**AH 60 DLA #1**

**Medical Terminology Word Parts**

If at any time, you have questions about how to complete any part of this DLA,

email them to: [mdsc@lbcc.edu](mailto:mdsc@lbcc.edu)

The purpose of this DLA is to provide you with increased understanding of how to break down medical terminology into word parts and to offer tools to more easily learn and remember medical terms. You will begin practicing with non-medical words that are already familiar to you and as the DLA progresses you will have the opportunity to breakdown medical terms that you are likely unfamiliar with!

After completing this activity, students should be able to:

* Break down medical terminology into word parts
* Decode unfamiliar medical terms by recognizing the various parts of a word
* Apply learning strategies to enhance memory of new medical terms

**Before beginning this DLA, answer the following:**

How confident do you feel in your ability to master new medical terminology as it relates to your AH60 course and possible future career in the medical field?

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How do you currently go about learning new vocabulary/terms?

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What do you think your greatest challenge in passing in AH 60 will be?

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**Instructions for Completing This DLA:** Follow the directions on the next page and complete the activities as directed. If you have any questions, ask an MDSC staff member for help.

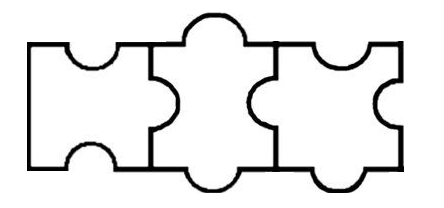
1. **COMPONENTS OF WORDS**

In order to master medical terminology, you must

* Break the word into pieces and
* Use various learning strategies and your resources (textbook, dictionary, online lists)

Medical terms that may at first seem very complex can be broken down into their component parts to give you a basic idea of their meaning. Most medical words derive from ancient Greek and Latin. It may be helpful to use a dictionary of Greek/Latin roots – either a hard copy or online when you are learning new medical terms for your AH 60 class. For purposes of this DLA, you will need a copy of AH 60 Supplemental Material which can be obtained from a front desk staff member.

**How is a word broken down into parts?**

Most medical terms are compound words made up of:

**PREFIX ROOT SUFFIX**

Beginning Beginning End

Middle or End

* **Prefixes** are words placed in front of a root word that usually changes the meaning of the root word.The word amoral has the prefix of “a-” meaning *not* or *without.* Therefore, this particular prefix added to the word moral (root word) changes the meaning to without morals, or having no morals.

*In medical terminology, the prefix often relates to size, shape, direction, color, and amount*

* **Roots** are words that are the basis of a new word. Sometimes it can stand on its own, like in the word *preventable*. The root word prevent can stand alone. However, when you add the suffix able, you change the meaning. However, not all root words are stand-alone words. For example, the word *reject* is made up of the prefix re- and the Latin root ject, which is not a stand-alone word.

*In medical terminology, the root word often relates to part of the body.*

* + Suffixes are groups of letters added to the end of a word to change or add to its meaning.The word claustrophobia has the suffix “phobia” which means *irrational fear*. Claustra means enclosed space, therefore adding the suffix “phobia” changes the meaning to fear of enclosed spaces.

*In medical terminology, it can be about size, shape, color or about a problem.*

**It’s important to note that words aren’t always made up of 1 Prefix, 1 Root word and 1 Suffix. Rather, the parts of these words can be in various combinations. The following are some of the combinations you might see (but there are more!). You will notice that all combinations include a root word.**

Prefix + Root

Prefix + Prefix + Root

Root + Suffix

Root + Root + Suffix

Prefix + Prefix + Root + Suffix

Example:

Neuro**blast**oma

**neuro (root):** means nerve

**blast (root):** relates to immature cells

**oma (suffix):** means tumor

Therefore, by breaking down a complex word (root + root + suffix) we can see that **neuroblastoma**literally means **a tumor made up of immature nerve cells*.***

***Now you try it!*** Break the following words down into its appropriate word parts. These are non-medical words that you are probably already familiar with.

1. **IDENTIFY THE PREFIX, ROOT, SUFFIX**

Let’s test your current knowledge of word parts.

* Find the root. *It helps to underline or circle the parts to help you concentrate when you are first learning to break down words.*

zoology

* Did you underline or circle zoo? If so, that is correct! Now write the meaning of the root word.

zoo = \_\_\_\_\_\_\_\_\_\_\_\_\_

“Zoo” means animal. Now, let’s move on to the next part of the word!

