

Medical terminology

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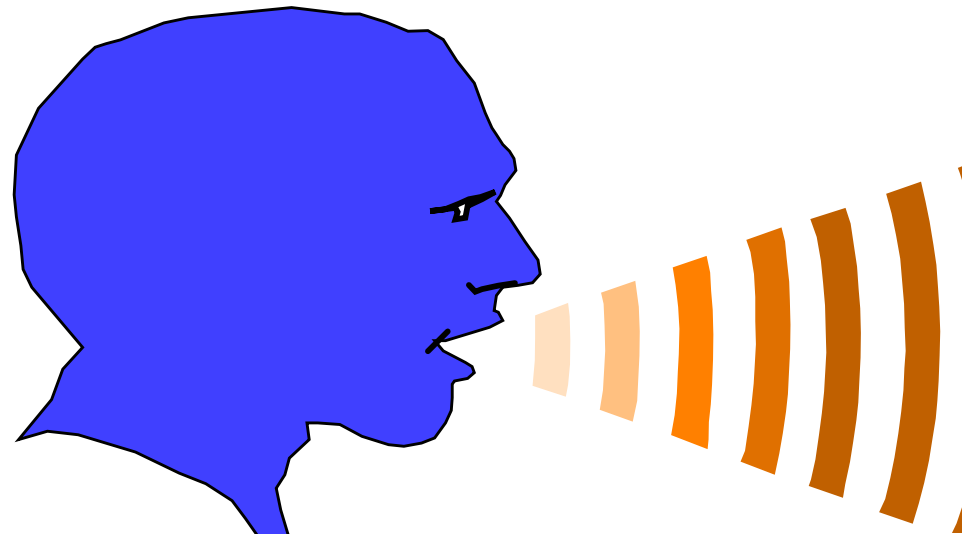
Medical Word Elements

- The language of medicine is a specialized vocabulary used by health care practitioners.
- Many current medical word elements originated as early as the 1st century B.C., when Hippocrates practiced medicine.

- With advancements in medicine, new terms have evolved to reflect these innovations.
- For example, radiographic terms, such as magnetic resonance Imaging (MRI) and ultrasound (US), are now used to describe current diagnostic procedures.

Here are rules regarding certain letter combinations and special sounds attributed to letters based on their placement in a medical word:

- The soft sound of **s** and **j** are given to **c** and **g**, respectively, before **e**, **i**, and **y** in words of Greek or Latin origin.



- Examples are cerebrum, circumcision, *cycle*, *gel*, *gingivitis*, *giant*, and *gyrate*.

Before other letters, c and g have a hard sound.
Examples are *cardiac*, *cast*, *gastric*, and *gonad*.

- The letters *ch* are sometimes pronounced like *k*. Examples are *cholesterol*, *cholera*, and *cholemia*.
- When *pn* appears at the beginning of a word, *p* is silent and only *n* is pronounced. Examples are *pneumonia* and *pneumotoxin*.

- When *pn* appears in the middle of a word, *p* and *n* are pronounced.

Examples are *orthopnea* and *hyperpnea*.

- When *ps* appears at the beginning of a word, *p* is silent and only *s* is pronounced.

Examples are *psychology* and *psychosis*.

- When forming the final letter(s) of a word, *e* and *es* are commonly pronounced as separate syllables.

Examples are *syncop*e**, *systol*e**, and *nares*.

