

LESSON INTRODUCTION

Welcome to Medical Terminology. This lesson is part of the GW Oncology Patient Navigator Training: The Fundamentals. My name is Kelly Angell, I am the Associate Director of Technical Assistance for the GW Cancer Center.

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After completing this lesson, you will be able to:

- Define basic medical terms using prefixes, root words and suffixes.
- Describe common words used in oncology, and
- Identify resources on basic medical terms.

In this lesson we will guide you on the use of medical terminology. This is an important skill which will help you define, understand and use these terms in any healthcare setting and with patients.

It may be useful to find a medical dictionary or a dictionary that focuses on Greek and Latin word roots since most science and medical terms come from them. We will

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discuss other useful resources for understanding medical terminology later in the lesson.

Let's begin.

LESSON SECTION I

Understanding how complex words are formed from smaller components can assist you in comprehending and defining medical terms. For example, take the word "Oncology." By breaking it down into its parts, [Onco] and [logy], you can identify [onco] as "tumor" and [logy] as "the study of." Thus, "Oncology" refers to the study of tumors, and an "Oncologist" is a specialist who studies and treats tumors.

Becoming familiar with frequently used medical and cancer-related terms can be very beneficial. It's a good practice to keep a personal list of these terms for quick reference when interacting with people or preparing for daily interactions.

Most medical and science terms 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:

The beginning a word is called a prefix:

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

The middle is known as the root:

This part of the word will usually help you to 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.

Shown on the screen is a list of common prefixes. Remember that a prefix will usually help you determine size, color, shape as well as location, direction and amount.

For example: In simple terms, a lack of red blood cells can be defined as Anemia. (A) describes "a lack of" and "Nemia" describes blood.

- "Between the ribs" could be described as INTER costal. "Inter" describing between and "costal" describing the ribs.
- SYN describes together; DROME is from the Greek work "run". So when you encounter the word syndrome you can determine that it is a group of symptoms occurring or "running" together.

You may access this chart below in the additional resources. It is good to review so that words can become easier for you to recognize and define when working with patients.

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 describes something fast, elevated, overproducing or energetic
- Hypo describes something slow, low, under-producing or low energy
- Tachy means rapid. An example may be tachycardia, which describes a rapid heartbeat that is above normal

- Brady means slow. An example may be bradycardia, which then describes a heartbeat 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 describes within. An example of this would be “intravenous” meaning a person may be receiving their medication directly through their veins.
- The prefix inter describes “between” or “together” or sometimes even “during”.
- Peri describes “about” or “around”. A word you may see is pericardium which describes the sac enclosing or “surrounding” the heart.
- and the prefix Trans describes “ across,” “beyond” or “through”.

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

For example: Dermatitis. There is no prefix with this word. DERMA is the root word and it means skin. The suffix ITIS describes inflammation. So dermatitis means inflammation of the skin.

A cancer-related word you may encounter could be Osteosarcoma. For this word, “osteo” describes a bone or bony tissue and “sarcoma” is defined as any type of “malignant,” or harmful, “tumor”. Sarcomas specifically refer to a malignant tumor of the connective tissue. So this means that the word osteosarcoma describes bone cancer.

Another cancer-related word would be Carcinogenic. "Carcino" describes cancer and remember that cancer means uncontrolled growth of abnormal cells. Genic can be defined as "producing or causing". So when you put all the words and meanings together you find that carcinogenic describes something that causes cancer.

These examples are also listed in the resources section below for your review.

Some important root words to remember are listed here on the screen.

- Osteo refers to bone.
- Myo is commonly used when describing anything related to muscle tissue.
- Neuro pertains to nerves and derm relates to the skin.
- Angio describes blood vessels. For instance, an "angiogram" is a procedure that uses an x-ray image and dye to examine the flow of blood in the blood vessels. A coronary angiogram specifically examines the blood vessels of the heart.
- Veno or Phlebo refer to veins. A phlebotomist is a professional who draws blood from the veins.
- Cardio is associated with the heart.
- Rhino is a root word for the nose. An easy way to remember this is to think of a rhinoceros and its prominent horn.
- Neph is related to the kidney, primarily because the nephron, an essential part of the kidney, helps filter the blood to produce urine.

