Florida CTE

# Health Science Anatomy & Physiology (2024)

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| **Analyze and interpret an overview of the human body, including organization and chemical process. The student will be able to:** 01.0 | **1** Evaluate interrelationships of the basic structural and functional organization of the human body including chemical, cellular, tissue and organ systems. 01.01 |
| | **2** Describe the basic molecular structures and primary functions of the four major categories of biological macromolecules. 01.02 |
| | **3** Examine medical implications of body planes, directional terms, cavities, abdominal regions, and quadrants. 01.03 |
| | **4** Discuss the chemical processes that maintain life, including homeostasis, cellular respiration, the role of enzymes as catalysts and the basic concepts of metabolism. 01.04 |
| **Apply correct medical terminology relating to body structure and function within a real-world application. The student will be able to:** 02.0 | **1** Evaluate and apply anatomical terminology to describe location of parts or areas of the body and to describe the relation of one part to another. 02.01 |
| | **2** Interpret correct medical terminology including roots, prefixes and suffixes to indicate anatomical structures and function. 02.02 |
| | **3** Extend medical terminology to real-world applications. 02.03 |
| **Evaluate cells and tissues microscopically and macroscopically and relate their specialized functions. – The student will be able to:** 03.0 | **1** Discuss and describe cell structure and function in healthy tissue. 03.01 |
| | **2** Discuss and describe cell structure and function in diseased tissue including how damage to one tissue may impact the function of another tissue. 03.02 |
| | **3** Compare and contrast the four main types of tissue including the interrelationships of tissues. 03.03 |
| | **4** Discuss the location and function of tissues as it relates to homeostasis. 03.04 |
| **Analyze the integumentary system in relation to health and disease. The student will be able to:** 04.0 | **1** Apply medical terminology as related to the integumentary system. 04.01 |
| | **2** Discuss and describe the structure and function of the integumentary system across the lifespan. 04.02 |
| | **3** Demonstrate knowledge of cells and tissues in the integumentary system. 04.03 |

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| | 4 Identify and analyze common diseases and disorders of the integumentary system including etiology, prevention, pathology, diagnosis and treatment/rehabilitation. 04.04 |
| | 5 Discuss or research health careers related to the integumentary system. 04.05 |
| | 6 Demonstrate knowledge of skills related to the integumentary system which may include infection control and hand washing skills. 04.06 |
| Analyze the skeletal system in relation to health and disease. The student will be able to: 05.0 | 1 Apply medical terminology as related to the skeletal system. 05.01 |
| | 2 Discuss and describe the structure and function of the skeletal system across the lifespan. 05.02 |
| | 3 Identify and explain major bone markings and their implications. 05.03 |
| | 4 Identify and explain joints and their implications. 05.04 |
| | 5 Discuss the interrelationship between calcium, hormones, and the skeletal system. 05.05 |
| | 6 Apply knowledge of cells and tissues in the skeletal system. 05.06 |
| | 7 Identify and analyze common diseases and disorders of the skeletal system including etiology, prevention, pathology, diagnosis and treatment/rehabilitation. 05.07 |
| | 8 Discuss or research health careers related to the skeletal system. 05.08 |
| | 9 Demonstrate knowledge of skills related to the skeletal system which may include range of motion. 05.09 |
| Analyze the muscular system in relation to health and disease. The student will be able to: 06.0 | 1 Apply medical terminology as related to the muscular system. 06.01 |
| | 2 Discuss and describe the structure and function of the muscular system across the lifespan. 06.02 |
| | 3 Identify and explain the 3 main types of muscles and their implications. 06.03 |
| | 4 Interpret muscle function by examining attachment to bone. 06.04 |
| | 5 Discuss the interrelationship between calcium, ions, and the muscular system. 06.05 |
| | 6 Apply knowledge of cells and tissues in the muscular system. 06.06 |
| | 7 List the steps involved in the sliding filament of muscle contraction. 06.07 |
| | 8 Describe signal transmission across a myoneural/neuromuscular junction. 06.08 |

