

Chapter 02

The Systems of the Body

1. _____ fibers provide input to the brain and spinal cord by carrying signals from receptors.
- A. Motor nerve
 - B. Sensory nerve**
 - C. Afferent
 - D. Bast

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2. The somatic nervous system connects
- A. the small intestine to the pancreas and ensures the regulation of enzymes in the pancreas.
 - B. the blood vessels to the lymph nodes to help in the formation of lymphocytes.
 - C. nerve fibers to voluntary muscles and provides the brain with feedback about voluntary movement.**
 - D. the central nervous system to all the internal organs that cannot be voluntarily controlled.

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3. The _____ nervous system helps to restore the body to a normal state after an emergency has passed.
- A. central
 - B. sympathetic
 - C. parasympathetic**
 - D. somatic

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4. Which of the following statements is true about the medulla?
- A. It is responsible for the regulation of heart rate, blood pressure, and respiration.**
 - B. It is the largest portion of the brain, involved in higher-order intelligence, memory, and personality.
 - C. It receives and interprets sensory impulses that come from the peripheral areas of the body.
 - D. It contains the somatosensory cortex, in which sensations of touch, pain, temperature, and pressure are registered and interpreted.

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5. The _____ coordinates voluntary muscle movement, the maintenance of balance and equilibrium, and the maintenance of muscle tone and posture.
- A. cerebral cortex
 - B. cerebellum**
 - C. pons
 - D. medulla

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6. Damage to the cerebellum is associated with
- A. loss of muscle tone and disturbances in posture.**
 - B. alterations in the rate of breathing.
 - C. reduced blood flow to the left and right atriums.
 - D. hypersecretion of hydrochloric acid.

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7. The _____ is responsible for the coordination of visual and auditory reflexes.
- A. thalamus
 - B. hindbrain
 - C. midbrain**
 - D. hypothalamus

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8. Which of the following is a function of the hypothalamus?
- A. It serves as a link between the hindbrain and the midbrain and helps control respiration.
 - B. It is responsible for the regulation of heart rate, blood pressure, and respiration.
 - C. It assists in the recognition of sensory stimuli and the relay of sensory impulses to the cerebral cortex.
 - D. It helps transit thoughts generated in the cerebral cortex and assess their impact on internal organs.**

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9. The _____ lobe contains the cortical areas, which are responsible for auditory and olfactory (smell) impulses.
- A. temporal**
 - B. occipital

- C. parietal
- D. frontal

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10. Epinephrine and norepinephrine are together termed as
- A. acids.
 - B. catecholamines.**
 - C. platelets.
 - D. enzymes.

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11. Which of the following occurs when catecholamines are released in the body?
- A. decrease in sweating
 - B. increase in digestion and urination
 - C. constriction of capillaries of the heart**
 - D. dilation of blood vessels

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12. _____ is a chronic, nonprogressive disorder of the nervous system that is marked by the lack of muscle control.
- A. Epilepsy
 - B. Parkinson's disease
 - C. Multiple sclerosis
 - D. Cerebral palsy**

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13. The gene for _____ disease has been identified by a test, which also roughly predicts the age when one will succumb to the disease.
- A. paraplegia
 - B. Parkinson's
 - C. epilepsy
 - D. Huntington's**

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14. _____ is the paralysis of all four extremities and the trunk of the body. It occurs when the upper portion of the spinal cord is severed.
- A. Epilepsy
 - B. Quadriplegia**
 - C. Polio
 - D. Paraplegia

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15. Identify a true statement about epilepsy.
- A. It results in progressive degeneration of the basal ganglia, a group of nuclei in the brain that control smooth motor coordination.
 - B. It is incurable but can often be controlled through medication and behavioral interventions.**
 - C. It is caused by the disintegration of myelin, a fatty membrane that surrounds nerve fibers.
 - D. It is a serious loss of cognitive ability beyond what might be expected from normal aging.

