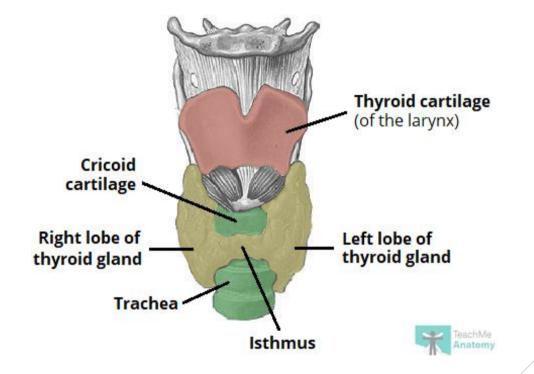
Endocrine system. Thyroid gland pathology-1.

Dr. Eman Krieshan, M.D.

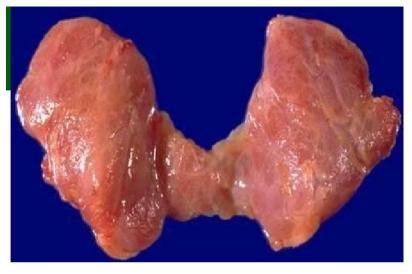
14-5-2024

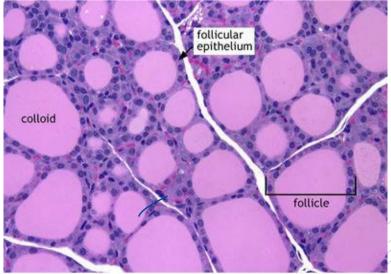
Thyroid. Anatomy.



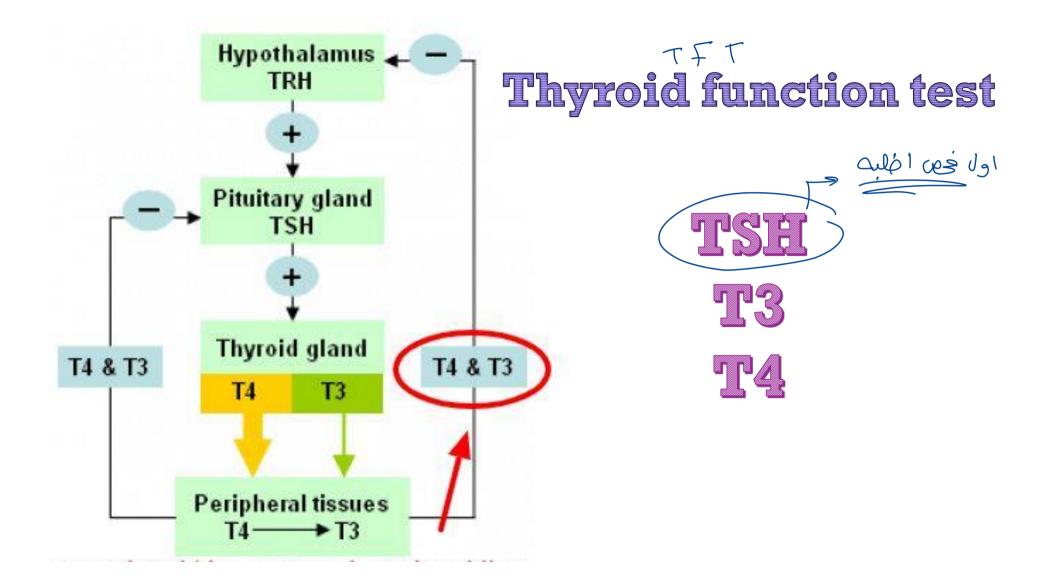


normal Hhyroid gland -Symmetrical -Smeoth surface





O Deltagen Inc.



