THYROID GLAND

Objectives:

By the end of this lecture, the student should be able to:

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

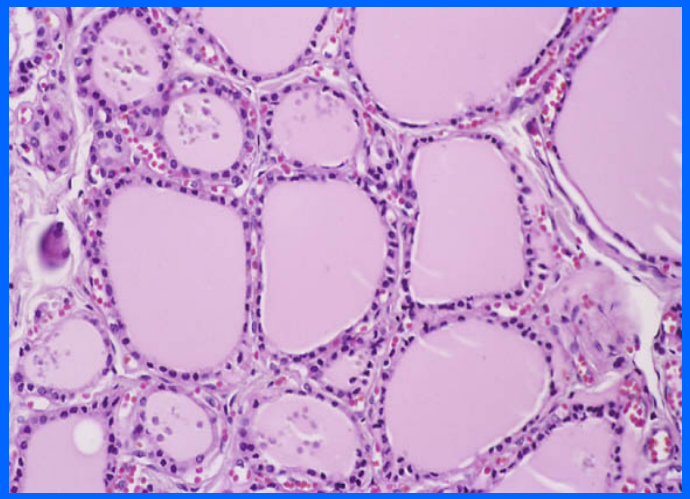
THYROID GLAND STROMA

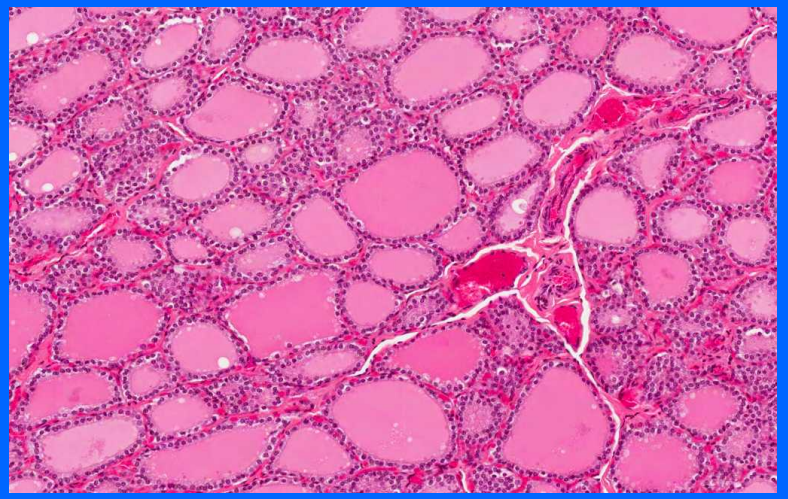
1- Capsule: dense irregular collagenous C.T.

2- Septa (Interlobular septa): " " " " .

