

Thyroid and Parathyroid Glands

Read Chapter 17.4

Fill in the blanks

Thyroid

1. The thyroid gland is located below the _____.
2. The _____ cells produce the hormones T3 and T4.
3. The _____ cells produce calcitonin.
4. The anterior pituitary gland hormone _____ stimulates the thyroid to produce T3 and T4 during periods of _____ and _____, which are times when body cells need to increase the production of ATP.
5. T3 and T4 are produced from the amino acid _____.
6. T3 and T4 production can only occur if the mineral _____ is present.
7. _____ is an important mineral that is involved in the conversion of T4 into the more active T3.
8. Thyroid hormones (T3 and T4) are not water-soluble so they must be transported through the bloodstream by a _____.
9. In the thyroid colloid regions, a protein called _____ is important for adding iodine ions to produce monoiodotyrosine (MIT) and diiodotyrosine (DIT).
10. Thyroid hormones have several functions related to metabolism:
 - a. Regulating the use of _____ during cellular respiration
 - b. Increasing metabolism of the nutrients _____, _____ and _____
 - c. Stimulating the production of _____ (especially important during fetal development).
 - d. Has a synergistic effect with _____ to increase protein synthesis and bone growth.
 - e. Has a permissive effect on the _____ and increases those effects during a stress response.
 - f. Increasing heart rate, _____ and _____
 - g. Thyroid hormones (increase/ decrease) _____ heat production.
11. Excess thyroid hormones is called _____

12. Too little thyroid hormone production is called _____
13. _____ is an autoimmune disease that causes an excess production of thyroid hormones
14. _____ is an autoimmune disease that causes hypothyroidism
15. An enlarged thyroid gland is called _____.
16. John feels anxious, has insomnia, hair loss, and feels hot all the time, he most likely has (hyper or hypothyroidism) _____.
17. Betty feels very tired, depressed, cold, and has been gaining weight, she most likely has (hyper or hypothyroidism) _____.
18. The parathyroid cells in the thyroid gland produce calcitonin that is involved in regulating _____.
19. Calcitonin is produced when blood calcium levels are (high/ low) _____.

Parathyroid

20. Parathyroid hormone (PTH) is produced in the _____ gland and is produced when blood calcium levels are (high/ low) _____.
21. PTH stimulates _____ cells in the bones to (absorb/ release) _____ calcium and tells the kidneys to (reabsorb/ excrete) _____ calcium.
22. Vitamin ____ is required for the absorption of calcium in the digestive tract.
23. _____ is a disease where excess minerals are lost from the bones, usually affecting older people and causing bones to be brittle.
24. _____ is a disease caused by vitamin D deficiency in children, and _____ is a disease caused by vitamin D deficiency in adults.