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MEDICAL TERMINOLOGY

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Medical Terminology

What is Medical Terminology?

Medical Terminology: is the process of dividing medical words into component parts.

Medical Terminology: is the process using the single word to express several concepts related to health, usually based on Latin and Greek word.

Medical Terminology: is the specialized language used by healthcare professionals to describe the human body, its functions, conditions, and treatments precisely and efficiently.

Medical Terminology describes:

1-Parts of the body.

2-Location in the body.

3-Bodily function (Physiology).

4-Diseases.

5-Procedures.

6-Instruments.

Basic Elements of Medical Terms

A medical word consists of some or all of the following elements:

1- Prefix

A prefix is a word element attached to the beginning of a word or word root. However, not all medical terms have a prefix. Adding or changing a prefix changes the meaning of the word. Pre-fixes usually indicate a number, time, position, direction, or negation.

2-Word root

A word root is the fixed basic part of the medical term. As a general rule, Greek roots describe a disease, condition, treatment, or diagnosis. Latin roots describe anatomical structures.

3- Combining Vowel

Combining Vowel is a vowel that links two-word parts together. It usually links one root to a suffix or two roots together.

The vowel, known as a combining vowel, is usually an o but is sometimes an i. The combining vowel has no meaning of its own but enables the connection of two or more-word elements.

4-Combining form

A combining form is created when a word root is combined with a vowel.

Word + Combining Vowel	meaning
gastr/ + o = gastr/o	stomach
hepat/ + o = hepat/o	liver
immun/ + o = immun/o	immune, immunity

5- Suffix

A suffix is a word element placed at the end of a word that alters its meaning. In medical terminology, a suffix usually describes a pathology (disease or abnormality), symptom, surgical or diagnostic procedure, or part of speech. To link a suffix that begins with a vowel, use a word root. To link a suffix that begins with a consonant, use a combining form.

Steps for Defining Medical Words

Here are three steps for defining medical words using gastr/o/enter/itis as an example.

Step 1. Define the suffix, or last part of the word. In this case, the suffix -itis means inflammation.

Step 2. Define the first part of the word (which may be a word root, combining form, or prefix). In this case, the combining form gastr/o means stomach.

Step 3. Define the middle parts of the word. In this case, the word root enter means intestine.

When you analyze gastr/o/enter/itis following the three steps, the meaning is: **inflammation** (of) **stomach** (and) **intestine**. Thus, the meaning of gastr/o/enter/itis is inflammation (of) stomach (and) intestine.

More examples

Nephrology: the study of kidney.

Gastrectomy: Surgical removal of the stomach.

Endocarditis: inflammation of the inner lining of the heart.

Hyperglycemia: abnormal blood condition of high glucose.

Neuroplasty: surgical repair of nerves.

Otolaryngology: the study of ear and throat.

Categories of Prefixes

1- Prefixes of Time or Speed: for example, Tachy, Post

2- Prefixes of direction: for example, Para

3- Prefixes of position: for example, Inter, Intra

4- Prefixes of size or number: for example, macro, micro

5- Prefixes of color: for example, Melan, Leuk

Prefix	Meaning	Example
Endo	Within	Endocardium
Tachy	Fast	Tachycardia
Hyper	high	Hypertension
Hypo	low	Hypotension
Brady	Slow	Bradycardia
infra	below	Infracostal
para	beside, near	Parathyroid
pan	all members of a group	Pandemic
epi	above, among	Epidemic
uni	one	Unicellular
bi	two	Bicuspid valve
tri	three	tricuspid valve
Poly	Many	polyuria
eryth	red	Erythrocyte
leuk	white	Leukocytes, Leukemia
cyan	blue	Cyanosis
chlor	green	Chloroma

Pre	Before	Pre- operation
Post	After	Post- operation
Micro	Small	Microscope
Macro	Large	Macroscope

Roots

A **root** in medical terminology is the central part of a word that carries its core meaning. It often refers to a specific structure, organ, system, or concept. Roots are the foundation upon which prefixes and suffixes build to create complex terms. In certain cases, prefixes and suffixes can seem to act as roots when they carry the core meaning of the term. For example, cyanosis.

