

Chapter-2:Medical Terminology

Day 1 – Introduction to Medical Terminology and Word Structure

Introduction to Medical Terminology

Meaning of Medical Terminology

Medical terminology is the specialized language used by healthcare professionals to describe:

- Diseases
- Body parts
- Medical conditions
- Treatments
- Procedures
- Medicines

It helps doctors, nurses, medical coders, pharmacists, and other healthcare workers communicate accurately and efficiently.

Medical terminology consists of words derived mainly from:

- Greek language
- Latin language

These terms are standardized so that healthcare professionals around the world can understand the same medical information.

Importance of Medical Terminology in Healthcare Communication

Medical terminology is important because it provides:

- Clear communication
- Accurate documentation
- Standardized healthcare language
- Reduced misunderstanding

Without standardized terminology, healthcare communication would become confusing and unsafe.

Example

Instead of saying:

“Slow heart rate”

Healthcare professionals use the term:
“Bradycardia”

This makes communication shorter and more professional.

Role in Medical Coding, Billing, and Documentation

Medical terminology plays a major role in:

- Medical coding
- Insurance billing
- Clinical documentation
- Electronic Health Records (EHR)

Medical coders must understand medical terminology to:

- Read doctor notes
- Identify diagnoses
- Understand procedures
- Assign correct medical codes

Example

If a doctor writes:
“Hypertension”

The medical coder should understand that it means:
“High blood pressure”

and assign the proper diagnosis code.

Accurate understanding of terminology helps prevent:

- Coding errors
- Claim denials
- Billing mistakes

Components of Medical Terms

Most medical terms are formed using four important parts:

1. Prefix
2. Root Word
3. Suffix
4. Combining Vowel

Understanding these components helps students easily identify the meanings of complex medical terms.

Prefix

Definition and Function

A prefix is a word part added at the beginning of a medical term.

Prefixes usually indicate:

- Number
- Time
- Position
- Direction
- Speed
- Size
- Condition

Not all medical terms contain prefixes.

How Prefixes Modify Meanings

Prefixes change or modify the meaning of the root word.

Example 1

Hyper + tension = Hypertension

- Hyper = Excessive or high
- Tension = Pressure

Meaning:

High blood pressure

Example 2

Brady + cardia = Bradycardia

- Brady = Slow
- Cardia = Heart

Meaning:

Slow heart rate

Importance of Prefixes

Understanding prefixes helps:

- Identify diseases quickly
- Understand medical reports
- Improve coding accuracy
- Learn medical terminology easily

Root Word

Core Meaning of Medical Terms

The root word is the main part of a medical term.

It gives the basic meaning related to:

- Body organs
- Body systems
- Tissues
- Functions

Almost every medical term contains a root word.

Identification of Body Parts and Systems

Root words often identify specific body parts.

Examples of Root Words

Root word	Meaning
cardi	Heart
neur	Nerve
gastr	Stomach
hepat	Liver
derm	Skin
oste	Bone
pulmon	Lung
nephr	Kidney

Example of Root Word Usage

Cardiology

- Cardi = Heart
- Logy = Study of

Meaning:

Study of the heart

Gastritis

- Gastr = Stomach
- Itis = Inflammation

Meaning:

Inflammation of the stomach

Importance of Root Words

Learning root words helps students:

- Understand medical terms faster
- Recognize body systems
- Improve medical coding skills
- Interpret patient documentation

Suffix

Meaning and Importance

A suffix is added at the end of a medical term.

Suffixes usually indicate:

- Diseases
- Conditions
- Procedures
- Disorders
- Specialists
- Diagnostic tests

Indication of Diseases, Conditions, and Procedures

Common Medical Suffixes

Suffix	Meaning
-itis	Inflammation

-ectomy	Surgical removal
-logy	Study of
-algia	Pain
-osis	Abnormal condition
-pathy	Disease
-gram	Record or picture
-scopy	Visual examination

Examples

Arthritis

- Arthr = Joint
- Itis = Inflammation

Meaning:

Inflammation of joints

Appendectomy

- Append = Appendix
- Ectomy = Surgical removal

Meaning:

Surgical removal of the appendix

Importance of Suffixes

Suffixes help identify:

- Nature of diseases
- Type of procedures
- Medical specialties
- Diagnostic methods

Combining Vowel

Purpose of Combining Vowels

A combining vowel connects:

- Root words
- Root words and suffixes

The most common combining vowel is:

“o”

It helps make pronunciation easier.

Use of “o” in Pronunciation

Example

Cardi + o + logy = Cardiology

Without the combining vowel, pronunciation becomes difficult.

Rules for Combining Vowels

Rule 1

Use a combining vowel when suffix begins with a consonant.

Example:

Nephr/o/logy

Rule 2

Do not use a combining vowel when suffix begins with a vowel.