* Find the suffix. *Remember to underline or circle the suffix.*

zoology

* Hopefully you underlined or circled ology, since we already identified zoo as the root word. Can you guess what ology means?

ology = \_\_\_\_\_\_\_\_\_\_\_\_\_

“ology” means study (or field) of. Therefore, when you put these two meanings together, you can figure out that zoology refers to the study of animals.

* Find the prefix. *Remember to underline or circle it.*

disagree

* Did you underline or circle “dis”? If so, you are correct! Now guess what “dis” means:

dis = \_\_\_\_\_\_\_\_\_\_\_\_\_\_

“dis” means not or opposite of. Agree means to have the same opinion, or concur. Therefore, when you put this prefix and root word together, what does it mean?

Now let’s tackle a medical word! Here the word is broken down for you. Try to fill in the blanks below labeling what word part each is.

**Leukocytosis**

|  |  |  |
| --- | --- | --- |
| **Word** | **Meaning** | **Name the Word Part** |
| Cyto | Refers to cells |  |
| Leuko | Indicates the color white |  |
| Osis | An abnormal increase |  |

By breaking down the word leukocytosis, you can infer that the term means: \_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

That’s right, leukocytosis is the abnormal increase of white blood cells. By putting the word together, you can see that it is easy to break down words by their parts to discover their definition.

What questions do you have about prefixes, roots, or suffixes?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Now that you have a basic understanding of the parts of a word, let’s back up and break it down by focusing on one word part at a time.

1. **ROOT WORDS**

The root word is always the foundation of the word – it always keeps the same meaning and many times relates to some part of the body. For example,

*cardi = heart*

You can add to the front (prefix) or end (suffix) of the word “cardi” and create a new word, but “cardi” always refers back to the heart.

Take a look at these words:

Peri**cardi**al [peri (prefix) = around] means around the heart.

**Cardi**ology [ology (suffix) = study of] refers to the study of the heart.

Myo**cardi**um [myo (prefix) = muscle] is talking about the heart muscle.

**Common Roots**

|  |  |
| --- | --- |
| **ROOT WORD** | **MEANING** |
| cardi | heart |
| crani | skull |
| osteo | bone |
| neuro | nerves |
| myo or sacro | muscle |
| arthro | joint |
| derma(to) | skin |
| angio | blood vessel |
| opthalm or oculo | eye |
| oto | ear |
| thrombo | blood clot |
| hepat(o) | liver |
| mammo | breast |
| colo | large intestine |
| gastro | stomach |
| thoraco | chest |
| pneumo or pleuro | lung |

**How to Remember:**

You might be wondering how you will memorize the meaning of all of these root words (plus more!), right?

* **Make a Personal Connection:** One of the best ways to learn something is to make a personal connection with it. In fact, some of these root words might have already been familiar to you because of your own or family medical history. In the section below, write down any medical terms you are already familiar with. It could be a medical specialty, procedure, diagnosis, etc. Instead of using words like *cancer* or *heart attack* – which are diagnoses, try to use proper medical terms such as “cardiology“ and “oncology.” You may need to refer to the Supplemental Material for this DLA.

Some questions/hints to get you started: Do you wear glasses? Have you ever broken a bone? Have you had an ear infection? The list has been started for you.

|  |  |  |
| --- | --- | --- |
| **Medical Term** | **What does it Affect?** | **Name the Root Word** |
| Mammogram | breast | mammo |
| Dermatology | skin |  |
| Echocardiogram |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

* **Create Visuals:** It is always helpful to *see* something to enhance your memory. In fact, the more senses you use, the greater chance you’ll have at remembering. So, when you create notecards or sit down to study – use pictures from the internet or your textbook and connect those visuals to the words you are trying to learn! For example, when creating your study notecards, you can draw/post a picture of a bone on your OSTEO notecard. See the sample below.

**Front Back**

BONE



OSTEO

**Write 3 of your own** for words you are currently working on in class below:

**Front Back**

1. **PREFIXES**

Prefixes are added to the beginning of words, and tell us a lot of different things about the whole word.

**The functions of a prefix:**

* A prefix can tell us how big something is (ex: micro, macro), its shape (like the “acanth” in acanthosis which means “thorn-like”), direction or location (such as “proxim,” which means near). Obviously, these are important things to know if you are in the medical field!
* By putting an “a” or “an” at the beginning of a word, it makes it a negative, which means “**without**.” For example, asepsis means without sepsis.
* It can assign a number. For instance, “mono-“ is “one” and “bi-“ is “two.”