Root	Meaning	Example
Gastr	Stomach	Gastritis
Pulmon	Lung	Pulmonologist
Hepat	Kidney	Hepatomegaly
Neur	Nerve	Neuralgia
Cardi	heart	cardiology
psycho	mind	psychopath
path	disease	pathology
derm	skin	dermatitis
hem	blood	hemoglobin
Pan	all members of a group	Pandemic
epi	among, above, on	epidemic
neur	nerve	neuralgia
My	Muscle	Myalgia

Oste	bone	Osteoporosis
Cephal	head	cephalalgia
Nephr	kidney	nephrology
Arthr	joints	arthritis
Ot	ear	otology
Ophthalm	eyes	ophthalmology
Rhin	nose	rhinitis

Categories of Suffixes

- 1- Suffixes that signify medical conditions. For example, itis / algia
- 2- Suffixes that signify diagnostic terms, test information or surgical procedures. For example, plasty / scopy.
- 3- Suffixes that convert a noun to an adjective. For example, al / ic
- 4- Suffixes associated with a medical specialty or specialist. For example, logy / ist

Suffix	Meaning	Example
pathy	disease	psychopathy
itis	inflammation	Hepatitis
plegia	paralysis	Cardioplegia
Rrhexis	rupture	Cardiorrhexis, Myorrhexis
megaly	enlargement	Splenomegaly
malacia	softening	Osteomalacia
cele	Protrusion, hernia	Gastrocele
algia	Pain	neuralgia
cide	To kill	insecticide
ist	specialist	Ophthalmologist

tomy	surgical removal	Appendectomy
plasty	surgical repair	Rhinoplasty
phobia	irrational fear	Bacteriophobia
cyte	cell	leukocyte
graphy	Recording, imaging	angiography
genesis	formation, development	osteogenesis
emia	abnormal blood condition	Hyperglycemia
genic	causing	Pathogenic

How to Derive a Plural in Medical Terminology

Some rules for pluralizing medical terms are as follows, with examples of the rule and exceptions to the rule.

Medical Rule 1: Change the **a** ending to **ae**

In other words, vertebra becomes vertebrae. By adding the **e** to the plural, the “aah” sound ending pronunciation becomes “eh.”

Singular	Plural
Axilla	Axillae
Bursa	Bursae
Conjunctiva	Conjunctivae
Scapula	Scapulae
Sclera	Sclerae

Medical Rule 2: Change the **um** ending to **a**. The **a** at the end is pronounced “aah”.

Singular	Plural
Acetabulum	Acetabula
Antrum	Antra
Atrium	Atria
Bacterium	Bacteria
Diverticulum	Diverticula

Labium	Labia
Medium	Media

Medical Rule 3: Change the **us** ending to **i**. The **i** at the end is pronounced “eye”.

Singular	Plural
Alveolus	Alveoli
Bronchus	Bronchi
Coccus	Cocci
Embolus	Emboli
Fungus	Fungi
Glomerulus	Glomeruli
Meniscus	Menisci
Syllabus	Syllabi (but Syllabuses is also acceptable)

The exceptions to this rule include the following:

Corpus, Corpora / Meatus, Meatus (stays the same) / Plexus, Plexuses

/Viscus, Viscera

Medical Rule 4: Change the **is** ending to **es**. The **es** is pronounced “eez”.

Singular	Plural
Analysis	Analyses
Diagnosis	Diagnoses
Exostosis	Exostoses
Metastasis	Metastases
Prognosis	Prognoses
Testis	Testes

The exceptions to this rule are

epididymis, epididymides / femur, femora / iris, irides

Medical Rule 5: Change the **ma** or **oma** ending to **mata** or the English plural is also acceptable.

Singular	Plural
Carcinoma	Carcinomata, Condylomas
Condyloma	Condylomata, Carcinomas
Fibroma	Fibromata , Fibromas
Leiomyoma	Leiomyomata, Leiomyomas

Medical Rule 6: When a term ends in **yx**, **ax**, or **ix**, change the **x** to **c** and add **es**.

Singular	Plural
Appendix	Appendices
Calyx	Calyces
Thorax	Thoraces

Medical Rule 7: When a term ends in **nx**, change **the x** to **g** and add **es**.

Singular	Plural
Larynx	Larynges
Phalanx	Phalanges

Medical Rule 8: For Latin medical terms that consist of a noun and adjective, pluralize both terms.

Singular	Plural
Condyloma acuminatum	Condylomata acuminata
Placenta previa	Placentae previae
Verruca vulgaris	Verrucae vulgares

There are some exceptions to all these rules:

Cornu, Cornua / Pons, Pontes / Vas, Vasa

English rules of forming plurals

Many medical terms apply basic English rules for forming plurals.

