

## Medical Terminology – 2 Anatomy and Physiology

The **College Tutor Medical Terminology – Anatomy and Physiology** course provides a solid foundation to understanding the working language of medicine as it pertains to human anatomy and physiology or, as termed in this course, *human Form and Function*. This is an all-inclusive, comprehensive course suitable for medical students as well as professionals.

### Course Objectives

- Learn and identify structures of the major organs and organ systems of the human body.
- Learn and understand the relationships between the various levels of organization within each system.
- Apply specific knowledge about the relationship between the structure and function of human organ systems and how they function independently and together to maintain homeostasis.

### Course Outline

Introduction to Human Form and Function  
Body Structure  
Body Organization  
Circulatory System  
Endocrine System  
Gastrointestinal System  
Integumentary System  
Lymphatic/Immune System  
Muscular System  
Nervous System  
Reproductive System  
Respiratory System  
Sensory System  
Skeletal System  
Urinary System



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## Topic Outlines

### **Topic 2**                      **Body Structure**

Anatomical position  
Anatomical planes of the body  
Body planes and positions  
Body cavities  
Divisions of the abdomen  
Terms of relation or position  
Terms of movement  
Anatomy terms

### **Topic 3**                      **Body Organization**

Terms and definitions  
Levels of organization  
    Cells  
        Cytoplasm  
        Nucleus  
        Genetic material  
        The gene  
        Genetic makeup  
    Tissues  
        Epithelial tissue  
        Connective tissue  
        Muscle tissue  
        Nerve tissue  
    Organs  
    Organ systems  
    Organization and functions of organ systems  
        Circulatory system  
        Endocrine system  
        Gastrointestinal system  
        Integumentary system  
        Lymphatic and immune systems  
        Musculoskeletal system  
        Nervous system  
        Reproductive system  
        Respiratory system  
        Sensory system  
        Urinary system

**Topic 4                      Circulatory System**

Terms and definitions

The circulatory system

Parts of the cardiovascular system

    The heart

        Heart chambers

        Cardiac muscle

        Cardiac circulation

        Cardiac cycle

        Intrinsic conduction system

    Blood vessels

    Structure of vessels

The pulmonary and systemic circuits

Functions of the circulatory system

    Blood pressure

    Regulating the heart rate

        Diffusion

        Filtration

        Osmosis

    Capillary exchange in the lungs

Hepatic portal circulation

The lymphatic system

**Topic 5                      Endocrine System**

Terms and definitions

The endocrine system

    Glands

    Hormones

    Homeostatic feedback mechanisms

Parts of the endocrine system

    The hypothalamus

        Functions of the hypothalamus

    The pituitary gland

        Anterior lobe of the pituitary gland

        Posterior lobe of the pituitary gland

    The thyroid gland

    The parathyroid glands

    The thymus gland

    The adrenal glands

        Hormones of the adrenal cortex

        Hormones of the adrenal medulla

    The pineal gland

    The gonads

        The ovaries and testes

    The pancreas

**Topic 6                      Gastrointestinal System**

Terms and definitions

The gastrointestinal system

Parts of the gastrointestinal system

    The alimentary canal

    The oral cavity

        Lips and cheeks

        Palate

        Tongue

        Teeth

        Salivary glands

    The pharynx

    The esophagus

    The stomach

    The small intestine

    The large intestine

    The pancreas

    The liver

    The gall bladder

**Topic 7                      Integumentary System**

Terms and definitions

The integumentary system

Parts of the integumentary system

    Skin

        Epidermis

        Dermis

    Accessory structures

        Hair

        Nails

        Sweat glands

        Sebaceous glands

Functions of the integumentary system

    Protection

    Body temperature

    Excretion and vitamin D formation

    Sensory reception

        Free nerve endings

        Touch receptors

        Temperature detection

        Pain receptors

**Topic 8                      Lymphatic/Immune Systems**

Terms and definitions

The lymphatic system

Fluid and protein balance

Digestion

Immunity and spread of infection

Lymphatic circulation

Parts of the lymphatic system

Lymph

Lymphocytes

Lymph vessels

Lymph organs

    Lymph nodes

    Tonsils

    Spleen

    Thymus

Functions of the lymphatic system

The immune system

    Immune response

    Natural immune system

        Physical barriers (mucosal immunity)

        Chemical defenses

        Cellular defenses

    Acquired immune system

        Cell-mediated immunity

        Antibody-mediated immunity

**Topic 9                      Muscular System**

Terms and definitions

The muscular system

Parts of the muscular system

    Structure of muscle cells

    Tendons

    Major muscles of the body

        Muscle terminology

        Muscles of the head and neck

        Muscles of the trunk

        Muscles of the shoulders and arms

        Muscles of the hips and legs

Functions of the muscular system

Muscle fiber energy

Exercise and muscle fatigue

Movement and muscle arrangement

Muscle tone

**Topic 10                      Nervous System**

Terms and definitions

The nervous system

Parts of the nervous system

    Neurons

        Types of neurons

    Nerves

    Central nervous system

        The brain

        Parts of the brain

        The limbic nervous system

        The spinal cord

    Peripheral nervous system

        Spinal nerves

        Cranial nerves

    Autonomic nervous system

        Parasympathetic nervous system

        Sympathetic nervous system

Functions of the nervous system

    Transmission of nerve impulses

    Neurotransmitters

    Reflexes

**Topic 11                      Reproductive System**

Terms and definitions

The reproductive system

    Development of sex cells

Parts of the male reproductive system

    The testes, epididymis, ductus deferens, ejaculatory duct

    The urethra

    Accessory glands and semen

    Male genitalia

Parts of the female reproductive system

    The ovaries

    Fallopian tubes, uterus, vagina

    Female genitalia

    Mammary glands

Functions of the reproductive system

    Hormones and the male reproductive system

    Hormones and the female reproductive system

    Fertilization

        The development of a human fetus

**Topic 12                      Respiratory System**

Terms and definitions

The respiratory system

Parts of the respiratory system

    The nose and nasal cavity

    The pharynx

    The larynx

    The trachea

    The bronchi

    The lungs

Functions of the respiratory system

    Breathing

    Respiration

        External respiration

        Internal respiration

    Moving air by other means

**Topic 13                      Sensory System**

Terms and definitions

Parts of the sensory system

    Sense organs

Anatomy of the eye

    The sclera

    The choroid

    The lens

    The retina

    Cavities and fluids of the eye

    Accessory structures of the eye

Anatomy of the ear

    The outer ear

    The middle ear

    The inner ear

Anatomy of the senses of smell and taste

Functions of the sensory system

    Sight

    Hearing

    Balance

    Smell

    Taste

    Temperature senses

    Sense of pain

**Topic 14                      Skeletal System**

Terms and definitions

The skeletal system

Structure of bones

Types of bones

Parts of the skeletal system

Axial skeleton

The skull

Facial bones

Vertebral column

The sternum and ribs

Appendicular skeleton

Bones of the upper extremity

The pectoral girdle

The arms

Bones of the lower extremity

The pelvic girdle

The legs

Ligaments and tendons

Functions of the skeletal system

Joints

Types of joints

**Topic 15                      Urinary System**

Terms and definitions

The urinary system

Parts of the urinary system

The kidneys

Nephrons

The ureter

The urinary bladder

The urethra

Functions of the urinary system

Formation of urine

Filtration

Reabsorption

Secretion

Hormones and the composition of urine

Elimination of urine

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