

Human Structure, Function & Disease (2025)

MEDICAL TERMINOLOGY: Demonstrate methods of delivering and obtaining information, while communicating effectively **1.0**

- 1** Use common roots, prefixes, and suffixes to communicate information regarding body systems, diseases, and disorders. **1.1**
- 2** Interpret common medical abbreviations. **1.2**

ANATOMY AND PHYSIOLOGY PART A: Understand human anatomy, physiology, common diseases and disorders, and medical math principles. **2.0**

- 1** Identify basic levels of organization of the human body. **2.1**
- 2** Identify body planes, directional terms, cavities, and quadrants. **2.2**
- 3** Investigate the process of homeostasis. **2.3**

4 Skeletal System **2.4**

- 1** Structures of the skeletal system **2.4.1**
 - 1** Distinguish between axial and appendicular skeletons **2.4.1.1**
 - 2** Describe long bone anatomy **2.4.1.2**
 - 3** Identify joint types and movement **2.4.1.3**
 - 4** Name and classify all bones (206) **2.4.1.4**
- 2** Functions of the skeletal system **2.4.2**
 - 1** Structure and support **2.4.2.1**
 - 2** Muscle attachment and movement **2.4.2.2**
 - 3** Mineral storage **2.4.2.3**
 - 4** Hematopoiesis **2.4.2.4**
 - 5** Ossification **2.4.2.5**

5 Muscular System **2.5**

- 1** Structures of the muscular system **2.5.1**
 - 1** Identify types of muscle tissue **2.5.1.1**
 - 2** Identify major muscle groups of neck, shoulder, chest, abdomen, back, arms and legs **2.5.1.2**

2 Functions of the muscular system 2.5.2

- 1 Body movement 2.5.2.1
 - 2 Posture 2.5.2.2
 - 3 Protection 2.5.2.3
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6 Integumentary System 2.6

- 1 Structures of the integumentary system 2.6.1
 - 1 Identify integumentary components 2.6.1.1
 - 2 Label the layers of skin 2.6.1.2
 - 2 Functions of the integumentary system 2.6.2
 - 1 Infection protection 2.6.2.1
 - 2 Sensory organ 2.6.2.2
 - 3 Temperature regulation 2.6.2.3
 - 4 UV light protection 2.6.2.4
 - 5 Vitamin D production 2.6.2.5
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7 Cardiovascular System 2.7

- 1 Structures of the cardiovascular system 2.7.1
 - 1 Distinguish blood components 2.7.1.1
 - 2 Identify cardiovascular organs 2.7.1.2
 - 3 Label the parts of the heart 2.7.1.3
 - 2 Functions of the cardiovascular system 2.7.2
 - 1 Blood flow through the heart and body 2.7.2.1
 - 2 Cardiac conduction system 2.7.2.2
 - 3 Transportation of nutrients, waste, antibodies, hormones, and gases 2.7.2.3
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8 Lymphatic/Immune System 2.8

- 1 Structures of the lymphatic system 2.8.1
 - 1 Identify lymphatic organs 2.8.1.1
 - 2 Functions of the lymphatic system 2.8.2
 - 1 Movement of lymph fluid 2.8.2.1
 - 2 Provides protection against disease 2.8.2.2
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9 Respiratory System 2.9

- 1 Structures of the respiratory system 2.9.1
 - 1 Identify respiratory organs 2.9.1.1

2 Functions of the respiratory system 2.9.2

1 Gas exchange 2.9.2.1

Cellular 2.1.1

1 Cellular 2.1.1

Chemical 2.1.2

2 Chemical 2.1.2

Organ 2.1.3

3 Organ 2.1.3

Organism 2.1.4

4 Organism 2.1.4

Systems 2.1.5

5 Systems 2.1.5

Tissue 2.1.6

6 Tissue 2.1.6

Body planes (sagittal, mid-sagittal, coronal/frontal, transverse/horizontal) 2.2.1

1 Body planes (sagittal, mid-sagittal, coronal/frontal, transverse/horizontal) 2.2.1

Directional terms (superior, inferior, anterior/ventral, posterior/dorsal, medial, lateral, proximal, distal, superficial, and deep) 2.2.2

2 Directional terms (superior, inferior, anterior/ventral, posterior/dorsal, medial, lateral, proximal, distal, superficial, and deep) 2.2.2

Cavities (dorsal, cranial, orbital, nasal, oral, spinal, thoracic, abdominal, and pelvic) 2.2.3

3 Cavities (dorsal, cranial, orbital, nasal, oral, spinal, thoracic, abdominal, and pelvic) 2.2.3

Quadrants (upper right, lower right, upper left, and lower left) 2.2.4

4 Quadrants (upper right, lower right, upper left, and lower left) 2.2.4

DISEASES AND DISORDERS- PART A 3.0

1 Describe etiology, pathology, diagnosis, treatment, and prevention of common diseases and disorders, including, but not limited to the following: 3.1.A

Arthritis 3.1.A.1

1 Arthritis 3.1.A.1

Asthma 3.1.A.2

2 Asthma 3.1.A.2

Cancer 3.1.A.3

3 Cancer 3.1.A.3

Cystic fibrosis 3.1.A.4

4 Cystic fibrosis 3.1.A.4

Melanoma 3.1.A.5

5 Melanoma 3.1.A.5

**Muscular
dystrophy** 3.1.A.6

6 Muscular dystrophy 3.1.A.6

**Myocardial infarction
(MI)** 3.1.A.7

7 Myocardial infarction (MI) 3.1.A.7

**Stroke/Cerebrovascular
Accident (CVA)** 3.1.A.8

8 Stroke/Cerebrovascular Accident (CVA) 3.1.A.8

Tuberculosis 3.1.A.9

9 Tuberculosis 3.1.A.9

**Anatomy and
Physiology- Part
B: Understand human
anatomy, physiology,
common diseases and
disorders, and medical
math principles.** 2.0

