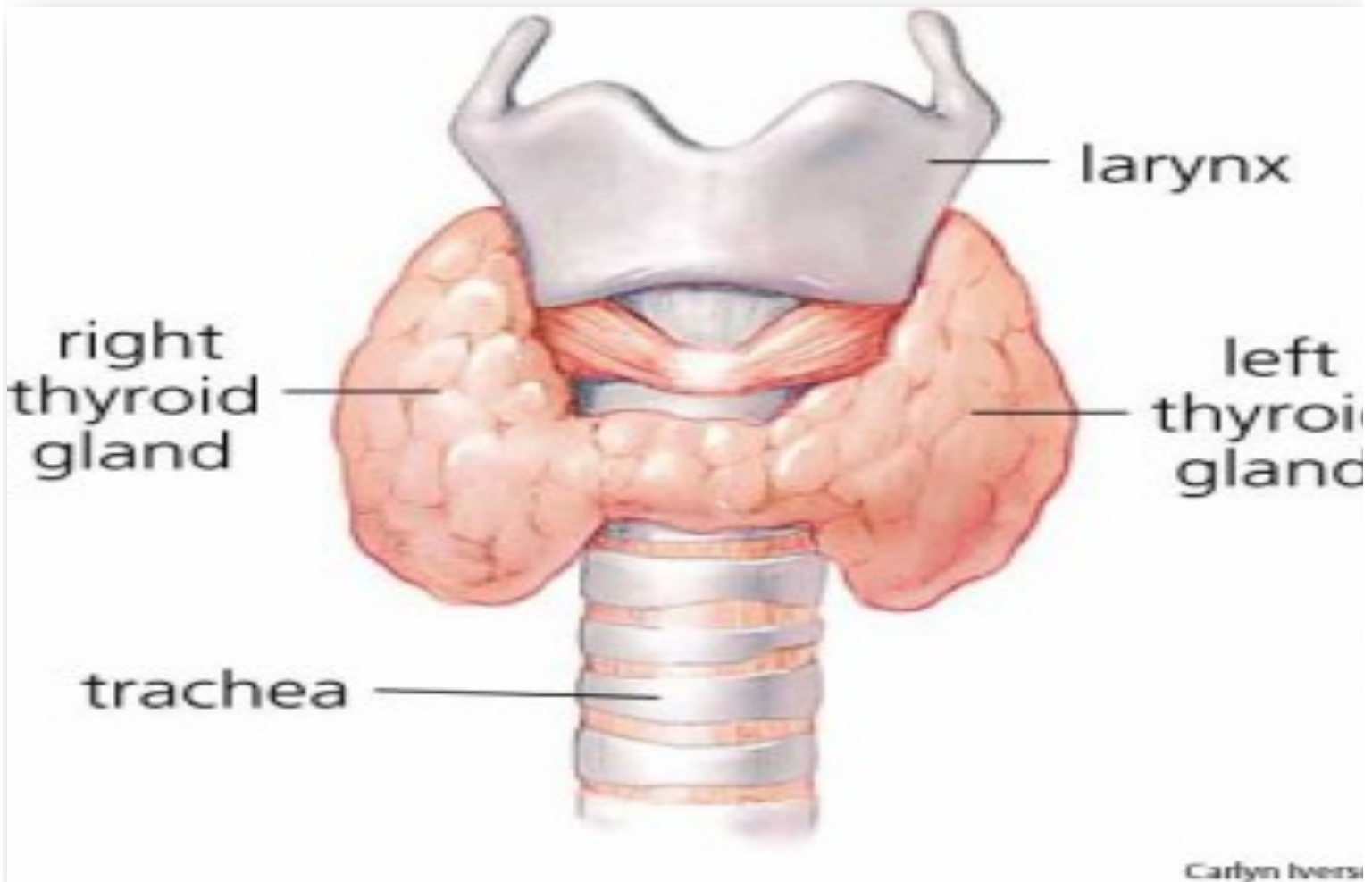


## ENDOCRINE BLOCK SECOND WEEK



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## Anatomy

### [2] Thyroid & Parathyroid glands

**The isthmus is connect the tow lobe of thyroid gland is overlies which one of these tracheal rings ?**

- A. 2nd 3rd & 4th
- B. 1st 3rd & 4th
- C. 2nd 3rd & 5th
- D. 1st 3rd & 5th

**As: a**

**The base of the lobe of thyroid gland lies in which tracheal rings ?**

- A. 3rd & 4th
- B. 2nd & 3rd
- C. 4th & 5th
- D. 4th

**Ans:C**

**Which of the following nerves is endanger in ligation of the superior thyroid artery?**

- A. External laryngeal
- B. Recurrent laryngeal.
- C. Internal laryngeal.
- D. Superior laryngeal.

**Ans: a**

**Which of the following structures lies anterior to the thyroid lobe?**

- A. Inferior belly of omohyoid.
- B. Internal jugular vein.
- C. Vagus nerve.

D. Sternohyoid.

Ans : d

**The Posterior relation of thyroid gland is ?**

- A. the common carotid artery
- B. internal jugular vein
- C. the vagus nerve
- D. All

Ans : d

**By which day after fertilization, the thyroid gland begins to develop?**

- A. 25
- B. 26
- C. -24
- D. -23

Ans: c

**By which day the gland takes its final shape & position?**

- A. -50
- B. 48
- C. -51
- D. -52

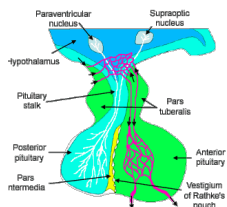
Ans : a

**The inferior para thyroid gland bud is develop from ?**

- A. Dorsal part of the 3rd pouch
- B. Dorsal part of the 4th pouch
- C. Ventral part of the 3rd pouch
- D. Dorsal part of the 4th pouch

Ans : a

The Pyramidal lobe is connected to the hyoid bone by a fibrous or muscular band called levator glandulae thyroideae.



## Histology

[2] & [3]

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

- A. Their apices do not reach the lumen of the follicle.