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16. Patients with _____ have progressive degeneration of the basal ganglia, a group of nuclei in the brain that control smooth motor coordination.
- A. dementia
 - B. Huntington's disease
 - C. Parkinson's disease**
 - D. polio

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17. A hereditary disorder of the central nervous system, _____ is characterized by chronic physical and mental deterioration.
- A. quadriplegia
 - B. paraplegia
 - C. Alzheimer's disease
 - D. Huntington's disease**

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18. Which of the following hormones secreted by the pituitary gland regulates bone, muscle, and other organ development?
- A.** somatotrophic hormone (STH)
 - B. thyrotrophic hormone (TSH)
 - C. adrenocorticotrophic hormone (ACTH)
 - D. antidiuretic hormone (ADH)

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19. The posterior pituitary lobe produces _____, which controls the water-absorbing ability of the kidneys.
- A.** antidiuretic hormone (ADH)
 - B. somatotrophic hormone (STH)
 - C. thyrotrophic hormone (TSH)
 - D. adrenocorticotrophic hormone (ACTH)

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20. The _____ glands are small glands located on top of each of the kidneys.
- A. pineal
 - B. pituitary
 - C. thyroid
 - D.** adrenal

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21. Which of the following is commonly known as the disease of lifestyle?
- A. dementia
 - B.** Type II diabetes
 - C. Type I diabetes
 - D. polio

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22. The right atrium and right ventricle pump blood back to the lungs via the _____.
- A. mitral valve.
 - B. capillaries.
 - C. aorta.
 - D.** pulmonary artery.

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23. _____ occurs when the heart has insufficient supply of oxygen or is unable to adequately remove carbon dioxide and other waste products.
- A.** Angina pectoris
 - B. Myocardial infarction
 - C. Arrhythmia
 - D. Ischemia

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24. _____ occurs when a clot has developed in a coronary vessel and blocks the flow of blood to the heart.
- A.** Myocardial infarction
 - B. Angina pectoris
 - C. Ischemia
 - D. Glioblastoma

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25. The _____ are a type of blood-forming cells that produce white blood cells.
- A. osteoclasts
 - B.** myeloblasts
 - C. erythroblasts
 - D. megakaryocytes

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26. Which of the following statements is true about platelets?
- A. They play an important role in healing by absorbing and removing foreign substances from the body.
 - B. They contain hemoglobin, which is needed to carry oxygen and carbon dioxide throughout the body.
 - C.** They clump together to block small holes that develop in blood vessels, and they also play an important role in blood clotting.
 - D. They contain granules that secrete digestive enzymes, which engulf and act on bacteria, turning them into a form conducive to excretion.

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27. An adult's body contains approximately _____ liters of blood, which consists of plasma and cells.
- A. 9
 - B. 7
 - C. 3
 - D. 5**

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28. Which of the following blood-forming cells produces platelets?
- A. myeloblasts
 - B. megakaryocytes**
 - C. erythroblasts
 - D. lymphoblasts

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29. _____ results from below-normal numbers of red blood cells, and it interferes with the transportation of oxygen and carbon dioxide throughout the body.
- A. Peptic ulcer
 - B. Anemia**
 - C. Lupus
 - D. Urticaria

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30. The _____, a muscular tube extending downward from the larynx, divides at its lower end into two branches called the primary bronchi.
- A. alveoli
 - B. larynx
 - C. pharynx
 - D. trachea**

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31. The exchange of oxygen and carbon dioxide during respiration occurs between the
- A. primary bronchi and the secondary bronchi.
 - B. alveoli and the capillaries.**
 - C. alveoli and the arteries.
 - D. bronchioles and the arteries.

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32. Respiratory movements are controlled by a respiratory center in the
- A. cerebellum.
 - B. cerebral cortex.
 - C. medulla.**
 - D. pons.

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33. _____ accounts for 80 percent of all cases of chronic obstructive pulmonary disease (COPD).
- A. Hypertension
 - B. Obesity
 - C. Smoking**
 - D. Alcoholism

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34. _____ is a secondary infection that may occur as a complication of other disorders, such as a severe cold or flu.
- A. Bronchial pneumonia**
 - B. Asthma
 - C. Meningitis
 - D. Pleurisy

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35. The unidirectional muscular movement of a bolus through the esophagus toward the stomach is known as
- A. mononucleosis.
 - B. metastasis.
 - C. peristalsis.**
 - D. phagocytosis.

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36. A critical function of the pancreas is the production of

- A. leptin.
- B. insulin.**
- C. pepsin.
- D. oxytocin.

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37. Bile is stored in the _____ and is secreted into the duodenum when necessary.

- A. gallbladder**
- B. pancreas
- C. appendix
- D. rectum

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38. _____ is an open sore in the lining of the stomach or the duodenum.

- A. Hepatitis
- B. Gastroenteritis
- C. Peptic ulcer**
- D. Appendicitis

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39. Which of the following types of hepatitis is also known as serum hepatitis?

