

CHAPTER 1 MEDICAL TERMINOLOGY: IDENTIFYING ROOT WORDS, PREFIXES AND SUFFIXES

When studying and using medical terminology it is important to understand the basic structure of medical terms and their meanings. In medicine all parts of a medical term are essential to the meaning of that term and each part of that term has its own meaning. Take the term *appendicitis* for example, *itis* means inflammation, *appendic* is the body part (the appendix) so, *appendicitis* is the medical term used for inflammation of the appendix.

When learning about language and medical terminology, it is worthwhile remembering that words will contain patterns and the more you read and become familiar with them, the more you will readily and easily understand them. It is also important to note that not every medical term follows the exact same pattern. Some words have very clear derivatives whereas others are not so distinct in where they have evolved from. Do not expect to see that exact same patterns in all words.

Medical terms sometimes consist of three parts - a root, a prefix and a suffix. When the three are combined it will express the meaning of the term. These types of words are called constructed words as they usually contain all three elements i.e. prefix, root and suffix.

The root of a word (known as the word root) contains the basic meaning (definition) of the word often referring to a body part or system e.g. *cardi* (heart). There may be more than one word root in a medical term and these are often combined with a combining vowel to make them easier to pronounce.

A prefix may or may not be present, but where it is used, it is placed in front of the word to change its meaning (pre means before), or to identify the core meaning of the word. Example: A prefix added to *cardia* (heart) will identify the type of heart condition e.g. *dextrocardia* (dextro means right) so in this case dextrodardia indicates that the heart is on the right side of the body, instead of the common left.

Another example: the prefixes 'a' or 'an' are much used in medical terminology and mean without for example:

anaemia	
an =	without/lack of,
<i>aemia</i> =	blood

anorexia	
an =	without
<i>orexia</i> pertains to the appetite	
(anorexia = without appetite)	

A prefix may also indicate a time, place, location or status. For example take the term intravenous meaning “within the veins”. Intra (the prefix) means ‘within’, *ven* (the word root) means vein, *ous* (the suffix) means ‘pertaining to’.

A suffix is found after the word root(s) and can also change the meaning or function of the word root. It can modify its forms to a different part of speech (a noun, a verb or an adjective) or may refer to a condition, disorder of a part of the body or medical procedure to treat it. For example, *itis* is a very common suffix meaning inflammation e.g. *arthritis*. Another example is *ectomy* is another well-known suffix that means ‘surgical removal of’ as in appendectomy (removal of the appendix).

Combining vowels can also be used to combine a word root with another word root that indicates location. Take the term pneumothorax as an example. *Pneum* means, air, lungs, and gas; *thorax* is the space in the body located between the abdomen and the neck that includes the lungs, the heart, and the first section of the aorta. So *pneumothorax* means abnormal air or gas in the pleural cavity - the cavity that surrounds the lungs. So the suffix *thorax* locates the area of the body with the abnormal air/gas.

Not all medical terms comprise of all three parts, some contain only a prefix and a suffix without a root word, or they contain two root words that are bound together by using a combining vowel (often an ‘o’). An example here is cardiovascular. *Cardi* meaning the heart, *vascular* meaning the vessels containing blood. Another example of this is cardiopulmonary; *cardi* means heart, *pulmonary* means lungs. Once again using *cardi* (the root word): in cardiotomy

- the suffix ‘otomy’ means incision and *cardi* means heart, so the word *cardiotomy* means a surgical incision into the heart. The ‘o’, or any combining vowel, does not have a meaning, it is purely used to combine the two words and make them easier to pronounce.

Medical terms may also consist of only a prefix and suffix along with a combining vowel for example the common medical condition apnea *a* = without, *pnea* = breathing.

Constructed words are easy to deconstruct and easier to learn as each part has a meaning. Learning the meaning of each word part first makes it much simpler to learn and to understand the meaning of a medical term.

Some medical words are not constructed from the suffix, root and prefix combination. These words are known as non-constructed medical terms. Non-constructed terms cannot be deconstructed into their individual word part so you must memorise them in their totality. They are words derived from other languages (particularly Latin or Greek), acronyms, abbreviations they also include eponyms i.e. medical terms named after the person who discovered the medical condition or procedure.

Rules to Remember:

1. A good rule to remember when defining the meaning of a medical term is to start with the suffix first, then the prefix, then word root(s) last. The same applies to terms that use combining vowels. Identify the word root(s) used as the suffix first then the word root used as the prefix. Take the term hysterosalpingectomy and define its meaning by starting with the suffix.

Consider the following examples.

Hysterosalpingectomy means the removal of the oviducts and the uterus.

Suffix *ectomy* = removal of
Salping = oviducts
Hyster = uterus
O = the combining vowel

Pericarditis means inflammation around the heart.

Suffix *itis* = inflammation
Prefix *peri* = around
Word root *cardi* = heart

2. A combining vowel is only used if the suffix starts with a consonant – if the suffix starts with a vowel then it negates the need for a combining vowel.

For example Fibromyalgia:

Fibro comes from the Latin word for fibrous tissue (*fibro*) and the Greek terms for muscle (*myo*) and pain (*algia*) – *algia* starts with a vowel so there is no need for a combining vowel. Remember combining vowels are only used to make it easier to pronounce a word.

3. The process of combining word roots or a suffix and prefix with a combining vowel is known as the *combining form*.

Creating Plural Forms out of the Singular (Medical Terms)

There are several ways to form a plural term from a singular term including when a term ends in any of the following: *is, us, a, um*.

Replace the *i* with an *e* for example: diagnosis singular; diagnoses plural.

When a term ends in *us* (to denote the singular form) end it in *i* (to denote the plural form) for example: *bacillus* (singular) *bacilli* (plural).

When a term ends in *a* (to denote the singular form) end it in *ae* (to denote the plural form) for example: *sclera* (singular) *sclerae* (plural).

When a term ends in *um* (to denote the singular form, end it in *a* to denote the plural form, for example: *Septum* (singular) *septa* (plural).