

**Thyroid glands Name\_\_\_\_\_**

1. A 28-year-old woman has had difficulty concentrating at work for the past month. She is constantly getting up and walking around to visit co-workers. She complains that the work area is too hot. She seems nervous and often spills her coffee. She has been eating more but has lost 5 kg in the past 2 months. On physical examination her temperature is 37.5°C, pulse 101/minute, respiratory rate 22/minute, and blood pressure 145/85 mm Hg. Which of the following laboratory findings is most likely to be present in this woman?

- a) Decreased catecholamines
- b) Decreased iodine uptake
- c) Decreased plasma insulin
- d) Decreased TSH
- e) Increased ACTH
- f) Increased calcitonin

2. A 40-year-old woman has noted enlargement of her anterior neck region over the past 8 months. On physical examination her vital signs include T 36.8°C, P 64/minute, RR 16/minute, and BP 155/105 mm Hg. There is diffuse, symmetrical thyroid enlargement without tenderness. A chest radiograph is normal. Fine needle aspiration of the thyroid yields cells consistent with a neoplasm. Laboratory studies show that she is euthyroid, but her serum ionized calcium is elevated. She is taken to surgery and frozen sections of several thyroid masses show a malignant neoplasm composed of polygonal cells in nests. A thyroidectomy is performed. Immunostaining for calcitonin of the permanent sections is positive, and the neoplasm has an amyloid stroma with Congo red staining. Which of the following neoplasms is she most likely to have?

- a) Anaplastic carcinoma
- b) Medullary carcinoma
- c) Papillary thyroid carcinoma
- d) Metastatic renal cell carcinoma
- e) Parathyroid carcinoma
- f) Follicular carcinoma

3. A 37-year-old man experiences abdominal pain, nausea, and constipation for the past 3 days. On physical examination he has no palpable abdominal masses and bowel sounds are present. His lungs are clear to auscultation. He has a heart rate of 80/min with an irregular rhythm. An electrocardiogram demonstrates a shortened QT(corrected) interval and a prolonged PR interval. He has a stool positive for occult blood. Upper GI endoscopy reveals multiple 1 cm diameter shallow ulcerations of the gastric antrum. Which of the following laboratory test findings is most likely to be present in this man?

- a) Thyroid peroxidase antibody of 4 IU/mL
- b) Serum calcium of 12.4 mg/dL
- c) Blood glucose of 225 mg/dL
- d) Total serum thyroxine of 21 ng/mL
- e) Plasma cortisol of 45 microgm/dL at 8 am
- f) Urine normetanephrine of 692 microgm/gm of creatinine
- g) Plasma renin activity (upright) of 6.8 ng/mL/hr

4. A 58-year-old man with a history of diabetes mellitus has noted the presence of bone pain, especially of his hands, for the past 6 months. On physical examination there is no swelling or redness of his hands, no joint deformity, but the range of motion is slightly decreased. Laboratory

studies show sodium 139 mmol/L, potassium 4.0 mmol/L, chloride 98 mmol/L, CO<sub>2</sub> 22 mmol/L, glucose 153 mg/dL, creatinine 7.8 mg/dL, calcium 7.8 mg/dL, phosphorus 5.7 mg/dL, total protein 6.2 g/dL, and albumin 4.0 g/dL. Which of the following conditions is this man most likely to have?

- a) Adrenal adenoma
- b) Medullary thyroid carcinoma
- c) Extra-adrenal pheochromocytoma
- d) Parathyroid hyperplasia
- e) Pituitary adenoma

5. A 49-year-old woman has had increasing cold intolerance, weight gain of 4 kg, and sluggishness over the past two years. A physical examination reveals dry, coarse skin and alopecia of the scalp. Her thyroid is not palpably enlarged. Her serum TSH is 11.7 mU/L with thyroxine of 2.1 micrograms/dL. A year ago, anti-thyroglobulin and anti-microsomal autoantibodies were detected at high titer. Which of the following thyroid diseases is she most likely to have?

- a) DeQuervain disease
- b) Papillary carcinoma
- c) Hashimoto thyroiditis
- d) Multinodular goiter
- e) Graves disease

6. Which of these can be used as a predictor of relapse of hyperthyroidism before pharmacologic treatment is discontinued?

