



# NOVA

Charting New Horizons in Education

Introduction to medical terminology

# 01

Medical terminology

# ~ Fundamentals of medical terminology



- 1) Most medical terms are derived from Greek and Latin language, which means that two different roots may have the same meaning, e.g. **dermatos (Greek word)** and the **cutane (Latin word)** both refer to the skin.
- 2) A medical word consists of some or all of the following elements:
  - A. Medical roots الجذر الطبي
  - B. Combining Form الأحرف المدمجة
  - C. Prefix البادئة
  - D. Suffix اللاحقة



## Term root الجذر الطبي

- 1) It is the main part of the medical term and which carries its primary meaning (**Greek roots are used for building up the words that describe a disease, condition, treatment, or diagnosis**, while, **Latin roots are used to build up words that describe anatomical structures**).
- 2) It can appear at the beginning of a word, after a prefix, before a suffix, or between a prefix and a suffix.
- 3) All terms have at least one word root.
- 4) A word root may be used alone or combined with other elements to form a complete word.

Examples of term roots:

“stomat” means mouth (Greek)

“dermat” means skin (Greek)

“nephr” means kidney (Greek)

“or” means mouth (Latin)

“cutane” means skin (Latin)

“ren” means kidney (Latin)



## Combining form الأحراف المدمجة

- 1) A combining form is the combination of the word root and the combining vowel which could be an **o**, but sometimes it is an **i** to make the word roots pronunciation easier.
- 2) The combining vowel **HAS NO MEANING OF ITS OWN**, but enables two word elements to be connected.
- 3) A combining form is presented as word root/vowel (such as gastr/o).
- 4) When a word has more than one root, a combining vowel is used to link the root to each other.

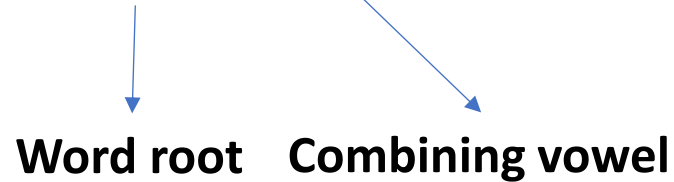
Combining form الأحراف المدمجة



Examples:

gastr/o is pronounced

GASTRO.



oste/o/arthr/itis is pronounced

OSTEOARTHRITIS.



# Combining form الأحراف المدمجة



## Examples of Combining Forms

*This table illustrates how word roots and vowels create combining forms. Learning combining forms rather than word roots makes pronunciation a little easier because of the terminal vowel. For example, in the table below, the word roots gastr and nephx are difficult to pronounce, whereas their combining forms gastr/o and nephx/o are easier to pronounce.*

Word Root	+	Vowel	=	Combining Form	Meaning
erythr/	+	o	=	erythr/o	red
gastr/	+	o	=	gastr/o	stomach
hepat/	+	o	=	hepat/o	liver
immun/	+	o	=	immun/o	immune, immunity, safe
nephx/	+	o	=	nephx/o	kidney
oste/	+	o	=	oste/o	bone

5



# Building Medical Words



There are three basic rules for building medical words:

## Rule I

A word root links to a suffix that begins with a vowel.

الجزر الطبي يربط بالكلمات اللاحقة التي تبدأ بأحرف علة.

## Rule II

A combining form (root o) links a suffix that begins with a constant.

الأحرف المدمجة تستعمل لربط الجذور الطبية بالكلمات اللاحقة التي تبدأ بحرف ثابت.



# Building Medical Words



## Rule III

- A combining form links a root to another root to form a compound word. This rule holds true even if the next root begins with a vowel, as in osteoarthritis.

عند استعمال جذران طبيان يجب أن نضع حرف دمج ما بينهما حتى إن كان الجذر الطبي الثاني يبدأ بحرف علة.

- Keep in mind that the rules for linking multiple roots to each other are slightly different from the rules for linking roots and combining forms to suffixes.

# Building Medical Words



Rule 1						
Word Root	+	Suffix	=	Medical Word	Meaning	
hepat liver	+	-itis inflammation	=	hepatitis hĕp-ă-TĪ-tĭs	inflammation of the liver	

Rule 2						
Combining Form	+	Suffix	=	Medical Word	Meaning	
hepat/o liver	+	-cyte cell	=	hepatocyte HĔP-ă-tō-sĭt	liver cell	

Rule 3							
Combining Form	+	Word Root	+	Suffix	=	Medical Word	Meaning
oste/o (bone)	+	chondr cartilage	+	-itis inflammation	=	osteochondritis ōs-tĕ-ō-kŏn-DRĪ-tĭs	inflammation of bone and cartilage
		arthr joint	+	-itis inflammation	=	osteoarthritis ōs-tĕ-ō-ăr-THRĪ-tĭs	inflammation of bone and joint



## ~ Meanings of certain suffixes

- scope (instrument to view)
- rrhea (excessive flow or discharge)
- stenosis (narrowing, stricture)
- rrhexis (rupture)
- toxic (poison)
- pathy (disease)

All begin with a consonant, therefore a combining vowel must be used between the word root and the suffix.

