Chapter 15

The Endocrine System

LEARNING OBJECTIVES

After completing this chapter, you will be able to:

• Define and spell the word parts used to create terms for the endocrine system.
• Identify the major organs of the endocrine system and describe their structure and function.
• Break down and define common medical terms used for symptoms, diseases, disorders, procedures, treatments, and devices associated with the endocrine system.
• Build medical terms from the word parts associated with the endocrine system.
• Pronounce and spell common medical terms associated with the endocrine system.
CHAPTER 15
The Endocrine System
Worksheet 1

Phonetic Spelling Challenge
Spell the medical term correctly in the space provided.

1. miks eh DEE mah
2. pih TOO ih tair ee DWARF izm
3. THYE royd EYE tiss
4. en doh krin ALL oh jist
5. HIGH poh kal SEE mee ah
6. HIGH poh GOH nad izm
7. en doh krin OPP ah thee
8. PAN kree ah TYE tiss
9. DYE ah BET ik ret in NOP ah thee
10. HIGH poh add REN al izm
11. add ree noh MEG ah lee
12. add en OH siss
13. KREE tin izm
14. DYE ah BEE teez MELL ih tuss
15. HIGH per glye SEE mee ah
16. ak roh MEG ah lee
17. GOY ter
18. HER soot izm
19. PALL ee DIP see ah
20. ADD eh noh kar sih NOH mah
Spelling Challenge

These terms are spelled incorrectly. Spell each term correctly in the space provided.

1. Pancreaz
2. Thieroid
3. Adison disease
4. Thyroidtoxicosis
5. Parofthyroid glands
6. Addenoma
7. Diabetees incipidus
8. Pollydipsia
9. Acidoses
10. Acromeagally
11. Ketoesis
12. Indocrinopathy
13. Endocrinne
14. Adrenomegally
15. Hypogonnadism

Abbreviation Matchup

Select and match the correct abbreviation to the definition.

_____ 1. diabetes insipidus                  a. GH
_____ 2. follicle-stimulating hormone      b. FBS
_____ 3. growth hormone                    c. DM
_____ 4. fasting blood sugar               d. DI
_____ 5. glucose tolerance test            e. FSH
_____ 6. diabetes mellitus                 f. GTT
True/False
Mark each statement as true (T) or false (F).

1. The failure of an endocrine gland to produce sufficient levels of a hormone, or hypo-secretion, can have a serious impact on health.
2. The term endocrine literally means “to secrete within.”
3. In the condition known as myxedema, the skin becomes loose and thin.
4. Hyper- means excessive.
5. Hypo- means below normal.
6. Pancreatitis is an acute reaction to infection or trauma and can become life threatening.
7. In general, any disease affecting the endocrine system is called an endocrinopathy.
8. HRT may be used following the surgical removal of an endocrine gland to restore homeostasis.
9. Thyroxine regulates glucose metabolism and cell division in most cells of the body.
10. A reduction of iodine uptake is an indication of deficient thyroid function.

Fill in the Blank
Fill in the blank with the correct medical term from this chapter.

11. A test that may be used to confirm a diagnosis of diabetes mellitus and that examines a patient’s tolerance of glucose is called ________________________.
12. The protrusion of the eyes is a common symptom of ________________________.
13. The surgical removal of the parathyroid glands with the thyroid gland is called ________________________.
14. The surgical removal, or excision, of a parathyroid gland is called a(n) ________________________.
15. A symptom of excessive body hair is known as ________________________.
16. The abnormal protrusion of the eyes is known as ________________________.
17. Excessive production of androgens in women also can lead to muscle and bone growth. The resulting pattern of masculinization is known as ________________________.
18. The prefix poly- means ________________________.
19. A sign that includes enlargement of bone structure is known as _______________________

20. A child suffering from the thyroid gland’s inability to produce normal levels of growth hormone at birth can develop the condition called _______________________

**Short Answer**

Write the definition for each of the following terms.

21. Adenocarcinoma _____________________________________________________________

22. Thyroiditis _________________________________________________________________

23. Thyroid scan _______________________________________________________________

24. Hypercalcemia _____________________________________________________________

25. Myxedema _________________________________________________________________

**Word Search**

Fill in the blank with the correct medical term from this chapter, then find the words in the word search puzzle that follows.

1. In a procedure called ________________________ blood sugar, blood sugar levels are measured after a 12-hour fast.

2. Diabetes ________________________ is a result of resistance of body cells to insulin, or a deficiency or complete lack of insulin production by cells of the pancreas.