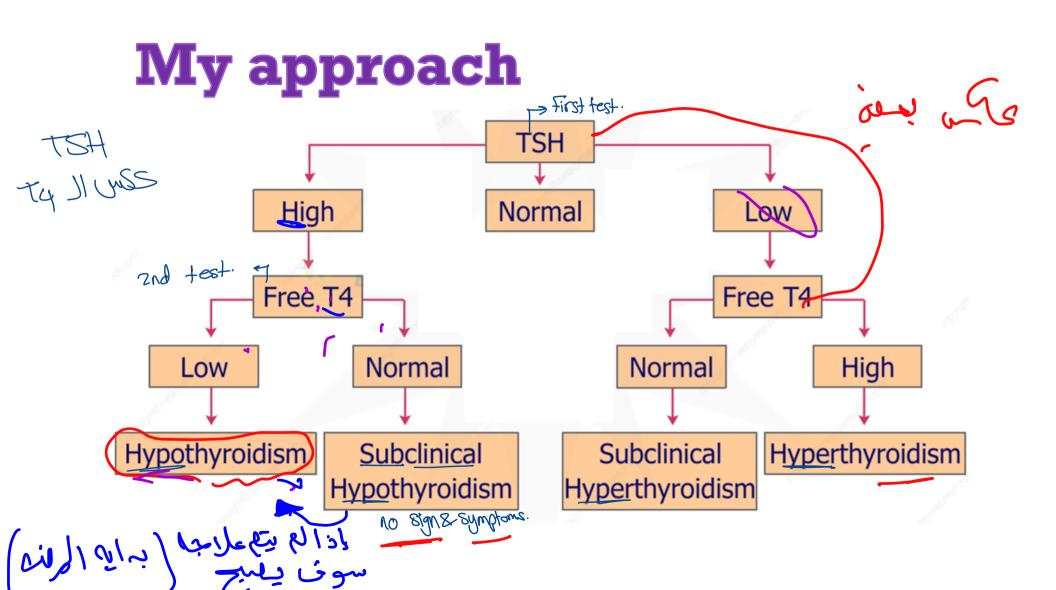
Diseases of thyroid gland

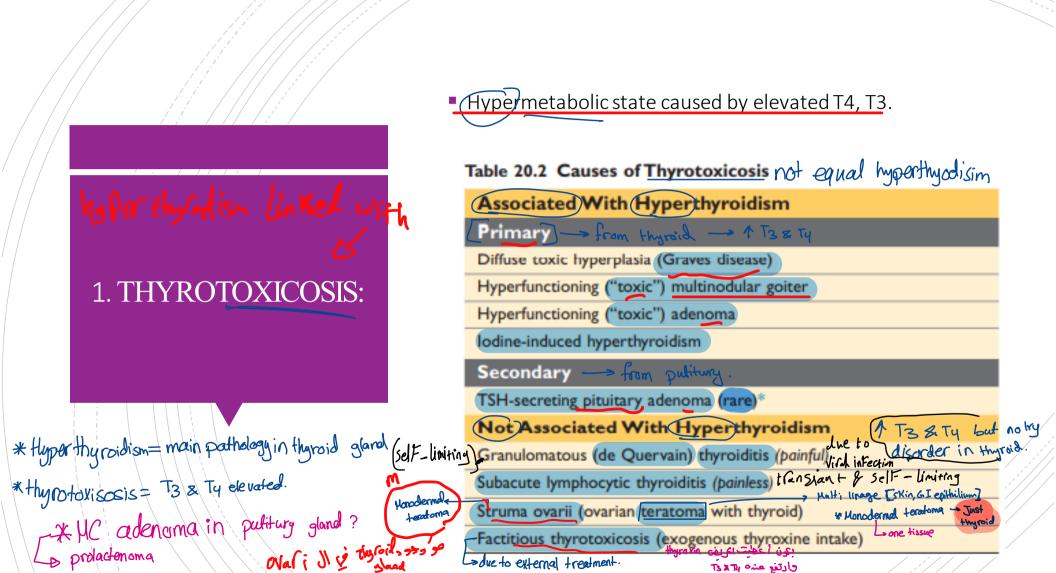
*<u>Non-neoplastic:</u>

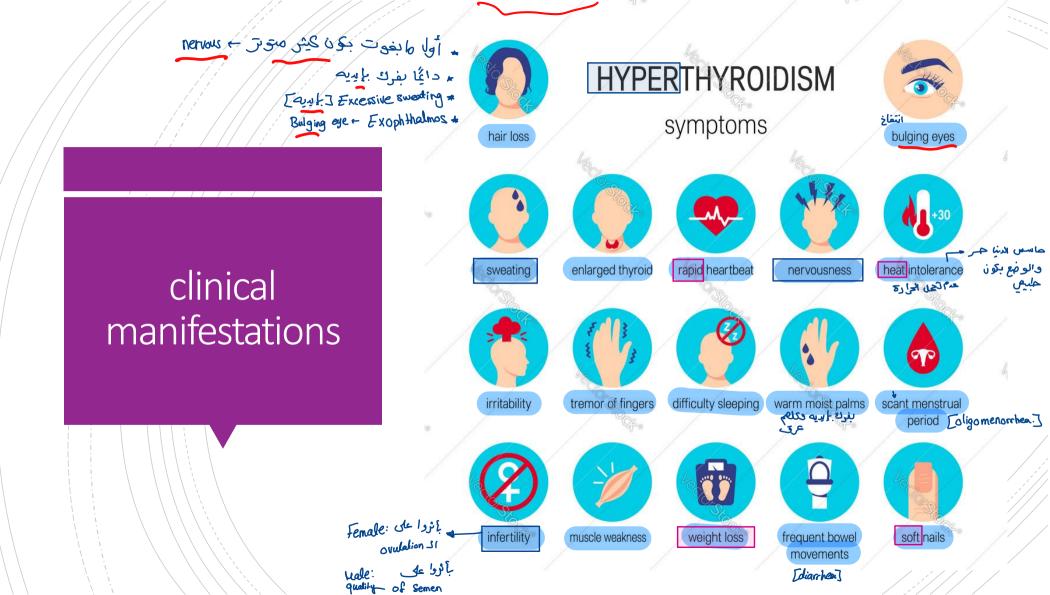
- Hyperthyroidism.
- Hypothyroidism.
- Autoimmune Thyroid Disease
- 🗸 Hashimoto Thyroiditis . 🧹
- ✓ de Quervain Thyroiditis. ∕
- Subacute Lymphocytic Thyroiditis
- ✓ Graves Disease.
- Diffuse and Multinodular Goiter