- algia (pain)
- edema (swelling)
- Uria (urine, urination)
- osis (abnormal condition)
- ectomy (excision)

These suffixes begin with a vowel, therefore a combining vowel is NOT used between the word root and the suffix.

# Prefix البادئة



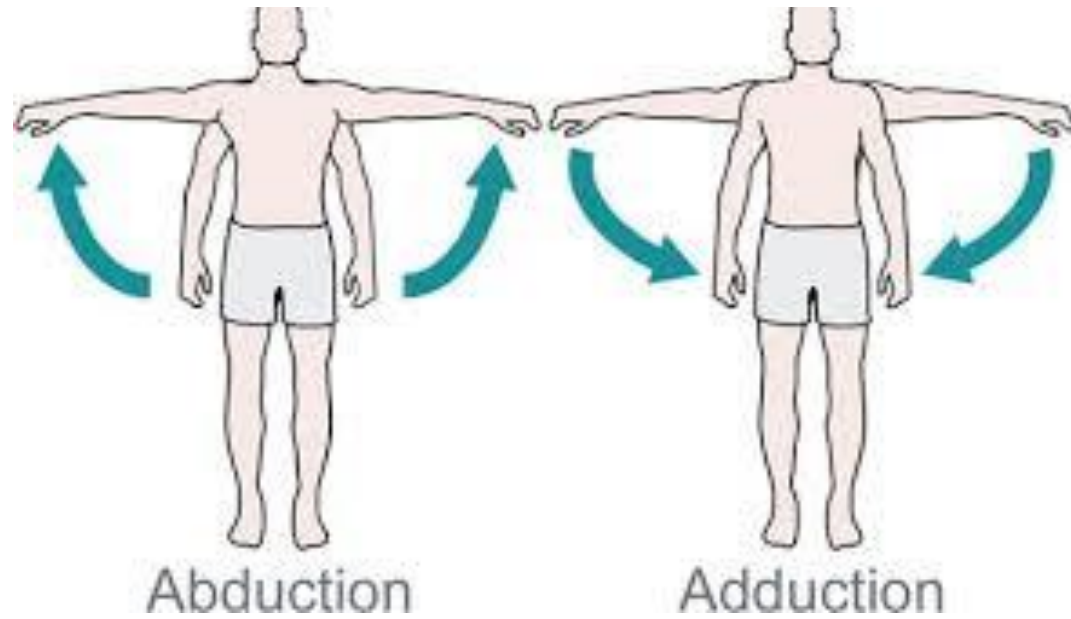
- A prefix is a syllable or syllables attached to the beginning of a word or word root to alter its meaning or create a new word.
- Not all medical terms have a prefix.
- The prefix usually indicates a number, time, position, direction, or negation, absence). Many of the same prefixes used in medical terminology are also used in the English language.

**Anti - (against)**  
**Hyper - (excessive)**  
**Pre - (before)**  
**Post - (after)**  
**Homo - (same)**  
**Hetero - (different)**  
**Eu - (normal)**  
**Dys - (painful)**  
**Brady - (slow)**

**Epi- (above)**  
**hemi- (half)**  
**bi- (two)**  
**tri- (three)**  
**mono- (one)**  
**Hypo- (under)**  
**para- (beside)**  
**Intra –(within)**  
**Endo- (within)**  
**Ecto –(outside)**

**Epi- (above)**  
**inter- (between)**  
**retro- (behind)**  
**macro- (large)**  
**micro- (small)**  
**multi- (much)**  
**ab- (away from)**  
**ad –(within)**  
**Endo- (toward)**  
**circum– (around)**

# Prefix البادئة



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## Examples of Prefixes

*This table lists examples of prefixes as well as their phonetic pronunciations. Begin learning the pronunciations as you review the information below.*