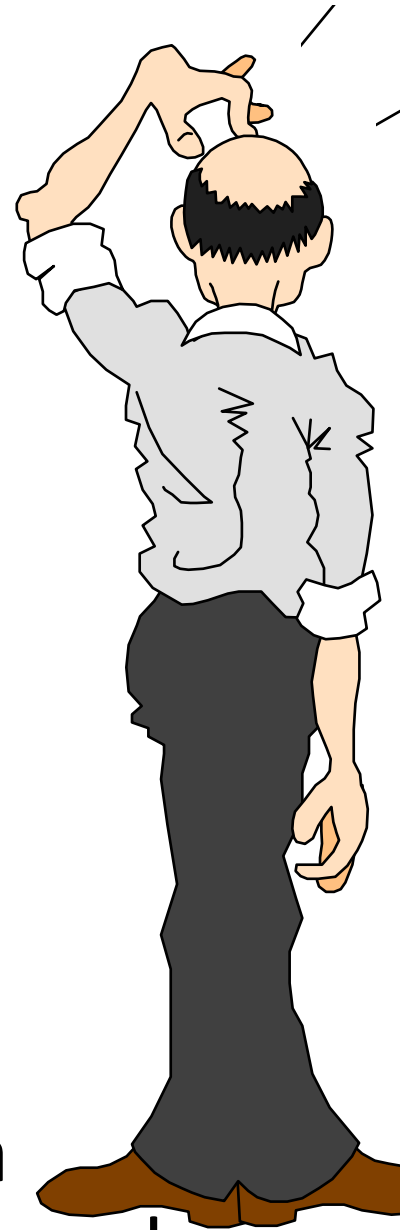
- When *i* appears at the end of a word (to form a plural), it is pronounced *eye*.

Examples are *bronchi*, *fungi*, and *nuclei*.

- All other vowels and consonants have normal English sounds.

Consists of Medical word

- A medical word consists of some or all of
- the following elements:
 - word root,
 - combining form,
 - suffix,
 - and prefix.
- How you combine these elements, and whether all or some of them are present in a medical term, determines the meaning of a word.