- A. hepatitis A
- B. hepatitis B**
- C. hepatitis C
- D. hepatitis

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40. Which of the following digestive system disorders is characterized by watery and frequent bowel movements and occurs when the lining of the small and large intestines cannot properly absorb water or digested food?

- A. peptic ulcer
- B. appendicitis
- C. gastroesophageal reflux disease (GERD)
- D. diarrhea**

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41. One of the chief functions of the kidneys is to

- A. control the growth and secretion of the cortex region of the adrenal gland.
- B. control the chemical composition of blood.
- C. produce various gastric secretions.
- D. control the water balance in the body.**

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42. Estrogen is responsible for

- A. the endometrial lining to move into the fallopian tube.
- B. the occurrence of menopause.
- C. preparing the body for pregnancy.
- D. the development of secondary sex characteristics in females.**

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43. _____ is produced by the interstitial cells of the testes under the control of the anterior pituitary lobe.

- A. Aldosterone
- B. Testosterone**
- C. Progesterone
- D. Estrogen

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44. _____ cancer is known to be the most lethal form of cancer that affects women.

- A. Vaginal
- B. Ovarian**
- C. Endometrial
- D. Cervical

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45. Some women usually choose to undergo _____ therapy to deal with the noxious symptoms that occur during menopause.
- A. aversion
 - B. hormone**
 - C. meso
 - D. gene

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46. Genetic material for inheritance lies in the nucleus of the cell in the form of _____ chromosomes.
- A. 53
 - B. 36
 - C. 23
 - D. 46**

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47. _____ is an example of an environmentally transmitted disease.
- A. Shigellosis
 - B. Yellow fever
 - C. Herpes
 - D. Influenza**

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48. Toxicogenicity is the ability to
- A. produce poisons which invade other parts of the body.**
 - B. resist the body's defenses.
 - C. produce white blood cells in the body.
 - D. reduce the risk of potential genetic disorders.

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49. A localized infection
- A. is confined to a particular site in the human body and does not spread.**
 - B. is confined to a particular area and sends toxins to other parts of the body.
 - C. rarely affects the human body.
 - D. affects several different areas or body systems.

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50. The largest group of cells involved in natural immunity is known as
- A. lymphocytes.
 - B. oocytes.
 - C. osteocytes.
 - D. granulocytes.**

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51. _____ release cytokines that lead to inflammation and fever and promote wound healing.
- A. Macrophages**
 - B. Lymphoblasts
 - C. Neutrophils
 - D. Megakaryocytes

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52. _____ prevent the passage of microbes from one section of the body to another.
- A. Phagocytoses
 - B. Anatomical barriers**
 - C. Antimicrobial substances
 - D. Inflammatory responses

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53. _____ are chemicals produced by the body that kill invading microorganisms.
- A. Antimicrobial substances**
 - B. Phagocytes
 - C. Inflammatory responses
 - D. Anatomical barriers

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54. _____ cells secrete chemicals that kill invading organisms and infected cells.
- A. Eosinophil
 - B. Mast
 - C. T**
 - D. B

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55. Which of the following bodily systems functions as the drainage system of the body?
- A. the immune system
 - B. the lymphatic system**
 - C. the endocrine system
 - D. the respiratory system

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56. _____, a malignant lymphoma, involves the progressive, chronic enlargement of the lymph nodes, spleen, and other lymphatic tissue.
- A. Parkinson's disease
 - B. Meningitis
 - C. Epilepsy
 - D. Hodgkin's disease**

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57. In an autoimmune disease,
- A. the treatment procedure is long-term, but it is easily curable.
 - B. the body fails to recognize the existence of a foreign substance until its severity increases.
 - C. certain white blood cells ingest microbes, causing an infection.
 - D. the body recognizes its own tissue as a foreign invader and produces antibodies to fight it.**

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58. Regulation of the autonomic nervous system occurs via the sympathetic nervous system and the parasympathetic nervous system.
- TRUE**

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59. The parasympathetic nervous system is activated in individual responses to stress.
- FALSE**

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60. The structures of the limbic system play an important role in stress and emotional responses.
- TRUE**

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61. The endocrine system is responsible for fast-acting, short-duration responses to changes in the body.
- FALSE**

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62. The two primary clinical manifestations of atherosclerosis are angina pectoris and congestive heart disease.
- FALSE**

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63. Hepatitis A is typically transmitted through food and water.
- TRUE**

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64. Appendicitis means "inflammation of the liver," and the disease produces swelling, tenderness, and sometimes permanent damage.
- FALSE**

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65. Hepatitis E resembles hepatitis A but is caused by a different virus.
- TRUE**

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66. Progesterone increases when pregnancy fails to occur.