<b>Prefix</b>	+	<b>Word Root</b>	+	<b>Suffix</b>	=	<b>Medical Word</b>	<b>Meaning</b>
<b>an-</b> (without, not)	+	<b>esthes</b> (feeling)	+	<b>-ia</b> (condition)	=	<b>anesthesia</b> än-ēs-THĒ-zē-ă	condition of not feeling
<b>hyper-</b> (excessive, above normal)	+	<b>therm</b> (heat)	+	<b>-ia</b> (condition)	=	<b>hyperthermia</b> hī-pēr-THĒR-mē-ă	condition of excessive heat
<b>intra-</b> (in, within)	+	<b>muscul</b> (muscle)	+	<b>-ar</b> (pertaining to)	=	<b>intramuscular</b> īn-tră-MŪS-kŭ-lār	pertaining to within the muscle
<b>para-</b> (near, beside; beyond)	+	<b>nas</b> (nose)	+	<b>-al</b> (pertaining to)	=	<b>paranasal</b> pār-ă-NĀ-sāl	pertaining to (area) near the nose
<b>poly-</b> many, much	+	<b>ur</b> (urine)	+	<b>-ia</b> (condition)	=	<b>polyuria</b> pōl-ē-Ū-rē-ă	condition of much urine



## Changing Prefixes and Meanings

*In this table, each word has the same root, nat (birth) and suffix, -al (pertaining to). By substituting different prefixes, new words with different meanings are formed.*

Prefix	+	Word Root	+	Suffix	=	Medical Word	Meaning
pre- (before)	+				=	prenatal prē-NĀ-tāl	pertaining to (the period) before birth
peri (around)	+	nat (birth)	+	-al (pertaining to)	=	perinatal pēr-Ī-NĀ-tāl	pertaining to (the period) around birth
post (after)	+				=	postnatal pōst-NĀ-tāl	pertaining to (the period) after birth



# Medical term Interpretation

- It can be done by defining the term components

1- suffix, or last part of the word.

2- the first part of the word (which may be a word root, combining form, or prefix).

3- the middle parts of the word.

Examples:

## **Acrocyanosis**

**Acr** (word root = extremities)

**cyan** (word root = blue)

**/ o /** = combining vowel

**osis** (suffix = condition)

So, **Acrocyanosis** = a condition characterized by blue extremities





## ~ Plural words

- Are formed by adding or substituting another vowel or syllable at the end of a word (i.e.suffix).
- Examples
  - macula – the plural is maculae
  - adenoma – the plural is adenomata
  - glomerulus – the plural is glomeruli
  - ovum – the plural is ova
  - spermatozoon – the plural is spermatozoa

# ~ Plural words



Rules for Singular and Plural Suffixes				
<i>This table presents common singular suffixes, the rules for forming plurals, and examples of each.</i>				
Rule		Example		
Singular	Plural	Singular	Plural	
-a	Retain <i>a</i> and add <i>e</i> .	pleura	pleurae	
-ax	Drop <i>x</i> and add <i>ces</i> .	thorax	thoraces	
-en	Drop <i>en</i> and add <i>ina</i> .	lumen	lumina	
-is	Drop <i>is</i> and add <i>es</i> .	diagnosis	diagnoses	
-ix	Drop <i>ix</i> and add <i>ices</i> .	appendix	appendices	
-ex	Drop <i>ex</i> and add <i>ices</i> .	apex	apices	
-ma	Retain <i>ma</i> and add <i>ta</i> .	carcinoma	carcinomata	
-on	Drop <i>on</i> and add <i>a</i> .	ganglion	ganglia	
-um	Drop <i>um</i> and add <i>a</i> .	bacterium	bacteria	
-us	Drop <i>us</i> and add <i>i</i> .	bronchus	bronchi	
-y	Drop <i>y</i> and add <i>ies</i> .	deformity	deformities	

# ~ eponyms



- Eponyms are medical terms derived from the name of a person. Many procedures and tests are also named after the person who invented or perfected them.
- Examples of diseases;
  - Alzheimer's disease
  - Addison's disease
  - Stokes-Adam's syndrome
  - Parkinson's disease
  - Cushing's disease
- Examples of body parts;
  - Bowman capsules
  - Wernicke's center or area
  - Cowper's glands
- Examples of tools;
  - Foleys catheter - Hegar dilators

# ~ acronyms



- Acronyms are medical abbreviations. They are used very frequently in medicine. They boost efficiency as long as they are used intelligently.
- Examples;
  - - ACE ----- angiotensin converting enzyme
  - - ACTH ----- adrenocorticotropic hormone
  - - AIDS ----- acquired immune deficiency syndrome
  - - HDL ----- high density lipoprotein
  - - Hx ----- history
  - - MI ----- myocardial infarction
  - - RBC ----- red blood cells
  - - RBBB ----- right bundle branch block
  - - TB ----- tuberculosis
  - - ADH ----- anti-diuretic hormone



«Education is the passport to the future, for tomorrow  
belongs to those who prepare for it today»

- Maclom X-