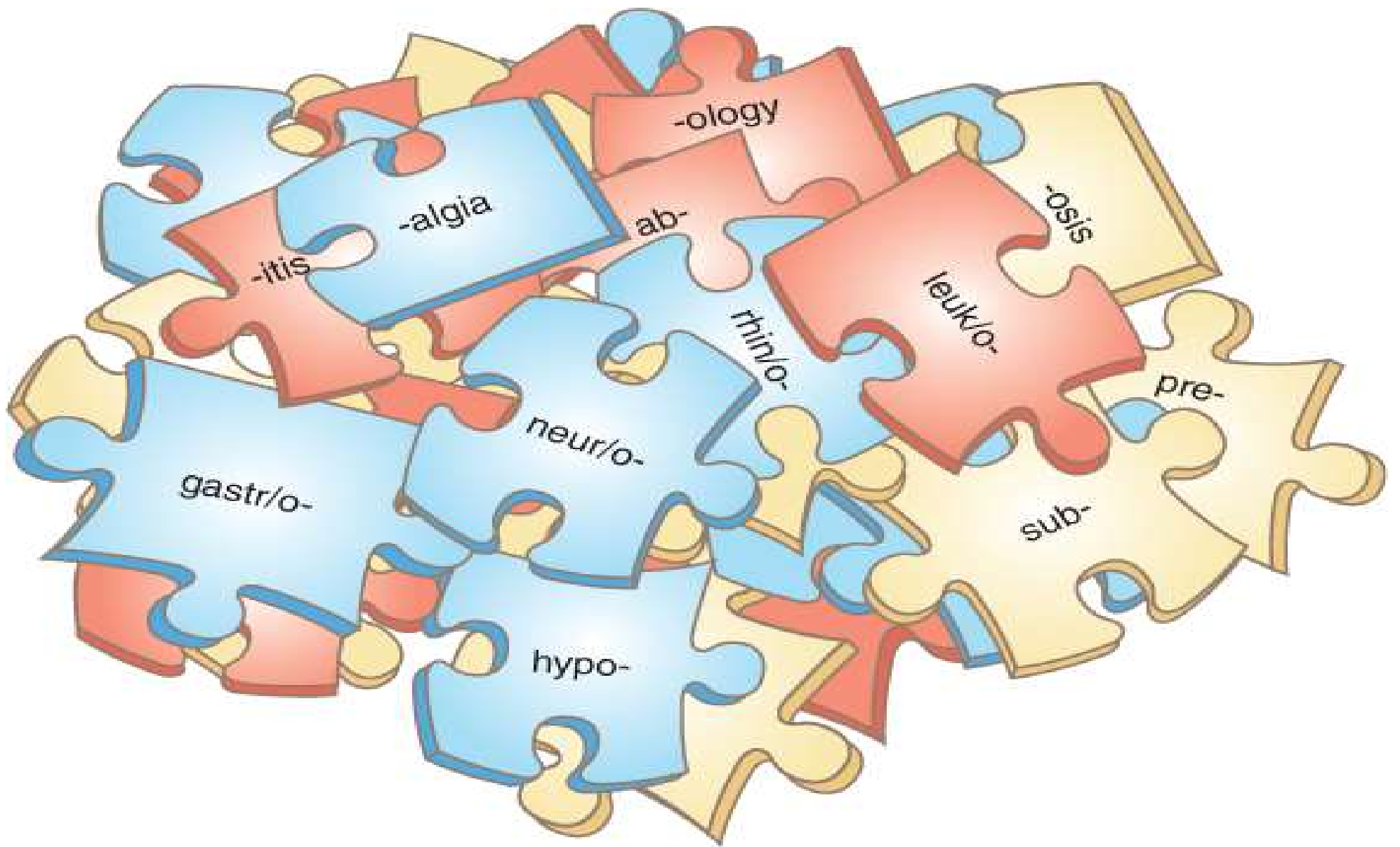
1. Word Roots

- A word root is the foundation of a medical term and contains its primary meaning.
- All medical terms have at least one word root.
- Most word roots are derived from Greek or Latin language.

- Thus, two different roots may have the same meaning.
- For example, the Greek word **dermatos** and the Latin word **cutane** both refer to the **skin**.

- As a general rule, **Greek** roots are used to build words that describe : **a disease, condition, treatment, or diagnosis.**
- Latin roots are used to build words that describe **anatomical structures.**

- Consequently, the Greek root **dermat** is used primarily in terms that describe **a disease, condition, treatment, or diagnosis** of the skin; the Latin root **cutane** is used primarily to describe an **anatomical** structure.



-ology

-algia

-itis

ab-

-osis

leuko-

-rhino-

neur/o-

pre-

gastr/o-

sub-

hypo-

| English Term | Greek or Latin Term* | Word Root | Word Analysis |
|--------------|--------------------------------|----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Skin | dermatos (Gr) cutis (L) | Dermat Cutane | <p>dermat/itis (d'ēr-m'ā-T-I-t' ɪs): inflammation of the skin A term that describes a skin disease</p> <p>cutane /ous (s'ub-k'ū-T= A-n'e-ŷus):pertaining to the skin A term that describes an anatomical structure</p> |
| kidney | nephros (Gr) renes (L) | Nephr ren | <p>nephr/oma (n'e-FR O-m'ā): tumor of the kidney A term that describes a kidney Disease</p> <p>ren/al (R-E-n' al): pertains to the kidney A term that describes an anatomical structure.</p> |
| mouth | stomatos (Gr) oris (L) | Stomat or | <p>stomat/itis (st'ō-m'ā-T-I-t' ɪs): inflammation of the mouth. A term that describes any inflammatory condition of the mouth</p> <p>or /al (OR-ŷal): pertaining to the mouth A term that describes an anatomical structure</p> |

2. Combining Forms

- A combining form is created when a word root is combined with a **vowel**.
- The vowel, known as a combining vowel, is usually an **o** but sometimes it is an **i**.

- The combining **vowel** has no meaning of its own, but enables two word elements to be connected.

- Like the **word root**, the **combining form** is the basic foundation to which other word elements are added to build a complete medical word.
- In this text, a combining form will be listed as word root/**vowel** (such as gastr/**o**).

