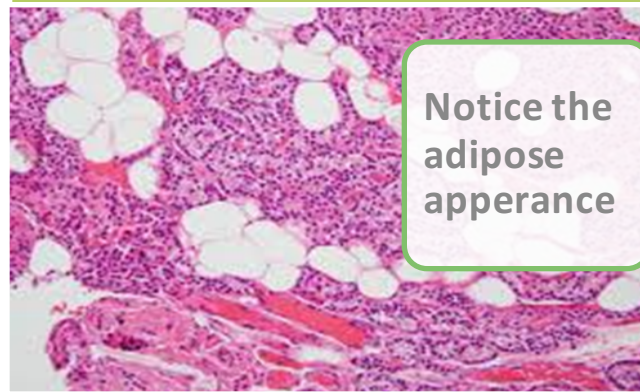
Parathyroid gland

Thyroid and parathyroid glands



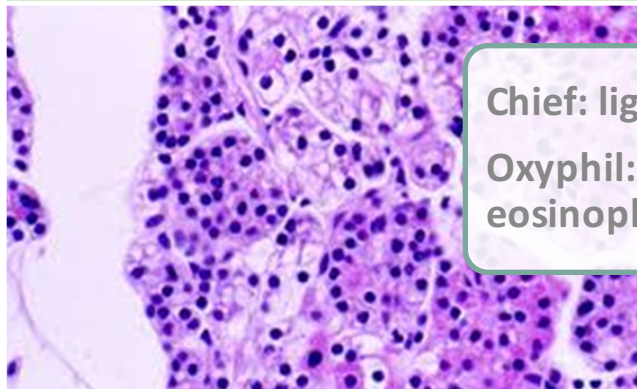
Notice the thin C.T

Parathyroid gland



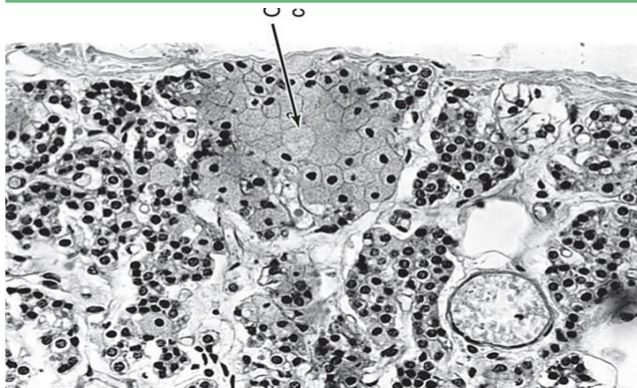
Notice the adipose appearance

Chief and oxyphil cells

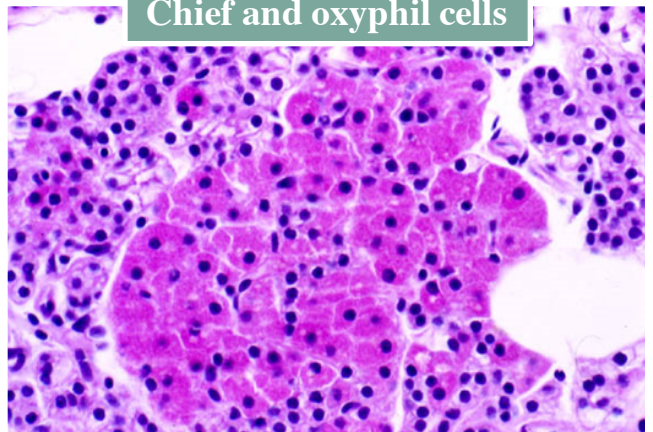


Chief: light pink
Oxyphil: deep eosinophilic

Chief and oxyphil cells



Chief and oxyphil cells



MCQs

1- Which one of these features does not found in para-follicular cells ?

- A. Their apices do not reach the lumen of the follicle.
- B. larger than follicular cells
- C. Their apices reaches the lumen of the thyroid follicle

What is the epithelium

3- Why the nucleus of the colloid does not appeared?

- A. Because it's not exist.
- B. Due to its homogenous mixture

2- lining of thyroid gland ?

- A. simple squamous epithelium
- B. Simple Columnar Epithelium
- C. -Simple Cuboidal Epithelium.

4- which one of the following secrete Calcitonin.

- A. Para-follicular cells
- B. Follicles

5- Which of the following is not a histological structure found in parathyroid gland:

- a) fenestrated blood capillaries
- b) colloid
- c) reticular fibers.

Answers

1 – C 3- B

2- C 4- A

5- B

6- C

6-which one of the following cells secrete parathyroid hormone:

- a) Oxyphil cell
- b) Para-follicular cells
- c) Chief cells

Done By:
Nada Alamri
Sara M Al Jasser

Edited By:
Amal Afrah



Thank you for checking our
work

For any correction, suggestion or any
useful information do not hesitate to
contact us: Histology434@gmail.com