- a) Presence of ophthalmopathy
- b) Suppressed TSH level
- c) Positive thyroid-stimulating autoantibody test
- d) Presence of lymphocytic infiltrate on thyroid ultrasonography
- e) Ongoing heat intolerance

7. Roughly what proportion of patients with newly diagnosed Graves' hyperthyroidism will develop Graves orbitopathy?

- a) 5%
- b) 10%
- c) 15%
- d) 20%
- e) 25%

8. The most common thyroid disorder is:

- a) Hypothyroidism
- b) Riedel's thyroiditis
- c) Hyperthyroidism
- d) Thyrocele

9. Hypothyroidism caused by Hashimoto's thyroiditis is much more common in women than in men.

- a) True
- b) False

10. One of the symptoms of hypothyroidism is:

- a) Fatigue
  - b) Intolerance to cold
  - c) Hair loss
  - d) All of the above
11. Although the symptoms of hypothyroidism may be difficult to detect, if hypothyroidism is suspected, the condition can best be diagnosed with:
- a) An MRI scan
  - b) An ultrasound
  - c) A thyroid stimulating hormone test (TSH)
  - d) A hemoglobin test or hematocrit test
12. In women, hypothyroidism can affect pregnancy by:
- a) Reducing the chance of getting pregnant
  - b) Boosting the chance of getting pregnant
  - c) Making miscarriage more likely
  - d) Making labor and delivery more difficult
13. A person with untreated hypothyroidism may also suffer from:
- a) High cholesterol
  - b) Low blood pressure
  - c) Low blood sugar
  - d) None of the above
14. How is hypothyroidism treated?
- a) With radiation
  - b) With surgery
  - c) With a synthetic hormone
  - d) The condition can't be treated
15. 29 year old Female referred to Head & Neck clinic for evaluation of a thyroid nodule. Patient reports this nodule was found incidentally while she was getting ready for work one morning. She went to her PCP, who ordered a thyroid ultrasound, which demonstrated a 2cm nodule in the right lobe of the thyroid.
- After thorough history and physical, what would you order first for this patient?**
- a) Thyroid function tests (TSH, T4)
  - b) CT neck
  - c) MRI neck
  - d) Radioactive Iodine uptake scan
  - e) All of the above
16. Which of the following statements best describes Hashimoto's thyroiditis?
- a) Iodine deficiency
  - b) Inflammation of the thyroid gland as the result of a virus. The disease is often preceded by an upper respiratory tract infection.
  - c) A destructive autoimmune disease caused by auto-reactive antibodies against thyroglobulin.
17. In regard to the investigation of hyperthyroidism, which one of the following antibodies is specific to Grave's disease?

- a) Thyroid peroxidase antibody
  - b) TSH receptor antibodies
  - c) Thyroglobulin antibody
18. Which of the following are common symptoms of hyperthyroidism?
- a) Heat intolerance
  - b) Weight gain
  - c) Tremor
  - d) Urinary frequency
  - e) Diarrhoea
  - f) Weight loss
19. Which of the following are common symptoms of hypothyroidism?
- a) Weight gain
  - b) Weight loss
  - c) Excessive hair growth
  - d) Hyporeflexia
  - e) Dry skin
  - f) Hair loss
  - g) Oily skin
20. Which of the following statements regarding Cushing's syndrome is correct?
- a) The incidence of Cushing's syndrome is distributed equally between sexes
  - b) Men are more likely to develop Cushing's syndrome
  - c) Women are more likely to develop Cushing's syndrome
21. Which one of the following statements describes the underlying pathology of Grave's disease?
- a) Inflammation of the thyroid gland due to lymphocytic infiltration causes the stored thyroid hormones to be released into the circulation leading to hyperthyroidism.
  - b) An autoimmune disease directed against thyroid stimulating hormone (TSH) receptors. The autoantibodies stimulate the TSH receptors causing increased T3 and T4 production.
  - c) Consumption of ground beef which has been contaminated with thyroid tissue. The thyroid tissue contains metabolically active thyroid hormones which causes hyperthyroidism.
  - d) A benign tumour of the thyroid gland which produces excessive amounts of thyroid hormones.
22. What of the following statements best describes a toxic thyroid adenoma?
- a) A malignant tumour of the thyroid gland which produces excessive amounts of thyroid hormones. These arise from the follicular cells of the thyroid gland.
  - b) An autoimmune disease directed against thyroid stimulating hormone (TSH) receptors. The autoantibodies stimulate the TSH receptors causing increased T3 and T4 production
  - c) A benign tumour of the thyroid gland which produces excessive amounts of thyroid hormones. These arise from the follicular cells of the thyroid.
  - d) Inflammation of the thyroid gland due to lymphocytic infiltration causing stored thyroid hormones to be released into the circulation leading to hyperthyroidism.