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Common prefixes and suffixes medical terminology

Most medical terms are derived from Latin or Greek and contain two or more components. Medical terms are better understood when you divide them into their component parts. Here are some tips on understanding medical terminology - TIP #1 - Most medical terms contain two or more of these parts: Root(s) - the word's essential meaning; a term may have two roots Prefix - added to the beginning of a root word to make it more specific Suffix - added to the end of the root word for specificity Linking or combining vowels - placed in between word parts to help with pronunciation For example, Myocarditis - myo/card/itis Myo = muscle (root), card = heart (root) and itis = inflammation (suffix) inflammation of the heart muscle. There are two roots, muscle and heart. Percutaneous - per/cutan/eous Per = through (prefix), cutan = skin (root) and -eous = pertaining to (suffix); meaning something through the skin. Suprascapular - supra/scapular Supra = above (prefix), scapula = shoulder blade (root), and -r = relative to (suffix); relative to the area above the shoulder blade. TIP #2 - The definitions of root words, prefixes and suffixes remain the same when they are combined to produce different terms. Here are three examples: A. The root word for skin is derm. Its combining forms are derma-, dermat-, dermot-, and dermo- . Look at some medical terms utilizing this root. Dermatitis - Dermat (root) and -itis (suffix) inflammation; condition of inflamed skin. Dermatology - Dermat (root) and -ology (suffix) branch of knowledge or science; medical specialty of diagnosis and treatment of skin diseases. Pyoderma - Pyo (root) combining form of the word for pus and derma; skin infection involving pus formation. B. Card is the root for heart. Cardiovascular - means pertaining to the heart and vessels. Cardiocentesis - surgical puncture of the heart. Cardiology - as in Example A above, the definition here is the study of the heart and its functions. C. The root for blood is hem. Hemorrhage - the suffix -rrhage means bursting forth; hemorrhage is the escape of blood from tissue. Hemostasis - adding the suffix -stasis (arrest in a process) gives us the process by which bleeding is stopped. TIP # 3. Similarly, prefixes and suffixes are defined the same when combined with various roots. They are never used alone, but further define root words. Here are some common prefixes in medical terminology: Auto- = self; for example, autoimmune or autogenous Anti- = against; antisepsis or antibodies De- = reverse, remove; dehydrate, defibrillate Dys- = abnormal, difficult; dyspnea, dysuria Contra- = opposed; for example, contraception, contraindication Hyper- = above, excessive; hypertensive, hyperglycemia Suffixes attach to the end of roots and describe certain actions, such as these surgical suffixes - -ectomy = surgical removal; thyroidectomy -plasty = surgical repair; angioplast -stomy = creation of a new opening; colonostomy or these suffixes for procedures or equipment - -graph = recording instrument; electrocardiograph -scope = instrument to examine visually; endoscope -therapy = course of treatment; chemotherapy To understand a medical term, break it down into its component parts - root(s), prefix, suffix and combining vowels. Remember that the basic definition of a word part remains the same when combined with various components. Medical terminology is language used to describe anatomical structures, procedures, conditions, processes, and treatments. While medical terms may appear intimidating at first glance, once the basic word structure is understood and the definitions of some common word elements are memorized, the meaning of thousands of medical terms can be easily parsed. Most medical terms adhere to a fixed structure of a prefix, root, and suffix. A set of common word components are assembled like building blocks to create a vast vocabulary. Greeks are considered the founders of rational medicine and medical terms are primarily derived from Greek and Latin.1 Over centuries, the language of medicine has evolved into multiple national medical languages. Today, medical English is the dominant language for international communication. Most influential medical journals are written in English and it has become the language of choice at international conferences.2 Basic Structure Medical terms are comprised of these standard word parts: Prefix: When included, the prefix appears at the beginning of a medical term and usually indicates a location, direction, type, quality, or quantity. Root: The root gives the term its essential meaning. Nearly all medical terms contain at least one root. When a prefix is absent, the term begins with a root. Suffix: The suffix appears at the end of the term and may indicate a specialty, test, procedure, function, disorder, or status. Otherwise, it may simply turn the word into a noun or adjective. Combining Vowel: A combining vowel (usually the letter "o") may be added between word parts to aid in pronunciation. Breaking a word down to its component parts should help readers determine the meaning of an unfamiliar term. For example, hypothermia has the prefix hypo- (below