

## Second Lecture

### 2. Suffixes

#### *Summary of previous lecture*

*In the previous lecture we talked about the basic elements of the medical word. A medical word consists of some or all of the following elements: word root, combining form, suffix, and prefix. The meaning of a word is determined by how these elements are combined, and whether all or some of them are present in a medical term.*

#### 2.1. Introduction

In “Basic elements of the medical word”, we talked about the main elements that form medical terms (word root, combining forms, suffixes and prefixes). In addition, some examples of these elements are also mentioned. In this lecture, more detailed information about suffixes is mentioned. Suffix linking and suffix types are explained in detail and many examples related to the surgical, diagnostic and pathological suffixes are also provided.

#### 2.2. Suffix linking<sup>13</sup>

In medical words, a suffix is added to the end of a word root or combining form to change its meaning. For example, the combining form gastr/o means stomach. The suffix -megaly means enlargement, and -itis means inflammation. Gastr/o/megaly is an enlargement of the stomach; gastr/itis is an inflammation of the stomach. Whenever you change the suffix, you change the meaning of the word. Suffixes are also used to denote singular and plural forms of a word as well as a part of speech. The following tables provide additional examples to reinforce the rules you learned in the previous lecture. (See [Table 2-1](#) and [Table 2-2](#)).

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<sup>13</sup> Medical Terminology Systems - A Body Systems Approach: Suffixes – Suffix linking p. 14

Table 2-1: Examples of word roots used to link a suffix that begins with a vowel. The table also lists combining forms (root + o) used to link a suffix that begins with a consonant

Element + Suffix	=	Medical Word	Pronunciation <sup>14</sup>	Meaning (Arabic <sup>15</sup> )
<b>Word Roots</b>				
gastr + -itis (stomach) (inflammation)	=	gastritis	gæ'straɪtɪs	inflammation of the stomach (التهاب المعدة)
hemat + -emesis (blood) (vomiting)	=	hematemesis	'hi:mətemesis	vomiting of blood (قيء الدم)
arthr + -itis (joint) (inflammation)	=	arthritis	ɑ:'θraɪtɪs	inflammation of a joint (التهاب المفاصل)
<b>Combining Forms</b>				
gastr/o + -dynia (stomach) (pain)	=	gastrodynia	ˌgæstrə'dɪniə	pain in the stomach (وجع المعدة)
hemat/o + -logy (blood) (study of)	=	haematology	'hi:mə'tɒlədʒi	study of blood (الدمويات)
arthr/o + -centesis (joint) (surgical puncture)	=	arthrocentesis	'ɑ:θrəʊ'sen'tɪsɪs	surgical puncture of a joint (بزل المفصل)

Words that contain more than one word root are known as compound words. Multiple word roots within a compound word are always changed to combining forms so that the roots are joined together with a combining vowel, regardless of whether the second word root begins with a vowel or a consonant. Notice that a combining vowel is used in [Table 2-2](#) between gastr and enter, even though the second word root, enter, begins with a vowel.

Table 2-2: Examples of medical terms with more than one word root, and also suffixes linked together with word roots when the suffix begins with a vowel

Combining Form + Word Root + Suffix	=	Medical Word	Pronunciation	Meaning (Arabic)
gastr/o + enter + -itis (stomach) (intestine) (inflammation)	=	gastroenteritis	ˌgæstrəʊ-entə'raɪtɪs	inflammation of stomach and intestine (التهاب معدي معوي)
oste/o + arthr + -itis (bone) (joint) (inflammation)	=	osteoarthritis	ˌɒstiəʊɑ:'θraɪtɪs	inflammation of bone and joint (فُصَال عظمي)
encephal/o + mening + -itis (brain) (meninges <sup>16</sup> ) (inflammation)	=	encephalomeningitis	enˌsefə'lə-ˌmenɪn'dʒaɪtɪs	inflammation of brain and meninges (التهاب الدماغ والسحايا)

<sup>14</sup> Oxford Advanced Learner's Dictionary, 8<sup>th</sup> ed. or: <http://dictionary.reference.com/>

<sup>15</sup> <http://www.emro.who.int/Unified-Medical-Dictionary.html>

<sup>16</sup> Meninges: /mə'nɪndʒi:z/ the three membranes (= thin layers of material) that surround the brain and spinal cord

Keep in mind the rule for linking multiple roots is slightly different from the rules for linking word roots to suffixes. Recall from lecture 1 that suffixes that begin with a vowel are linked with a word root; suffixes that begin with a consonant are linked with a combining form.

### 2.2.1. Surgical, diagnostic, pathological, and related suffixes

Surgical suffixes describe a type of invasive<sup>17</sup> procedure performed on a body part. (See [Table 2-3](#)). Diagnostic suffixes denote a procedure or test performed to identify the cause and nature of an illness. Pathological suffixes describe an abnormal condition or disease. (See [Table 3-1](#) (next lecture)).