10 Nervous System 2.10

1 Structures of the nervous system 2.10.1

1 Identify organs of the nervous system 2.10.1.1

2 Identify structures of the “special sense” organs 2.10.1.2

3 Differentiate CNS and PNS 2.10.1.3

4 Differentiate sympathetic and parasympathetic 2.10.1.4

2 Functions of the nervous system 2.10.2

1 Sensation 2.10.2.1

2 Movement 2.10.2.2

3 Processing 2.10.2.3

11 Endocrine System 2.11

1 Structures of the endocrine system 2.11.1

1 Identify endocrine glands 2.11.1.1

2 Functions of the Endocrine System 2.11.2

1 Production of hormones 2.11.2.1

2 Regulation of body processes 2.11.2.2

3 Controls metabolism 2.11.2.3

4 Regulates growth, development, and maturation 2.11.2.4

12 Digestive System 2.12

- 1 Structures of the digestive system 2.12.1
 - 1 Identify digestive organs in sequence 2.12.1.1
 - 2 Differentiate between alimentary and accessory organs 2.12.1.2
 - 2 Functions of the digestive system 2.12.2
 - 1 Chemical and mechanical digestion 2.12.2.1
 - 2 Absorption of nutrients 2.12.2.2
 - 3 Excretion of waste 2.12.2.3
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13 Urinary System 2.13

- 1 Structures of the urinary system 2.13.1
 - 1 Identify urinary organs 2.13.1.1
 - 2 Identify gross and microscopic anatomy of the kidney 2.13.1.2
 - 2 Functions of the urinary system 2.13.2
 - 1 Process of urine formation 2.13.2.1
 - 2 Urine composition 2.13.2.2
 - 3 Homeostatic balance 2.13.2.3
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14 Reproductive System 2.14

- 1 Structures of the reproductive system 2.14.1
 - 1 Identify female reproductive organs 2.14.1.1
 - 2 Identify male reproductive organs 2.14.1.2
 - 2 Functions of the reproductive system 2.14.2
 - 1 Formation of gametes 2.14.2.1
 - 2 Production of hormones 2.14.2.2
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15 The Special Senses 2.15

- 1 Structures of the Eyes and Ears 2.15.1
 - 1 Identify structures of the eyes 2.15.1.1
 - 2 Identify structures of the ears 2.15.1.2
 - 2 Functions of the Eyes and Ears 2.15.2
 - 1 Eyes are the receptor organs of sight; receive and transmit images to the brain 2.15.2.1
 - 2 Ears are the receptor organs of hearing; receive and transmit sound impulses to the brain, helps maintain balance 2.15.2.2
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2 Discuss research related to emerging diseases and disorders such as: 3.2

3 Describe biomedical therapies as they relate to prevention, pathology, and treatment of disease. 3.3

Bipolar disorder 3.1.B.1

1 Bipolar disorder 3.1.B.1

Cancer 3.1.B.2

2 Cancer 3.1.B.2

Cataracts 3.1.B.3

3 Cataracts 3.1.B.3

Concussion / Traumatic Brain Injury (TBI) 3.1.B.4

4 Concussion / Traumatic Brain Injury (TBI) 3.1.B.4

Diabetes 3.1.B.5

5 Diabetes 3.1.B.5

Dementia 3.1.B.6

6 Dementia 3.1.B.6

Gastric ulcer 3.1.B.7

7 Gastric ulcer 3.1.B.7

Hepatitis 3.1.B.8

8 Hepatitis 3.1.B.8

Sexually Transmitted Infection (STI) 3.1.B.9

9 Sexually Transmitted Infection (STI) 3.1.B.9

Urinary Tract Infection (UTI) 3.1.B.10

10 Urinary Tract Infection (UTI) 3.1.B.10

Autism 3.2.1

1 Autism 3.2.1

VRSA 3.2.2

2 VRSA 3.2.2

PTSD 3.2.3

3 PTSD 3.2.3

Listeria 3.2.4

4 Listeria 3.2.4

Seasonal flu 3.2.5

5 Seasonal flu 3.2.5

Gene editing 3.3.1

1 Gene editing 3.3.1

Gene testing 3.3.2

2 Gene testing 3.3.2

Gene therapy 3.3.3

3 Gene therapy 3.3.3

Immunizations 3.3.4

4 Immunizations 3.3.4

Immunotherapy 3.3.5

5 Immunotherapy 3.3.5

Stem cell research 3.3.6

6 Stem cell research 3.3.6

**MEDICAL
MATHEMATICS** 4.0

1 Demonstrate competency using basic math skills and mathematical conversions as they relate to healthcare. 4.1

2 Demonstrate the ability to analyze diagrams, charts, graphs, and tables to interpret healthcare results. 4.2

**INFORMATION
TECHNOLOGY IN
HEALTHCARE: Apply
information technology
practices common
across health
professions.** 5.0

1 Key Principles, components, and practices of Health Information Systems 5.1

1 Utilize components of an electronic health record (EHR) and/or electronic medical record (EMR). 5.1.1

1 Diagnostic tests 5.1.1.1

2 History and physical 5.1.1.2

3 Medications 5.1.1.3

4 Patient demographics 5.1.1.4

5 Progress notes 5.1.1.5

6 Treatment Plan 5.1.1.6

2 Evaluate types of health data collection tools. 5.1.2

1 Medical wearable devices 5.1.2.1

2 Patient monitoring equipment 5.1.2.2

3 Phone application 5.1.2.3

4 Telemedicine/telehealth 5.1.2.4

3 Adhere to information systems policies, procedures, and regulations as required by national, state, and local entities. 5.1.3