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| | 9 Identify and analyze common diseases and disorders of the muscular system including etiology, prevention, pathology, diagnosis and treatment/rehabilitation. 06.09 |
| | 10 Discuss or research health careers related to the muscular system. 06.10 |
| | 11 Demonstrate knowledge of skills related to the muscular system which may include isometric and isotonic contractions. 06.11 |
| **Analyze the nervous system in relation to health and disease. The student will be able to:** 07.0 | 1 Apply medical terminology as related to the nervous system. 07.01 |
| | 2 Discuss and describe the structure and function of the nervous system across the lifespan. 07.02 |
| | 3 Identify and explain the interrelatedness of the Central Nervous System (CNS) and Peripheral Nervous System (PNS). 07.03 |
| | 4 Compare and contrast the divisions of the Autonomic Nervous System (ANS). 07.04 |
| | 5 Apply knowledge of cells and tissues in the nervous system. 07.05 |
| | 6 Explain how neurotransmitters help propagate electrical impulses. 07.06 |
| | 7 Describe reflex pathways and their importance. 07.07 |
| | 8 Identify and analyze common diseases and disorders of the nervous system including etiology, prevention, pathology, diagnosis and treatment/rehabilitation. 07.08 |
| | 9 Discuss or research health careers related to the nervous system. 07.09 |
| | 10 Demonstrate knowledge of skills related to the nervous system which may include recognizing signs and symptoms of a stroke. 07.10 |
| **Analyze the endocrine system in relation to health and disease. The student will be able to:** 08.0 | 1 Apply medical terminology as related to the endocrine system. 08.01 |
| | 2 Discuss and describe the structure and function of the endocrine system across the lifespan. 08.02 |
| | 3 Compare and contrast endocrine and exocrine glands. 08.03 |
| | 4 Compare and contrast negative and positive feedback loops. 08.04 |
| | 5 Evaluate the relationship between the endocrine system and homeostasis in health and disease. 08.05 |
| | 6 Apply knowledge of cells and tissues in the endocrine system. 08.06 |

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| | 7 Identify and analyze common diseases and disorders of the endocrine system including etiology, prevention, pathology, diagnosis and treatment/rehabilitation. 08.07 |
| | 8 Discuss or research health careers related to the endocrine system. 08.08 |
| | 9 Demonstrate knowledge of skills related to the endocrine system which may include recognizing the signs and symptoms of low blood sugar. 08.09 |
| Analyze the cardiovascular/circulatory system in relation to health and disease. The student will be able to: 09.0 | 1 Apply medical terminology as related to the cardiovascular system. 09.01 |
| | 2 Discuss and describe the structure and function of the cardiovascular system across the lifespan. 09.02 |
| | 3 Demonstrate knowledge of major blood vessels. 09.03 |
| | 4 Compare and contrast the structure and function of arteries, veins, and capillaries. 09.04 |
| | 5 Analyze the interdependence between systemic and pulmonary circulation. 09.05 |
| | 6 Design a map or flow chart depicting the normal pathway of blood flow through the heart. 09.06 |
| | 7 Design a map or flow chart depicting the normal electrical pathway through the heart. 09.07 |
| | 8 Apply knowledge of cells and tissues in the cardiovascular system. 09.08 |
| | 9 Demonstrate knowledge of the composition of blood to include formed elements and plasma. 09.09 |
| | 10 Evaluate ABO blood types and Rh factor. 09.10 |
| | 11 Predict potential blood donors for a transfusion through the analysis of blood types with ABO and/or Rh compatibility. 09.11 |
| | 12 Identify and analyze common diseases and disorders of the cardiovascular system including etiology, prevention, pathology, diagnosis and treatment/rehabilitation. 09.12 |
| | 13 Discuss or research health careers related to the cardiovascular system. 09.13 |
| | 14 Demonstrate knowledge of skills related to the cardiovascular system which might include assessing pulse. 09.14 |
| Analyze the lymphatic and immune systems in relation to health and | 1 Apply medical terminology as related to the lymphatic and immune systems. 10.01 |