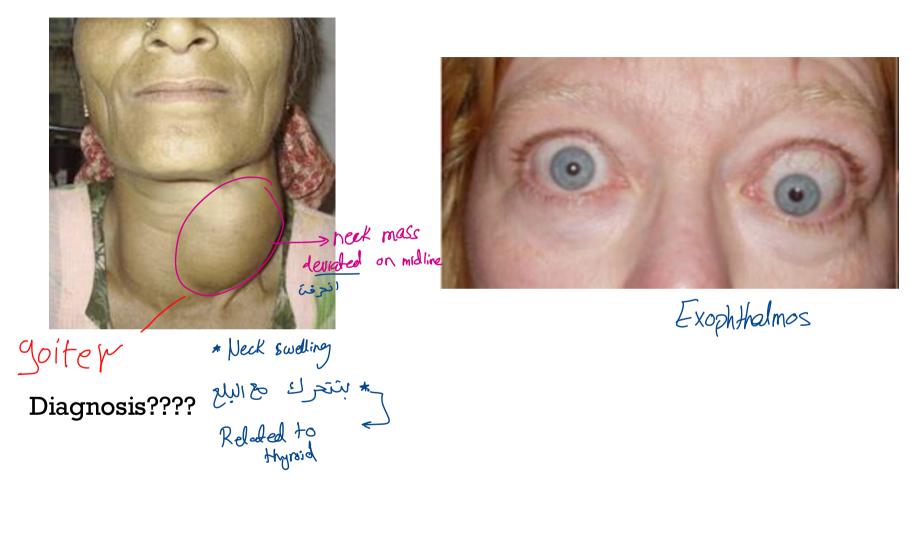
♦<u>Neoplastic.</u>







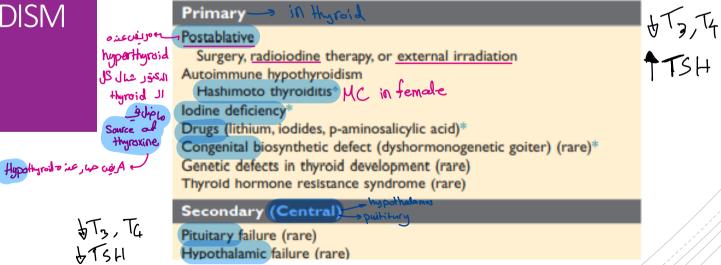




2. HYPOTHYROIDISM

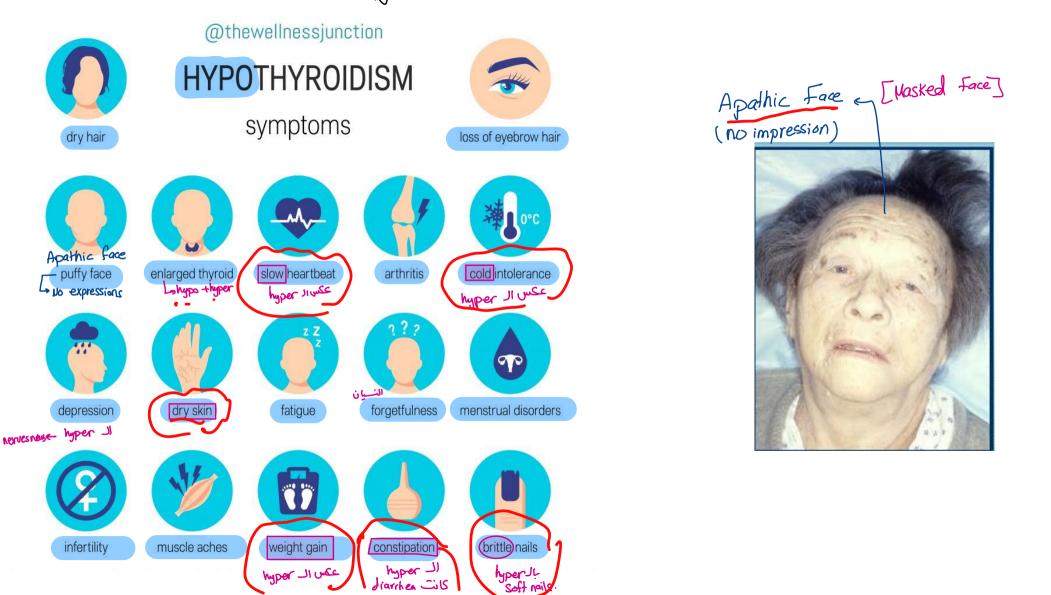
Hypothyroidism is caused by structural or functional derangements that interfere with thyroid hormone production.

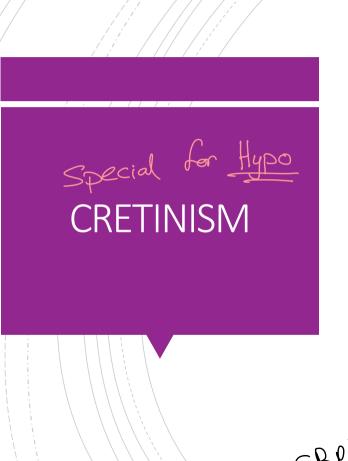
Table 20.3 Causes of Hypothyroidism



Hypothalamic failure (rare)

LTRH





- Cretinism refers to (hypothyroidism) developing in infancy or early childhood.
- common in areas of the world where dietary iodine deficiency is endemic.
- **Clinical features:**
- impaired development of the skeletal system and central nervous system. severe mental retardation.

->15t sign on loaby

short stature.

Huge torgue and partia √ coarse facial features, a <u>protruding tongue</u>.

umbilical hernia

CRETIMSM - Mil.J.



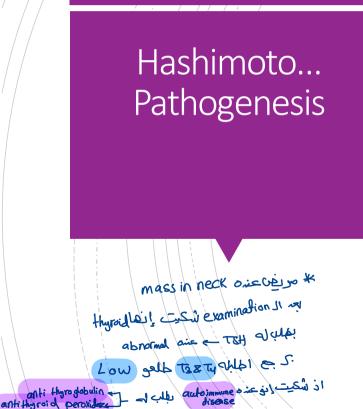
Autoimmune thyroiditis.