**Common Prefixes:**

|  |  |
| --- | --- |
| **PREFIX** | **MEANING** |
| Multi- | Many |
| Neo- | New |
| Anti- | Against |
| Ante- | Before |
| Peri- | Around |
| Poly- | Many |
| Hemi- | Half |
| Semi- | Partial, Half |

As you can see above, ANTI and ANTE are very similar but have different meanings. It is best to come up with a way to remember the difference between them – much like we practiced above with learning new root words.

* **Make a connection** with other words you already know beginning with the same prefix, such as “antisocial” meaning against being social or “anti-inflammatory” meaning it works against (or to combat) inflammation. Once you remember what you already know, you can eliminate the other!

**More Prefixes**

Other commonly used prefixes you will see in medical terminology are those listed below. Make an educated guess at their meaning by making a connection to another word you already know.

|  |  |  |
| --- | --- | --- |
| **PREFIX** | **WORD YOU KNOW WITH SAME PREFIX** | **GUESS THE MEANING** |
| Sub - |  |  |
| Hyper - |  |  |
| Hypo - |  |  |
| Micro - |  |  |
| Macro - |  |  |

When you saw the prefix ***sub -***did you think of the word *submarine* or *subway*? And then did you remember that a submarine travels under the water, and that a subway is located underground? So, you might have guessed that the prefix *sub* means below.

What about the prefix ***hyper -*** ? Did you think *hyperactive* or *hypertension* and realize that when one has hypertension it means they have high blood pressure and when one is hyperactive they have more energy than those who are not? If so, you may have guessed that *hyper* means above or in excess. If you had discovered the meaning of hyper-, how could it help you understand or rememberpairs of terms such as ***hyper****thyroidism* and ***hypo****thyroidism*?

You can do the same with *micro* and *macro*. A microscope is used to magnify small images, correct? Therefore, we can guess that *micro* would mean small. Though it’s not always the case with similar prefixes, knowing one might help you learn or remember the other. Did you guess that *macro* means large?

1. **SUFFIXES**

Almost all medical terms have a suffix! What’s a suffix again? Suffixes are added to the end of words, and tell us whether a word is a noun (a person, place, thing, or idea/concept) or an adjective (a word that describes some aspect of a noun, such as fast, small, orange, burly). For example, the word *pericardium* contains the suffix *–ium*. This suffix indicates that the term is a noun (a thing). The word cardiac has the suffix *-ac.* This suffix indicates it is an adjective. (And therefore would almost certainly be followed by another word – a noun. For example, “cardiac arrest.”) There are many suffixes. Each suffix can be categorized as indicating the term is either a noun or an adjective.

But how can that help you? If you had a test and it happened to have fill-in-the-blank types of questions, you could look at the sentence type and it could help you select the appropriate word. Choose which of the 2 words below to fit in the sentences that follow:

myocardium myocardial

The \_\_\_\_\_\_\_\_\_\_\_\_ study showed interesting results.

The doctor examined the patient’s \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

How did you choose which word to use?

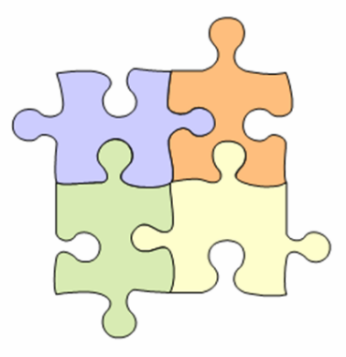
* **Make a Personal Connection:** Again, try to make a personal connection with the suffixes listed below. As mentioned before, some of these might be familiar to you because of your own or family medical history. In the section below, write down any medical terms you are already familiar with that contain the suffix listed. Then, write down what you think the meaning of the term is. The list has been started for you.

**Common & General Suffixes**

|  |  |  |
| --- | --- | --- |
| **SUFFIX** | **MEDICAL TERM** | **DERIVE MEANING** |
| -ectomy | Tonsillectomy | Removal of tonsils |
| -itis |  |  |
| -megaly |  |  |
| -pathy |  |  |
| -ic, -iac, -ic, -al, -ar, -ary, -ous |  |  |
| -ologist |  |  |

This may have been quite challenging! Some of the above suffixes are very familiar (and the meaning may already be known to you), but others may have been new to you. See the list of meanings that follow.

|  |  |
| --- | --- |
| **SUFFIX** | **MEANING** |
| -ectomy | removal of |
| -itis | inflammation of |
| -megaly | enlargement of |
| -pathy | disease of |
| -ic, -iac, -ic, -al, -ar, -ary, -ous | pertaining to |
| -ologist | specialist |



1. **PUTTING IT ALL TOGETHER**

Imagine that you are reading from a medical textbook and you come across a medical term you are not familiar with, but you don’t have access to a medical dictionary or text glossary. What do you do?

