

# Medical Terminology Knowledge Base

## Anatomical Terms and Body Systems

### Anatomical Position and Directional Terms

- **Anatomical Position**: Standing upright, arms at sides, palms forward
- **Superior/Cranial**: Toward the head
- **Inferior/Caudal**: Toward the feet
- **Anterior/Ventral**: Toward the front
- **Posterior/Dorsal**: Toward the back
- **Medial**: Toward the midline
- **Lateral**: Away from the midline
- **Proximal**: Closer to point of attachment
- **Distal**: Farther from point of attachment

### Body Planes and Sections

- **Sagittal Plane**: Divides body into left and right
- **Coronal/Frontal Plane**: Divides body into anterior and posterior
- **Transverse/Axial Plane**: Divides body into superior and inferior
- **Oblique Plane**: Diagonal cut through body

### Body Cavities

- **Dorsal Cavity**: Cranial and spinal cavities
- **Ventral Cavity**: Thoracic, abdominal, and pelvic cavities
- **Thoracic Cavity**: Heart, lungs, major vessels
- **Abdominal Cavity**: Stomach, liver, intestines
- **Pelvic Cavity**: Reproductive organs, bladder, rectum

## Medical Word Formation

### Root Words (Common Examples)

- **Cardio**: Heart (cardiology, cardiomyopathy)
- **Pulmo/Pneumo**: Lung (pulmonology, pneumonia)
- **Gastro**: Stomach (gastroenterology, gastritis)
- **Nephro**: Kidney (nephrology, nephritis)

- **Neuro**: Nerve (neurology, neuropathy)
- **Hemo/Hemato**: Blood (hematology, hemoglobin)
- **Osteo**: Bone (osteoporosis, osteomyelitis)
- **Dermato**: Skin (dermatology, dermatitis)

## Prefixes

- **A-/An-**: Without, absence of (anemia, apnea)
- **Brady-**: Slow (bradycardia, bradypnea)
- **Tachy-**: Fast (tachycardia, tachypnea)
- **Hyper-**: Above, excessive (hypertension, hyperglycemia)
- **Hypo-**: Below, deficient (hypotension, hypoglycemia)
- **Dys-**: Difficult, abnormal (dyspnea, dysphagia)
- **Pre-**: Before (preoperative, prenatal)
- **Post-**: After (postoperative, postpartum)

## Suffixes

- **-itis**: Inflammation (arthritis, appendicitis)
- **-osis**: Condition, disease (cirrhosis, osteoporosis)
- **-oma**: Tumor, mass (carcinoma, hematoma)
- **-pathy**: Disease (neuropathy, cardiomyopathy)
- **-ectomy**: Surgical removal (appendectomy, cholecystectomy)
- **-ostomy**: Surgical opening (colostomy, tracheostomy)
- **-scopy**: Visual examination (endoscopy, colonoscopy)
- **-graphy**: Recording, imaging (radiography, echocardiography)

# Cardiovascular System Terminology

## Heart and Circulation

- **Myocardium**: Heart muscle
- **Pericardium**: Membrane surrounding heart
- **Endocardium**: Inner lining of heart
- **Systole**: Contraction phase
- **Diastole**: Relaxation phase
- **Arrhythmia**: Irregular heart rhythm
- **Ischemia**: Reduced blood flow
- **Infarction**: Tissue death due to lack of blood supply

## Blood Vessels

- **Arteries**: Carry blood away from heart
- **Veins**: Carry blood toward heart
- **Capillaries**: Smallest blood vessels
- **Atherosclerosis**: Hardening of arteries
- **Thrombosis**: Blood clot formation
- **Embolism**: Blockage by traveling clot
- **Aneurysm**: Abnormal dilation of blood vessel

## Respiratory System Terminology

### Breathing and Gas Exchange

- **Inspiration**: Breathing in
- **Expiration**: Breathing out
- **Ventilation**: Movement of air in and out of lungs
- **Perfusion**: Blood flow through lungs
- **Diffusion**: Gas exchange across alveolar membrane
- **Hypoxia**: Low oxygen levels
- **Hypercapnia**: High carbon dioxide levels