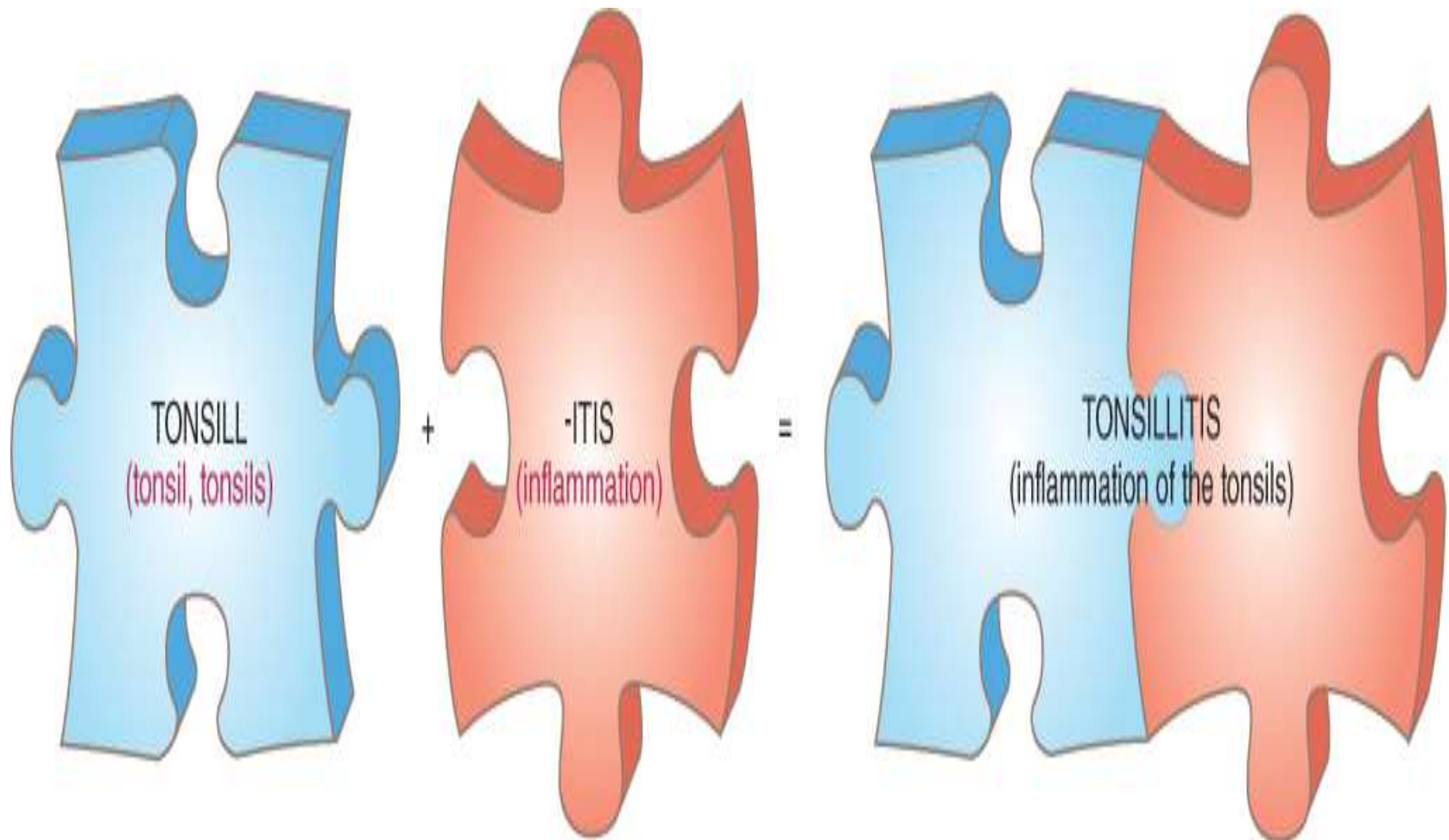
3. Suffixes

- A suffix is a word element **placed at the end of a word** that changes the meaning of the word.
- In the terms **tonsill/itis**,
- and **tonsill/ectomy**, the suffixes are –it is (inflammation) and – ectomy (excision, removal).

- Changing the suffix changes the meaning of the word.
- In medical terminology, a suffix usually describes **a pathology** (disease or abnormality), **symptom, surgical or diagnostic procedure, or part of speech**.
- Many suffixes are derived from **Greek or Latin** words.

