

Medical Terminology

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Lecture two

COMMON SUFFIX'S & PREFIX'S

Introduction

Lecture 1 presented the four common word elements used in medical terminology : roots, suffixes, prefixes, and combining forms. This chapter will focus on suffixes and prefixes in greater detail to facilitate a better understanding and confidence in learning medical terms.

Recall in Chapter 1 that a suffix is the word part that comes at the end of a word. The word suffix comes from the Latin word *suffixum* , which may be translated as “to attach under or to the end of.” Although the suffix is located last in a medical term, it most often comes first in its definition.

For example, appendicitis means “inflammation (*-itis*) of the appendix.” Therefore, the suffix, in this case *-itis*, provides us with the first word of the defining phrase. The term gastrectomy is another example. It is defined as “the removal of the stomach.” The definition begins with the meaning of the suffix, *-ectomy*, which means “removal of.” We analyzed the medical term by dividing it into its basic elements and translating it beginning with the suffix.

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Categories of suffixes

A suffix attached to the end of a word adds meaning to the root. It may modify the root to indicate a condition, diagnostic test, procedure, or specialty. For example, consider the term **arteriostenosis** by observing how it is divided into the word elements and how the suffix **-stenosis** modifies the root:

| EXAMPLE: COMBINING VOWEL BETWEEN ROOTS | ARTERI / O / STENOSIS | |
|--|-------------------------------|-----------|
| Word | arteri/o | -stenosis |
| | ↓ | ↓ |
| Element | combining form (root + vowel) | suffix |
| | ↓ | ↓ |
| Element Meaning | artery | narrowing |
| Word Meaning | narrowing of an artery | |

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Although not all medical terms have suffixes, when one is used, it is added to the root or combining form.

Dividing suffixes into functional categories makes them easier to learn. The four divisions are as follows:

- Suffixes that signify medical conditions
- Suffixes that signify diagnostic terms, test information, or surgical procedures
- Suffixes associated with a medical specialty or specialist
- Suffixes that convert a noun to an adjective

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Table 2-1 Suffixes that signify medical conditions

| Suffix | Refers to | Examples |
|--------------------|---------------------------------------|----------------|
| -algia | pain | arthralgia |
| -cele | protrusion, hernia | rectocele |
| -dynia | pain | arthrodynia |
| -ectasis, -ectasia | expansion or dilation | angiectasis |
| -emia | blood | anemia |
| -iasis | presence of; formation of | cholelithiasis |
| -ism | a condition, a process, or a state of | dwarfism |
| -itis | inflammation | appendicitis |
| -malacia | softening | osteomalacia |
| -megaly | enlargement | gastromegaly |
| -oma | tumor | gastroma |
| -osis | abnormal condition | osteoporosis |
| -penia | reduction of size or quantity | leukopenia |
| -plegia | paralysis | hemiplegia |
| -pnea | breathing | tachypnea |
| -porosis | porous condition | osteoporosis |
| -ptosis | downward displacement | nephroptosis |
| -rrhage | flowing forth | hemorrhage |
| -rhea | discharge | diarrhea |
| -rhexis | rupture | hysterorrhexis |
| -spasm | muscular contraction | angiospasm |

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Table 2-2 Suffixes that signify diagnostic terms test information or surgical procedures

| Suffix | Refers to | Examples |
|------------------------|---|---------------------|
| -centesis | surgical puncture | thoracentesis |
| -desis | surgical binding | arthrodesis |
| -ectomy | surgical removal | appendectomy |
| -gen, -genic, -genesis | origin, producing | osteogenic |
| -gram | written or pictorial record | electrocardiogram |
| -graph | device for graphic or pictorial recording | electrocardiograph |
| -graphy | act of graphic or pictorial recording | electrocardiography |
| -meter | device for measuring | audiometer |
| -metry | act of measuring | audiometry |
| -pexy | surgical fixation | hysteropexy |
| -plasty | surgical repair | rhinoplasty |
| -rhapth | suture | hemiorrhaphy |
| -scope | device for viewing | arthroscope |
| -scopy | act of viewing | arthroscopy |
| -tomy | incision | colotomy |
| -tripsy | crushing | lithotripsy |

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Table 2-3 Suffixes that signify medical specialties and specialist

| Suffix | Refers to | Examples |
|----------|--------------------------------|--------------|
| -ian | specialist | pediatrician |
| -iatrics | medical specialty | pediatrics |
| -iatry | medical specialty | psychiatry |
| -ics | medical specialty | orthopedics |
| -ist | specialist in a field of study | orthopedist |
| -logy | study of | gynecology |