It's helpful to keep a list of these root words as a quick reference when engaging with patients or preparing for your interactions throughout the day. This approach not only aids in understanding medical terminology but also ensures effective communication.

Let's review some other root words.

- Cranio originally came from the Greek word "Kranion," meaning "skull." An example is cranium.
- Ophthalmo or oculo (AWK-QUE-LO) both describe the eye or eyeball. An example is ophthalmoscope. By breaking down the word into "Ophthalmo" and "Scope," you can identify it as an instrument used to examine the eye.
- Oto describes the ear. An example is otology, the study of the ear and its diseases.
- Thrombo refers to a blood clot. An example is thrombo-embolism, which describes the blocking of a blood vessel by a particle that has broken away from a blood clot at the site of formation.
- Hepato describes the liver. An example is hepatotoxin, meaning a toxin that affects the liver.
- Mammo refers to the breast. An example is a mammogram, an x-ray picture of the breast used to detect possible tumors.
- Colo describes the colon or large intestine. An example is colostomy, which incorporates the suffix -stomy, meaning the creation of an opening. So, colostomy describes the creation of an artificial opening in the colon.
- Gastro refers to the stomach. An example is gastritis, which describes an inflammation of the stomach.
- Ileo(ill-eo) describes the small intestine. An example is ileostomy, which is similar to colostomy, meaning a procedure to create an artificial opening in the small intestine.
- Thoraco describes the thorax, the part of the body from the neck to the abdomen that encloses the heart and lungs. An example is thoracic surgery, which involves entrance into the chest cavity.

- Pneumo or Pleuro describe the lungs or respiratory functions. An example is pneumonitis, an inflammation of the lungs that can affect breathing.

Now that you are more familiar with some common root words, let's move on to the suffix of a word.

The suffix is the third and last component of a word. It can also help describe size, shape or color but more importantly can tell you what the problem actually is.

For example:

- The suffix "AEMIA" describes the condition of blood. So, the word "LEUKEMIA" means cancer of blood cells.
- "ECTOMY" refers to the excision or removal of something. This would mean that "NEPHRECTOMY" is the excision of the kidney.

These examples are also listed in the resources section. Take a moment to review these common suffixes.

There are some other root words and suffixes that may be helpful to review. Echo and Electro are two words we haven't reviewed yet. Echo- describes the use of sound waves which 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. Electro- 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.

Some other common suffixes are listed on the screen.

There are many strategies and resources to help understand and define medical terminology.

The first resource is the National Cancer Institute's Dictionary of Cancer Terms. This resource has more than 7,000 terms related to cancer and medicine.

The second resource is the American Cancer Society's Cancer Glossary. You may want to use this resource to become familiar with the names of some of the more common drugs and treatment options for patients.

The third resource is a website developed by the University of Minnesota called WebAnatomy. This website has a series of self-test questions on roots, prefixes and suffixes.

The fourth is the National Library of Medicine, Medical Terminology Standards.

The fifth resource is the Clinical Research Abbreviations and Acronym Reference sheet.

More information about these resources can be found in the resources section of this lesson.

This concludes Medical Terminology, a lesson in the GW Oncology Patient Navigation: The Fundamentals course. After completing this lesson, you learned to:

- Define basic medical terms using prefixes, root words, and suffixes.
- Describe common words used in oncology.

- Identify resources on basic medical terms.

We have guided you on the use of medical terminology, which is an important skill that will help you define, understand, and use these terms effectively in any healthcare setting and with patients. We encourage you to take some additional time to review the resources below and further familiarize yourself with the terminology.

Thank you for your participation in this lesson.