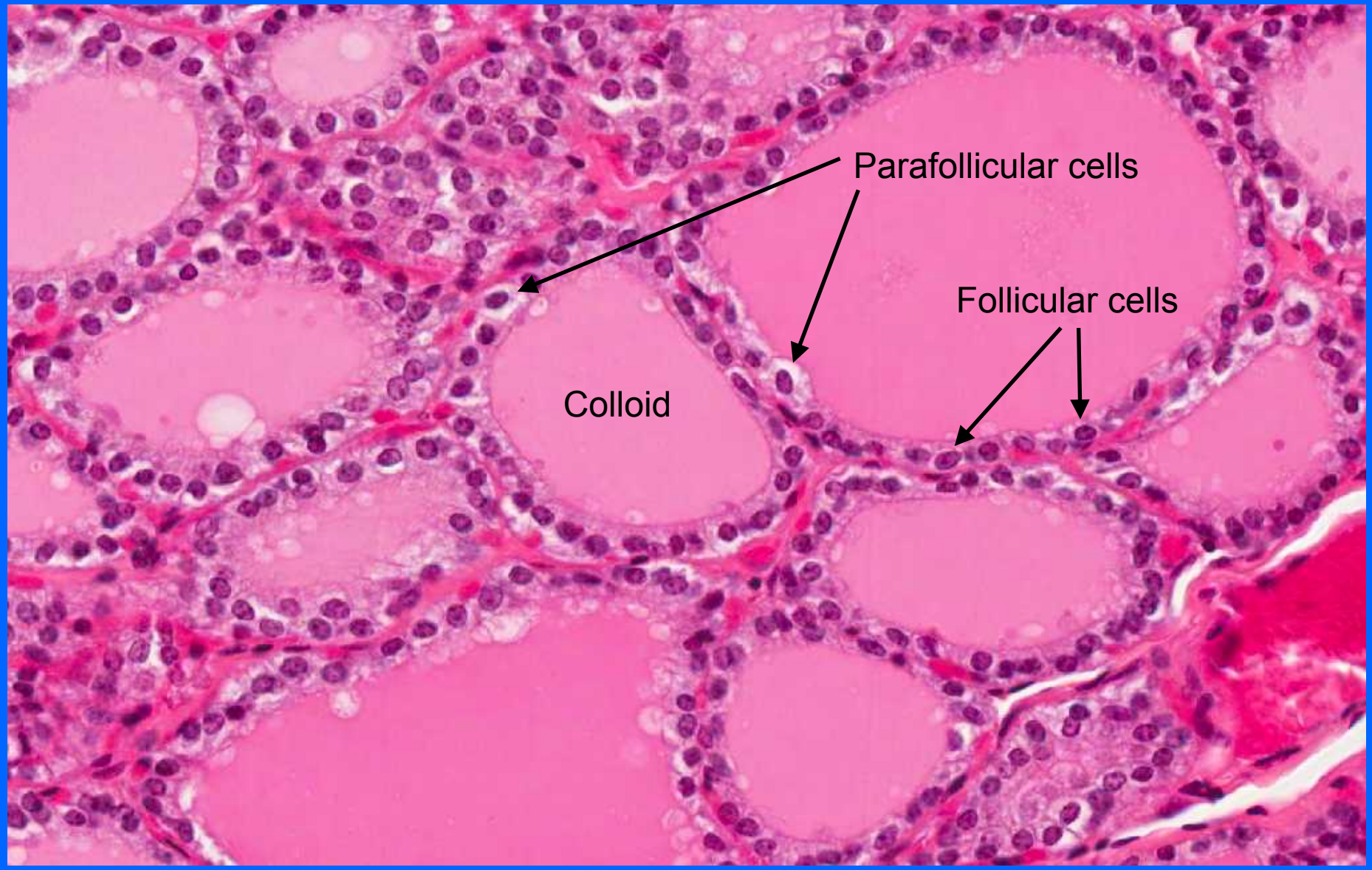
3- Reticular fibers:

Thin C.T., composed mostly of reticular fibers with rich capillary plexus surrounds each thyroid follicle.





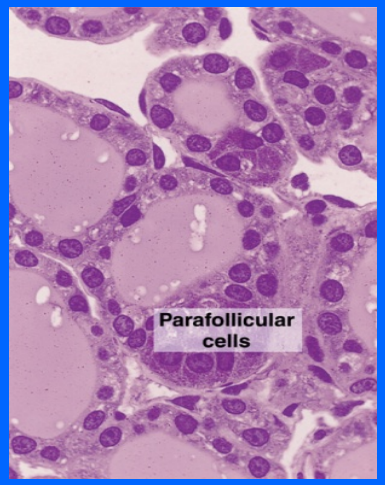
THYROID GLAND

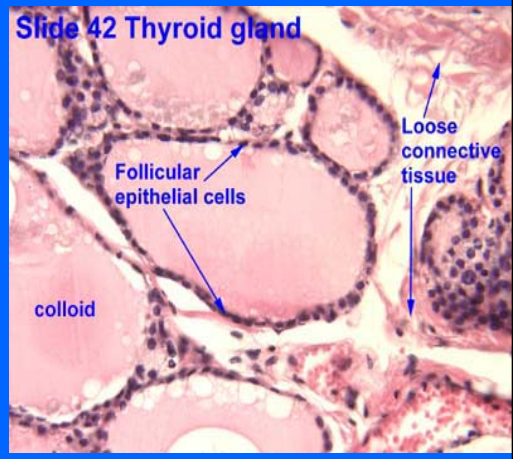


PARENCHYMA OF THYROID GLND

THYROID FOLLICLES:

Are the structural and functional units of the thyroid gland.





L/M:

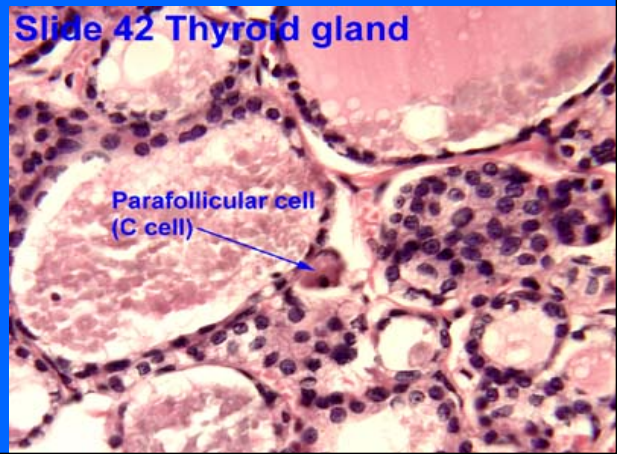
1- Simple cuboidal epithelium:

a- Follicular cells.

b- Parafollicular cells.

2- Colloid: central colloid-filled lumen.

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



FOLLICULAR (PRINCIPAL) CELLS

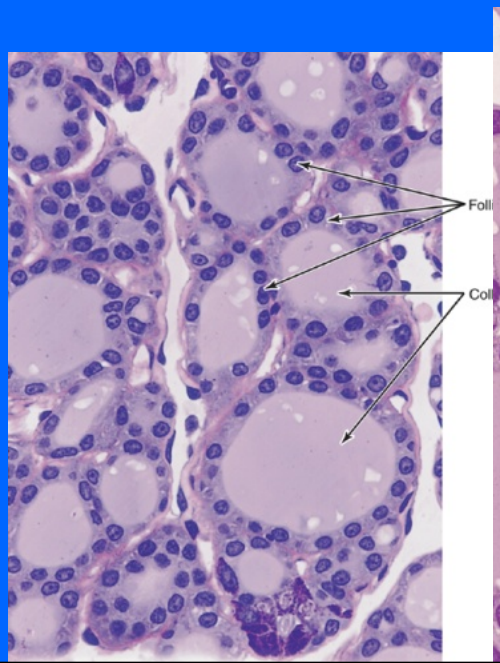
L/M:

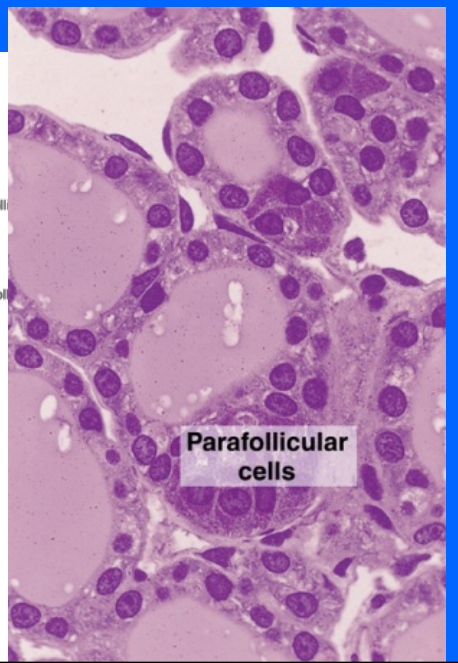
Simple cuboidal cells

Round nucleus with prominent nucleoli.