Suffixes

- Example:



Sub/gastr/algia

sub- + *gastr/* + *-algia*
(under) (stomach) (pain)
prefix root suffix

2

3

1



- For example, in the table below, the word roots **gastr** and **nephr** are difficult to pronounce, whereas their combining forms **gastr/o** and **nephr/o** are easier to pronounce.

| Word Root | Vowel | Combining Form | Meaning |
|------------------|--------------|-----------------------|-----------------------------------|
| erythr/ | o | erythr/o | red |
| gastr/ | o | gastr/o | stomach |
| hepat/ | o | hepat/o | liver |
| immun/ | o | immun/o | immune, immunity, safe |
| nephr/ | o | nephr/o | kidney |
| oste/ | o | oste/o | Bone |

Examples of Suffixes

Begin learning the pronunciations as you review the information below

| Form | Suffix | Medical words | Meaning |
|--------------------------|--------------------------|---------------------|-----------------------------|
| gastr/o (stomach) | -itis (inflammation) | gastritis | inflammation of the stomach |
| | -megaly (enlargement) | gastromegaly | enlargement of the stomach |
| | -oma (tumor) | gastrooma | tumor of the stomach |

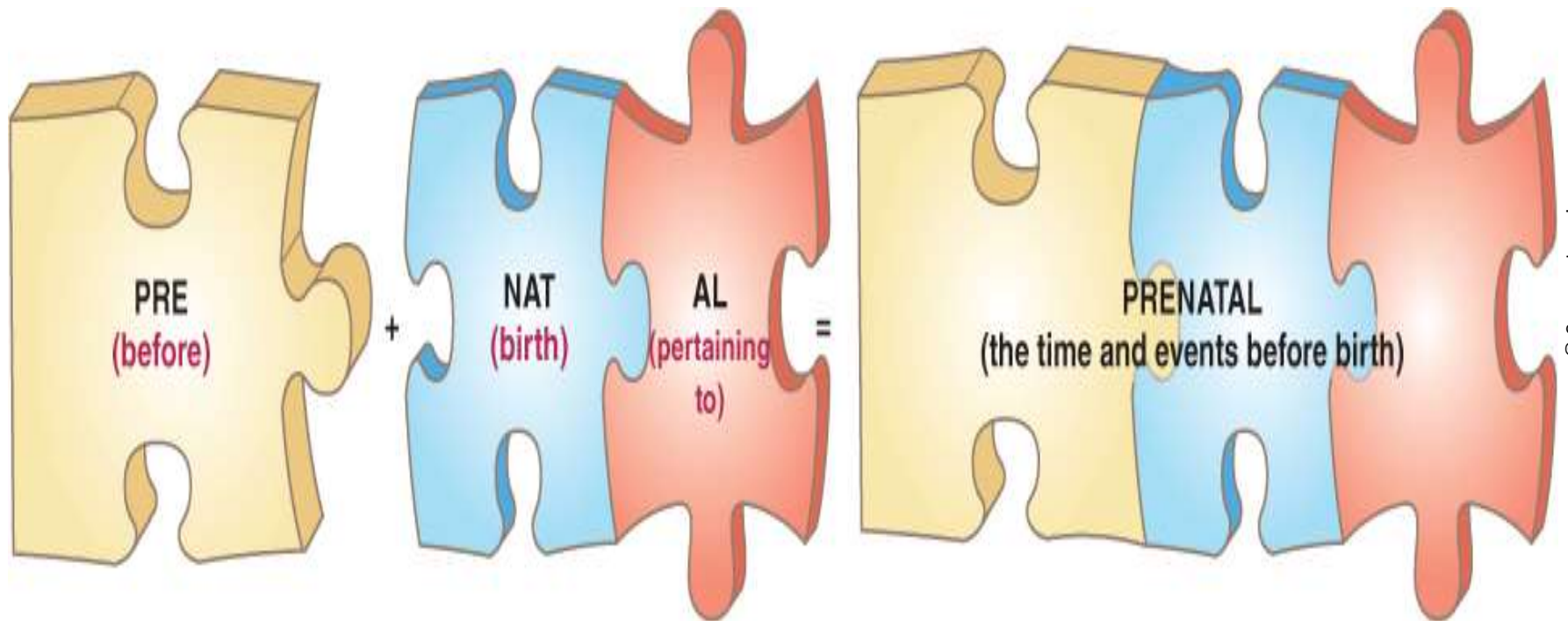
| | | | |
|---------------------------------|--------------------------------------|---------------------|--------------------------------------|
| hepat /o (liver) | -itis (inflammation) | hepatitis | inflammation of the liver |
| | -megaly (enlargement) | hepatomegaly | enlargement of the liver |
| | -oma (tumor) | hepatoma | tumor of the liver |

4. Prefixes

- A Prefix is a word element attached to the beginning of a word or word root.
- However, not all medical terms have a prefix.
- Adding or changing a prefix changes the meaning of the word.