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Table 2-4 Suffix that denote adjective and other common suffixes

| Suffix | Meaning | Examples |
|--|--|-------------------------------|
| -ac, -al, -an, -aneous, -ar, -ary, -eous, -iac, -iatic, -ic, -ical, -oid, -otic, -ous, -ular | converts a root or noun to an adjective | geriatric, orthopedic, ocular |
| -cyte | cell | leukocyte |
| -emesis | vomiting | hematemesis |
| -iasis | a suffix used to convert a verb to a noun indicating a condition | cholelithiasis |
| -lith | a stone, calculus, calcification | pneumolith |
| -lysis | disintegration or destruction of | hemolysis |
| -megaly | enlarged | gastromegaly |
| -opsy | visual examination | biopsy |
| -pathy | disease | cardiopathy |
| -phobia | a word meaning fear, often appearing as a suffix | claustrophobia |
| -poiesis | producing or formation | erythropoiesis |
| -ptosis | drooping | nephroptosis |
| -sclerosis | hardness | arteriosclerosis |
| -stasis | level, unchanging | hemostasis |
| -stenosis | narrowed, blocked | arteriostenosis |
| -stomy | permanent opening | colostomy |
| -tome | instrument for cutting | osteotome |

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Categories of prefixes

Not all medical terms include a prefix, although when one is present, it is critical to the term's meaning. For example, **hyper** glycemia (high blood sugar) and **hypo** glycemia (low blood sugar) name conditions that are exact opposites. Let's look at an example of how to analyze a term with a prefix:

| EXAMPLE: COMBINING VOWEL BETWEEN ROOTS | MICRO / SCOPE | |
|--|---|------------------------|
| Word | micro- | -scope |
| | ↓ | ↓ |
| Element | prefix | root |
| | ↓ | ↓ |
| Element Meaning | smallness | instrument for viewing |
| Word Meaning | instrument that magnifies small objects | |

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Seeing prefixes in words we already know helps us assimilate their meanings quickly and enables us to understand medical terms we encounter later on. For that reason, we have chosen common English words as examples in some of the following paragraphs and tables.

Dividing prefixes into functional categories, just as we did with suffixes, also makes them easier to learn. There are four logical divisions:

- Prefixes of time or speed.
- Prefixes of direction.
- Prefixes of position.
- Prefixes of size or number.

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Prefixes of time or speed

Prefixes denoting time or speed are used in everyday English language. **Pre** historic and **post** graduate are common words with a prefix relating to time.

Table 2-5 Prefixes of time and speed

| Prefix | Refers to | Examples |
|-------------|--------------------------------------|------------------------|
| ante-, pre- | before | ante partum, premature |
| brady- | abnormally slow rate of speed | bradycardia |
| neo- | new | neoplasm |
| post- | after | postsynaptic |
| tachy- | rapid, abnormally high rate of speed | tachycardia |

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Prefixes of direction

The word **ab** normal is an example of a word containing a prefix that signifies direction. **Ab** -means “away from,” so abnormal means “away from normal.” We use prefixes in our everyday communications without bothering to analyze them.

| Prefix | Refers to | Examples |
|------------------|-------------------------------|---------------------------------------|
| ab- | away from, outside of, beyond | abnormal |
| ad- | toward, near to | addiction |
| con-, sym-, syn- | with | congenital, sympathetic, synarthrosis |
| contra- | against | contraindicate |
| dia- | across, through | diarrhea |

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Prefixes of position

Infrastructure (infra- means “inside” or “below”), **interstate** (inter- means “between”), and **paralegal** (para- means “alongside”) are all words we frequently use that have prefixes of position preceding their roots. Having these prefix meanings already in our vocabularies makes it easier.

Table 2-6 Prefixes of direction

| Prefix | Refers to | Examples |
|-----------------------|----------------------|-----------------|
| ec-, ecto-, ex-, exo- | outside | ectopy |
| en- | inside | encephalopathy |
| endo- | within | endoscopy |
| epi- | upon, subsequent to | epigastric |
| extra- | beyond | extrasystole |
| hyper- | above, beyond normal | hypergastric |
| hypo- | below, below normal | hypogastric |
| infra- | inside or below | infrastructure |
| inter- | between | intercostal |
| intra- | inside, within | intracerebral |
| meso- | middle | mesothelium |
| meta- | beyond | metacarpal |
| pan- | all or everywhere | pancarditis |
| para- | alongside, like | paraplegia |
| retro- | backward, behind | retroperitoneal |

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Prefixes of size or number

A **semiannual** (semi- means “half”; annual means “yearly”) sale is one that occurs every six months.

| Prefix | Refers to | Examples |
|---------------|-------------------|--------------|
| bi- | two | biannual |
| di-, dipl- | two, twice | diplopia |
| hemi-, semi- | half | hemiplegia |
| macro- | big | macrocyte |
| micro- | small | microscope |
| mono- | one | monocyte |
| olig-, oligo- | a few | oliguria |
| pan- | all or everywhere | pancarditis |
| poly- | many | polydactyly |
| quadri- | four | quadriplegia |
| semi- | half, partial | semiannual |
| tetra- | four | tetradactyl |
| tri- | three | triceps |
| uni- | one | unicellular |