

Thyroid & Parathyroid Glands

[Endocrinology Block | Histology]

Editing File

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Objectives:

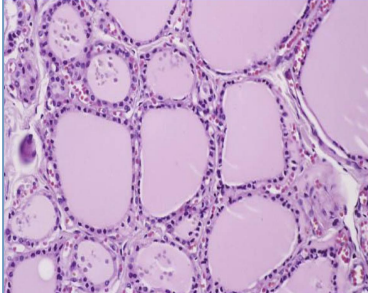
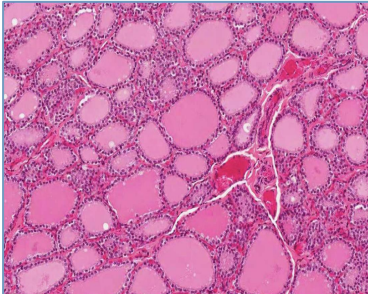
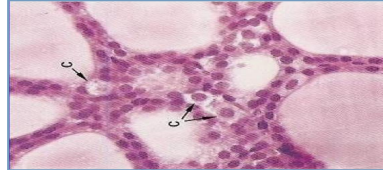
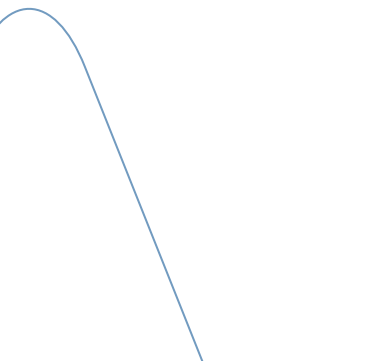
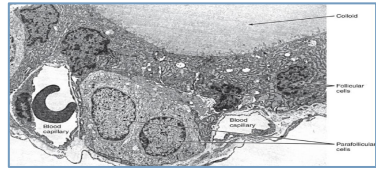
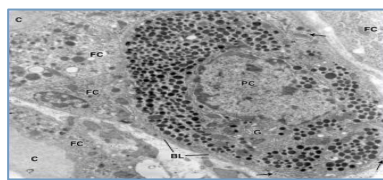
By the end of this lecture, the student should be able to:

- 01** Describe the histological structure of thyroid gland.
- 02** Identify and correlate between the different endocrine cells in thyroid gland and their functions.
- 03** Describe the microscopic structure of the parathyroid gland.
- 04** Describe the functional structure of the parathyroid cells.



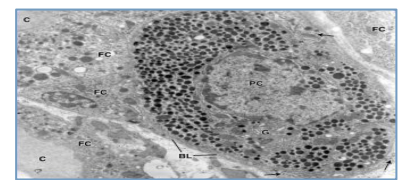
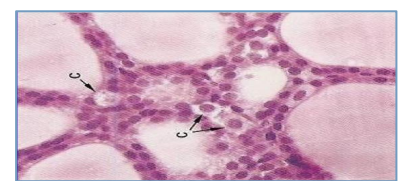
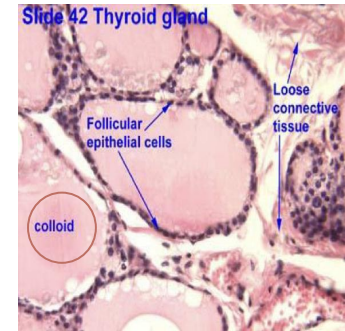
**This lecture was presented by:
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Thyroid Gland

