

Workbook Answers

Chapter 4

Diseases and Conditions of the Endocrine System

Short Answers

1. Pituitary gland
2. Tropic hormones
3. Hormones
4. Blood tests, radioimmunoassay (RIA), immunometric assay (IMA), 24-hour urine
5. Human growth hormone (hGH)
6. Dwarfism
7. Males
8. Thyroid gland
9. Thyroid-stimulating hormone (TSH)
10. Women, 8 times more often than men
11. There is a gradual and painless enlargement of the thyroid gland, which causes a feeling of pressure in the neck and difficulty swallowing.
12. Endocrinology
13. Iodized table salt, dietary intake of 150-300 mcg of iodine, eating seafood
14. The goal of treatment is to decrease thyroid hormone formation and secretion.
15. Infancy or early childhood
16. Levothyroxine sodium (T4)
17. Papillary, follicular, medullary, anaplastic
18. Papillary, follicular

Short Answers

19. Fatigue; muscle weakness; changes in body appearance, including fat deposits in the scapular area (buffalo humps) and in the trunk; protruding abdomen; hypertension; edema; moon face; thin skin that bruises easily and develops red or purple striae; excessive hair growth; amenorrhea; impotence.
20. Replacement of natural hormones with glucocorticoid and mineralocorticoid drugs; increased fluid intake; correction of salt and potassium levels; a diet high in carbohydrate and protein. Hormone replacement therapy with close medical supervision must continue for life. Patient education is necessary regarding the symptoms of overdose and underdose and the role of stress and infection.
21. Glucotrol, Avandia, Micronase, Glucophage, Precose (newer: Januvia, Cycloset, and use of combination medications)
22. Eyes, blood vessels, kidneys, nerves
23. Gestational diabetes
24. Hypoglycemia
25. 9 years of age
26. 8 years of age
27. Growth hormone (GH)
28. Melanocyte-stimulating hormone
29. Oxytocin
30. Estrogens

