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# Medical Terminology: Introduction
## *The 1ˢᵗ  Lecture*

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# Medical Terminology Introduction

**What is medical terminology?**

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**Medical terminology** *It is a ==specialized vocabulary== that is an essential part of the healthcare care profession In this presentation,*

*Medical terminology is used regularly in ==patient charting==.*

*we will explore the different parts of medical terms and their meanings, as well as the importance of understanding medical terminology for patients and healthcare professionals.*
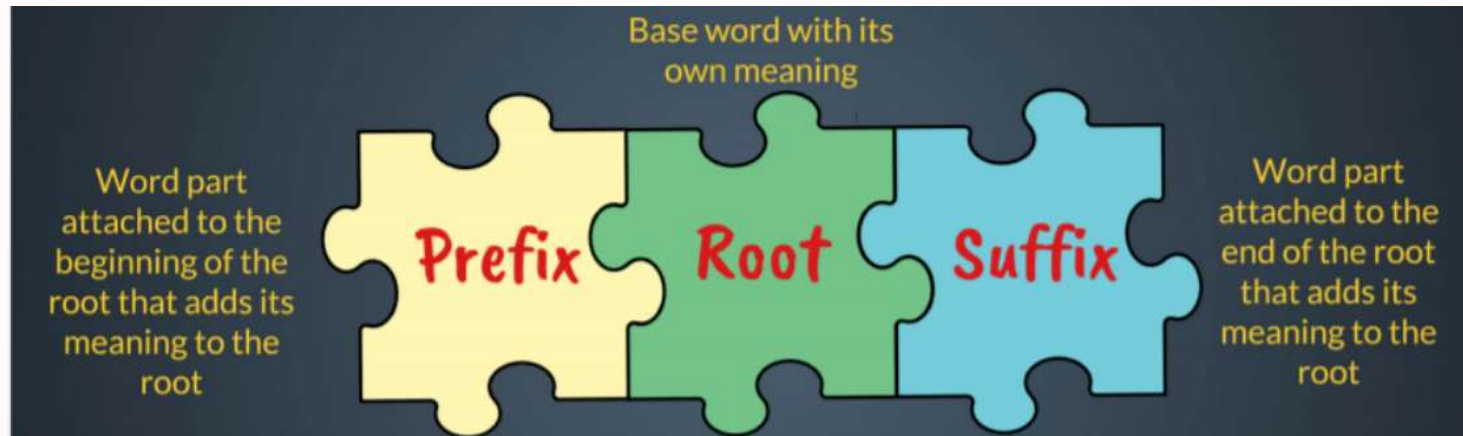
## By Dr.ali Al-nasrawi

# Medical Terminology

## *Define Medical Terminology?*

Medical terminology is a special vocabulary used by health care professionals for effective and accurate communication. Because it is based mainly on **Greek** and **Latin** words, medical terminology is consistent and uniform throughout the world.



*Medical words consist of roots, prefixes, and suffixes.*
*•Word root: The basic meaning of the word.*
*• Suffix: Added at the end to modify the meaning.*
*• Prefix: Added before a root to modify the meaning.*

*• Combining Forms: A vowel added between root and suffix for pronunciation.*

# Medical terminology word Parts or words elements

Words are formed from roots, prefixes, and suffixes.

**1) Word Root :**deal with your location or the structure**:**

    A.  The ==fundamental== unit of each medical word. This establishes the ==basic== meaning of the word and is the part to which modifying prefixes and suffixes are added.

    B.  The foundation or core part of a medical term.

    C.  Typically derived from Greek or Latin, it indicates the body part or system being referenced.

    D.  Example: *cardi-* refers to the heart, *hepat-* refers to the liver

## ROOT WORDS

determine the **part of the body** a word relates to.

• Example: "Dermatitis" (DERMA - skin).

• Other root words include "Myo" (muscle), "Neuro" (nerves), "Angio" (blood vessels), and more

**Root words __help__ you know which part of the body a word relates to.**

**Dermatitis. . DERMA is the root word and it means skin. The suffix ITIS means inflammation of the skin.**

**Osteosarcoma: "osteo" describes the bone and "sarcoma" is defined as any type of "malignant," So osteosarcoma describes bone cancer.**

**Carcinogenic. "Carcino" means uncontrolled growth of abnormal cells. Genic can be defined as "producing .**

# Frequent root

| | |
|---|---|
| Oste(o) | Bone |
| Myo | Muscle |
| Neuro | Nerves |
| Derm | Skin |
| Angi(o) | Blood vessels |
| Ven(o)  or Phleb(o) | Veins |
| Cardio | Heart |
| Rhino | Nose |
| Nephro | Kidney |

# Benefits of Understanding Medical Terminology

- ❑ For Patients: Empowers them to ==communicate== and understand their care.