Example:

Gastritis

Not:

Gastroitis

Common Prefixes

Learning common prefixes helps students understand many medical terms easily.

a-, an-Meaning

Without, absence of, lack of

Examples

Apathy

- Without feeling

Anemia

- Lack of blood

Apnea

- Absence of breathing

brady-Meaning

Slow

Examples

Bradycardia

- Slow heart rate

Bradypnea

- Slow breathing

tachy-Meaning

Fast or rapid

Examples

Tachycardia

- Rapid heart rate

Tachypnea

- Rapid breathing

hyper-Meaning

Excessive, above normal, high

Examples

Hypertension

- High blood pressure

Hyperglycemia

- High blood sugar

hypo-Meaning

Low, below normal, deficient

Examples

Hypotension

- Low blood pressure

Hypoglycemia

- Low blood sugar

dys-Meaning

Difficult, painful, abnormal

Examples

Dysphagia

- Difficulty swallowing

Dysuria

- Painful urination

peri-Meaning

Around or surrounding

Examples

Pericardium

- Membrane around the heart

Perinatal

- Around the time of birth

intra-Meaning

Within or inside

Examples

Intravenous

- Within the vein

Intramuscular

- Within the muscle

pre-

Meaning

Before

Examples

Prenatal

- Before birth

Preoperative

- Before surgery

post-

Meaning

After

Examples

Postoperative

- After surgery

Postpartum

- After childbirth

Conclusion

Medical terminology is the foundation of healthcare communication and medical coding. Understanding prefixes, root words, suffixes, and combining vowels helps students interpret complex medical terms accurately.

Day 2 – Suffixes and Root Words in Medical Terminology

Introduction to Suffixes and Root Words

Medical terminology is built using different word parts that help healthcare professionals understand diseases, procedures, and body systems accurately.

Two of the most important components of medical terminology are:

- Suffixes
- Root words

Understanding suffixes and root words helps students:

- Interpret medical terms easily
- Understand patient records
- Improve medical coding accuracy
- Communicate effectively in healthcare settings

Most medical terms can be understood by breaking them into smaller parts and analyzing their meanings.

Common Suffixes

A suffix is a word part added at the end of a medical term.

Suffixes often indicate:

- Diseases
- Conditions
- Procedures
- Treatments
- Diagnostic methods
- Medical specialties

Learning suffixes helps students identify the purpose or condition described in a medical term.

Disease and Condition Suffixes

These suffixes describe diseases, abnormal conditions, pain, or disorders.

-itis

Meaning

Inflammation

This is one of the most commonly used medical suffixes.

Examples

Arthritis

Arthr = Joint

Itis = Inflammation

Meaning:

Inflammation of joints

Gastritis

Gastr = Stomach

Itis = Inflammation

Meaning:

Inflammation of the stomach

Tonsillitis

Tonsill = Tonsils

Itis = Inflammation

Meaning:

Inflammation of the tonsils

Importance

The suffix “-itis” always indicates inflammation in a body part or organ.

-algia Meaning

Pain

Examples

Neuralgia

Neur = Nerve

Algia = Pain

Meaning:

Nerve pain

Myalgia

My = Muscle

Algia = Pain

Meaning:

Muscle pain

Importance

This suffix helps identify painful conditions.

-emia Meaning

Blood condition

Examples

Anemia

An = Without

Emia = Blood condition

Meaning:

Deficiency of healthy blood cells

Leukemia

Leuk = White

Emia = Blood condition

Meaning:

Cancer affecting white blood cells

Importance

“-emia” usually refers to abnormalities related to blood.

-oma Meaning

Tumor or mass

Examples

Carcinoma

Carcin = Cancer

Oma = Tumor

Meaning:

Cancerous tumor

Lipoma

Lip = Fat

Oma = Tumor

Meaning:

Fatty tumor

Importance

This suffix is commonly used in oncology and pathology.

-osis Meaning

Abnormal condition

Examples

Dermatosis

Dermat = Skin

Osis = Abnormal condition

Meaning:

Abnormal skin condition

Cyanosis

Cyan = Blue

Osis = Condition

Meaning:

Bluish discoloration due to lack of oxygen

Importance

“-osis” often describes chronic or abnormal conditions.

-pathy Meaning

Disease or disorder

Examples

Neuropathy

Neur = Nerve

Pathy = Disease

Meaning:

Disease of nerves

Cardiomyopathy

Cardio = Heart

Myo = Muscle

Pathy = Disease

Meaning:

Disease of heart muscle

Importance

This suffix helps identify diseases affecting organs or tissues.

Procedure and Study Suffixes

These suffixes describe medical procedures, examinations, or areas of study.

-ectomy

Meaning

Surgical removal

Examples

Appendectomy

Append = Appendix

Ectomy = Surgical removal

Meaning:

Removal of appendix

Mastectomy

Mast = Breast

Ectomy = Surgical removal

Meaning:

Removal of breast tissue

Importance

“-ectomy” indicates surgery involving removal of an organ or body part.

-otomy

Meaning

Cutting into or incision

Examples

Tracheotomy

Trache = Trachea

Otomy = Incision

Meaning:

Surgical incision into the trachea

Laparotomy

Lapar = Abdomen

Otomy = Incision

Meaning:

Surgical incision into the abdomen

Importance

“-otomy” differs from “-ectomy” because it means cutting into, not removal.

-logy

Meaning

Study of

Examples

Cardiology

Cardi = Heart

Logy = Study of

Meaning:

Study of the heart

Neurology

Neur = Nerves

Logy = Study of

Meaning:

Study of the nervous system

Importance

This suffix is used for medical specialties and sciences.

-scopy

Meaning

Visual examination

Examples

Endoscopy

Endo = Inside

Scopy = Visual examination

Meaning:

Examination inside the body

Colonoscopy

Colon = Colon

Scopy = Examination

Meaning:

Examination of the colon

Importance

“-scopy” is commonly used in diagnostic procedures.