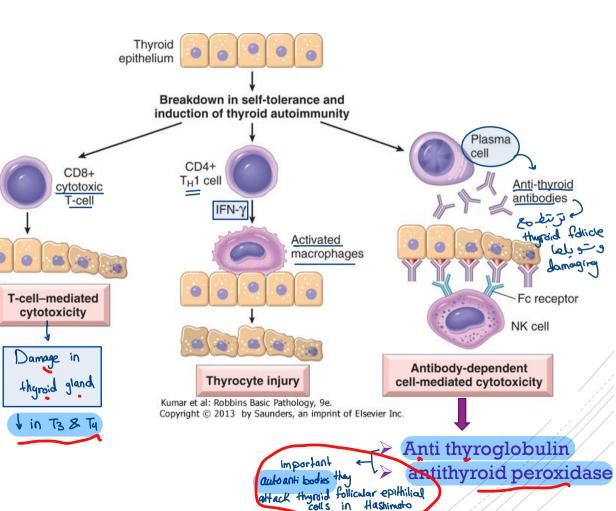
- <u>1. HASHIMOTO's THYROIDITIS</u>: • Autoimmune disease characterized by progressive destruction of thyroid tissue
- \checkmark Commonest type of thyroiditis \checkmark
- \checkmark Commonest cause of hypothyroidism in areas

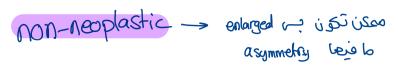
of sufficient iodine levels

$$\checkmark F:M = \frac{female}{10-20} : \frac{1}{2}, 45-65 \text{ yrs.}$$

✓ Patient presented with Painless symmetrical diffuse goiter

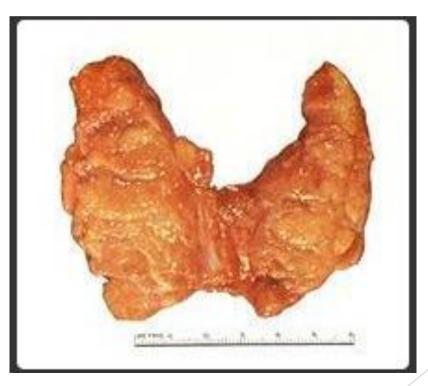




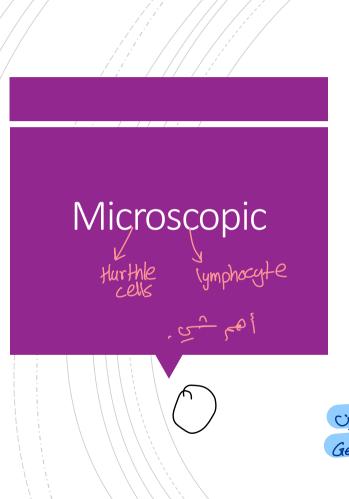




Gland is a smooth pale goiter, minimally nodular, well demarcated.