3. Inflammation of the adrenal gland is a condition known as ________________________.

4. The excessive production of PTH by the parathyroid glands is a disorder known as ________________________.

5. When ________________________ occurs in women, it is caused by the hypersecretion of androgens by the adrenal cortex.

6. ________________________ is the production of abnormally large volumes of urine.

7. Both adrenalitis and adrenomegaly are forms of ________________________.

8. In time, hyperadrenalism produces the symptoms that characterize ________________________ syndrome.

9. ________________________ is the general term for an inflammation of a gland.
10. A(n) ____________________________ is a disease with an array of symptoms, involving multiple organs.

11. Caused by hyposecretion of ADH by the pituitary gland, diabetes ____________________________ is a disease characterized by the symptoms of polydipsia.

12. One form of chronic hyperthyroidism, called ____________________________ disease, is believed to be an autoimmune disease.

13. The surgical removal, or excision, of a parathyroid gland may be a treatment for parathyroid cancer, called ____________________________, or for hyperparathyroidism.

14. Abnormally high production of pituitary growth hormone before adolescence results in ____________________________.

15. A child suffering from the thyroid gland’s inability to produce normal levels of growth hormone at birth may develop the condition called pituitary ____________________________.
Dictation Report

Write each numbered term as you hear it, spelling each term correctly. This exercise will help you learn to hear, comprehend, visualize, and spell the new medical terms accurately.

The (1) __________________________ system works hand-in-hand with the nervous system to regulate body functions. The (2) __________________________ is a medical specialist who treats people with diseases affecting many different organs of the body. Endocrine organs include the (3) __________________________, the (4) __________________________, the (5) __________________________, the (6) __________________________, the (7) __________________________, the (8) __________________________, the (9) __________________________, and the (10) __________________________.

One of the most common endocrine diseases is (11) __________________________, which is a result of resistance of body cells to insulin, or a deficiency or complete lack of insulin production by cells of the pancreas. If unmanaged, diabetes mellitus causes large fluctuations in blood sugar levels, leading to circulatory deficiencies that result in kidney damage called (12) __________________________. (13) __________________________ is a similar disease, caused by (14) __________________________ of ADH by the pituitary gland, characterized by the symptoms of (15) __________________________. There can be many other complications of diabetes that can lead to blindness or (16) __________________________ or even death. Careful daily management of the diabetic patient is essential for long life.

Excessive activity of one or more adrenal glands is the disease called (17) __________________________. The adrenal glands produce many different hormones, which control different activities of the body. (18) __________________________ and (19) __________________________ stimulate the development of sex characteristics.
Hypersecretion of androgens in a women can lead to a pattern of masculinization known as (20) ______________________. Inflammation of the adrenal gland is a condition called (21) ______________________.

Endocrine disease runs in families, so it is very important for you to understand your family’s history so you can do everything you can to prevent disease. You should know if anyone in your family ever suffered from (22) ______________________, (23) ______________________, or (24) ______________________. You should also be aware of any symptoms that could be the beginning of endocrine disease. The formation of a(n) (25) ______________________ or experiencing (26) ______________________ could be your first sign of a problem. Being proactive about your health and the health of your family is an important part of being a medical professional.
Word Surgery

Read the Medical Word. Break down the medical word into its word parts, and give the meaning of each word part. Then give the definition of the medical word.

1. Endocrinologist

Definition: ________________________________________________________________
Prefix and definition: ______________________________________________________
Combining form and definition: _____________________________________________
Suffix and definition: ______________________________________________________

2. Hyperadrenalism

Definition: ________________________________________________________________
Prefix and definition: ______________________________________________________
Combining form and definition: _____________________________________________
Suffix and definition: ______________________________________________________

3. Exophthalmos

Definition: ________________________________________________________________
Prefix and definition: ______________________________________________________
Combining form and definition: _____________________________________________
Suffix and definition: ______________________________________________________

4. Acromegaly

Definition: ________________________________________________________________
Combining form and definition: _____________________________________________
Suffix and definition: ______________________________________________________

5. Hypocalcemia

Definition: ________________________________________________________________
Prefix and definition: ______________________________________________________
Combining form and definition: _____________________________________________
Suffix and definition: ______________________________________________________
6. Polydipsia
   Definition: ________________________________________________________________
   Prefix and definition: ______________________________________________________
   Combining form and definition: ____________________________________________
   Suffix and definition: ______________________________________________________