Stroma	Parenchyma "Thyroid Follicles" Are the structural and functional units of the thyroid gland.	
<p>1- Capsule: dense irregular collagenous C.T.</p>	<p>1- Simple cuboidal epithelium</p>	
<p>2- Septa (Interlobular septa). (septa is not very clear in endocrine glands unlike the exocrine glands)</p>	<p>A- Follicular (principal) cells more than 99%</p> <div style="border: 1px solid black; padding: 5px; margin-top: 5px;"> <p>Function > Synthesis of thyroid hormones (T4&T3)</p> </div>	<p>B- Parafollicular cells (C cells) (clear cells)</p> <div style="border: 1px solid black; padding: 5px; margin-top: 5px;"> <p>Function > Secrete Calcitonin</p> </div>
<p>3- Reticular fibers: collagen type 3</p> <p>Thin reticular C.T. composed mostly of reticular fibers with rich capillary plexus surrounds each thyroid follicle. highly vascular</p>	<p>L/M:</p> <ul style="list-style-type: none"> - Simple cuboidal cells. - Round and central nucleus with prominent nucleoli, because it's active. - Pale basophilic cytoplasm. - Apical surface reaches the lumen of the thyroid follicle. 	<p>L/M:</p> <ul style="list-style-type: none"> - Pale-stained cells (Clear Cells). - Are found singly or in clusters in between the follicular cells. - Their apices do not reach the lumen of the follicle. - Are larger than follicular cells (2-3 times). - Only 0.1% of the epithelial cells. - Have round nucleus - Rich in blood capillaries
	<p>E/M:</p> <ul style="list-style-type: none"> - Mitochondria. - RER. - Supranuclear Golgi Complex. - Numerous apically located lysosomes. - Numerous dispersed small vesicles - These vesicles contain newly formed Thyroglobulin. - Numerous apical short microvilli. 	<p>E/M:</p> <ul style="list-style-type: none"> - Mitochondria. - RER (moderate). - Well-developed Golgi.
	<p>E/M:</p> <ul style="list-style-type: none"> - Mitochondria. - RER (moderate). - Well-developed Golgi. 	
		

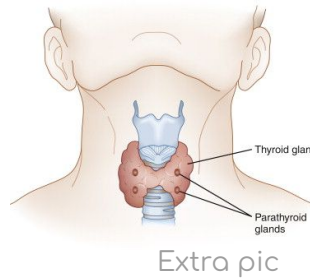
2- Colloid: central Colloid-filled lumen.