FALSE

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67. Menopause is a disorder of the reproductive system.

FALSE

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68. There appears to be a genetic contribution to coronary heart diseases and some forms of cancer.

TRUE

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69. Antigens are proteins produced in response to stimulation by antibodies.

FALSE

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70. Describe the two most common disorders of the nervous system.

The most common forms of neurological dysfunction are epilepsy and Parkinson's disease. Epilepsy is a disease of the central nervous system. It is often idiopathic, which means that no specific cause for the symptoms can be identified. Epilepsy is marked by seizures, which range from barely noticeable to violent convulsions accompanied by irregular breathing and loss of consciousness. Epilepsy cannot be cured, but it can often be controlled through medication and behavioral interventions designed to manage stress. Patients with Parkinson's disease have progressive degeneration of the basal ganglia, which is a group of nuclei in the brain that control smooth motor coordination. The result of this deterioration is tremors, rigidity, and slowness of movement. Parkinson's patients may be treated with medication, but large doses can cause undesirable side effects.

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71. Describe the structure of the cardiovascular system. Include the internal and external factors influencing heart rate and its impact on the heart's functioning.

The cardiovascular system comprises the heart, blood vessels, and blood and acts as the transport system of the body. Blood carries oxygen from the lungs to the tissues and carbon dioxide from the tissues to the lungs. Blood also carries nutrients from the digestive tract to the individual cells so that the cells may extract nutrients for growth and energy. The heart functions as a pump, and its pumping action causes the blood to circulate throughout the body. The heart performs its internal functions through regular rhythmic phases of contraction and relaxation known as the cardiac cycle. A number of external factors also influence the rate at which the heart contracts and relaxes. During exercise, emotional excitement, or stress, the heart speeds up, and the cardiac cycle is completed in a shorter time.

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72. Describe the nature and symptoms of hepatitis. Compare and contrast Hepatitis A and Hepatitis B, and explain their modes of transmission.

Hepatitis means inflammation of the liver, and it produces swelling, tenderness, and sometimes permanent damage. It remains in the blood, causing a yellowing of the skin known as jaundice. Hepatitis A is caused by viruses and is typically transmitted through food and water. It is often spread by poorly cooked seafood or through unsanitary preparation and storage of food. Hepatitis B, also known as serum hepatitis, is a more serious form. It is caused by a virus and is transmitted by the transfusion of infected blood, by improperly sterilized needles, through sexual contact, and through mother-to-infant contact. It is a particular risk among intravenous drug users. Its symptoms are similar to those of hepatitis A but are far more serious.

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73. Discuss the role of genetic counseling. How can health psychologists use it effectively?

Genetic counseling is used in prenatal diagnostic tests that permit the detection of some genetically based disorders, including Tay-Sachs disease, cystic fibrosis, muscular dystrophy, Huntington's disease, and breast cancer. Helping people decide whether to be screened and how to cope with genetic vulnerabilities if they test positive represents an important role for health psychologists. For example, belief in a genetic cause can lead people to take medical actions that may be medically unwarranted. People who have a family history of genetic disorders, those who have already given birth to a child with a genetic disorder, or those who have recurrent reproductive problems, such as multiple miscarriages, often seek such counseling. In some cases, technological advances have made it possible to treat some of these problems before birth through drugs or surgery. Growing evidence suggests that people at risk for treatable disorders benefit from genetic testing and do not suffer long-term psychological distress. Health psychologists have an important role to play in research and counseling related to genetic risks, especially if they can help people modify their risk status and manage their distress.

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74. Compare and contrast nonspecific and specific immune mechanisms. Provide an example for each.

The body has a number of responses to invading organisms, some nonspecific and others specific. Nonspecific immune mechanisms are a general set of responses to any kind of infection or disorder. The inflammatory response is an example of a nonspecific immune mechanism. Specific immune mechanisms are always acquired after birth, and they fight particular microorganisms and their toxins. Antibodies that develop with the help of foreign antigens are an example of a specific immune mechanism.

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