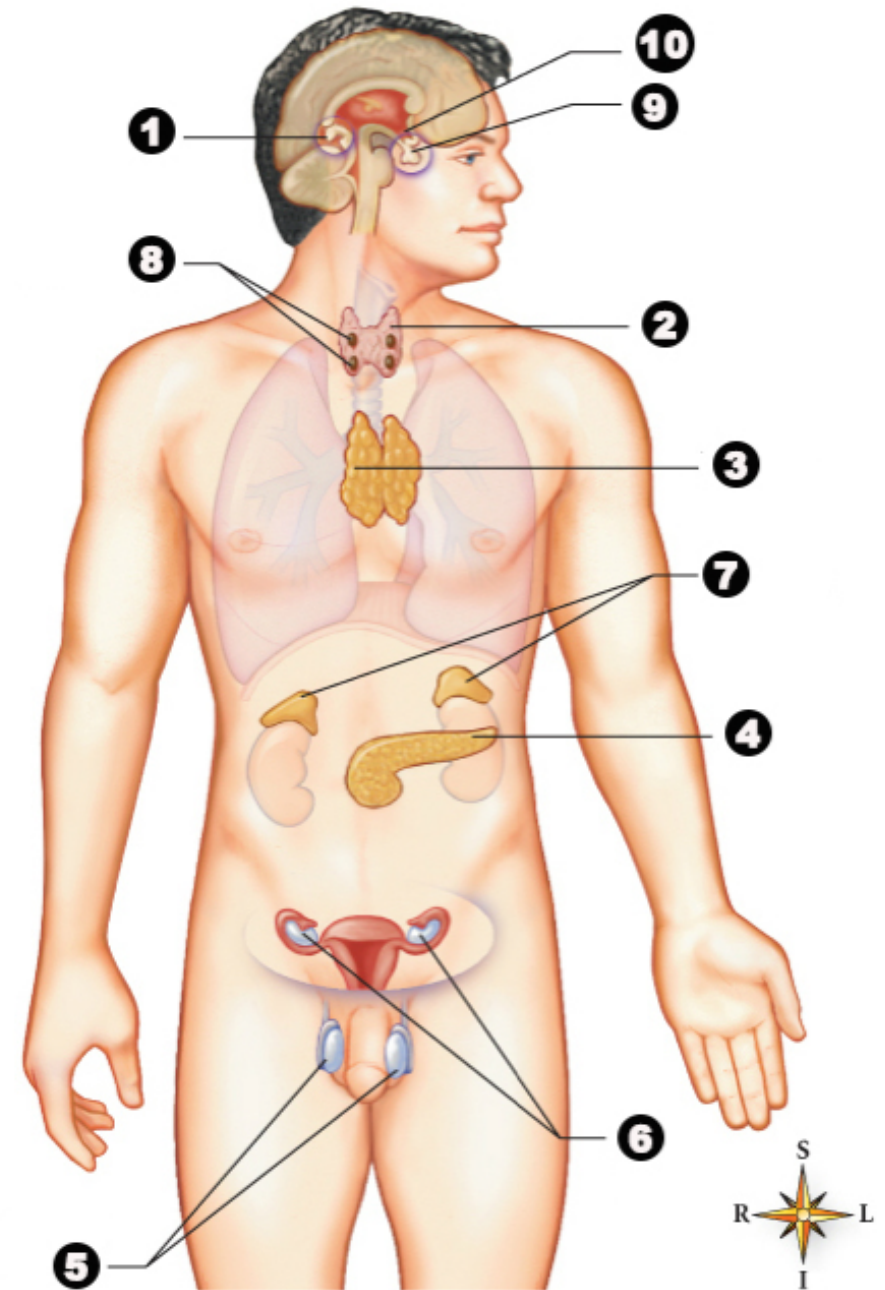
Fill in the Blank

1. Glands, tissues, urinary output, growth and development
2. Anterior pituitary adenoma
3. Pituitary, hypothalamus, congenital, damage
4. Somatotrophin (hGH)
5. Extreme thirst, dilute urine
6. Goiter
7. Thyroxine (T4) and tri-iodothyronine
8. Genetic factor
9. Rapid heartbeat, palpitations, excitability, insomnia
10. Mental, growth
11. Myxedema, thick, puffy
12. Anaplastic
13. Breakdown, bone, excessive calcium
14. Potassium, lymphocyte, hematocrit
15. 2
16. 40
17. Acute reactive, emergency
18. Secondary sex, gonadal
19. Idiopathic
20. Follicle-stimulating hormone

Anatomic Structures

Major glands of the endocrine system

1. Pineal gland
2. Thyroid gland
3. Thymus gland
4. Pancreas
5. Testes (male)
6. Ovaries (female)
7. Adrenal glands
8. Parathyroid glands (on posterior surface of thyroid gland)
9. Pituitary gland
10. hypothalamus



Multiple Choice Questions

Pharmacology Questions

1. C
2. B
3. D
4. A
5. D

Certification Examination Review

- | | | |
|------|------|------|
| 1. A | 6. C | 11.A |
| 2. B | 7. D | 12.C |
| 3. C | 8. A | 13.C |
| 4. A | 9. A | 14.A |
| 5. C | 10.B | 15.C |

Essay Question

**Explain the symptoms and treatment for hypoglycemia.
Why is this condition considered serious?**

Hypoglycemia causes symptoms of sweating, nervousness, hunger, weakness, dizziness, trembling, headache, and palpitations. Treatment involves restoring blood sugar level to normal limits by infusion of intravenous (IV) glucose or the hormone glucagon. When the patient starts to feel better, he or she should be given a complex carbohydrate and protein snack.

Hypoglycemia is serious because the brain requires adequate glucose to function properly. When the blood sugar level drops too low, the patient may experience central nervous system problems including confusion, visual disturbances, behavior that is similar to drunkenness, stupor, coma, and seizures, all of which can be severe.

Patient Screening #1

○ Possible Diabetes Insipidus

Abrupt onset of excessive thirst and excessive urination merits prompt medical attention. Schedule the next available appointment the day of the call. If an appointment is not available, refer to an urgent care facility for prompt assessment.

Patient Screening #2

○ Possible Simple Goiter

Schedule the patient complaining of an enlargement in the area of the thyroid gland, with or without accompanying discomfort in the area, for a thorough patient history and physical examination.