Prefixes

- Example:



- The prefix usually indicates a number, time, position, direction, or negation.
- Many of the same prefixes used in medical terminology are also used in the English language.

Basic Guidelines

- Defining and building medical words are crucial skills in mastering medical terminology.
- Following the basic guidelines for each will help you develop these skills.
- **Defining Medical Words**
- Here are three basic steps for defining medical words using **gastroenteritis** as an example.

- 1. Define the suffix, or last part of the word. In this case, the suffix -itis, which means inflammation.
- 2. Define the first part of the word (which may be a word root, combining form, or prefix).
- In this case, the combining form gastr/o means stomach.

3. Define the middle parts of the word.

In this case, the word root enter means intestine.

- When you analyze gastroenteritis following the three previous rules, the meaning is:
- 1 inflammation (of) 2. stomach (and) 3. intestine.

Example of prefix

Begin learning the pronunciations as you review the information below.

| Prefix | Word Root | Suffix | Medical Word | Meaning |
|-------------------------------------|---------------------|--------------------|----------------------------------------------------------------------------------------------|-----------------------------|
| an- (without, not) | esthes (feeling) | -ia (condition) | Anesthesia an- [~] es-TH E-z ⁻ e- [~] a | condition of not feeling |
| hyper- (excessive, above normal) | Therm (heat) | -ia (condition) | Hyperthermia h ⁻ i-p [~] er-TH ER-m ⁻ e- [~] a | condition of excessive heat |

| Prefix | Word Root | Suffix | Medical Word | Meaning |
|---------------------------|--------------------|---------------------------|--------------------------------------------|---------------------------------------|
| intra- (in, within) | Muscul (muscle) | -ar (pertaining to) | Intramuscul ar in-tră-MŪS- kŭ-lăr | pertaining to within the muscle |

| Prefix | Word Root | Suffix | Medical Word | Meaning |
|---------------------------------------|------------------|---------------------------|--------------------------------|------------------------------------------|
| para- (near, beside; beyond) | nas (nose) | -al (pertaining to) | Paranasal pǎr-ǎ-N A- sǎl | pertaining to (area) near the nose |
| poly- many, much | Ur (urine) | -ia (condition) | polyuria pǎl-e-U-r e- ǎ | condition of much urine |

Defining Gastroenteritis

- This table illustrates three steps of defining a medical word using the example gastroenteritis.

stomach + intestine + inflammation

| Combining Form | Middle | Suffix |
|----------------|--------|--------|
| gastr/o | enter/ | -itis |
| Step 2 | Step 3 | Step 1 |

Learning Activity

- Identifying Word Roots and Combining Forms

1. nephritis = inflammation of the kidneys

2. arthrodesis = fixation of a joint

3. dermatitis = inflammation of the skin

4. dentist = specialist in teeth

5. gastrectomy = excision of the stomach
6. chondritis = inflammation of cartilage
7. hepatoma = tumor of the liver
8. muscular = pertaining to muscles
9. gastria = condition of the stomach
10. osteoma = tumor of the bone

Underline the combining forms below.