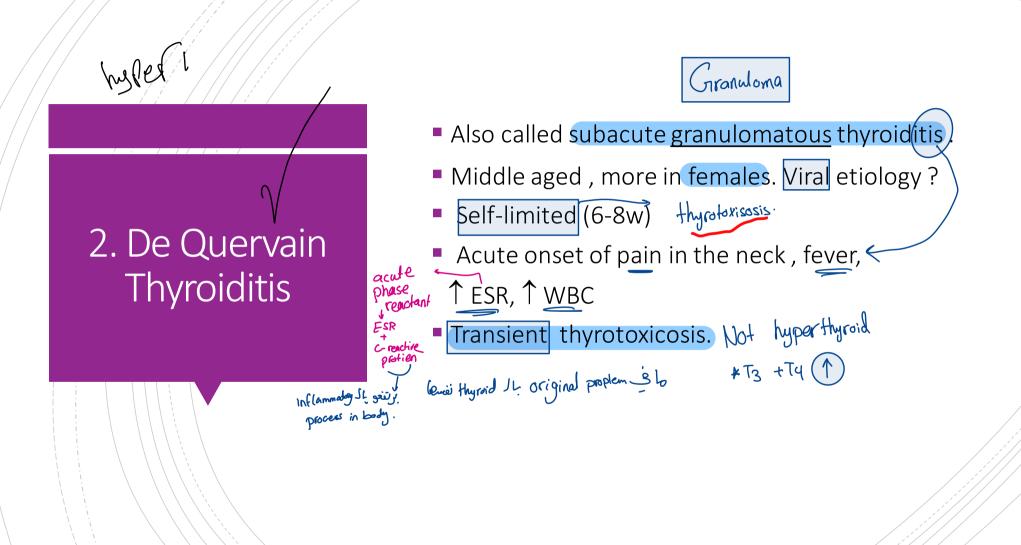
Morphology

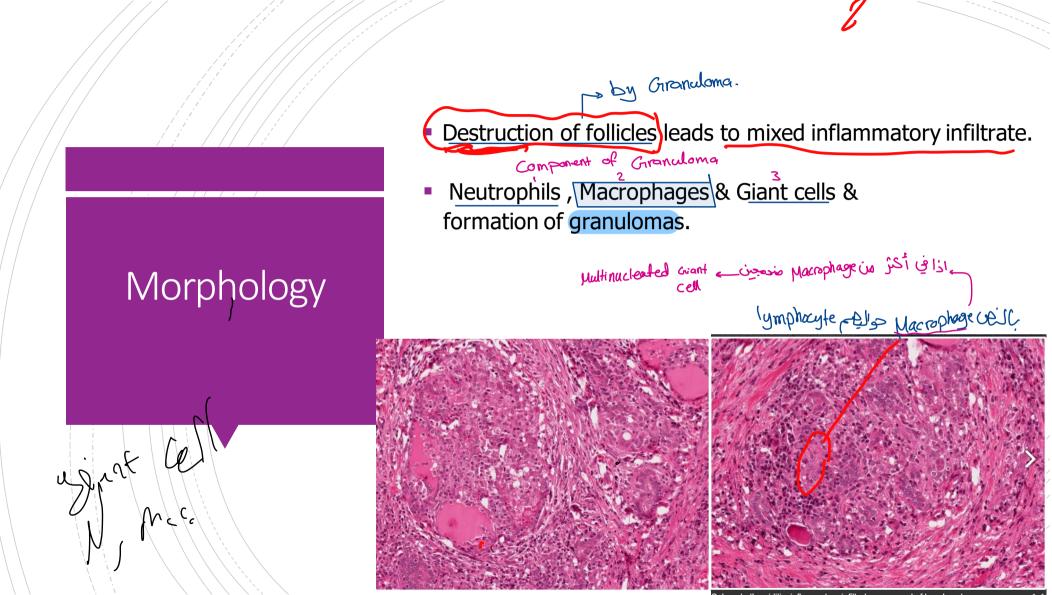


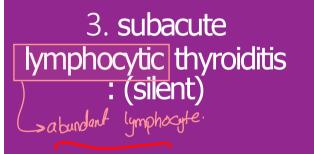
- Dense infiltration by lymphocytes & plasma cells
- Formation of lymphoid follicles, with germinal centers
- Presence of <u>HURTHLE CELLS</u> oncocyte ?



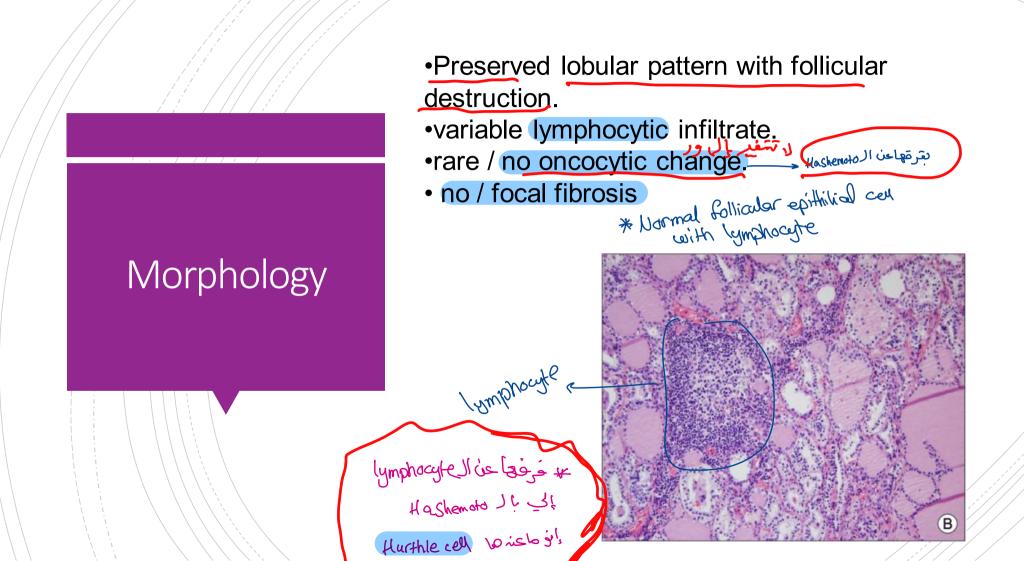
Culote lympocyte. Germinal center - Nucleus enlarged - pale or easinophilic cytoplasm? - expansion in cell - because if have now armout of eosinophilic to pate catoplasm & 1 nacleus.