Common Root Words

Root words form the main meaning of medical terms and usually identify organs, body systems, or tissues.

Body System Roots

cardi/o

Meaning

Heart

Examples

- Cardiology
- Cardiomyopathy
- Electrocardiogram

neur/o

Meaning

Nerve

Examples

- Neurology
- Neuropathy
- Neuralgia

gastr/o

Meaning

Stomach

Examples

- Gastritis
- Gastroscopy
- Gastroenterology

hepat/o

Meaning

Liver

Examples

- Hepatitis
- Hepatomegaly

oste/o

Meaning

Bone

Examples

- Osteoporosis
- Osteoarthritis

derm/o

Meaning

Skin

Examples

- Dermatology
- Dermatitis

arthr/o

Meaning

Joint

Examples

- Arthritis
- Arthroscopy

hem/o

Meaning

Blood

Examples

- Hemoglobin
- Hematology

pneum/o

Meaning

Lung or air

Examples

- Pneumonia
- Pneumothorax

nephr/o

Meaning

Kidney

Examples

- Nephrology
- Nephritis

Importance of Root Words

Root words help identify:

- Body organs
- Body systems
- Medical specialties
- Disease locations

Understanding root words makes medical terminology easier to interpret.

Formation of Medical Terms

Medical terms are usually formed by combining:

- Prefixes
- Root words
- Suffixes
- Combining vowels

Combining Prefixes, Roots, and Suffixes

Example 1 – Cardiology

Cardi = Heart

Logy = Study of

Meaning:

Study of the heart

Example 2 – Gastritis

Gastr = Stomach

Itis = Inflammation

Meaning:

Inflammation of the stomach

Example 3 – Neuropathy

Neur = Nerve

Pathy = Disease

Meaning:

Disease of nerves

Example 4 – Osteoarthritis

Oste = Bone

Arthr = Joint

Itis = Inflammation

Meaning:

Inflammation affecting bones and joints

Understanding Term Meanings

Students can understand unfamiliar medical terms by:

1. Identifying the prefix
2. Finding the root word

3. Understanding the suffix
4. Combining all meanings

This method improves:

- Vocabulary building
- Medical coding skills
- Documentation interpretation

Conclusion

Suffixes and root words are essential parts of medical terminology. Suffixes help identify diseases, procedures, and medical specialties, while root words indicate organs and body systems. Understanding how medical terms are formed improves healthcare communication, medical coding accuracy, and clinical documentation interpretation. Strong knowledge of medical terminology helps students become skilled medical coders and healthcare professionals.

Day 3 – Cardiovascular, Respiratory, and Digestive Systems

Introduction to Body Systems in Medical Terminology

Understanding body systems is very important in medical terminology and medical coding. Healthcare professionals use medical terms related to body organs, diseases, procedures, and treatments every day.

In this session, students will learn about:

- Cardiovascular system
- Respiratory system
- Digestive system

Learning these systems helps students:

- Understand medical records
- Identify disease conditions
- Improve coding accuracy
- Interpret clinical documentation

Each system has:

- Specific organs
- Important functions

- Medical terms
- Prefixes
- Root words
- Suffixes

Cardiovascular System

The cardiovascular system is responsible for circulating blood throughout the body.

It helps transport:

- Oxygen
- Nutrients
- Hormones
- Waste products

The cardiovascular system is also called the circulatory system.

Organs and Functions

Heart

The heart is a muscular organ that pumps blood throughout the body.

Functions of the Heart

- Pumps oxygen-rich blood to body tissues
- Receives oxygen-poor blood from the body
- Maintains blood circulation
- Supports delivery of nutrients and oxygen

The heart has four chambers:

- Right atrium
- Right ventricle
- Left atrium
- Left ventricle

Arteries

Arteries are blood vessels that carry blood away from the heart.

Functions

- Deliver oxygen-rich blood to body tissues
- Maintain blood pressure
- Support circulation

The largest artery is the aorta.

Veins

Veins are blood vessels that carry blood back to the heart.

Functions

- Return oxygen-poor blood to the heart
- Maintain circulation balance

Veins contain valves that prevent backward blood flow.

Capillaries

Capillaries are very small blood vessels connecting arteries and veins.

Functions

- Exchange oxygen and nutrients
- Remove waste products
- Support tissue function

Capillaries are extremely thin to allow easy exchange of materials.

Important Terms

Myocardium

Myo = Muscle

Cardium = Heart

Meaning:

Muscular layer of the heart

The myocardium is responsible for heart contractions and pumping action.

Arrhythmia

A = Without

Rhythmia = Rhythm

Meaning:

Abnormal heart rhythm

Examples:

- Fast heartbeat
- Slow heartbeat
- Irregular heartbeat

Arrhythmias can affect blood circulation.

Angioplasty

Angio = Blood vessel

Plasty = Surgical repair

Meaning:

Procedure used to open blocked blood vessels

Doctors commonly perform angioplasty to improve blood flow to the heart.

Prefixes, Roots, and Suffixes

cardi/o Meaning

Heart

Examples

- Cardiology
- Cardiomyopathy
- Electrocardiogram

angi/o

Meaning

Blood vessel

Examples

- Angiography
- Angioplasty

vascul/o Meaning

Blood vessel

Examples

- Vascular disease
- Vasculitis

arteri/o Meaning

Artery

Examples

- Arteriosclerosis
- Arteriogram

ven/o Meaning

Vein

Examples

- Venous circulation
- Venogram

-megaly Meaning

Enlargement

Example

Cardiomegaly

Cardio = Heart

Megaly = Enlargement

Meaning:

Enlargement of the heart

-sclerosis

Meaning

Hardening

Example

Arteriosclerosis

Arterio = Artery

Sclerosis = Hardening

Meaning:

Hardening of arteries

Respiratory System

The respiratory system helps the body breathe and exchange gases.