11. nephr ----- kidney

12. hepat/o -----liver

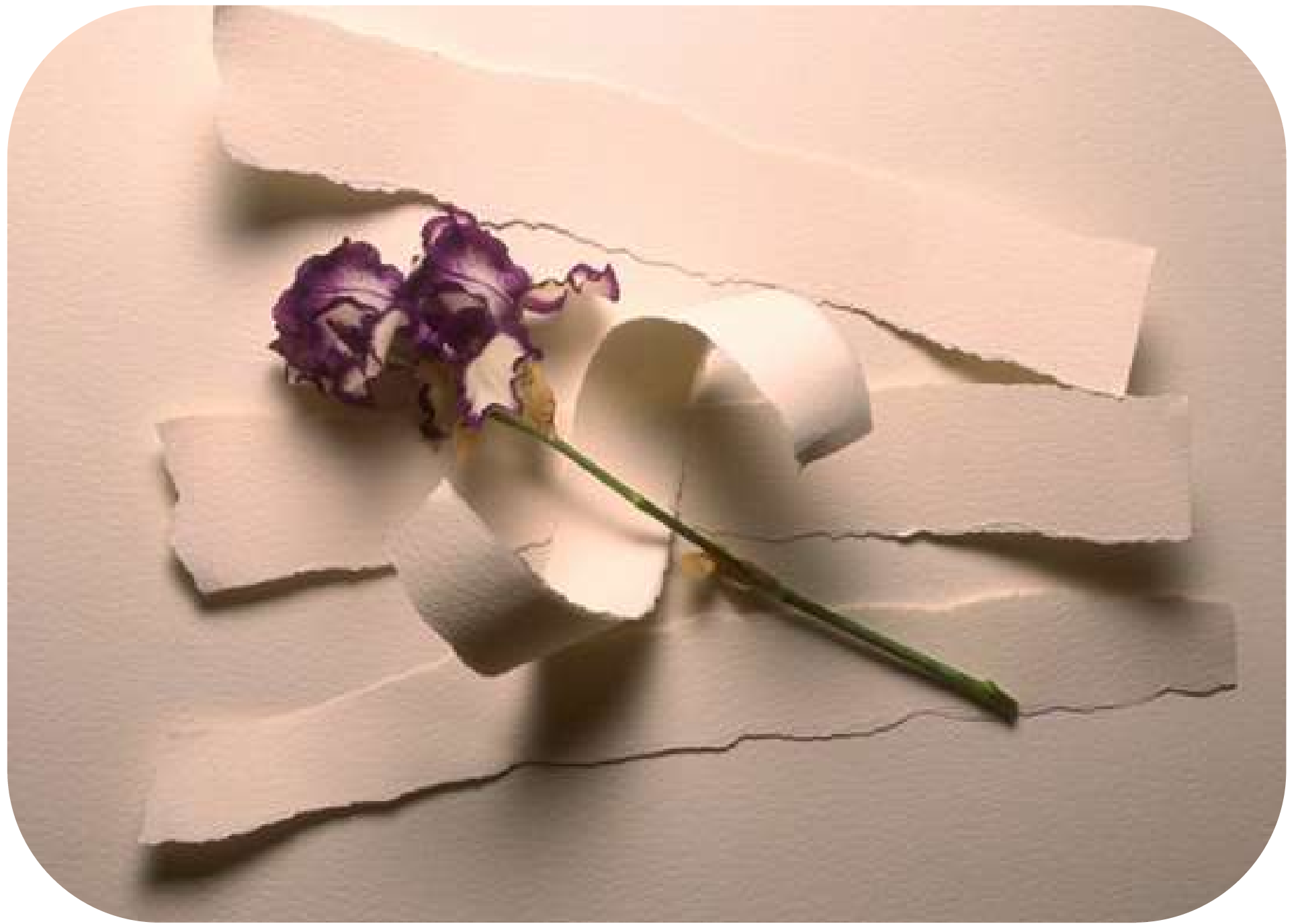
13. arthr -----joint

14. oste/o/arthr -----bone, joint

Identifying Suffixes and Prefixes

1. thoracotomy -tomy
2. gastroscope -----
3. tonsillitis -----
4. gastroma -----
5. tonsillectomy -----

Thank you



Quiz B

- letters based on their placement in a medical word:
 1. For **ae** and **oe**, only the second vowel is pronounced. Examples are -----, **and** -----.
 2. The soft sound of **s** are given to **c**, respectively, before **e,i**, and **y** in words of Greek or Latin origin. Examples are -----.

3. Before other letters, **c** and **g** have a hard sound. Examples are -----, -----.
4. The letters **ch** are sometimes pronounced like k. Examples are -----**and**-----
5. When **pn** appears at the beginning of a word, **p** is silent and only **n** is pronounced. Examples are ----- **and** -----.
6. When **pn** appears in the middle of a word, **p** and **n** are pronounced.
 - Examples are ----- **and** -----
-----.

Quiz A

- A medical word consists of some or all of the following elements: prefix , suffix , root, and combining form. All medical terms have at least one word root. Most word roots are derived from Greek or Latin language. Support with an example
- Latin
- Greek