- ❑ For Healthcare ==Professionals==: Enhances patient care, documentation, and communication.

- ❑ For Medical Students: Better ==preparation== for the healthcare industry's language and concepts

## 2) A suffix:

Is a short word part or series of parts added at the end of a root to modify its meaning.
that deals with <mark>condition</mark> or the status of the patients and the diagnosisand often indicates the <mark>procedure</mark>, condition, disorder, or disease.  Many suffixes <mark>start</mark> with a vowel and often connect directly to the word root or combining form. Example:  *-itis* refers to inflammation,  *-ectomy* means removal,  *-logy* means the study of.

- ## The suffix

**Describes**

➢ size,
➢ shape,
➢ color,
➢ and the nature of the problem.

Example: "ECHO" (sound waves), "ELECTRO" (electricity).

Examples: "Adenocarcinoma," "Biopsy," "Dyspnea."

Echo and Electro are two words we haven't seen yet.

<mark>Echo</mark>- describes the use of sounds waves which can help to detect the location of any abnormal findings.

For example, an echocardiogram describes the use of sound waves to create a picture of the heart.

<mark>Electro</mark>- refers to electricity.

For example, an electrocardiogram (often referred to as an EKG or ECG) is a test that records the electrical activity of the heart.

Both of these studies can be used to look at how the heart is functioning.

**3) A prefix**:A prefix is placed at the ==beginning== of a medical term to modify or change its meaning.Prefixes often indicate **location**, **time**, **number**, or **status**.
Example: hyper- means excessive, hypo- means under or below, pre- means before. Is a short word part added before a root to modify its meaning.,
 such as pre.

# Prefix

Helps to describe the ==location==, ==direction==, ==amount==

❑ • <u>Location</u>: near, towards, upon, within, around,
❑ • <u>Direction</u>: away from, beneath, above, between, before, after
❑ • <u>Amount</u>: lack of, without,

➢ "Macro" (large), "Micro" (small), "Megal/o" (abnormally large).

➢ • Direction and location:   "Hyper" (fast), "Hypo" (slow),    "Tachy" (rapid), "Brady" (slow).

➢ •Others include "Extra," "Endo," "Intra," "Inter," "Peri," and "Trans."

# Prefixes

## Size

- Macro (large)
- Micro (small)
- Megalo or Megaly (abnormally large)

## Direction and location

- Hyper (fast, elevated, overproducing, energetic)
- Hypo (slow, low, under-producing, low energy
- Tachy (rapid)
- Brady (slow)
- Extra (outside, excess, beyond)
- Endo (within)
- Intra (within)
- Inter (between, together, during)
- Peri (about, around, surround)
- Trans (across, beyond, through)

**4) Combining Forms:**
When a suffix beginning with a ==consonant== is added to a root, a vowel (usually an o) is inserted between the root and the suffix to aid in pronunciation.
A combining ==vowel== may be added between a root and a suffix.
•Example: *cardi/o* (heart), *gastr/o* (stomach).


-Thus, when the suffix –logy, meaning "study of," is added to the root neur, meaning "nerve or nervous system," a combining vowel is added:
**neur + o + logy = neurology (study of the nervous system)**


**Note**: A combining vowel usually is not used if the ending begins with a vowel.
The root neur is combined with the suffix -itis, meaning "inflammation of," in this way:
**neur + itis = neuritis (inflammation of a nerve)**
There are some exceptions to this rule, particularly when pronunciation or meaning is affected.

**Combining Forms**

When a suffix beginning with a consonant is added to a root, a vowel (usually an o) is inserted between the root and the suffix to aid in pronunciation.

A combining vowel may be added between a root and a suffix.

- A word root combined with a vowel, usually "o" or sometimes "i" or "a," to make the word easier to pronounce when adding suffixes or prefixes.
- Combining vowels do not have meanings on their own.
- Example: *cardi/o* (heart), *gastr/o* (stomach).
- A combining vowel is used when the suffix begins with a consonant, but typically not used when the suffix begins with a vowel.Example: gastr/o/logy (combining vowel used), gastr/itis (no combining vowel used).