### Respiratory Conditions

- **Pneumonia**: Lung infection
- **Pneumothorax**: Collapsed lung
- **Pleural Effusion**: Fluid in pleural space
- **Atelectasis**: Lung collapse
- **Bronchospasm**: Airway constriction
- **Dyspnea**: Difficulty breathing
- **Orthopnea**: Difficulty breathing when lying flat

## Gastrointestinal System Terminology

### Digestive Process

- **Ingestion**: Taking in food
- **Digestion**: Breaking down food
- **Absorption**: Uptake of nutrients
- **Elimination**: Waste removal

- **Peristalsis**: Wave-like muscle contractions
- **Gastric**: Related to stomach
- **Hepatic**: Related to liver
- **Biliary**: Related to bile/gallbladder

## GI Conditions

- **Gastritis**: Stomach inflammation
- **Peptic Ulcer**: Stomach or duodenal ulcer
- **Cholecystitis**: Gallbladder inflammation
- **Pancreatitis**: Pancreas inflammation
- **Cirrhosis**: Liver scarring
- **Jaundice**: Yellow discoloration from bilirubin
- **Ascites**: Fluid accumulation in abdomen

## Nervous System Terminology

### Neuroanatomy

- **Central Nervous System (CNS)**: Brain and spinal cord
- **Peripheral Nervous System (PNS)**: Nerves outside CNS
- **Autonomic Nervous System**: Controls involuntary functions
- **Sympathetic**: "Fight or flight" response
- **Parasympathetic**: "Rest and digest" response
- **Neuron**: Nerve cell
- **Synapse**: Connection between neurons

### Neurological Conditions

- **Stroke**: Brain attack, cerebrovascular accident
- **Seizure**: Abnormal electrical activity in brain
- **Epilepsy**: Recurrent seizures
- **Dementia**: Progressive cognitive decline
- **Neuropathy**: Nerve damage
- **Paralysis**: Loss of muscle function
- **Paresthesia**: Abnormal sensation (tingling, numbness)

## Musculoskeletal System Terminology

### Bones and Joints

- **Osteoblast**: Bone-building cell
- **Osteoclast**: Bone-resorbing cell
- **Periosteum**: Membrane covering bone
- **Synovial**: Joint fluid and membrane
- **Cartilage**: Smooth tissue covering joints
- **Ligament**: Connects bone to bone
- **Tendon**: Connects muscle to bone

## Musculoskeletal Conditions

- **Fracture**: Broken bone
- **Dislocation**: Joint displacement
- **Sprain**: Ligament injury
- **Strain**: Muscle or tendon injury
- **Arthritis**: Joint inflammation
- **Osteoporosis**: Bone density loss
- **Myalgia**: Muscle pain
- **Arthralgia**: Joint pain

## Laboratory and Diagnostic Terms

### Laboratory Values

- **CBC**: Complete blood count
- **BMP**: Basic metabolic panel
- **CMP**: Comprehensive metabolic panel
- **LFTs**: Liver function tests
- **ABG**: Arterial blood gas
- **Urinalysis**: Urine examination
- **Culture**: Growing organisms for identification
- **Sensitivity**: Antibiotic susceptibility testing

### Diagnostic Imaging

- **Radiography**: X-ray imaging
- **CT**: Computed tomography
- **MRI**: Magnetic resonance imaging
- **Ultrasound**: Sound wave imaging
- **Nuclear Medicine**: Radioactive tracer imaging
- **Contrast**: Enhancement agent for imaging

- **Fluoroscopy**: Real-time X-ray imaging

## Pharmacological Terms

### Drug Classifications

- **Analgesic**: Pain reliever
- **Antibiotic**: Infection fighter
- **Anticoagulant**: Blood thinner
- **Antihypertensive**: Blood pressure lowering
- **Bronchodilator**: Airway opener
- **Diuretic**: Increases urine production
- **Sedative**: Calming agent
- **Stimulant**: Increases activity

### Drug Actions

- **Agonist**: Activates receptor
- **Antagonist**: Blocks receptor
- **Bioavailability**: Amount reaching circulation
- **Half-life**: Time for drug level to decrease by half
- **Metabolism**: Drug breakdown
- **Excretion**: Drug elimination
- **Tolerance**: Decreased response over time
- **Dependence**: Physical need for drug