7. Ketonuria
   Definition: ________________________________________________________________
   Combining form and definition: ____________________________________________
   Suffix and definition: ______________________________________________________

8. Parathyroidism
   Definition: ________________________________________________________________
   Prefix and definition: ______________________________________________________
   Combining form and definition: ____________________________________________
   Suffix and definition: ______________________________________________________

9. Glycolysis
   Definition: ________________________________________________________________
   Combining form and definition: ____________________________________________
   Suffix and definition: ______________________________________________________

10. Adenocarcinoma
    Definition: ________________________________________________________________
    Combining form and definition: ____________________________________________
    Suffix and definition: ____________________________________________________

11. Pancreatitis
    Definition: ________________________________________________________________
    Combining form and definition: ____________________________________________
    Suffix and definition: ____________________________________________________

12. Ketoacidosis
    Definition: ________________________________________________________________
    Combining form and definition: ____________________________________________
    Suffix and definition: ____________________________________________________
13. **Hursutism**

Definition: ____________________________________________

Combining form and definition: ____________________________

Suffix and definition: ________________________________

14. **Renopathy**

Definition: ____________________________________________

Combining form and definition: ____________________________

Suffix and definition: ________________________________

15. **Thyroidectomy**

Definition: ____________________________________________

Combining form and definition: ____________________________

Suffix and definition: ________________________________
Case Study

Fill in the blank with the correct medical term from this chapter.

Derek is an 18-year-old high school senior excited about his upcoming graduation. Approximately one week ago he had two days of nausea, vomiting, diarrhea, and pyrexia. He recovered and felt well until last night, when he developed excessive thirst, urination, and hunger.

What is the appropriate medical terminology for:

1. Increased thirst ________________________
2. Increased urination ______________________
3. Increased hunger ________________________

Derek is seen by his family doctor. The doctor is concerned Derek may have Type I diabetes based on this history and these symptoms. After a thorough review of his history and examination, the doctor confirms his suspicion by ordering a test of Derek’s blood glucose in the office. The test the doctor ordered uses a portable device called a glucometer.

The doctor orders the appropriate further testing, and Derek’s condition is stabilized. Derek and his parents are given a consultation with the specialists in the diabetes clinic.

Derek is given instruction in how to care for his diabetes with lifestyle, dietary, and medical education. There are many possible complications of diabetes. These include diseases of the retina, nerves, and kidneys.

What is the appropriate medical terminology for:

4. Disease of the retina ______________________
5. Disease of the nerves ______________________
6. Disease of the kidneys ______________________
Medical Report Analysis

Consider the following excerpt from a clinician’s notes following completion of an endocrine examination. For the highlighted terms or word parts, provide the meaning.

Patient is a 12-year-old female being evaluated for a four-week history of polyuria (A) ________________________ accompanied by increased thirst and a lack of energy between meals. The general practice physician had requested a urinalysis and blood evaluation, which had revealed ketonuria (B) ________________________ and hyperglycemia (C) ________________________, prompting the referral to endocrinology (D) ________________________.

Glucose tolerance testing verified the presence of Type I diabetes mellitus. Blood gas analysis further confirmed the presence of acidosis (E) _________________________. Insulin therapy and patient education was begun, and follow-up evaluation was scheduled.
CHAPTER 15
The Endocrine System
Worksheet 6

Which Term Does Not Belong?
Circle the term that is not related to the other terms. Then explain why the term does not belong with the others.

1. Word roots
   a. acid
   b. acr
   c. dips
   d. hirsut
   e. poly

   Why does it not belong? ________________________________________________

2. Signs and symptoms
   a. acromegaly
   b. exophthalmos
   c. thyroidectomy
   d. ketosis
   e. polyuria

   Why does it not belong? ________________________________________________

3. Disorders and conditions of the endocrine system
   a. adenocarcinoma
   b. adrenomegaly
   c. hyperthyroidism
   d. endocrinology
   e. hypocalcemia

   Why does it not belong? ________________________________________________

4. Diseases and conditions of the endocrine system
   a. adenoma
   b. diabetes insipidus
   c. hypoadrenalism
   d. thyroiditis
   e. thyroxine

   Why does it not belong? ________________________________________________
5. Treatments and procedures
   a. thyrotoxicosis
   b. thyroidotomy
   c. thyroid scan
   d. hormone replacement therapy
   e. fasting blood sugar

   Why does it not belong? ____________________________________________
Labeling

Label the diagram below.
Key Terms Double Check

Remember that the chapter’s key terms appeared alphabetically throughout this chapter. This exercise helps you to check your knowledge and review for tests.