- B. Are larger than follicular cells (2-3 times).
- C. Have round nucleus
- D. Their apices reaches the lumen of the thyroid follicle.

Ans:d

**What is the epithelium lining of thyroid gland ?**

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

Ans: c

**All of these cells present in Para thyroid gland except ?**

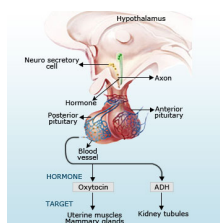
- A. Chief cells
- B. Oxyphil cells
- C. Adipose cells
- D. Goblet cells

Ans: d

**Which cells of para thyroid are responsible for secretion of hormones ?**

- A. Chief cells
- B. Oxyphil cells
- C. Adipose cells
- D. Goblet cells

Ans:A



## Physiology

### [6] Physiology of the thyroid gland

**1- which of the following is the first recognized endocrine gland:**

- A- Pancrease
- B- Hypothalamus
- C- Thyroid
- D- Parathyroid

Answer: C

**2- which of the following is not feature of thyroid gland:**

- A- Contains a large amount of iodine.
- B- T3 is the major product.
- C- Thyroxin is the major product.

Answer: B

**3- In pregnancy:**

- A- Thyroid hormone is stimulated
- B- Thyroid hormone is inhibited
- C- Decrease in TBG

Answer: A

**4- Regarding Thyroid hormone:**

- A- Increase appetite and food intake.
- B- Decrease of G.I tract motility
- C- Decrease dissociation of oxygen from Hb by increasing RBC 2,3-DPG (2,3 diphosphoglycerate)

Answer: A

**5- Action of TSH:**

- A- Decrease coupling reaction
- B- Increase pump activity
- C-activation of adenylyl cyclase

Answer: B

**6- TSH secreted from:**

- A- Anterior Pitutary
- B- Posterior pituitary
- C- Hypothalamus

Answer: A

## [7] Hypo,Hyperthyroidism

### 1-Graves' disease :

- A- autoimmune disorder.
- B- more common in women than men.
- C- Lead to hyperthyroidism
- D- All of the following