Its main function is:

- Taking oxygen into the body
- Removing carbon dioxide

Organs and Functions

Nose

The nose is the main entry point for air.

Functions

- Filters air
- Warms air
- Moistens air
- Supports sense of smell

Trachea

The trachea is also called the windpipe.

Functions

- Carries air to the lungs
- Keeps airway open

- Removes dust particles through mucus and cilia

Bronchi

Bronchi are two large air passages branching from the trachea into the lungs.

Functions

- Deliver air into lungs
- Distribute oxygen during breathing

Each lung contains smaller branches called bronchioles.

Lungs

The lungs are the main respiratory organs.

Functions

- Exchange oxygen and carbon dioxide
- Supply oxygen to blood
- Remove carbon dioxide from the body

The lungs contain tiny air sacs called alveoli.

Important Terms

Bronchitis

Bronch = Bronchi

Itis = Inflammation

Meaning:

Inflammation of the bronchial tubes

Symptoms

- Cough
- Mucus production
- Breathing difficulty

Asthma

Asthma is a chronic respiratory condition causing airway narrowing.

Symptoms

- Wheezing
- Shortness of breath
- Chest tightness

Asthma affects breathing efficiency.

Pleura

The pleura is a membrane surrounding the lungs.

Functions

- Protect lungs
- Reduce friction during breathing

Inflammation of the pleura is called pleuritis.

Prefixes, Roots, and Suffixes

pneum/o Meaning

Lung or air

Examples

- Pneumonia
- Pneumothorax

bronch/o Meaning

Bronchus

Examples

- Bronchitis
- Bronchoscopy

thorac/o Meaning

Chest

Examples

- Thoracic cavity

- Thoracotomy

trache/o Meaning

Trachea

Examples

- Tracheotomy
- Tracheitis

-pnea Meaning

Breathing

Examples

Apnea

- Absence of breathing

Tachypnea

- Rapid breathing

Bradypnea

- Slow breathing

-spasm Meaning

Sudden involuntary contraction

Example

Bronchospasm

Broncho = Bronchi

Spasm = Contraction

Meaning:

Sudden narrowing of airways

Digestive System

The digestive system helps break down food and absorb nutrients required for body functions.

It also removes waste products from the body.

Organs and Functions

Mouth

The mouth is the beginning of the digestive tract.

Functions

- Chewing food
- Mixing food with saliva
- Starting digestion

Saliva contains enzymes that begin digestion.

Stomach

The stomach is a muscular organ involved in digestion.

Functions

- Breaks down food
- Produces digestive acids
- Mixes food with digestive juices

Intestines

The intestines include:

- Small intestine
- Large intestine

Functions

- Absorb nutrients
- Absorb water
- Eliminate waste

The small intestine mainly absorbs nutrients.

The large intestine mainly absorbs water.

Liver

The liver is one of the largest organs in the body.

Functions

- Produces bile
- Removes toxins
- Stores nutrients
- Supports metabolism

Pancreas

The pancreas is both a digestive and endocrine organ.

Functions

- Produces digestive enzymes
- Helps regulate blood sugar
- Assists digestion

Important Terms

Colitis

Col = Colon

Itis = Inflammation

Meaning:

Inflammation of the colon

Symptoms

- Abdominal pain
- Diarrhea
- Intestinal discomfort

Gastroenteritis

Gastr/o = Stomach

Enter/o = Intestine

Itis = Inflammation

Meaning:

Inflammation of the stomach and intestines

Symptoms

- Vomiting
- Diarrhea
- Stomach pain

Cholecystectomy

Cholecyst = Gallbladder

Ectomy = Surgical removal

Meaning:

Surgical removal of the gallbladder

Prefixes, Roots, and Suffixes

gastr/o Meaning

Stomach

Examples

- Gastritis
- Gastroscopy

enter/o Meaning

Intestine

Examples

- Enteritis
- Gastroenteritis

hepat/o Meaning

Liver

Examples

- Hepatitis

- Hepatomegaly

Pancreat/o Meaning

Pancreas

Examples

- Pancreatitis
- Pancreatology

-pepsia Meaning

Digestion

Example

Dyspepsia

Dys = Difficult

Pepsia = Digestion

Meaning:

Indigestion or difficult digestion

-rrhea Meaning

Flow or discharge

Example

Diarrhea

Dia = Through

Rrhea = Flow

Meaning:

Frequent loose bowel movements

Conclusion

The cardiovascular, respiratory, and digestive systems are essential body systems in medical terminology and healthcare. Understanding the organs, functions, medical terms, root words, prefixes, and suffixes related to these systems helps students interpret medical documentation accurately.

Day 4 – Nervous, Musculoskeletal, and Urinary Systems

Introduction to Body Systems and Medical Terminology

Understanding body systems is very important in medical terminology and medical coding. Each body system contains specific organs that perform important functions necessary for maintaining health.