1. First, fill in the missing word in the definitions for the chapter’s key terms.

2. Then, check your answers using the answer key.

3. If you got the answer right, put a checkmark in the right column.

4. If your answer was incorrect, go back to the frame number provided and review the content.

Use the checklist to study the terms you don’t know until you’re confident you know them all.

<table>
<thead>
<tr>
<th>Key Term</th>
<th>Frame</th>
<th>Definition</th>
<th>Know It?</th>
</tr>
</thead>
<tbody>
<tr>
<td>acidosis</td>
<td>15.7</td>
<td>the condition of _____________ in the body</td>
<td></td>
</tr>
<tr>
<td>acromegaly</td>
<td>15.8</td>
<td>a sign that includes _____________ of bone structure that causes disfigurement, especially in the hands and face</td>
<td></td>
</tr>
<tr>
<td>adenitis</td>
<td>15.15</td>
<td>inflammation of a(n) _____________</td>
<td></td>
</tr>
<tr>
<td>adenocarcinoma</td>
<td>15.16</td>
<td>a malignant _____________ with a glandular or glandlike pattern of cells</td>
<td></td>
</tr>
<tr>
<td>adenoma</td>
<td>15.16</td>
<td>a(n) _____________ tumor of glandular cells</td>
<td></td>
</tr>
<tr>
<td>adenopathy</td>
<td>15.15</td>
<td>the general term for a glandular ________________</td>
<td></td>
</tr>
<tr>
<td>adrenalectomy</td>
<td>15.33</td>
<td>the surgical _____________ of one or both of the adrenal glands</td>
<td></td>
</tr>
<tr>
<td>adrenalitis</td>
<td>15.17</td>
<td>_____________ of the adrenal gland that may result from tumor development or infection</td>
<td></td>
</tr>
<tr>
<td>adrenomegaly</td>
<td>15.17</td>
<td>the _____________ of one or both of the adrenal glands</td>
<td></td>
</tr>
<tr>
<td>Key Term</td>
<td>Frame</td>
<td>Definition</td>
<td>Know It?</td>
</tr>
<tr>
<td>--------------------------</td>
<td>-------</td>
<td>----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>----------</td>
</tr>
<tr>
<td>10. cretinism</td>
<td>15.18</td>
<td>a condition in which the thyroid gland is unable to produce normal levels of hormone at birth, resulting in reduced mental development and physical growth</td>
<td>❑</td>
</tr>
<tr>
<td>11. Cushing syndrome</td>
<td>15.19</td>
<td>a disease characterized by excessive secretion of that affects many organs and results in obesity, moon face, hyperglycemia, and muscle weakness</td>
<td>❑</td>
</tr>
<tr>
<td>12. diabetes insipidus</td>
<td>15.20</td>
<td>a disease characterized by polydipsia and that is caused by hyposecretion of ADH by the pituitary gland, abbreviated DI</td>
<td>❑</td>
</tr>
<tr>
<td>13. diabetes mellitus</td>
<td>15.21</td>
<td>a chronic disorder of metabolism that is a result of resistance to insulin, or a deficiency or complete lack of insulin production by cells of the pancreas; DM occurs in two types, Type 1 and Type 2</td>
<td>❑</td>
</tr>
<tr>
<td>14. diabetic retinopathy</td>
<td>15.21</td>
<td>damage to the eyes caused by diabetes mellitus that can result in</td>
<td>❑</td>
</tr>
<tr>
<td>15. endocrinologist</td>
<td>15.34</td>
<td>a physician specializing in the field of medicine that focuses on the study and treatment of disorders</td>
<td>❑</td>
</tr>
<tr>
<td>16. endocrinopathy</td>
<td>15.22</td>
<td>a general term for disease of the endocrine system, either the excessive production of one or more hormones or the deficient production of one or more hormones</td>
<td>❑</td>
</tr>
<tr>
<td>17. exophthalmos</td>
<td>15.9</td>
<td>an abnormal protrusion of the , a classic symptom of excessive activity of the thyroid gland</td>
<td>❑</td>
</tr>
<tr>
<td>18. fasting blood sugar</td>
<td>15.35</td>
<td>a procedure that measures blood sugar levels after a 12-hour</td>
<td>❑</td>
</tr>
<tr>
<td>19. glucose tolerance test</td>
<td>15.36</td>
<td>a test used to confirm a diagnosis of diabetes mellitus in which glucose is given orally or intravenously and blood levels are measured at timed intervals</td>
<td>❑</td>
</tr>
<tr>
<td>20. goiter</td>
<td>15.10</td>
<td>a swelling on the anterior side of the in the area of the thyroid gland, a symptom of thyroid disease</td>
<td>❑</td>
</tr>
<tr>
<td>21. hirsutism</td>
<td>15.11</td>
<td>a symptom of excessive body in a masculine pattern</td>
<td>❑</td>
</tr>
<tr>
<td>Key Term</td>
<td>Frame</td>
<td>Definition</td>
<td>Know It?</td>
</tr>
<tr>
<td>----------------------------------</td>
<td>-------</td>
<td>-----------------------------------------------------------------------------</td>
<td>----------</td>
</tr>
<tr>
<td>22. hormone replacement therapy</td>
<td>15.37</td>
<td>a common therapy to counteract _____________ of hormones</td>
<td></td>
</tr>
<tr>
<td>23. hyperadrenalism</td>
<td>15.23</td>