Answer: D

### 2- One of the following is not a symptom of Hyperthyroidism:

- A- night sweating
- B- menstrual cycle disturbance
- C- protrusion of eye balls
- D- decrease in the glomerular filtration rate

Answer: D

### 3- Choose the correct answer regarding primary hyperthyroidism:

- A- high T3, T4 and low TSH
- B- High T3, T4 and TSH
- C- Low TSH, T3 & T4

Answer: A

### 4- one of the following does not cause Hypothyroidism:

- A- thyroglobulin defect
- B- Gland destruction
- C- Increase TSH

Answer: C

### 5- characteristic eye sign in dysthyroid status:

- a- exophthalmos
- b- ptosis
- c- optic neuropathy
- d- myopathy

answer : A



## Pharmacology

### [1]&[2] Drug used in hypo & hyper thyroidism

**Which one of the following treat hyperthyroidism by inhibiting peroxidase enzyme ?**

- A. *Thioamides ( antithyroid drugs)*
- B. Iodides
- C. Radioactive iodine

ans: A

**Which one of the following is a drug of choice in case of pregnant women having hyperthyroidism ?**

- A. -Propylthiouracil
- B. -iodine
- C. -Methimazole

Ans: A

**Which one of the following could be used as a diagnostic tool for hyperthyroidism ?**

- A. Radioactive Iodine
- B. -iodine
- C. -Methimazole

Ans: A

**Which one of the following dangerous side effects the doctor should look after in the patient after using Propylthiouracil;**

- A. Arthralgia
- B. GI upset
- C. Agranulocytosis

Ans: C

**Which of the following used Prior to thyroid surgery to decrease vascularity & size of the gland ?**

- A. *-Thioamides ( antithyroid drugs)*
- B. Iodides
- C. Radioactive iodine

Ans: B

**Which of the following should be avoided in cardiac patients ?**

- A. -Liothyronine
- B. -levothyroxine

Ans: A

**The treatment of choice for MYXEDEMA COMA is :**

- A. Liothyronine
- B. Levothyroxine

Ans: B





## Pathology

### [1] Hypo,Hyperthyroidism and Hashimoto Thyroiditis

**A 46-year-old woman complains of increasing fatigue and muscle weakness over the past 6 months. She reports an inability to concentrate at work and speaks with a husky voice. The patient denies drug or alcohol abuse. Physical examination reveals cold and clammy skin, coarse and brittle hair, boggy face with puffy eyelids, and peripheral edema. There is no evidence of goiter or exophthalmos. Laboratory studies show reduced serum levels of T3 and T4. Which of the following is the most likely underlying cause of these signs and symptoms?**

- (A) Amyloidosis of the thyroid
- (B) Autoimmune thyroiditis
- (C) Thyroid follicular adenoma
- (D) Multinodular goiter
- (E) Papillary carcinoma of the thyroid

**The answer is B: Autoimmune thyroiditis.**

Primary (idiopathic) hypothyroidism is often autoimmune. Three fourths of patients with primary hypothyroidism have circulating antibodies to thyroid antigens, suggesting that these cases represent the end stage of autoimmune thyroiditis. Nongoitrous hypothyroidism may also result from antibodies that block TSH itself or the TSH receptor, without activating the thyroid. The other choices present with either an enlarged thyroid or a mass and rarely present with hypothyroidism. Hypothyroidism secondary to amyloidosis of the thyroid (choice A) is rare.

**Diagnosis:** Hypothyroidism

**A 65-year-old woman with a history of multinodular goiter complains of increasing nervousness, insomnia, and heart palpitations. She has lost 9 kg (20 lb) over the past 6 months. Physical examination reveals a diffusely enlarged thyroid. There is no evidence of exophthalmos. Laboratory studies show elevated serum levels of T3 and T4. Serologic tests for antithyroid antibodies are negative. Which of the following is an important complication of this patient's endocrinopathy?**

- (A) Autoimmune hepatitis
- (B) Cardiac arrhythmia
- (C) Follicular carcinoma of the thyroid
- (D) Medullary carcinoma of the thyroid

(E) Myxedema madness

**The answer is B: Cardiac arrhythmia.**

Many patients with nontoxic goiter, usually over the age of 50 years, eventually develop a toxic form of the disease. Since patients with toxic goiter tend to be older, cardiac complications, including atrial fibrillation and congestive heart failure, dominate the clinical presentation.