Medical terminology related to body systems helps healthcare professionals:

- Identify diseases
- Understand patient conditions
- Interpret clinical documentation
- Assign accurate medical codes

In this session, students will study:

- Nervous system
- Musculoskeletal system
- Urinary system

Students will also learn important:

- Medical terms
- Prefixes
- Root words
- Suffixes

related to these systems.

Nervous System

The nervous system controls and coordinates body activities. It helps the body respond to internal and external changes.

The nervous system is responsible for:

- Thinking
- Memory
- Movement
- Sensation
- Coordination

- Communication between body parts

The nervous system has two major divisions:

1. Central nervous system
2. Peripheral nervous system

Organs and Functions

Brain

The brain is the control center of the body.

Functions of the Brain

- Controls body movements
- Processes thoughts and emotions
- Maintains memory
- Controls speech and learning
- Regulates body functions such as breathing and heartbeat

Different parts of the brain perform different functions.

Spinal Cord

The spinal cord connects the brain to the rest of the body.

Functions

- Transmits nerve signals
- Controls reflex actions
- Helps coordinate movement

The spinal cord is protected by the vertebral column.

Nerves

Nerves are bundles of fibers that carry electrical signals throughout the body.

Functions

- Carry messages between brain and body
- Control sensations
- Control muscle movements

There are:

- Sensory nerves
- Motor nerves

Important Terms

Epilepsy

Epilepsy is a neurological disorder causing repeated seizures.

Causes

- Abnormal electrical activity in the brain

Symptoms

- Seizures
- Loss of consciousness
- Muscle spasms

Epilepsy affects brain function and nervous system control.

Meningitis

Mening = Membrane

Itis = Inflammation

Meaning:

Inflammation of the meninges, the protective membranes surrounding the brain and spinal cord.

Symptoms

- Fever
- Headache
- Neck stiffness
- Sensitivity to light

Meningitis may be caused by infections.

Neuropathy

Neur = Nerve

Pathy = Disease

Meaning:

Disease or damage affecting nerves.

Symptoms

- Numbness
- Tingling sensation
- Muscle weakness
- Pain

Neuropathy commonly affects patients with diabetes.

Prefixes, Roots, and Suffixes

neur/o Meaning

Nerve

Examples

- Neurology
- Neuropathy
- Neuralgia

encephal/o Meaning

Brain

Examples

- Encephalitis
- Encephalopathy

mening/o Meaning

Meninges or membranes around the brain and spinal cord

Examples

- Meningitis
- Meningocele

psych/o Meaning

Mind

Examples

- Psychology
- Psychosis

-logy Meaning

Study of

Example

Neurology

Neur = Nerve

Logy = Study of

Meaning:

Study of the nervous system

-oma Meaning

Tumor or mass

Example

Glioma

Gli = Glial cells

Oma = Tumor

Meaning:

Tumor involving brain supportive tissue

Musculoskeletal System

The musculoskeletal system provides body support, movement, and protection.

It includes:

- Bones
- Muscles
- Joints
- Ligaments
- Cartilage

This system allows the body to move and maintain posture.

Organs and Functions

Bones

Bones form the skeletal framework of the body.

Functions

- Support body structure
- Protect internal organs
- Store minerals
- Produce blood cells

The adult human body contains 206 bones.

Muscles

Muscles help produce body movement.

Functions

- Support posture
- Generate movement
- Produce heat
- Protect organs

Muscles work together with bones and joints.

Joints

Joints are connections between bones.

Functions

- Allow movement
- Provide flexibility
- Support body motion

Examples:

- Knee joint
- Shoulder joint
- Elbow joint

Ligaments

Ligaments are strong bands connecting bones to other bones.

Functions

- Stabilize joints
- Prevent excessive movement
- Support body structure

Ligament injuries are common in sports activities.

Important Terms

Osteoarthritis

Oste = Bone

Arthr = Joint

Itis = Inflammation

Meaning:

Degenerative joint disease affecting bones and joints.

Symptoms

- Joint pain
- Stiffness
- Swelling
- Reduced movement

Osteoarthritis commonly affects elderly people.

Myalgia

My = Muscle

Algia = Pain

Meaning:

Muscle pain

Causes

- Muscle injury
- Overuse
- Infection

Tendinitis

Tendin = Tendon

Itis = Inflammation

Meaning:

Inflammation of a tendon

Symptoms

- Pain
- Swelling
- Difficulty moving joints

Tendinitis often occurs due to repetitive movement.

Prefixes, Roots, and Suffixes

oste/o Meaning

Bone

Examples

- Osteoporosis
- Osteoarthritis

arthr/o Meaning

Joint

Examples

- Arthritis
- Arthroscopy

my/o Meaning

Muscle

Examples

- Myalgia
- Myopathy

chondr/o Meaning

Cartilage

Examples

- Chondritis
- Chondroma

-malacia Meaning

Softening

Example

Osteomalacia

Oste = Bone

Malacia = Softening

Meaning:

Softening of bones

-desis Meaning

Binding or surgical fixation

Example

Arthrodesis

Arthr = Joint

Desis = Surgical fixation

Meaning:

Surgical fusion of a joint

Urinary System

The urinary system removes waste products and maintains fluid balance in the body.

It also helps regulate:

- Blood pressure

- Electrolyte balance
- Water levels

Organs and Functions

Kidneys

The kidneys are two bean-shaped organs located in the lower back region.

Functions

- Filter blood
- Remove waste products
- Produce urine
- Maintain fluid balance

The kidneys help maintain body homeostasis.