<td>_____________ activity of one or more adrenal glands</td>
<td></td>
</tr>
<tr>
<td>24. hypercalcemia</td>
<td>15.24</td>
<td>abnormally high levels of _____________ in the blood</td>
<td></td>
</tr>
<tr>
<td>25. hyperglycemia</td>
<td>15.25</td>
<td>excessive sugar in the _____________</td>
<td></td>
</tr>
<tr>
<td>26. hyperparathyroidism</td>
<td>15.26</td>
<td>a disease characterized by the excessive production of parathyroid hormone (PTH) by the _____________ glands</td>
<td></td>
</tr>
<tr>
<td>27. hyperthyroidism</td>
<td>15.27</td>
<td>a disease characterized by abnormally high levels of _____________ hormone</td>
<td></td>
</tr>
<tr>
<td>28. hypoadrenalism</td>
<td>15.23</td>
<td>abnormally _____________ activity of the adrenal glands</td>
<td></td>
</tr>
<tr>
<td>29. hypocalcemia</td>
<td>15.24</td>
<td>abnormally _____________ levels of calcium in the blood</td>
<td></td>
</tr>
<tr>
<td>30. hypoglycemia</td>
<td>15.25</td>
<td>abnormally low levels of _____________ in the blood</td>
<td></td>
</tr>
<tr>
<td>31. hypogonadism</td>
<td>15.29</td>
<td>a disease characterized by abnormally low amounts of _____________-stimulating hormone (FSH) and luteinizing hormone (LH) produced by the pituitary gland, which reduces the production of the sex hormones testosterone or estrogen and progesterone</td>
<td></td>
</tr>
<tr>
<td>32. hypoparathyroidism</td>
<td>15.26</td>
<td>a disease characterized by the abnormally _____________ production of PTH by the parathyroid glands</td>
<td></td>
</tr>
<tr>
<td>33. hypothyroidism</td>
<td>15.28</td>
<td>a disease characterized by abnormally low levels of _____________ hormone</td>
<td></td>
</tr>
<tr>
<td>34. ketoacidosis</td>
<td>15.12</td>
<td>a synonym for _____________, which is a symptom of unmanaged diabetes mellitus and starvation</td>
<td></td>
</tr>
<tr>
<td>35. ketosis</td>
<td>15.12</td>
<td>a(n) _____________ amount of ketone bodies in the blood and urine</td>
<td></td>
</tr>
<tr>
<td>36. pancreatitis</td>
<td>15.30</td>
<td>inflammation of the _____________ that can be acute or chronic; both types are life threatening</td>
<td></td>
</tr>
<tr>
<td>Key Term</td>
<td>Frame</td>
<td>Definition</td>
<td>Know It?</td>
</tr>
<tr>
<td>--------------------------</td>
<td>-------</td>
<td>------------------------------------------------------------------------------------------------------</td>
<td>----------</td>
</tr>
<tr>
<td>37. parathyroidectomy</td>
<td>15.38</td>
<td>the ________________ of a parathyroid gland</td>
<td></td>
</tr>
<tr>
<td>38. pituitary gigantism</td>
<td>15.31</td>
<td>a condition of extraordinary growth due to an abnormally ________________ production of pituitary growth hormone before adolescence</td>
<td></td>
</tr>
<tr>
<td>39. polydipsia</td>
<td>15.13</td>
<td>a symptom of excessive ________________</td>
<td></td>
</tr>
<tr>
<td>40. polyuria</td>
<td>15.14</td>
<td>a symptom of disease that is the production of abnormally large volumes of ________________</td>
<td></td>
</tr>
<tr>
<td>41. radioactive iodine</td>
<td>15.39</td>
<td>a substance used in a radioactive iodine uptake test, a diagnostic procedure in which radioactive iodine is used to track and measure its entry into ________________</td>
<td></td>
</tr>
<tr>
<td>42. radioiodine therapy</td>
<td>15.40</td>
<td>a treatment for a thyroid tumor that involves the use of radioactive ________________ that targets cells within the thyroid gland and destroys them</td>
<td></td>
</tr>
<tr>
<td>43. thyroid scan</td>
<td>15.41</td>
<td>a procedure in which a(n) ________________ of the thyroid gland is obtained with a scanning instrument following oral administration of a labeled substance</td>
<td></td>
</tr>
<tr>
<td>44. thyroidectomy</td>
<td>15.42</td>
<td>the surgical ________________ of the thyroid gland</td>
<td></td>
</tr>
<tr>
<td>45. thyroiditis</td>
<td>15.32</td>
<td>________________ of the thyroid gland; occurs as acute thyroiditis caused by a local infection or as a chronic condition of many types</td>
<td></td>
</tr>
<tr>
<td>46. thyroidoma</td>
<td>15.41</td>
<td>a thyroid ________________</td>
<td></td>
</tr>
<tr>
<td>47. thyroidotomy</td>
<td>15.42</td>
<td>a(n) ________________ into the thyroid gland</td>
<td></td>
</tr>
<tr>
<td>48. thyroparathyroidectomy</td>
<td>15.43</td>
<td>the surgical removal of the ________________ glands as well as the thyroid gland</td>
<td></td>
</tr>
<tr>
<td>49. thyroxine test</td>
<td>15.44</td>
<td>a diagnostic test that measures ________________ levels in the blood; it is one of several hormones that regulates glucose metabolism and cell division</td>
<td></td>
</tr>
</tbody>
</table>
CHAPTER 15
The Endocrine System
Worksheet 9