**Diagnosis:** Hyperthyroidism, toxic goiter

**A 40-year-old woman complains of chronic constipation and anovulatory cycles for the last 8 months. Her vital signs are normal. Physical examination reveals peripheral edema and a firm, diffusely enlarged thyroid gland. Serum levels of T3 and T4 are abnormally low. A thyroid biopsy shows Hürthle cells and extensive infiltration of the parenchyma by small lymphocytes, plasma cells . What is the appropriate diagnosis?**

- (A) Acute necrotizing thyroiditis
- (B) Hashimoto thyroiditis
- (C) Multinodular goiter
- (D) Reidel thyroiditis
- (E) Subacute (DeQuervain) thyroiditis

**The answer is B: Hashimoto thyroiditis (autoimmune thyroiditis).**

It's a common cause of goitrous hypothyroidism. The disease is characterized by the presence of circulating antibodies to thyroid antigens and features of cell-mediated immunity to thyroid tissue. The disorder arises most commonly in women in the fourth and fifth decades . Microscopically, the thyroid displays

- (1) a conspicuous infiltrate of lymphocytes and plasma cells,
- (2) destruction and atrophy of the follicles, and
- (3) oxyphilic metaplasia of the follicular epithelial cells (Hürthle or Askanazy cells).

**A 52-year-old woman complains of swelling in the anterior portion of her neck, which she first noticed 6 months ago. Except for some discomfort during swallowing, the patient does not report any significant symptoms. Physical examination reveals a symmetrically enlarged thyroid. A thyroid biopsy is shown in the image. Which of the following is the most likely diagnosis?**

- (A) Follicular adenoma
- (B) Graves disease
- (C) Hashimoto thyroiditis
- (D) Nontoxic goiter
- (E) Non-Hodgkin lymphoma

**The answer is D: Nontoxic goiter.**

Nontoxic goiters range from double the size of a normal gland (40 g) to massive thyroid weighing hundreds of grams. Microscopically, nontoxic goiter exhibits hypertrophy and hyperplasia. There is marked variation in size of the follicles (see photomicrograph), fibrosis, and evidence of old hemorrhage.

**Diagnosis:** Nontoxic goiter, multinodular goiter

**Five years later, the patient described in previous Question returns with symptoms of hyperthyroidism. Which of the following best summarizes the clinical symptoms expected in this patient?**

- (A) Dry skin, hypogonadism, fatigability
- (B) Hyperpigmentation, weakness, hypotension
- (C) Nervousness, irritability, paresthesias, tetany
- (D) Pale complexion, cold intolerance, lethargy
- (E) Tremor, tachycardia, weight loss

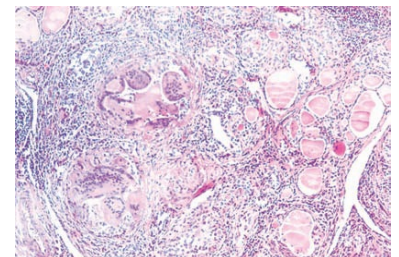
**The answer is E: Tremor, tachycardia, weight loss.**

Some patients with nontoxic goiter, usually over the age of 50 years, eventually develop hyperthyroidism, in which case the term toxic multinodular goiter is applied. The symptoms of toxic goiter are less severe than those associated with Graves disease, and patients do not develop exophthalmos. Because patients with toxic goiter tend to be older, cardiac complications are common. The other choices, which include symptoms such as hypogonadism (choice A), hyperpigmentation (choice B), tetany (choice C), and lethargy (choice D), are encountered in other endocrinopathies.