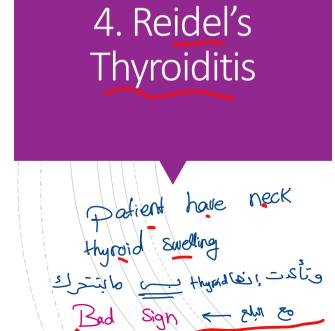






- Middle aged females & post partum patients
- Probably autoimmune with circulating AB.
- May recur in subsequent pregnancies
- May progress to hypothyroidism





J20

-Fix thyroid - Symmetric is Sub Densely fibrotic) inflammatory process involving thyroid gland and adjacent neck tissue.

Fixation 11 ---



**Morphology

Follicles are obliterated or compressed by extensive dense fibrous tissue



Hyper 5. GRAVE'S DISEASE. Autoimmune disease characterized by hyperthyroidism due to circulating autoantibodies against thyrotropin (TSH receptor) that activates the receptor, leading to increased thyroid hormone synthesis and secretion and growth of the thyroid gland

Common in young formale.

- Commonest cause of endogenous hyperthyroidism
- Age 20- 40 y.
- M: F ratio is 1: <u>7</u>
- More common in western races

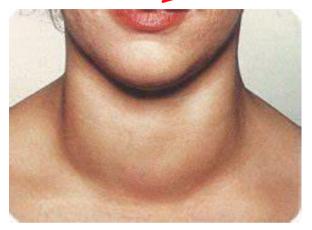
Associated with...

- enlargment of Hyraid
 - infiltrative ophthalmopathy.
 - Infiltrative dermogathy, including:
 - pretibial myxedema .
 - thyroid acropachy (extremity swelling, clubbing of fingers and toes due to periosteal new bone formation)





pretibial myxedema





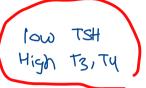
clubbing of fingers





Diagnosis

clinically by symptoms.



presence of laboratory markers of hyperthyroidism.

(Increased T3 / T4, increased uptake of radioactive iodine, decreased TSH).

presence of serum anti thyrotropin antibodies

(thyroglobulin, thyroid peroxidase, sodium iodide symporter and thyrotropin / TSH receptor).

Nost specific of Growis.

Pathogenesis

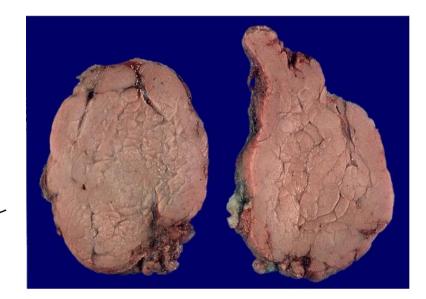
Circuis SLE

- Exact cause is unclear.
- It is believed to involve a combination:
- ✤ Genetic (Caused by B and T cell mediated immune responses leading to production of autoantibodies to thyrotropin / TSH receptor).
- environmental factors (Onset of disease may be triggered by stress, infection or giving birth).

May exist with other similar diseases e.g. SLE, Pernicious
anemia, Diabetes type I, Addison's disease.
hgpe 1 DA Jut to disfiction of autoimmune disease
hgp 1 Jut to disfiction of autoimmune disease
hgp 3-st(ic Codd

Morphology.