**Multiple Word Roots (Compound Words)**

•When a medical term involves more than one body part, two or more roots are combined with a vowel.

•This is common for terms related to complex systems or procedures.

•Example: *oste/o/arthr/itis* (inflammation of bone and joint).

•**Order of Word ComponentsIn medical terminology**,

• The suffix is always listed and interpreted first.

•The word root or combining form is interpreted next, and lastly,

•The prefix (if present) is interpreted.

    Example: In sub/hepat/ic:-ic (pertaining to)    hepat- (liver)  sub- (under)

**Singular and Plural FormsMedical terms** have specific rules for converting singular words to plural.
 Example: <mark>vertebra</mark> becomes vertebrae,
　　　　 <mark>bacterium</mark> becomes bacteria.


**Abbreviation and Acronym Usage.**
Abbreviations and acronyms are common in medical terminology but must be used carefully to avoid confusion.
Example: BP for blood pressure, MI for myocardial infarction.

**Develop your skill set**

- **Find a resource that will help you understand Greek/Latin word roots**

- **Learn to break down words to smaller components**

- **Keep your own list of common words**

- **Onco– "tumor" + - logy "science or study of."**

# Word Breakdown

| Prefix | Root | Suffix |
|---|---|---|
| • Helps to describe the location, direction, amount | • Helps to determine which part of the body it relates to | • Helps to describe what the word or problem relates to |

**Prefix**
- Helps to describe the location, direction, amount
  - Location: near, towards, upon, within, around,
  - Direction: away from, beneath, above, between, before, after
  - Amount: lack of, without,

Most medical and science terms will have three parts and may seem very complex. But they can be broken down into their parts to give you a basic idea of what they mean:

A beginning called a **prefix**:

This part of the word will usually help you figure out size, color, shape as well as location, direction and amount

A middle known as **the root:**

This part of the word will usually help you determine which part of the body it relates to

The ending of a word is known as **a suffix:**

This part can also help describe size, shape or color but more importantly can tell you what the problem actually is

**Other important prefixes that describe size include:**

**Macro**, which describes something large.

**Micro**, which describes something small.

**Megalo** or **Megaly**, which can be used to describe something abnormally large.

**When describing direction or a location you may see words beginning with these terms:**

**Hyper** is used when describing something fast, elevated, overproducing or energetic

**Hypo** is used when describing something slow, low, under-producing or low energy

**Tachy** means rapid. An example may be tachycardia …which describes a rapid heart beat that is above normal

**Brady** means slow. An example may be bradycardia … which then describes a heart beat below normal rates

**Extra** is used to describe when something is outside or in excess. Or Beyond.

**Endo** used to describe something within. An example may be endoskeleton which describes the internal skeleton.

**Intra** can also be used to describe within. An example of this would be "intravenous" meaning a patient may be receiving their medication directly through their veins.

The prefix **inter** can be used to describe "between" or "together" or sometimes even "during".

**Peri** can describe "about" or "around". A word you may see is pericardium which describes the sac enclosing or "surrounding" the heart.

and **Trans** is used to describe " across" , "beyond" or "through".

# Frequent Root Words

| Root | Meaning |
|------|---------|
| Oste(o) | • Bone |
| Myo | • Muscle |
| Neuro | • Nerves |
| Derm | • Skin |
| Angi(o) | • Blood vessels |
| Ven(o) or Phleb(o) | • Veins |
| Cardio | • Heart |
| Rhino | • Nose |
| Neph | • Kidney |

Suffixes

| SUFFIX | WHAT IT DESCRIBES | EXAMPLE |
|--------|-------------------|---------|
| -AEMIA | condition of blood | leuk**emia** = cancer of blood cells |
| -ECTOMY | excision / removal | nephr**ectomy** = excision of a kidney |
| -ITIS | inflammation | hepat**itis** = inflammation of the liver |
| -OLOGY | study / science of | cyto**logy** = the study of cells |
| -OMA | tumor | retinoblast**oma** = tumor of the eye |
| -PATHY | disease | neuro**pathy** = disease of the nervous system |
| -OSIS | disease /condition | necr**osis** = dying cells |

## An Example

-Thus, when the suffix –logy, meaning "study of," is added to the root neur, meaning "nerve or nervous system," a combining vowel is added:

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