



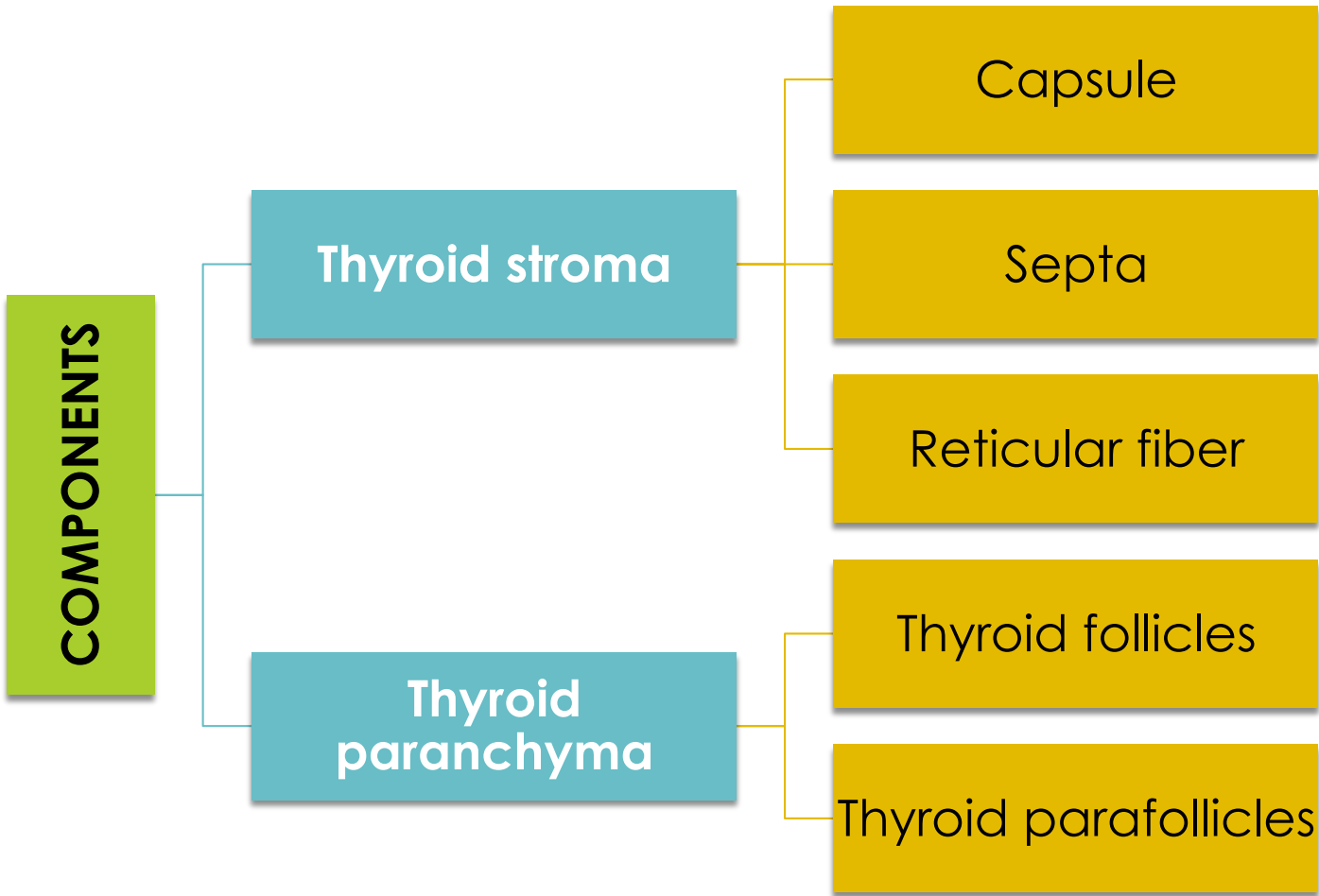
LECTURE 2: THYROID GLAND

❑ Objectives:

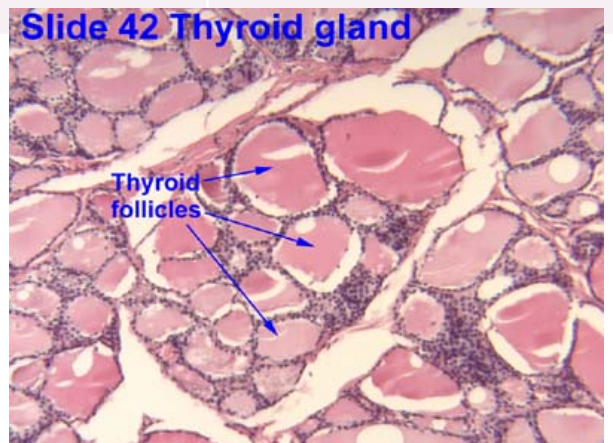
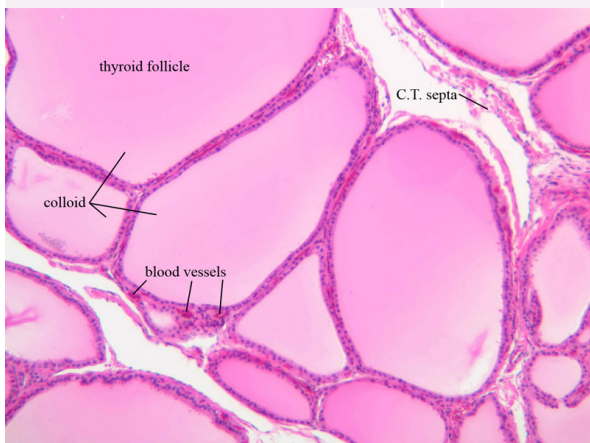
At the end of this lecture, you should describe:

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

COMPONENTS OF Thyroid GLAND



Thyroid stroma		
1. Capsule	2. Septa	3. Reticular fiber
dense irregular collagenous C.T		Thin C.T., composed mostly of reticular fibers with rich capillary plexus surrounds each thyroid follicle.



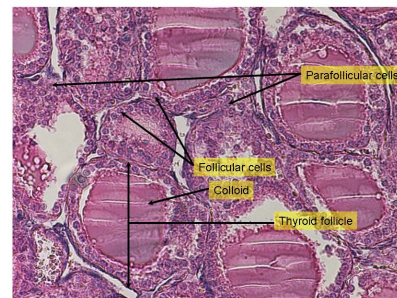
THYROID FOLLICLES

“functional & structural unit of the thyroid”

Each thyroid follicle consists of

1. Central colloid (lumen) surrounded by
2. Epithelium
 - i. Follicular
 - ii. Parafollicular cells.

N.B. each follicle is surrounded by thin basal lamina



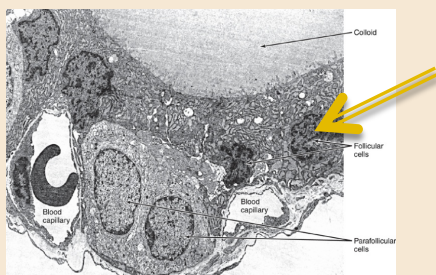
1. Follicular (principal) cells

Light microscope:

Simple cuboidal cells with **round nucleus** and prominent nucleoli.

- It's Function to **synthesis T4 & T3**.
- Iodination of thyroglobulin happens **extracellular**.

- **Basophilic** cytoplasm.
- Apical surface reaches the lumen of the thyroid follicle.



Electron microscope:

- Mitochondria
- Rough ER
- Supranuclear **Golgi** complex
- Numerous apically-located **lysosomes**.
- Dispersed **small vesicles** contain newly formed thyroglobulin.
- microvilli at the surface of the lumen.

2. Parafollicular (clear or c) cells

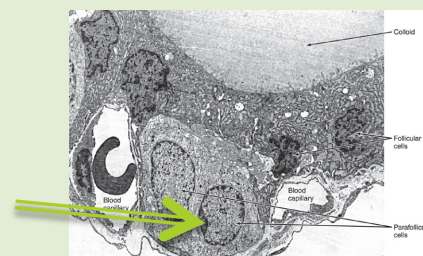
- **Pale-stained cells (Clear Cells)** with round nucleus.
- Are found singly or in clusters in between the follicular cells.
- It's Function to **secrete calcitonin**.

Light microscope:

- Apical surface **does NOT** reach the lumen of the thyroid follicle.
- They are larger than follicular cells (2-3 times) but less numerous (presents only 0.1% of the epithelial cells).

Electron microscope:

- Mitochondria
- Rough ER
- Well-developed **Golgi** complex



1- The **type of epithelium** for follicular & para follicular cells are:

- a. Simple cuboidal epithelium
 - b. Simple columnar epithelium
 - c. Simple squamous epithelium
 - d. Simple cuboidal with goblet cells
-

2- The thyroid follicles are **separated** from each other by a ?

- a. septa
 - b. Basal lamina
 - c. Capsule
 - d. Colloid
-

3- Which of the following is **NOT** true about follicular cells?

- a. It has round nucleus
 - b. Its nucleoli is disappeared
 - c. It has basophilic cytoplasm
 - d. Reaches the lumen
-

4- Which of these feature is true about **parafollicular cells**?

- a. It has smaller size than principles cells
 - b. It is more numerous than follicular cells
 - c. It doesn't reach the lumen of the follicle
 - d. It secretes T4
-

5- Why the nucleus of the colloid does **not appeared**? *

- a. Because it's not exist.
- b. Due to its homogenous mixture

* Q5 mentioned by female's doctor only

1-a 2-c 3-b 4-c 5-b