Crossword Puzzle

Directions: Fill in the crossword puzzle with the words missing from the sentences below. Match the number of the sentence to the boxes placed across or down the grid. If filled out correctly, the words will fit neatly into the puzzle.

ACROSS
2 Because the thyroid gland is the only organ of the body that uptakes iodine, an effective treatment against a thyroid tumor, or __________ is the use of radioactive iodine.
4 The treatment of endocrine diseases is a focused discipline within medicine, called __________.
8 The excessive production of PTH by the parathyroid glands is a disorder known as __________.
9 __________ is the general term for an inflammation of a gland.

DOWN
1 A procedure involving the surgical excision, or removal, of one or both of the adrenal glands is known as __________.
3 The abnormal protrusion of the eyes is known as __________.
5 The endocrine organs secrete chemicals called __________ that are carried by the bloodstream.
6 A symptom of excessive body hair in a masculine pattern is known as __________.
7 The __________ system works hand in hand with the nervous system to regulate body functions.

© 2013 Pearson Education, Inc.
Wingerd, In-Class Activities to Accompany Medical Terminology Complete!, 2nd Edition
CHAPTER 15
The Endocrine System

Worksheet 1 Answers

Phonetic Spelling Challenge

1. Myxedema
2. Pituitary dwarfism
3. Thyroiditis
4. Endocrinologist
5. Hypocalcemia
6. Hypogonadism
7. Endocrinopathy
8. Pancreatitis
9. Diabetic nephropathy
10. Hypoadrenalism
11. Adrenomegaly
12. Adenosis
13. Cretinism
14. Diabetes mellitus
15. Hyperglycemia
16. Acromegaly
17. Goiter
18. Hirsutism
19. Polydipsia
20. Adenocarcinoma

Spelling Challenge

1. Pancreas
2. Thyroid
3. Addison disease
4. Thyrotoxicosis
5. Parathyroid glands
6. Adenoma
7. Diabetes insipidus
8. Polydipsia
9. Acidosis
10. Acromegaly
11. Ketonis
12. Endocrinopathy
13. Endocrine
14. Adrenomegaly
15. Hypogonadism