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| **disease. The student will be able to:** 10.0 | **2** Discuss and describe the structure and function of the lymphatic and immune systems across the lifespan. 10.02 |
| | **3** Explain the importance of the accessory organs (thymus, tonsils, spleen, appendix, Peyer's patch) promoting the effectiveness of the lymphatic and immune system. 10.03 |
| | **4** Compare and contrast passive and active immunity. 10.04 |
| | **5** Discuss the impact of B cells and T cells on diseases of the immune system. 10.05 |
| | **6** Evaluate and discuss the body's defense mechanisms in relation to common communicable diseases. 10.06 |
| | **7** Apply knowledge of cells and tissues in the lymphatic and immune systems. 10.07 |
| | **8** Identify and analyze common diseases and disorders of the lymphatic and immune system including etiology, prevention, pathology, diagnosis, and treatment/rehabilitation. 10.08 |
| | **9** Discuss or research health careers related to the lymphatic and immune systems. 10.09 |
| **Analyze the respiratory system in relation to health and disease. The student will be able to:** 11.0 | **1** Apply medical terminology as related to the respiratory system. 11.01 |
| | **2** Discuss and describe the structure and function of the respiratory system across the lifespan. 11.02 |
| | **3** Evaluate the interrelatedness of the cardiovascular and respiratory systems. 11.03 |
| | **4** Apply knowledge of cells and tissues in the respiratory system. 11.04 |
| | **5** Identify and analyze common diseases and disorders of the respiratory system including etiology, prevention, pathology, diagnosis and treatment/rehabilitation. 11.05 |
| | **6** Discuss or research health careers related to the respiratory system. 11.06 |
| | **7** Demonstrate knowledge of skills related to the respiratory system which might include monitoring respirations. 11.07 |
| **Analyze the digestive system in relation to health and disease. The student will be able to:** 12.0 | **1** Apply medical terminology as related to the digestive system. 12.01 |
| | **2** Discuss and describe the structure and function of the digestive system across the lifespan. 12.02 |
| | **3** Apply knowledge of cells and tissues in the digestive system. 12.03 |

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| | 4 Identify and analyze common diseases and disorders of the digestive system including etiology, prevention, pathology, diagnosis and treatment/rehabilitation. 12.04 |
| | 5 Discuss or research health careers related to the digestive system. 12.05 |
| | 6 Demonstrate knowledge of skills related to the digestive system which might include a nutritional self-assessment. 12.06 |
| Analyze the urinary system in relation to health and disease. The student will be able to: 13.0 | 1 Apply medical terminology as related to the urinary system. 13.01 |
| | 2 Discuss and describe the structure and function of the urinary system across the lifespan. 13.02 |
| | 3 Justify the interrelatedness of the urinary and cardiovascular system in promoting homeostasis. 13.03 |
| | 4 Apply knowledge of cells and tissues in the urinary system. 13.04 |
| | 5 Identify and analyze common diseases and disorders of the urinary system including etiology, prevention, pathology, diagnosis and treatment/rehabilitation. 13.05 |
| | 6 Discuss or research health careers related to the urinary system. 13.06 |
| | 7 Demonstrate knowledge of skills related to the urinary system which may include how to use urine test strips. 13.07 |
| Analyze the both the male and female reproductive systems in relation to health and disease. The student will be able to: 14.0 | 1 Apply medical terminology as related to the each of the male and female reproductive systems. 14.01 |
| | 2 Discuss and describe the structure and function of both reproductive systems across the lifespan. 14.02 |
| | 3 Apply knowledge of cells and tissues of both reproductive systems. 14.03 |
| | 4 Identify and analyze common diseases and disorders of both reproductive systems including etiology, prevention, pathology, diagnosis and treatment/rehabilitation. 14.04 |
| | 5 Discuss or research health careers related to both reproductive systems. 14.05 |
| | 6 Explain fetal development with regard to trimesters and measuring according to the fetal growth chart. 14.06 |
| Identify and explain factors relating to genetics and disease. | 1 Discuss DNA and its role in human heredity. 15.01 |
| | 2 Describe the role of human genetics in relation to genetic diseases. 15.02 |

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| **The student will be able to:** 15.0 | **3** Discuss or research current issues related to genetic research. 15.03 |
| | **4** Explore the relationship between mutation, cell cycle and uncontrolled cell growth that can result in cancer. 15.04 |
| | **5** Explore how environmental factors contribute to an individual's overall wellness and quality of life. 15.05 |
| **Evaluate and apply the principles of disease transmission and control to real-world scenarios. The student will be able to:** 16.0 | **1** Discuss and explain the direct and indirect transmission of disease. 16.01 |
| | **2** Discuss and apply the principles of the chain of infection to real-world scenarios. 16.02 |
| | **3** Categorize the common morphology of microorganisms affecting the human body. 16.03 |
| | **4** Identify and analyze common diseases caused by microorganisms. 16.04 |