Basophilic cytoplasm.

Apical surface reaches the lumen of the thyroid follicle.





FOLLICULAR (PRINCIPAL) CELLS

E/M:

- Mitochondria.
- RER
- Supranuclear Golgi Complex.
- Numerous apically-located lysosomes.
- Numerous dispersed small vesicles:

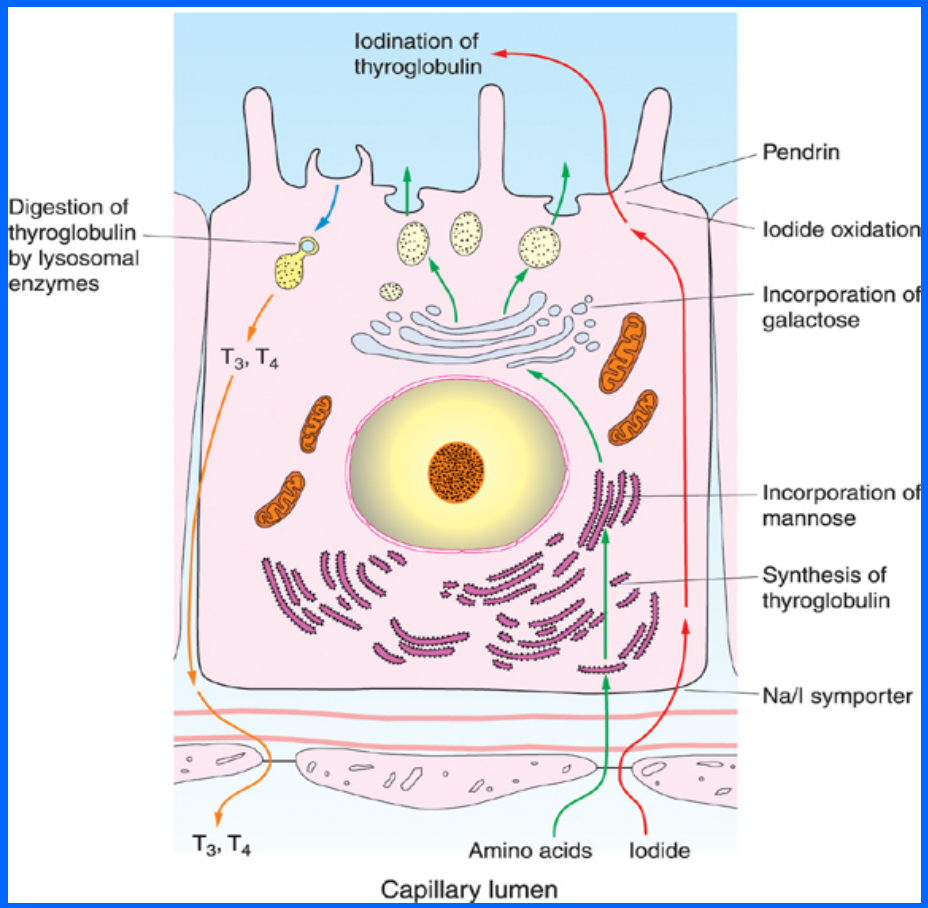
  contain newly formed thyroglobulin.