Abbreviation Matchup

1. DI
2. FSH
3. GH
4. FBS
5. GTT
6. DM

True/False

1. T
2. T
3. F
4. T
5. T
6. T
7. T
8. T
9. T
10. T
Fill in the Blank

11. glucose tolerance test—GTT
12. hyperthyroidism
13. thyroparathyroidectomy
14. parathyroidectomy
15. hirsutism
16. exophthalmos
17. adrenal virilism
18. many
19. acromegaly
20. cretinism

Short Answer

21. A malignant tumor that arises from epithelial tissue to form a glandular or glandlike pattern of cells
22. Inflammation of the thyroid gland
23. A procedure measuring thyroid function; image of thyroid gland obtained
24. When calcium levels in the blood become abnormally high
25. Literally means “swollen mucus”; the chronic form of hypothyroidism
Word Search

1. fasting
2. mellitus
3. adrenalitis
4. hyperparathyroidism
5. hirsutism
6. Polyuria
7. adrenopathy
8. Cushing
9. Adenitis
10. syndrome
11. insipidus
12. Graves’
13. parathyroidoma
14. gigantism
15. cretinism
CHAPTER 15
The Endocrine System
Worksheet 2 Answers

Dictation Report
Write each numbered term as you hear it, spelling each term correctly. This exercise will help you learn to hear, comprehend, visualize, and spell the new medical terms accurately.

The (1) endocrine system works hand-in-hand with the nervous system to regulate body functions. The (2) endocrinologist is a medical specialist who treats people with diseases affecting many different organs of the body. Endocrine organs include the (3) pituitary gland, the (4) pineal gland, the (5) thyroid gland, the (6) parathyroid glands, the (7) adrenal glands, the (8) pancreas, the (9) thymus, and the (10) gonads.

One of the most common endocrine diseases is (11) diabetes mellitus, which is a result of resistance of body cells to insulin, or a deficiency or complete lack of insulin production by cells of the pancreas. If unmanaged, diabetes mellitus causes large fluctuations in blood sugar levels, leading to circulatory deficiencies that result in kidney damage called (12) diabetic nephropathy. (13) Diabetes insipidus is a similar disease, caused by (14) hyposecretion of Adh by the pituitary gland, characterized by the symptoms of (15) polydipsia. There can be many other complications of diabetes that can lead to blindness or (16) retinopathy or even death. Careful daily management of the diabetic patient is essential for long life.

Excessive activity of one or more adrenal glands is the disease called (17) hyperadrenalism. The adrenal glands produce many different hormones, which control different activities of the body. (18) Androgens and (19) estrogens stimulate the development of sex characteristics. Hypersecretion of androgens in a women can lead to a pattern of masculinization known as (20) hirutism. Inflammation of the adrenal gland is a condition called (21) adrenalitis.
Endocrine disease runs in families, so it is very important for you to understand your family’s history so you can do everything you can to prevent disease. You should know if anyone in your family ever suffered from (22) **Graves’ disease**, (23) **Cushing syndrome**, or (24) **acromegaly**. You should also be aware of any symptoms that could be the beginning of endocrine disease. The formation of a (25) **goiter** or experiencing (26) **polyuria** could be your first sign of a problem. Being proactive about your health and the health of your family is an important part of being a medical professional.
Word Surgery

1. **Endocrinologist**
   Definition: One who studies and treats disorders of the endocrine system
   Prefix and definition: endo-, within
   Combining form and definition: crin/o, secretion; log/o, study or science of
   Suffix and definition: -ist, one who specializes

2. **Hyperadrenalism**
   Definition: A condition characterized by oversecretion of the steroid hormones
   from the adrenal cortex
   Prefix and definition: hyper-, excessive, abnormally high, above
   Combining form and definition: adren/o, adrenal gland
   Suffix and definition: -ism, condition

3. **Exophthalmos**
   Definition: A condition associated with hyperactivity of the thyroid gland that
   causes the eyes to seem to protrude from the eye sockets
   Prefix and definition: ex-, outside, away from
   Combining form and definition: ophthalm/o, eye
   Suffix and definition: -s, plural

4. **Acromegaly**
   Definition: Enlargement of one or more of the extremities
   Combining form and definition: acr/o, extremity
   Suffix and definition: -megaly, abnormally large

5. **Hypocalcemia**
   Definition: A low level of calcium in blood
   Prefix and definition: hypo-, deficient, abnormally low, below
   Combining form and definition: calc/o, calcium
   Suffix and definition: -emia, condition of blood

6. **Polydipsia**
   Definition: Excessive thirst
   Prefix and definition: poly-, excessive, over, many
   Combining form and definition: dips/o, thirst
   Suffix and definition: -ia, condition