**Break it down in this way -**

**SUFFIX --- PREFIX --- ROOT**

* Look at the **suffix first**!
  + It will tell you if the word is a noun or if it’s describing something.
* Once you figure out what type of word it is, go back to the beginning and look at the **prefix**
* Lastly, look at the **root word.**

In some cases, you may not be able to immediately recognize certain word parts. In this case, remember that all words have a root, so if there are only 2 identifiable parts, then it’s easy to tell there is no prefix/suffix depending on where the non-root parts are located (before the root or after).

**Let’s try it:**

Term: Gastromegaly

Step 1: Look at the suffix – *megaly*

It means *enlargement of* (describes something)

Step 2: Look at the prefix – there is none!

Step 3: Look at the root – *gastro*

It refers to the *stomach*

So, what is the meaning of the word GASTROMEGALY?

\*Remember, not all medical terms will have all 3 of these word parts. You may have various combinations, such as “Prefix + Root” or “Root + Suffix” or “Prefix + Root + Root,” etc…

**Now, use this same method to determine the meaning of the words below and if a term does not have a certain word part, simply leave the box blank:**

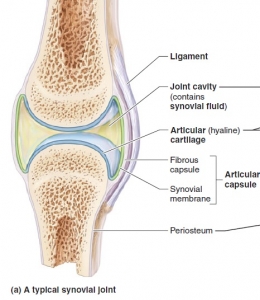
|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **TERM** | **SUFFIX** | **PREFIX** | **ROOT** | **MEANING** |
| PERICARDITIS |  |  |  |  |
| CARDIAC |  |  |  |  |
| HEMIGASTRECTOMY |  |  |  |  |
| OSTEOPATHY |  |  |  |  |

The example above assumes you are able to identify each of the parts. However, there will be many times when you are not familiar with some or all parts of the word and are not able to identify each individual part. And that’s OK. What can you do if you run across terms with which you are totally unfamiliar?

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

1. **FINAL TIPS ON LEARNING MEDICAL TERMINOLOGY**

Remember that with anything, you must practice to get better at it. This includes learning! Here are a few tips and resources that might help you find success in your class!

* Find videos and other resources that will help you learn new material, like this one: <https://www.youtube.com/watch?v=3fiEszFPRE8>
* When trying to learn new terminology use the strategies discussed above, like
  + Make a connection to something you already know
  + Use your senses. For example, add a photo or draw a picture to go along with the material you are trying to learn. Or, say things out loud so you are seeing it and hearing it.
  + Teach someone else the material! The best way to learn something, is to talk about it with someone else! You can do this with family and friends or in a study group.
  + Learn things in chunks. The average student can learn 7 new things at a time. Break up new material into small chunks. Study and master the first 7, take a break, then come back and learn 7 more. Review all of them, then repeat the cycle!
  + Download medical terminology and abbreviation apps on your mobile phone for repeated practice during down times (waiting for the bus, in between classes, etc.). Better yet – create your own! The process of creating them is a great way to help get the info into your long term memory.
  + Visit the MDSC and practice prefixes, suffixes, word combinations and abbreviations on our computer programs. The MDSC staff will help you get started!

**Now that you’ve completed this activity, what questions do you have?**

**Which of the information in this activity will be most helpful to you?**

You are well on your way to finding success in AH 60 and all of your classes! To **receive credit** for completing this assignment, you will participate in an online follow-up session with a Center staff member. Go to the “Follow-up Sessions” tab on the Multidisciplinary Student Success Center Online Supplemental Learning Assistance site: <http://www.lbcc.edu/SuccessCenters/mdsc/> to schedule your online appointment with a Center staff member.

**THE MDSC IS HERE TO HELP!**

There are many learning/study strategies you can utilize, and our LBCC Multidisciplinary Success Centers are here to help. Visit their website to view Study Skills Videos at <http://www.lbcc.edu/LAR/studyskills.cfm>

or download their Study Skills Handouts at <http://www.lbcc.edu/LAR/handouts.cfm>