English Rule 1: Add an s

Singular	Plural
Bronchoscope	Bronchoscopes
Disease	Diseases
Endoscope	Endoscopes
Finger	Fingers
Vein	Veins

English Rule 2: When a term ends in s, x, ch, or sh, add es

Singular	Plural
Crutch	Crutches
Distress	Distresses
Patch	Patches
Stress	Stresses

English Rule 3: When a term ends in y after a consonant, change the y to i and add es

Singular	Plural
Artery	Arteries
Bronchoscopy	Bronchoscopies
Endoscopy	Endoscopies
Ovary	Ovaries
Therapy	Therapies

English Rule 4: When a term ends in o after a consonant, add nes

Singular	Plural
Comedo	Comedones

Exceptions:

Embryo, embryos / Placebo, placebos

Match the words (1-7) with the definitions (A-G).

1. infection 2. facemask 3. quarantine 4. bacteria
5. transmit 6. Antibiotic 7. contagious

A- to relay an illness from one person to another

B- single celled organisms responsible for many human infections

C- a manifestation of parasitic micro-organisms in the body

D- a covering worn over the mouth and nose

E- to isolate an individual to prevent transmission of microbes.

F- something that kills bacteria in the body

G- moving easily from one person to another

Match the words (1-6) with the definitions (A-F).

1. verbal 2. therapeutic 3. Open-ended question
4. rapport 5. anxiety 6. nonverbal

A- a feeling of understanding and a connection between two people

B- a feeling of nervousness and worry

C- an inquiry that requires an answer longer than a one-word response

D- communication without the use of spoken language

E- spoken

F- helping someone to heal or feel relaxed

Match the words (1-5) with the definitions (A-E).

1. radiation therapy 2. immunotherapy 3. Anti-angiogenesis therapy
4. oncology 5. Chemotherapy

A. the medical specialty that studies and treats cancer and tumors

- B. a drug or combination of drugs, given to a patient in order to kill cancer cells
- C. a form of cancer treatment that uses high-energy x-rays to prevent cancer cells from growing or splitting further
- D. a form of cancer treatment that uses drugs or other substances to stop a tumor from building new blood vessels
- E. a form of cancer treatment that strengthens the patient's immune system

Match the words (1-6) with the definitions (A-F).

- 1. vertigo 2. coma 3. paralysis 4. Alzheimer's disease
- 5. numbness 6. seizure

- A. a long state of unconsciousness during which a person does not wake or respond to stimuli.
- B. the loss of function in one or more muscles
- C. a kind of dizziness in which a person feels like he or she is moving when stationary
- D. a symptom of excessive brain activity, resulting in temporary thrashing movements or a loss of awareness
- E. a brain illness that causes a person to lose memory and the ability to think clearly
- F. the inability of a part of the body to feel stimulation

Match the words (1-8) with the definitions (A-H).

- 1. sterile 2. clamp 3. surgery 4. transplant
- 5. excision 6. scalpel 7. suture 8. anesthesia

- A- the act of moving an organ from one body to another
- B- a medical specialty that involves the use of manual and instrumental techniques to treat a disease or injury
- C- a medical method of preventing sensation, used to eliminate pain

D- a stitch used to hold tissue together

E- free of all living microorganisms

F- the complete removal of an organ, tissue, or tumor from the body

G- a device used to hold objects in place

H- a very sharp knife used to make incisions and other cuts

Match the words (1-5) with the definitions (A-E).

1- pulmonary

2 – valve

3- vein

4 – capillary

5 - artery

A a blood vessel that carries blood away from the heart

B the smallest kind of blood vessel in the body

C a blood vessel that carries blood towards the heart

D having to do with the lungs

E a flap in a bodily system that allows passage of material in one direction but prevents passage in the other direction

Match the words (1-6) with the definitions (A-F).

1-shock

2-burn

3- pulse

4-rescue breathing

5- laceration

6- CPR

A. a normal, regular heartbeat that can be felt when an artery is pressed

B. a first aid procedure involving chest compression and artificial breathing

C. an open injury caused by a hard impact to soft body tissue

D. a medical emergency in which the circulatory system cannot provide oxygen to the body

E. a first aid procedure involving providing air for someone who has stopped breathing, but still has a heartbeat

F. a physical injury that can be caused by heat

Match the words (1-7) with the definitions (A-G).

- 1- bone 2- marrow 3- impacted
4- greenstick 5- compound 6- comminuted
7-stress fracture

- A. having bone protruding through the skin
B. a minor crack in a bone
C. the breakage of a young, soft bone
D. a strong, hard part of a body's structure
E. having parts crushed together
F. a soft substance with immune functions
G. being broken into several pieces

Match the words (1-5) with the definitions (A-E).