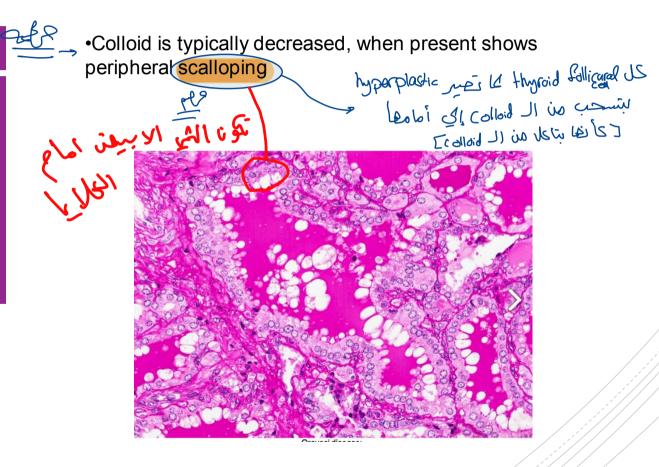
 Diffuse and symmetrically enlarged thyroid gland with beefy red cut surface.



•Hyperplastic thyroid follicles with papillary infolding.

extensive porification an

Histology



DIFFUSE & MULTINODULAR GOITRE

JUSI de

جوين عن البحر

- Goiter is clinical term meaning enlarged thyroid, which can be either diffuse or nodular (e.g. multinodular or solitary / dominant nodule).
- Multinodular goiter: irregular enlargement of thyroid gland due to <u>repeated episodes of hyperplasia and involution</u> (degeneration).
- Iodine deficiency is most common cause worldwide.



DIFFUSE & MULTINODULAR GOITRE

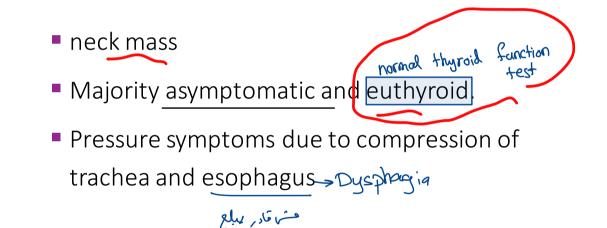
- 90% of those affected are women (F >> > M)
- Variable age; develops more <u>frequently during</u> adolescence and pregnancy.
- Increase in TSH secretion is the main cause in iodine deficiency related goiter.
- Endemic: 10% of population have goiter Sporadic : 1- Physiological demand

2-Dietary intake of excessive calcium &

cabbages.

3-Hereditary enzyme defects

Clinical features



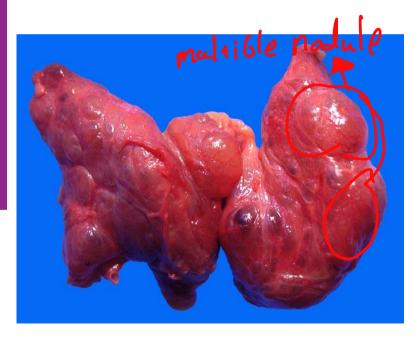
Diagnosis

- Clinical examination
- Thyroid function tests: TSH, T3, T4 entry roid.
 (Usually normal T3 / T4, TSH, normal radioactive iodine uptake)
- Thyroid ultrasound
- CT or MRI to evaluate extent of goiter

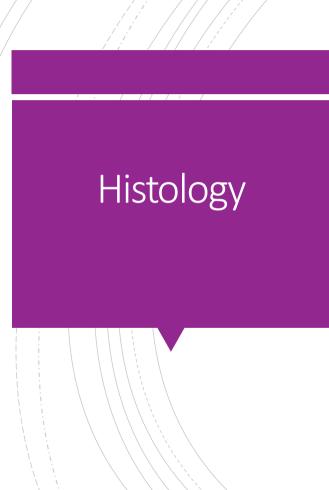
* Multinodular goiters are asymmetric, large

Nodular, bumpy outer surface and variegated cut surface

Morphology







- Variable sized dilated follicles with flattened to hyperplastic epithelium.
- Nodules may be present.

Multiple nodules.