**Diagnosis:** Toxic goiter

**A 43-year-old woman complains of low-grade fever and has a 3-day history of pain in her neck. Physical examination reveals a slightly enlarged thyroid. A CBC is normal. A biopsy of the thyroid reveals granulomatous inflammation and the presence of giant cells (shown in the image). What is the appropriate diagnosis?**

- (A) Graves disease
- (B) Hashimoto thyroiditis
- (C) Lymphadenoid thyroiditis
- (D) Nontoxic multinodular goiter
- (E) Subacute (deQuervain) thyroiditis



**The answer is E: Subacute (DeQuervain) thyroiditis.**

Subacute thyroiditis (deQuervain, granulomatous, or giant-cell thyroiditis) is caused by a viral infection. It is an infrequent, self-limited disorder of the thyroid characterized by granulomatous inflammation. Initially, microscopic examination reveals an acute inflammation, often with microabscesses. The other choices do not feature a granulomatous reaction.

**Diagnosis:** Subacute (DeQuervain) thyroiditis

**A 29-year-old woman complains of nervousness and muscle weakness of 6 months in duration. She is intolerant of heat and sweats excessively. She has lost 9 kg (20 lb) pounds over the past 6 months, despite increased caloric intake. She frequently**

**finds her heart racing and can feel it pounding in her chest. She also states that she has missed several menstrual periods over the past few months. Physical examination reveals warm and moist skin and bulging eyes (exophthalmos). Laboratory studies will likely reveal which of the following endocrine abnormalities in this patient?**

- (A) Anti-thyroid DNA antibodies
- (B) Anti-TSH receptor antibodies
- (C) Decreased uptake of radioactive iodine in the thyroid
- (D) Increased serum TSH
- (E) Low serum T3

**The answer is B: Anti-TSH receptor antibodies.**

Anti-thyroid DNA antibodies (choice A) are not common in patients with Graves disease, and the thyroid shows *increased* uptake of radioactive iodine (see choice C). Serum levels of TSH are *low* (see choice D) and serum levels of T3 and T4 are *high* (see choice E).

**Diagnosis:** Graves disease

**A thyroid biopsy obtained from the patient described in previous Question is shown in the image. Which of the following best describes the pathologic findings?**

- (A) Atrophy and fibrosis
- (B) Dense lymphoid infiltrate with germinal centers
- (C) Follicular hyperplasia with scalloping of colloid
- (D) Necrotizing parenchymal granulomas
- (E) Papillary hyperplasia with psammoma bodies

**The answer is C: Follicular hyperplasia with scalloping of colloid.**

In Graves disease, the follicles are lined by hyperplastic, tall columnar cells. Colloid is pink and scalloped at the periphery adjacent to the follicular cells. None of the other choices would appear in biopsy.

**Diagnosis:** Graves disease

## **[2] Thyroid nodules and neoplasms.**

**A 33-year-old woman presents with a swelling in her neck, Physical examination reveals a solitary, nontender nodule of the thyroid gland. The patient has previous exposure to ionizing radiation in her neck region. A biopsy of the nodule shows orphan Annie nuclei, Pseudoinclusions and Psammoma bodies. What is the diagnosis of this case:**

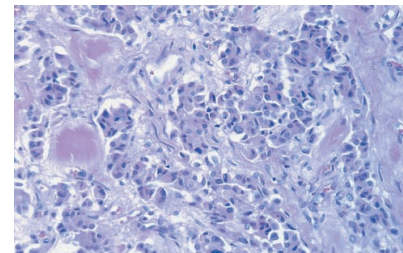
- (A) Follicular adenoma
- (B) Medullary thyroid carcinoma
- (C) Metastatic carcinoma
- (D) Multinodular goiter

(E) Papillary thyroid carcinoma

**The answer is A: Papillary thyroid carcinoma**

**A 36-year-old woman presents with swelling in her neck that she first noticed 3 months ago. She also complains of intermittent watery diarrhea over the same time period. Physical examination reveals a nontender nodule in the left lobe of the thyroid. The patient's mother died of thyroid cancer 8 years ago. The thyroid nodule is found to be "cold" by radioiodine scintiscan. A needle biopsy of the nodule reveals malignant cells and homogeneous eosinophilic material (shown in the image). Laboratory studies would likely show elevated blood levels of which of the following hormones in this patient?**

