

Laboratory evaluation of thyroid disorders

1. A patient with apparent symptoms of hypothyroidism. What laboratory tests would be the most appropriate to perform?
2. A 40-year-old woman seeks evaluation for subfebrility and diarrhea commenced 2–3 weeks before. Blood glucose: 6.6 mmol/l. Blood pressure: 160/85 mmHg, heart rate: 120/min. Serum TSH: 0.15 mU/l (decreased), FT₄: 60 pmol/l (elevated), anti-thyroid and anti-microsomal antibody titer elevated, anti-thyreoglobulin antibody negative.
What is the most likely diagnosis? What other test would you order to specify your diagnosis?
3. A 42-year-old woman developed diffusely enlarged, painless thyroid glands. Total T₄ is decreased, thyroid uptake of radioiodine is low. ECG reveals low voltage and bradycardia. The thyroid autoimmunity panel demonstrates the presence of antithyroglobulin and antimicrosomal antibodies.
What is the most likely diagnosis? Is this condition characterized by a hypo- or hyperfunction of the thyroid gland?
4. A schoolgirl at the age of 14 without any complaints develops diffusely enlarged painless thyroid glands recognized accidentally by the school doctor. Laboratory findings: FT₄ is slightly decreased, whereas total T₃ is slightly elevated. Thyroid uptake of radioiodine is increased. FT₄ gets normalized after treatment with anorganic iodine.
What is the most likely diagnosis? Try to interpret the opposite changes in hormone levels.

Pathophysiology lab exam questions

5. An 11-month-old baby with protruded belly and retarded in movement development has been brought for medical evaluation. The perchlorate discharge test is positive. Serum FT₄ and FT₃ are decreased. Serum MIT/DIT are elevated and their urinary excretion increased. What is the most likely diagnosis?

6. List those thyroid tests that are considered helpful in the diagnosis of thyroid cancer!