Bladder

The bladder is a muscular sac that stores urine.

Functions

- Collect urine
- Store urine temporarily
- Release urine during urination

Urethra

The urethra is a tube that carries urine out of the body.

Functions

- Transport urine from bladder to outside the body

Important Terms

Nephritis

Nephr = Kidney

Itis = Inflammation

Meaning:

Inflammation of the kidneys

Symptoms

- Swelling
- Blood in urine
- High blood pressure

Cystitis

Cyst = Bladder

Itis = Inflammation

Meaning:

Inflammation of the bladder

Symptoms

- Burning urination
- Frequent urination
- Lower abdominal pain

Urolithiasis

Uro = Urinary tract

Lith = Stone

Iasis = Condition

Meaning:

Formation of stones in the urinary tract

Kidney stones are a common example of urolithiasis.

Prefixes, Roots, and Suffixes

nephro/o Meaning

Kidney

Examples

- Nephrology
- Nephritis

cyst/o Meaning

Bladder or sac

Examples

- Cystitis
- Cystoscopy

pyel/o Meaning

Renal pelvis of kidney

Examples

- Pyelitis
- Pyelonephritis

urethr/o Meaning

Urethra

Examples

- Urethritis
- Urethroscopy

-uria Meaning

Urine condition

Examples

Hematuria

- Blood in urine

Polyuria

- Excessive urination

Dysuria

- Painful urination

-lith Meaning

Stone or calculus

Examples

Nephrolith

- Kidney stone

Urolithiasis

- Urinary stone condition

Conclusion

The nervous, musculoskeletal, and urinary systems are essential body systems in healthcare and medical terminology. Understanding the organs, functions, diseases, root words, prefixes, and suffixes related to these systems helps students interpret medical records accurately.

Day 5 – Reproductive, Endocrine, and Integumentary Systems

Introduction to Body Systems in Medical Terminology

Understanding body systems is essential in medical terminology and medical coding. Healthcare professionals use medical terms related to organs, diseases, procedures, and treatments in daily clinical practice.

Knowledge of body systems helps students:

- Understand medical records
- Identify disease conditions
- Improve coding accuracy
- Interpret clinical documentation
- Communicate effectively in healthcare settings

In this session, students will learn about:

- Reproductive system
- Endocrine system
- Integumentary system

Students will also study:

- Important medical terms
- Prefixes
- Root words
- Suffixes

related to these systems.

Reproductive System

The reproductive system is responsible for reproduction and production of reproductive cells and hormones.

It includes:

- Male reproductive organs
- Female reproductive organs

The reproductive system also supports:

- Hormone production
- Sexual development
- Pregnancy and childbirth

Organs and Functions

Ovaries

The ovaries are female reproductive organs.

Functions

- Produce eggs (ova)
- Produce female hormones such as estrogen and progesterone
- Support reproductive function

Women normally have two ovaries.

Uterus

The uterus is a hollow muscular organ in females.

Functions

- Supports growth of the fetus during pregnancy
- Protects the developing baby

- Contracts during childbirth

The uterus is also called the womb.

Testes

The testes are male reproductive organs.

Functions

- Produce sperm cells
- Produce testosterone hormone

The testes are located inside the scrotum.

Prostate

The prostate is a gland found in males.

Functions

- Produces fluid that supports sperm
- Helps in reproductive function

The prostate surrounds part of the urethra.

Important Terms

Hysterectomy

Hyster = Uterus

Ectomy = Surgical removal

Meaning:

Surgical removal of the uterus

Reasons for Hysterectomy

- Uterine tumors
- Excessive bleeding
- Cancer
- Fibroids

Orchitis

Orch = Testis

Itis = Inflammation

Meaning:

Inflammation of the testes

Symptoms

- Pain
- Swelling
- Fever

Orchitis may result from infections.

Oophorectomy

Oophor = Ovary

Ectomy = Surgical removal

Meaning:

Surgical removal of one or both ovaries

This procedure may be performed for:

- Ovarian cysts
- Tumors
- Cancer

Prefixes, Roots, and Suffixes

gynec/o

Meaning

Woman or female

Examples

- Gynecology
- Gynecologist

andr/o Meaning

Male

Examples

- Androgen
- Andrology

hyster/o Meaning

Uterus

Examples

- Hysterectomy
- Hysteroscopy

mamm/o Meaning

Breast

Examples

- Mammogram
- Mammoplasty

-cyesis Meaning

Pregnancy

Example

Pseudocyesis

Pseudo = False

Cyesis = Pregnancy

Meaning:

False pregnancy

-plasia Meaning

Formation or development

Example

Hyperplasia

Hyper = Excessive

Plasia = Development

Meaning:

Excessive growth of tissue

Endocrine System

The endocrine system consists of glands that produce hormones.

Hormones are chemical messengers that regulate body activities.

The endocrine system controls:

- Growth
- Metabolism
- Reproduction
- Blood sugar levels
- Stress responses

Organs and Functions

Thyroid Gland

The thyroid gland is located in the neck.

Functions

- Regulates metabolism
- Controls energy production
- Supports body growth and development

The thyroid produces hormones such as thyroxine.

Adrenal Gland

The adrenal glands are located above the kidneys.

Functions

- Produce stress hormones
- Help regulate blood pressure
- Maintain salt and water balance

Adrenal hormones include adrenaline and cortisol.