- (A) Calcitonin
- (B) Cortisol
- (C) PTH
- (D) T4
- (E) TSH



**The answer is A: Calcitonin.**

Medullary thyroid carcinoma (MTC) is derived from C cells of the thyroid, which secrete the calcium-lowering hormone calcitonin. The disease represents fewer than 5% of all thyroid cancers, although the incidence is considerably higher in familial forms (e.g., MEN-2). MTC is characteristically solid and composed of polygonal, granular cells that are separated by a distinctly vascular stroma. A conspicuous feature is the presence of stromal amyloid, representing the deposition of procalcitonin. Watery diarrhea in one third of patients is caused by the secretion of vasoactive intestinal peptide. T4 (choice D) is incorrect because the tumor does not cause hyperthyroidism and TSH (choice E) is normal because the remaining thyroid produces adequate thyroid hormone. Choices B and C (cortisol and PTH) are not thyroid hormones.

**Diagnosis:** Medullary carcinoma of the thyroid

**A 45-year-old man presents with swelling in the anterior portion of his neck. Physical examination reveals an enlarged nodular thyroid. Thyroid function tests are within normal limits. A thyroid scintiscan shows a dominant "hot" nodule. A biopsy of this nodule reveals neoplastic cells with evidence of vascular and capsular invasion (shown in the image). X-rays demonstrate distant bony metastases. What is the most likely diagnosis?**

- (A) Anaplastic carcinoma
- (B) B-cell lymphoma
- (C) Follicular carcinoma
- (D) Medullary carcinoma
- (E) Metastatic carcinoma

**The answer is C: Follicular carcinoma.**

Follicular thyroid carcinoma (FTC) is purely follicular and does not contain any papillary or other elements. Minimally invasive FTC is seen grossly as a well-defined, encapsulated tumor, which on cut section is soft and pale tan and bulges from the confines of its capsule.

Microscopically, most lesions resemble follicular adenoma, although they tend more to a microfollicular or trabecular pattern. Anaplastic carcinoma of the thyroid (choice A) manifests as large masses of the gland that are poorly circumscribed and frequently extend into the soft tissues of the neck.

**Diagnosis:** Follicular carcinoma of the thyroid

N.B.

**"Hot" nodules**= increased uptake compared to the rest of the thyroid= virtually never malignant.

**"Cold" nodules**= less iodine than the rest of the thyroid=, chances are still good that it's not malignant – but not quite as good: about 10% of cold nodules turn out to be malignant.



## Biochemistry

**q1) Which of the following is the main hormone secreted by the thyroid gland:-**

- A. Reverse T3
- B. Calcitonin
- C. Triiodothyronine
- D. Thyroxine

**Ans:D**

**Q2) Which one of the following is first line test to determine thyroid function?**

- A. Free T3
- B. b. CRH
- C. Free T4 OR Total T4
- D. TSH

**Ans:D**

**Q3) Low level of T3 and T4 and high TSH in serum indicates:**

- A. Hyperthyroidism of pituitary origin (secondary)
- B. Hypothyroidism of pituitary origin (secondary)
- C. Hypothyroidism of thyroid origin (primary)
- D. Hyperthyroidism of thyroid origin (primary)

**Ans:C**

**Q4 Which one of the following will happen in case of neonatal hypothyroidism?**

- A. Acromegaly
- B. Dwarfism
- C. Cretinism
- D. Gigantism

**Ans:C**

If you have any questions you want to add, please send it to  
[Revisiontest432@gmail.com](mailto:Revisiontest432@gmail.com)

**Good luck**

**Team Leaders :**

**Khalid Al-Osaimi & Lulu Al-Obaid**



**"The good physician treats the disease; the great physician treats the patient who has the disease."**  
*~William Osler*