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

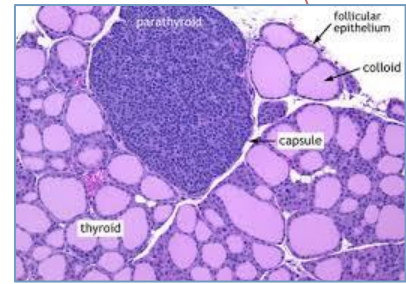


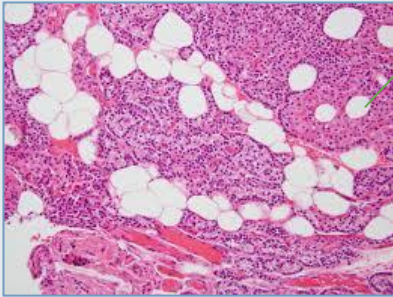
Parathyroid Gland

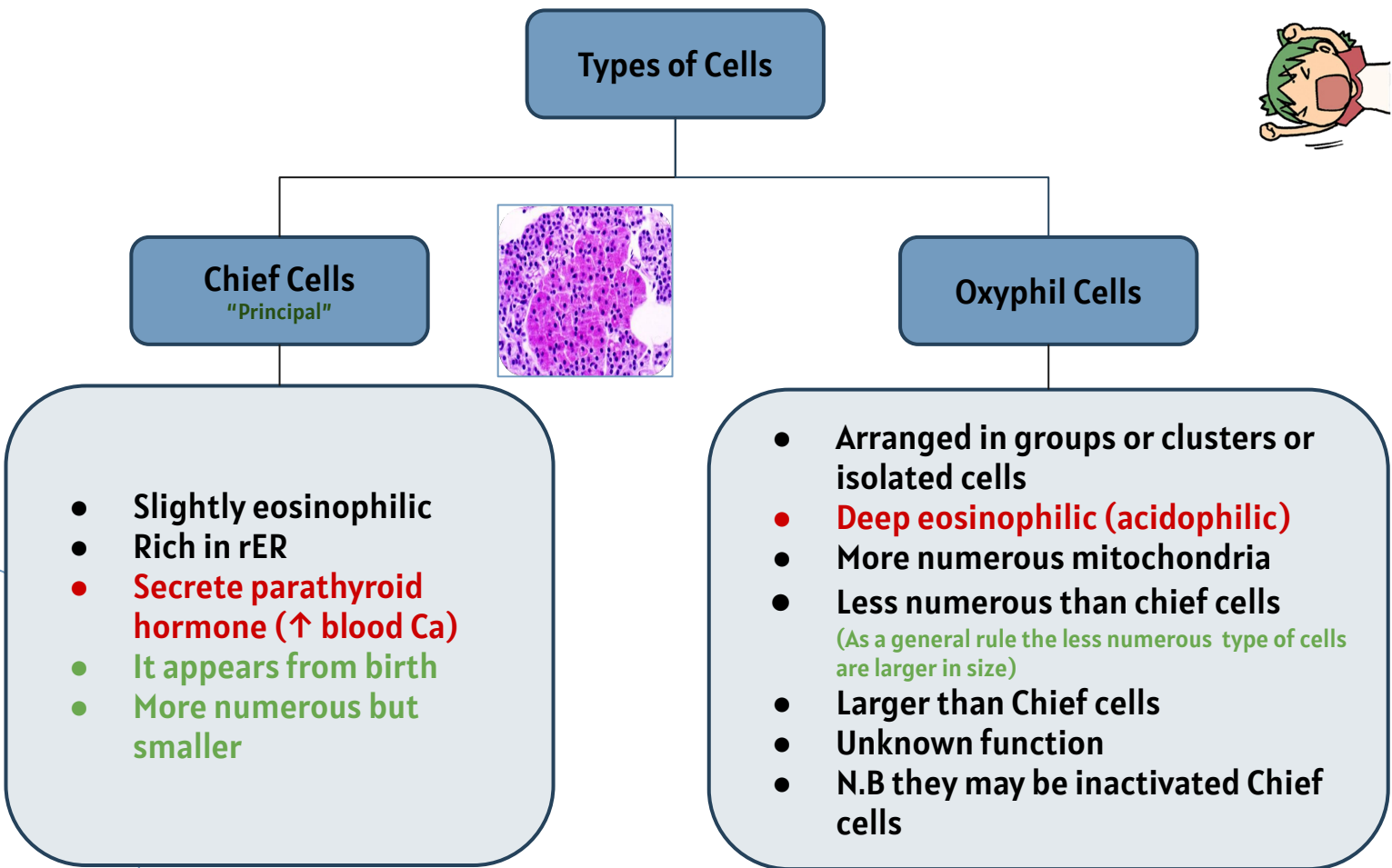
➤ They are 4 glands located on the posterior of thyroid gland



Extra pic



<p>Stroma</p>	<p>C.T stroma in older adults often contains many adipose cells might be up to 60% of total cells in 30-40 y.o.</p> <p><u>1- Capsule:</u> Each gland has its thin capsule</p> <p><u>2- Septa: Thin</u> Separate the glands into lobules.</p> <p><u>3- Reticular C.T.:</u> Separate the glands into lobules.</p>  <p>Adipocytes</p>
<p>Parenchyma</p>	<ul style="list-style-type: none"> Formed of cords or clusters of epithelial cells (Chief & Oxyphil) Both cells are acidophilic Contain blood capillaries in between. These cells are surrounded by reticular fibers.



MCQs

01 Which of the following is a feature of the parafollicular cells?

A- Apical surface reaches the lumen of the thyroid follicle.	B- Numerous apically-located lysosomes.	C-Their apices do not reach the lumen of the follicle.	D-Numerous dispersed small vesicles
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02 Which of the following is a feature of the parenchyma of the parathyroid gland?

A- Its cells are basophilic	B- Formed of cords or clusters of epithelial cells (Chief & Oxyphil)	C- Doesn't Contain blood capillaries	D- One of its cells secrete calcitonin
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03 Which of the following cells is responsible for the Synthesis of thyroid hormones (T4&T3)?

A- Chief cells	B- Follicular cells	C- parafollicular cells	D-Oxyphil cells
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04 Which of the following is a feature of the follicular cells?

A- Numerous apically-located lysosomes.	B- Well-developed Golgi.	C-Larger than parafollicular cells	D-Very few
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05 Which of the following is a feature of the chief cells?

A- Rich in mitochondria	B- Round and central nucleus with prominent nucleoli	C-Slightly basophilic	D-Secrete parathyroid hormone
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Answer key:
1-C,2-B,3-B,4-A,5-D

Leaders



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Waad alqahtani

Members



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Reviewed by

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