7. **Ketonuria**
   Definition: The presence of ketones in the urine
   Combining form and definition: keton/o, ketone
   Suffix and definition: -uria, condition of urine
8. **Parathyroidism**
   Definition: A condition affecting the parathyroid glands usually resulting in hypersecretion of parathyroid hormone
   Prefix and definition: para-: alongside, abnormal
   Combining form and definition: thyroid/o: thyroid gland
   Suffix and definition: -ism: condition

9. **Glycolysis**
   Definition: Breaking down of glycogen and glucose molecules
   Combining form and definition: glyc/o: glycogen or sugar
   Suffix and definition: -lysis: loosen, dissolve

10. **Adenocarcinoma**
    Definition: Cancerous tumor in a gland
    Combining form and definition: aden/o: gland; carcin/o: cancer
    Suffix and definition: -oma: tumor

11. **Pancreatitis**
    Definition: Inflammation of the pancreas
    Combining form and definition: pancreat/o: pancreas
    Suffix and definition: -itis: inflammation

12. **Ketoacidosis**
    Definition: A condition characterized by accumulations of excess acids and ketones
    Combining form and definition: ket/o: ketones; acid/o: acids
    Suffix and definition: -osis: condition

13. **Hursutism**
    Definition: A condition usually seen in females that causes the production of excessive body hair
    Combining form and definition: hursut/o: hairy
    Suffix and definition: -ism: condition

14. **Renopathy**
    Definition: Disease of the kidney
    Combining form and definition: ren/o: kidney
    Suffix and definition: -pathy: disease

15. **Thyroidectomy**
    Definition: Surgical removal of all or part of the thyroid gland
    Combining form and definition: thyroid/o: thyroid gland
    Suffix and definition: -ectomy: surgical excision, removal
CHAPTER 15
The Endocrine System

Worksheet 4 Answers

Case Study

1. polydipsia
2. polyurea
3. polyphagia
4. retinopathy
5. neuropathy
6. nephropathy
CHAPTER 15
The Endocrine System

Worksheet 5 Answers

Medical Report Analysis

A. Increased urine production
B. Ketones in the urine
C. Elevated sugar in blood
D. Specialist who manages disorders of the endocrine system
E. An increased level of acids in the body
CHAPTER 15
The Endocrine System

Worksheet 6 Answers

Which Term Does Not Belong?

1. E Poly- is a prefix meaning many or much rather than a word root.
2. C Thyroidectomy is the surgical removal of the thyroid gland and is not a sign or symptom.
3. D Endocrinology is the study of disorders of the endocrine system and is not a disorder or condition.
4. E Thyroxine is one of the hormones secreted by the thyroid gland and is not a disease or condition.
5. A Thyrotoxicosis is a disorder caused by hypersecretion of the thyroid hormones. It is not a treatment or condition.
CHAPTER 15
The Endocrine System

Worksheet 7 Answers

Labeling

[Diagram showing various endocrine glands labeled as follows: Hypothalamus, Pineal gland, Pituitary gland, Thyroid gland, Parathyroid gland, Thymus, Adrenal gland, Pancreas, Ovary (female), Testis (male).]
CHAPTER 15
The Endocrine System
Worksheet 8 Answers

Key Terms Double Check

1. acid
2. enlargement
3. gland
4. tumor
5. benign
6. disease
7. removal
8. inflammation
9. enlargement
10. growth
11. cortisol
12. polyuria
13. carbohydrate
14. blindness
15. endocrine
16. hormones
17. eyes
18. fast
19. sugar
20. neck
21. hair
22. hyosecretion
23. excessive
24. calcium
25. blood
26. parathyroid
27. thyroid
28. low (or reduced)
29. low
30. sugar
31. follicle
32. low
33. thyroid
34. ketosis
35. excessive (or high)
36. pancreas
37. surgical removal
38. high
39. thirst
40. urine
41. thyroid gland
42. iodine
43. image
44. removal
45. inflammation
46. tumor
47. incision
48. parathyroid
49. thyroxine
CHAPTER 15
The Endocrine System
Worksheet 9 Answers

Crossword Puzzle

Solution:

A

T H Y R O I D O M A

R

E

N

A

E N D O C R I N O L O G Y

E

P

H

T

H

O

H

O

E

E

C

T

N

H Y P E R P A R A T H Y R O I D I S M

A

M

S

M

O

L

O

U

Y

C

M

N

T

R

O

E

I

A D E N I T I S

S

S

S

N

M

E