- 1- motor 2- spinal cord 3- reflex
4- sensory 5- brain

- A. an involuntary and immediate movement in response to a stimulus
B. the large organ that controls bodily functions through release of hormones or activating muscles
C. a long bundle of nerve cells that extends downward from the brain
D. having to do with the five senses of sight, hearing, touch, taste, and smell
E. having to do with creating the ability to move

Match the words (1-6) with the definitions (A-F).

1- data 2 - onset 3- allergy 4 - complaint

5- procedure 6 - family medical history

- A. the first instance of something
- B. a record of a patient's family's conditions
- C. a collection of information
- D. a condition that causes a reaction or illness
- E. a medical treatment
- F. a pain or illness reported by a patient

Match the words (1-6) with the definitions (A-F).

1 – cold 2 – runny 3 – cough

4 – wheeze 5 – headache 6 - muscle ache

- A. having liquid leaking from something
- B. to breathe noisily and with difficulty
- C. a pain felt in the head
- D. a pain felt throughout the body
- E. to force air loudly through the throat
- F. an illness that causes discomfort in the head and body

Match the words (1-6) with the definitions (A-F).

1- stroke 2- incontinence 3- nursing home

4- geriatrics 5- polypharmacy 6- bed sore

- A. the use of too many medications at once
- B. a field of medicine that focuses on preventing and treating diseases in older people

- C. a rapid loss of brain functions due to a loss of blood to the brain
- D. the inability to control one's bladder or bowel movements
- E. a skin wound caused by too much pressure cutting off blood circulation to a part of the body
- F. a facility that provides 24-hour care to elderly patients

Match the words (1-8) with the definitions (A-H).

- 1- status 2- concise 3- near miss 4- document 5- assessment
 6 - plan of care 7 - medical record 8 - comprehensive

- A. the current condition of something
- B. a situation in which a crisis was avoided
- C. communicating an idea without extra words
- D. a formation of a judgment or opinion
- E. an outline of a patient's treatment
- F. a collection of patient information
- G. being thorough or complete
- H. to make a record of something

Match the words (1-6) with the definitions (A-F).

- 1- scarlet fever 2- pneumonia 3- chronic bronchitis
 4- endocarditis 5- strep virus 6- osteoporosis

- A. an organism that causes throat infections
- B. a persistent condition in which tubes in the lungs swell and make it difficult to breathe
- C. a chronic condition in which the bones slowly weaken and become prone to breaking
- D. an acute condition in which the lungs become inflamed and filled with fluid

E. an acute illness characterized by a fever, sore throat, and bright red rashes on the body

F. a chronic condition in which the inner layers of the heart become inflamed due to bacteria growing inside

Match the words (1-6) with the definitions (A-F).

1- glaucoma

2- glucose

3- cataract

4- alcohol

5- insulin

6- amputation

A. a natural form of sugar created in the body

B. when a person's limbs, fingers, or toes are removed during surgery

C. the chemical substance in drinks, such as wine and beer, that causes people to get drunk

D. a disease in which a high level of pressure in the eye causes a person to go blind

E. a substance produced by the body that regulates the levels of sugar in the blood

F. a medical condition in which the lens of the eye becomes white

Match the words (1-5) with the definitions (A-E).

1- heart disease

2- atherosclerosis

3- coronary artery disease

4- angioplasty

5- arrhythmia

A. a heart condition in which fatty materials accumulate in arteries and harden their walls

B. a condition where the arteries become blocked and narrow, which prevents sufficient blood from reaching the heart

C. a surgical procedure that widens an obstructed blood vessel by inserting a balloon and inflating it

D. a term for a group of illnesses involving irregular electrical activity in the heart

E. a term for a group of illnesses that affect the heart

Match the words (1-7) with the definitions (A-G).

- 1- priority 2- resource 3- wound 4- ESI level
5- triage 6- minor 7- critical

- A. a unit of measurement of a trauma patient's injuries
B. the process of determining the order to treat trauma patients based on the severity of their injuries
C. something that is more important than other things
D. requiring immediate medical attention
E. an injury in which a part of the body is damaged
F. not very serious
G. anything a person uses to achieve a goal

Match the words (1-6) with definitions (A-F).

- 1- injection 2- licensed 3- prescribe 4- patient flow
5- electronic health record 6- nurse practitioner

- A. having a document saying that a person can do a job
B. a medical worker who can diagnose illnesses
C. medicine put into a person's body
D. a patient's medical history, stored on a computer
E. the rate at which a person moves through the health care system
F. to recommend a type of medication