normal), root therm (heat), and suffix -ia (condition). Word Roots A root is the foundational element of any medical term. Roots often indicate a body part or system. Common word roots: Head brain enceph ear ot, aur eardrum tympan, myring eye ophthalm, ocul face faci nose rhin skull crani tongue lingu tooth odont, dent Heart and Circulatory aorta aort arteries arteri blood hem, sangu blood vessels angi heart cardi veins ven, phleb Bones and Muscles arm brachi back dorsa bones oste foot pod, ped muscles myo rib cost shoulder scapul wrist carp Digestive System appendix append colon col esophagus esophag intestine (usually small) inter kidney ren, neph liver hepat stomach gastr Other Common Roots cancer carci drug chem electric electr heat therm knowledge gnos life bi pressure bar returned sound echo Compound Words A medical word may include multiple roots. This frequently occurs when referencing more than one body part or system. For example, cardio-pulmo-nary means pertaining to the heart and lungs; gastro-entero-logy means the study of the stomach and intestines. Combining Forms When a root is followed by another word part that begins with a consonant, a combining vowel (usually the letter 'o') is added after the root (e.g. neur-o-logy) to aid pronunciation. The plural form of each word is based on the last two letters of the singular suffix. The root and vowel together (e.g. neur-o) are referred to as the combining form. For simplicity, combining vowel options are omitted from the word part tables. Prefixes A prefix modifies the meaning of the word root. It may indicate a location, type, quality, body category, or quantity. The prefix is optional and does not appear in all medical terms. Common prefixes: Size large macro-, mega(lo)- small micro- Number half semi- half (one side) hemi- one mono-, uni- two | three | four bi- | tri- | qua(dr/r/t)- equal equi- many poly- Level above normal hyper- below normal hypo- normal/good eu- Time or Speed after post- again re- back/backward retro- before pro-, pre-, ante- fast tachy- new neo- time, long time chron- slow brady- Location or Relationship away from ab- above supra- around peri- across trans- between inter- out of, outside ex-, ec(t)- self auto- through, completely dia- together con- toward ad- within, inside end(o)- Function or Quality against anti-, contra- bad mal- cause eti- self auto- without a-, de- not working correctly dys- Suffixes Medical terms always end with a suffix.3 The suffix usually indicates a specialty, test, procedure, function, condition/disorder, or status. For example, "itis" means inflammation and "ectomy" means removal. Alternatively, the suffix may simply turn the word into a noun or adjective. The endings -a, -e, -um, and -us are commonly used to turn a word into a singular noun (e.g. crani-um). Though the suffix appears at the end of the term, it often comes first in the definition. For example, appendicitis means: inflammation (-itis) of the appendix.4 Accordingly, it is sometimes helpful to read unfamiliar medical terms from right to left. Occasionally, a medical term may be comprised of a prefix and suffix. For example, apnea includes the prefix a- (without) and suffix -pnea (breathing). Here are some common suffixes (letters in parenthesis are not always present): Basic Noun and Adjective Suffixes (noun form) -a, -e, -um, -is causing -genic condition -ia, -ism, -sis, -y specialty -iatry, -iatrics, -ics specialist -ian, -ist structure -um, -us study of -logy pertaining to -ac, -ar(y), -(e/i)al, -ic(al), -ior, -ory,, -ous, -tic Tests and Procedures removal of -ectomy image/record -gram (making a) picture/record -graph(y) cut in -otomy viewing -scopy opening -stomy Pathology or Function blood (condition of) -emia breathing -pnea inflammation -itis condition or disease -osis deficiency -penia disease -pathy excessive flow -rrhag(e/ia) mass, tumor -oma Plural Forms The addition of an "s" or "es" to the end of a word is often the straightforward method to make a word plural in English and many modern Romance languages. In medical terminology, however, things are a little more complicated. The plural form of each word is based on the last two letters of the singular suffix. There are several exceptions. For example, virus is a Latin term without a plural form. "Viruses" is the accepted plural form. Elsewhere, the suffix "s" or "es" has occasionally prevailed in common usage. For example, the plural form of "hematoma" is "hematomas" rather than "hematomata." Common singluar endings and corresponding plural endings: Plural Forms5 Singular Plural a ae en ina ex, ix, yx ices is es ma mata (a/i/y)nx nges um a us i(i) Additional resources: The Understanding Medical Words Tutorial by MedlinePlus provides a concise introduction to medical terminology and several quizzes. For an expanded list of medical word components, visit Word Parts and What They Mean at MedlinePlus. TheFreeDictionary's Medical Dictionary by Farlex offers a comprehensive dictionary of medical terms (including word parts) from American Heritage, Collins Encyclopedia, and other major publishers. References Banay, G L. "An Introduction to Medical Terminology I. Greek and Latin Derivations." 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