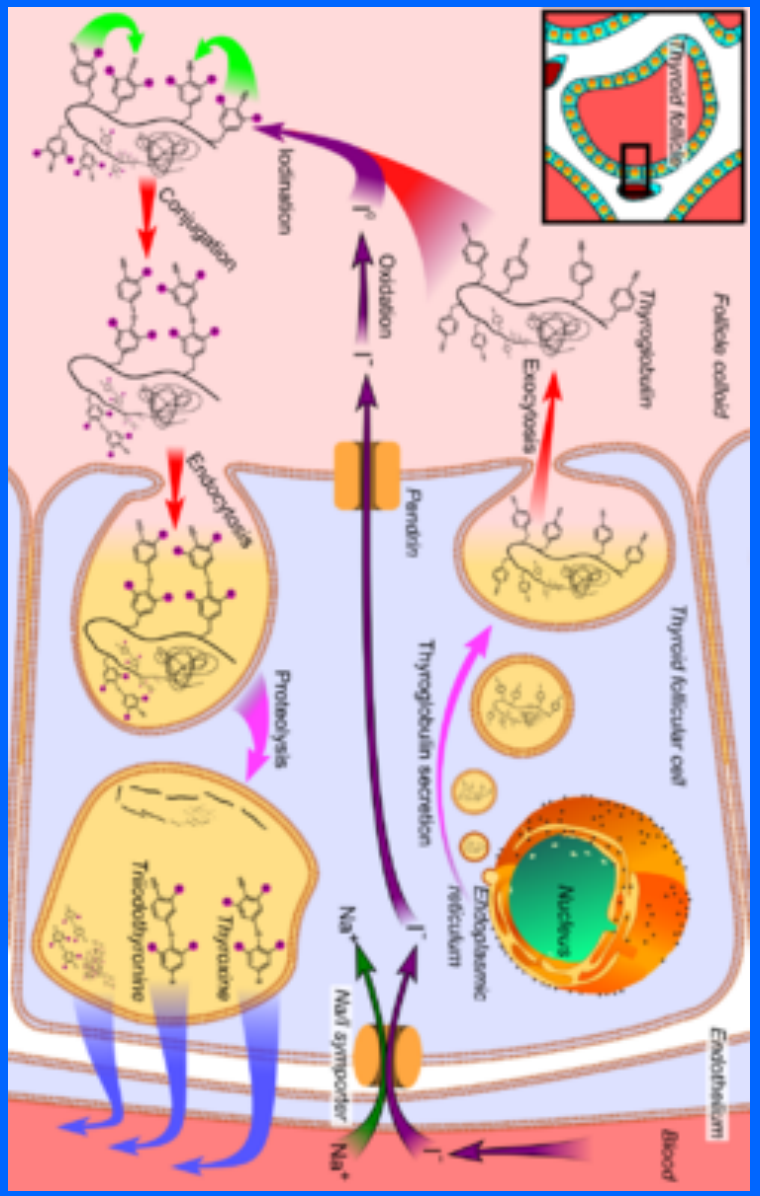
- Numerous apical short microvilli.

FOLLICULAR (PRINCIPAL) CELLS

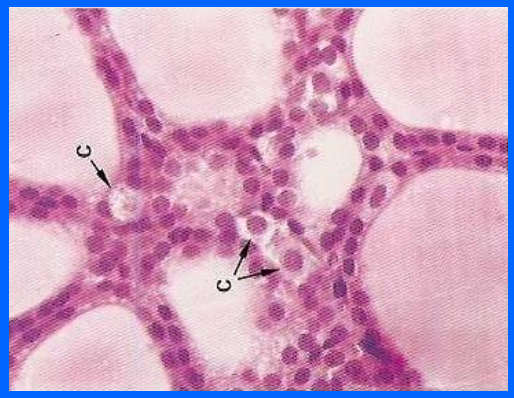
Function:

Synthesis of
thyroid hormones (T4 & T3).





PARAFOLLICULAR CELLS (CLEAR CELLS) (C-CELLS)



L/M:

- Pale-stained cells (Clear Cells).
- Are found singly or in clusters in between the follicular cells.

- Their apices ***do not*** reach the the lumen of the follicle.
- Are larger than follicular cells (2-3 times).
- Only 0.1% of the epithelial cells.
- Have round nucleus

PARAFOLLICULAR CELLS (CLEAR CELLS) (C CELLS)

E/M:

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

Function:

Secrete calcitonin.

BEST WISHES