Patient Screening #3

○ Possible Hyperthyroid Activity or Graves Disease

The mild symptoms are vague; therefore, an appointment for a medical history and physical are indicated.

Patient Screening #4

○ Possible Diabetes Mellitus or Hyperglucose

Known diabetics are at risk for elevated blood glucose. This man requires prompt assessment and intervention. Refer the patient to an urgent care facility or emergency facility.

Patient Screening #5

○ Possible Diabetes Mellitus—New Onset

Known high-risk individuals require frequent screening for the signs of diabetes as part of regular medical checkups. Anyone complaining of weight loss, excessive thirst, excessive hunger, and frequent urination needs a prompt appointment for diagnostic evaluation.

Patient Teaching #1

○ Acromegaly

Give the patient the printed visual aids that explain the anatomy and function of the pituitary gland and its hormones. Include e-learning videos or CDs to enhance patient knowledge about the pituitary gland and the treatment for acromegaly. The educational material may also be helpful in explaining the purpose and procedure for the required diagnostic tests. Review this material with the patient. When possible use the material to review the operative procedures if indicated, and explain the dosage schedule for medications and what adverse effects to report. Encourage the patient to express concerns and questions over changes in body image.

Patient Teaching #2

○ Diabetes Insipidus

Using the printed material, provide the patient with guidelines to monitor fluid intake and output in light of adequate water replacement. Instruct the patient to notify the physician of any increase in symptoms, including weight loss or weight gain. Demonstrate how to check the specific gravity of urine. Discuss the side effects or toxic effects of prescribed medication. Encourage the patient to wear a medical ID alert bracelet.

Patient Teaching #3

○ Graves Disease

Present visual aids (e.g., computer-based health education, if available) to the patient to explain the location and function of the thyroid gland. Explain the effects of hyperthyroidism on the body and emotional stability. Reinforce information provided in the printed material, discuss diagnostic procedures and their purpose, and explain the dosage schedule of medications and what adverse effects to report. If necessary, give preoperative and postoperative instructions as required. Stress the importance of a follow-up appointment to monitor treatment. Ask the patient to repeat back to you the information you have provided.

Patient Teaching #4

○ Hypothyroidism

Explain the importance of regular assessment and monitoring for therapeutic response to hormone replacement. Reinforce the concept that a response to hormone replacement takes time and that taking medication on a regular schedule as prescribed is significant. Stress the importance of keeping the follow-up appointment and of reporting any changes in heart rate.

Patient Teaching #5

○ Diabetes Mellitus

This patient should be aware that diabetic control is monitored daily, mainly by blood glucose determination using a blood glucose level device and by testing of urine glucose and acetone levels. The patient should be knowledgeable in monitoring techniques to monitor blood glucose levels at home. With experience, the patient can interpret the results and make simple modifications in insulin dose and caloric intake to maintain precise blood glucose control. All persons with diabetes are encouraged to reach and maintain appropriate body weight.

Optimal education for the diabetic and family could include an appointment to offer the opportunity to educate them with a blend of electronic visuals on different aspects of diabetic care. Videos and other customized electronically generated material are readily available. The manufacturer's website for the glucometer being used by the patient could provide helpful information during the learning phase of diabetic care. These suggestions, along with follow-up phone calls, can lead to good compliance with the treatment plan and a more positive outcome.

In addition, patients must be made aware that trauma and infection easily upset the balance between insulin and glucose requirements. Regular medical supervision is encouraged, especially for insulin-dependent persons. Patient and caregiver are taught the proper techniques of insulin administration. The patient and family members must be educated to recognize the symptoms of diabetic coma (high blood glucose levels) and insulin shock (too much insulin), and to implement immediate action to correct these serious complications. Provide the patient with printed information concerning diabetic monitoring and complications.

The patient must understand the significance of preventing infection and avoiding injury. Present the patient with written material that explains the importance of skin, foot, and dental care. Instruct the patient to carry some form of fast-acting sugar such as hard candy or sugar packets to combat the onset of hypoglycemia. Advise the individual with diabetes to obtain a medical ID alert bracelet. Refer the patient to counseling and support to adapt to the challenges of this chronic disease.