Pancreas

The pancreas functions as both a digestive and endocrine organ.

Functions

- Produces insulin
- Regulates blood sugar levels
- Supports digestion

The pancreas plays a major role in diabetes management.

Pituitary Gland

The pituitary gland is often called the “master gland.”

Functions

- Controls other endocrine glands
- Regulates growth
- Controls hormone production

It is located at the base of the brain.

Important Terms

Diabetes Mellitus

Diabetes Mellitus is a metabolic disorder involving high blood sugar levels.

Causes

- Insufficient insulin production
- Insulin resistance

Symptoms

- Frequent urination
- Increased thirst
- Fatigue
- Weight loss

Diabetes affects multiple body systems.

Hyperthyroidism

Hyper = Excessive

Thyroid = Thyroid gland

Ism = Condition

Meaning:

Overactivity of the thyroid gland

Symptoms

- Weight loss
- Rapid heartbeat
- Nervousness
- Increased sweating

Adrenalectomy

Adrenal = Adrenal gland

Ectomy = Surgical removal

Meaning:

Surgical removal of one or both adrenal glands

This procedure may be performed for adrenal tumors.

Prefixes, Roots, and Suffixes

thyroid/o

Meaning

Thyroid gland

Examples

- Thyroiditis
- Hyperthyroidism

adrenal/o

Meaning

Adrenal gland

Examples

- Adrenalectomy
- Adrenalitis

pancreat/o

Meaning

Pancreas

Examples

- Pancreatitis
- Pancreatectomy

-tropin

Meaning

Stimulating hormone

Example

Gonadotropin

Gonad = Reproductive gland

Tropin = Stimulating hormone

Meaning:

Hormone stimulating reproductive glands

-ism

Meaning

Condition or process

Example

Hyperthyroidism

Meaning:

Condition involving excessive thyroid activity

Integumentary System

The integumentary system protects the body from external damage and helps maintain body temperature.

It includes:

- Skin
- Hair
- Nails
- Sweat glands

The skin is the largest organ of the body.

Organs and Functions

Skin

The skin covers and protects the entire body.

Functions

- Protects against infection
- Prevents water loss
- Regulates body temperature
- Provides sensation

The skin contains sweat glands and sensory receptors.

Hair

Hair grows from follicles in the skin.

Functions

- Protection
- Temperature regulation
- Sensory function

Hair helps protect the scalp from sunlight.

Nails

Nails protect the tips of fingers and toes.

Functions

- Protect fingertips
- Support fine movements
- Assist gripping

Important Terms

Dermatitis

Dermat = Skin

Itis = Inflammation

Meaning:

Inflammation of the skin

Symptoms

- Redness
- Itching
- Swelling
- Skin irritation

Melanoma

Melan = Black or pigment

Oma = Tumor

Meaning:

Cancer involving pigment-producing skin cells

Melanoma is a serious form of skin cancer.

Seborrhea

Seb/o = Sebum or oil

Rrhea = Flow

Meaning:

Excessive discharge of skin oil

Symptoms

- Oily skin

- Scalp scaling
- Skin irritation

Prefixes, Roots, and Suffixes

derm/o

Meaning

Skin

Examples

- Dermatology
- Dermatitis

melan/o

Meaning

Black or pigment

Examples

- Melanoma
- Melanin

trich/o

Meaning

Hair

Examples

- Trichology
- Trichiasis

-derma Meaning

Skin condition

Example

Scleroderma

Sclero = Hard
Derma = Skin

Meaning:
Hardening of the skin

-rrhea Meaning

Flow or discharge

Examples

- Seborrhea
- Diarrhea

Conclusion

The reproductive, endocrine, and integumentary systems are important body systems in medical terminology and healthcare. Understanding the organs, functions, diseases, root words, prefixes, and suffixes related to these systems helps students interpret medical documentation accurately.

Day 6 – Lymphatic System, Importance of Medical Terminology, and Practice Preparation

Introduction to the Lymphatic System and Medical Terminology

The lymphatic and immune systems are important body systems that help protect the body from infections and diseases. These systems work together to maintain body defense and fluid balance.

Medical terminology related to the lymphatic and immune systems is commonly used in:

- Hospital documentation
- Laboratory reports
- Medical coding
- Insurance claims
- Clinical diagnosis

For medical coders, understanding medical terminology is essential because accurate coding depends on proper interpretation of medical records and diagnoses.

In this session, students will learn:

- Organs and functions of the lymphatic system
- Important medical terms
- Prefixes, root words, and suffixes
- Importance of medical terminology in medical coding

Lymphatic and Immune System

The lymphatic system is part of the immune system and helps protect the body from infections, bacteria, viruses, and harmful substances.

The lymphatic system also helps:

- Maintain fluid balance
- Absorb fats from the digestive system
- Remove waste materials
- Produce immune cells

The immune system protects the body by identifying and destroying harmful microorganisms.

Organs and Functions

Lymph Nodes

Lymph nodes are small bean-shaped structures located throughout the body.

Functions

- Filter lymph fluid
- Trap bacteria and viruses
- Produce immune cells called lymphocytes
- Help fight infections

Lymph nodes are commonly found in:

- Neck
- Armpits
- Groin

Swollen lymph nodes may indicate infection or disease.

Spleen

The spleen is located in the upper left side of the abdomen.

Functions

- Filters blood
- Removes old red blood cells
- Stores blood cells
- Helps fight infections

The spleen supports immune system activity.