Table 2-3: Commonly used surgical suffixes along with their meanings and word analyses

Suffix (Meaning)	Word (Arabic)	Pronunciation	Analysis
-centesis (surgical puncture)	arthr/o/centesis (بَزْلُ المَفْصَلِ)	'ɑ:θrəʊ'sen'tɪsɪs	puncture of a joint space with a needle and the withdrawal of fluid arthr/o: joint Arthrocentesis may also be performed to obtain samples of synovial <sup>18</sup> fluid for diagnostic purposes, instil <sup>19</sup> medications, and remove fluid from joints to relieve pain.
-clasis (to break; surgical fracture)	oste/o/clasis (نَقْضُ العَظْمِ)	ˌɒstɪ'ɒkləsɪs	surgical fracture of a bone to correct a deformity <sup>20</sup> oste/o: bone
-desis (binding, fixation (of a bone or joint))	arthr/o/desis (إِثْثَاقُ المَفْصَلِ)	ɑ:'θrɒdəsɪs	binding together of a joint arthr/o: joint Arthrodesis is a surgical procedure to fuse bones across the joint space in a degenerated <sup>21</sup> , unstable joint.
-ectomy (excision, removal)	append/ectomy (اسْتِئْصَالُ الرُّأْيَةِ)	ˌæpen'dektəmi	excision of the appendix <sup>22</sup> append: appendix

<sup>17</sup> Invasive: /ɪn'veɪsɪv/ (of medical treatment) involving cutting into the body

<sup>18</sup> Synovial: /saɪ'nəʊviəl/ (of a joint) having a membrane containing liquid between the bones, which allows the joint to move freely

<sup>19</sup> Instil: /ɪn'stɪl/ to put in drop by drop

<sup>20</sup> Deformity: /dɪ'fɔ:məti/ a condition in which a part of the body is not the normal shape because of injury, illness or because it has grown wrongly

<sup>21</sup> Degenerate: /dɪ'dʒenəreɪt/ to become worse, for example by becoming lower in quality or weaker

<sup>22</sup> Appendix: /ə'pendɪks/ (pl. appendices /ə'pendɪsɪz/) a small bag of tissue that is attached to the large intestine

-lysis (separation; destruction; loosening)	thromb/o/lysis (انحلال الخثرة)	ˌθrɒmˈbɒlɪsɪs	destruction of a blood clot thromb/o: blood clot Drug therapy is usually used to dissolve a blood clot.
-pexy (fixation (of an organ))	mast/o/pexy (تثبيت الثدي)	ˈmæstəˌpeksi	fixation of the breast(s) mast/o: breast Mastopexy, an elective surgery, is performed to affix sagging <sup>23</sup> breasts in a more elevated position, commonly improving their shape.
-plasty (surgical repair)	rhin/o/plasty (رأب الأنف)	ˈraɪnəʊplæsti	surgical repair of the nose rhin/o: nose Plastic surgery to change the size or shape of the nose.
-rrhaphy (suture <sup>24</sup> )	my/o/rrhaphy (رَفُو العَصَل)	maɪəʊrəfi	suture of a muscle my/o: muscle
-stomy (forming an opening (mouth))	trache/o/stomy (فَعْر الرُّغَامِي)	ˌtrækiˈɒstəmi	forming an opening into the trachea <sup>25</sup> trache/o: trachea (windpipe) A tracheostomy is an artificial opening performed to bypass an obstructed upper airway.
-tome (instrument to cut)	oste/o/tome (مِبْضَع العَظْم)	ˈɒstɪəˌtəʊm	instrument to cut bone oste/o: bone An osteotome is a surgical chisel used to cut through bone.
-tomy (incision)	trache/o/tomy (بِضَع الرُّغَامِي)	ˌtrækiˈɒtəmi	incision (through the neck) into the trachea trache/o: trachea (windpipe) Tracheotomy is performed to gain access to an airway below a blockage.

<sup>23</sup> Sag: /sæg/ to hang or bend down in the middle, especially because of weight or pressure

<sup>24</sup> Suture: /ˈsu:tʃə(r)/ a stitch or stitches made when sewing up a wound, especially after an operation

<sup>25</sup> Trachea: /trəˈki:ə/ (pl. tracheas or tracheae /trəˈki:i:/) the tube in the throat that carries air to the lungs

-tripsy (crushing)	lith/o/tripsy (تفتيت الحصى)	'liθəʊ, trɪpsi	crushing a stone lith/o: stone, calculus <sup>26</sup> Lithotripsy is a surgical procedure for eliminating a stone in the kidney, ureter <sup>27</sup> , bladder <sup>28</sup> , or gallbladder <sup>29</sup> .
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<sup>26</sup> Calculus: /'kælkjələs/ (pl. calculi /'kælkjələɪ/) an abnormal concretion in the body, usually formed of mineral salts and most commonly found in the gallbladder, kidney, or urinary bladder. Also called stone

<sup>27</sup> Ureter: /jʊ'ri:tə/ the tube that conveys urine from the kidney to the urinary bladder

<sup>28</sup> Bladder: /'blædə(r)/ an organ that is shaped like a bag in which liquid waste (= urine) collects before it is passed out of the body

<sup>29</sup> Gallbladder: /gɔ:l'blædə(r)/ an organ attached to the liver in which bile is stored (Bile /baɪl/ the greenish brown liquid with a bitter unpleasant taste that is produced by the liver)