Thymus

The thymus gland is located behind the breastbone.

Functions

- Produces T-lymphocytes (T-cells)
- Supports immune system development
- Helps the body recognize harmful organisms

The thymus is more active during childhood.

Lymph Vessels

Lymph vessels are thin tubes that carry lymph fluid throughout the body.

Functions

- Transport lymph fluid
- Remove excess tissue fluid
- Carry immune cells

These vessels connect lymph nodes and other lymphatic organs.

Important Terms

Lymphadenopathy

Lymph = Lymph tissue

Aden = Gland

Pathy = Disease

Meaning:

Disease or enlargement of lymph nodes

Causes

- Infection
- Inflammation
- Cancer

Symptoms

- Swollen lymph nodes
- Tenderness
- Fever

Lymphadenopathy is commonly seen in infections.

Immunodeficiency

Immuno = Immune system

Deficiency = Reduced function

Meaning:

Weakness or failure of the immune system

Effects

- Increased infections
- Reduced body defense
- Poor immunity

Immunodeficiency may be congenital or acquired.

Splenectomy

Splen = Spleen

Ectomy = Surgical removal

Meaning:

Surgical removal of the spleen

Reasons for Splenectomy

- Spleen injury
- Blood disorders
- Cancer
- Enlarged spleen

Patients without a spleen may have increased infection risk.

Prefixes, Roots, and Suffixes

Lymph/o Meaning

Lymph or lymphatic tissue

Examples

- Lymphocyte
- Lymphadenopathy
- Lymphoma

immun/o Meaning

Immune system or protection

Examples

- Immunology
- Immunodeficiency
- Immunotherapy

thym/o Meaning

Thymus gland

Examples

- Thymoma
- Thymectomy

splen/o Meaning

Spleen

Examples

- Splenectomy
- Splenomegaly

-penia Meaning

Deficiency or decrease

Example

Leukopenia

Leuko = White blood cells

Penia = Deficiency

Meaning:

Low white blood cell count

-cytosis Meaning

Increase in cell numbers

Example

Leukocytosis

Leuko = White blood cells

Cytosis = Increase in cells

Meaning:

Increased white blood cell count

Importance of Medical Terminology for Coders

Medical terminology is one of the most important skills for medical coders.

Coders must understand medical language to:

- Interpret patient records
- Identify diseases and procedures
- Assign correct medical codes
- Support insurance claims

Without medical terminology knowledge, accurate coding is not possible.

Accurate Coding

Medical coding converts healthcare information into standardized codes.

To assign accurate codes, coders must understand:

- Medical diagnoses
- Procedures
- Treatments
- Laboratory reports

Understanding Diagnoses and Procedures

Doctors use medical terminology in clinical documentation.

Example

Myocardial infarction

Meaning:

Heart attack

A coder must understand this term to assign the correct diagnosis code.

Another Example

Cholecystectomy

Meaning:

Surgical removal of the gallbladder

The coder must identify this as a surgical procedure and assign the proper procedure code.

Importance of Accurate Coding

Accurate coding helps:

- Process insurance claims correctly
- Reduce billing errors
- Prevent claim denials
- Improve patient records

Incorrect coding can result in:

- Financial loss
- Delayed reimbursement
- Legal issues

Documentation Analysis

Medical coders spend a large amount of time reviewing patient records.

They analyze:

- Doctor notes
- Discharge summaries
- Operative reports
- Laboratory reports
- Imaging reports

Reading and Interpreting Medical Records

Medical terminology helps coders understand:

- Disease conditions
- Surgical procedures
- Diagnostic tests
- Treatment plans

Example

If a doctor documents:

“Acute bronchitis with bronchospasm”

The coder should understand:

- Bronchitis = Inflammation of bronchi
- Bronchospasm = Narrowing of airways

This helps assign accurate diagnosis codes.

Importance of Documentation Analysis

Good documentation analysis helps:

- Improve coding quality
- Ensure claim accuracy
- Maintain proper healthcare records

Coders must carefully interpret every medical term written in patient documentation.

Communication

Medical terminology improves communication among healthcare professionals.

Healthcare workers including:

- Doctors
- Nurses
- Coders
- Pharmacists
- Insurance staff

use standardized medical language.

Better Coordination with Healthcare Staff

Medical coders communicate with:

- Physicians
- Billing departments
- Insurance companies
- Hospital administrators

Understanding medical terminology helps coders:

- Clarify documentation
- Discuss patient conditions
- Resolve claim issues

Effective communication improves healthcare efficiency.

Compliance and Quality

Healthcare organizations must follow legal and insurance regulations.

Medical coding accuracy plays a major role in compliance and quality management.

Maintaining Insurance and Legal Standards

Medical terminology helps coders:

- Follow coding guidelines
- Maintain accurate records
- Support legal documentation

- Ensure insurance compliance

Correct coding reduces:

- Fraud risks
- Audit problems
- Claim rejection

Role in Quality Healthcare

Proper use of medical terminology supports:

- Accurate patient records
- Better healthcare analysis
- Improved hospital performance
- Patient safety

High-quality coding improves healthcare services overall.

Conclusion

The lymphatic and immune systems play a vital role in protecting the body from infections and maintaining fluid balance. Understanding the organs, functions, diseases, root words, prefixes, and suffixes related to these systems helps students interpret medical terminology accurately.