

# Introduction to Veterinary Medicine

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# What is it?

- Veterinary Medicine is the medical treatment of animals.

## How is it different from a Doctor?

- Must know many different species.
- Must know many areas such as internal medicine, pediatrics, obstetrics, surgery, etc.
- Can't talk to the patient

## What animals does a Vet treat?

- Pets, livestock, lab animals, zoo animals, wildlife

# What is the History of Vet Med?

- Veterinary Medicine developed alongside human medical advancements.
- Recorded references as early as 9000 BC in the Middle Eastern sheperding cultures.
- Hieroglyphs in Egypt refer to placing stones in a female camel's uterus to prevent pregnancy.
- In American West a veterinarian would find themselves treating animals and people alike because of their skills in many areas.

# What are the Career options in Vet Med?

- Veterinarian
  - Small Animal
  - Large Animal
  - Exotic
  - Zoological
- Veterinary Technologist
- Veterinary Assistant
- Clinical Pathologist
- Academia

# What education is needed for Veterinary Medicine?

- A DVM needs 8 years of post secondary education.
  - There are 28 schools of veterinary medicine in the country.
- A Vet Tech needs 4 years of post secondary education.
- A Vet assistant can have 2-4 years of post secondary education.
- A pathologist will need 4-6 years of post secondary education

# Duties in Veterinary Medicine

- Breed selection
- Nutrition
- Grooming
- Training
- General husbandry
- Vaccination
- Spay/neuter
- Treat illness/injury
- Health screening
- Treat parasites
- Provide referrals
- Humane euthanasia
- Allay concerns of owner

# How does someone in Vet Med contribute to society?

- By Promoting animal health and welfare.
- By Combating zoonotic diseases.
- By inspecting livestock and food-processing procedures to ensure safety of food supply.
- By preserving and conserving wildlife.
- By conducting scientific research that impacts the food we eat, the medicine we take, etc.

# This Course

- We will cover Veterinary Medical Terminology in English.
- Introduction to Medical Terminology.
- Positional Terms
- Skeletal & Muscular Systems
- Common Anatomical Terms
- Common Species Names
- Digestive System
- Urinary System
- Cardiovascular System
- Respiratory System
- Integumentary System



# Course Assessment

- Quizzes and/or Assignments .....20%
  - Assignments if handed in late lose 20% per day
- Mid Term Exam .....30%
- Final Exam .....50%

# Veterinary Medical Terminology

# Introduction

- Medical terms are used every day in medical offices, newspapers, television, and conversational settings.
- Most of us are familiar with many medical terms; however, other medical terms seem complicated and foreign.
- Learning and understanding how medical terminology developed can help us understand these terms.

# Introduction

- Current medical vocabulary is based on:
  - Greek and Latin origin
  - Eponyms (words formed from a person's name)
  - Modern language terms
- The majority of medical terms are derived from word parts based on Greek and Latin words.
- Becoming familiar with these Greek and Latin terms and identifying word parts will enable one to learn common medical terms and to recognize unfamiliar medical terms by word analysis.

# Introduction

- Medical terminology may seem daunting at first because of the length of medical words and seemingly complex spelling rules, but once you learn the basic rules of breaking a word down into its constituents the words become easier to read and understand.

# Anatomy of a Medical Term

- Many medical terms are composed of word part combinations.
- Recognizing these word parts and their meanings simplifies learning medical terminology.

# Anatomy of a Medical Term

- These word parts are:
  - Prefix
    - Word part found at the beginning of a word.
    - Usually indicates number, location, time, or status.
  - Root
    - Word part that gives the essential meaning of the word.
  - Combining word
    - Single vowel, usually an “o”, that is added at the end of a root to make the word easier to pronounce.
  - Combining form
    - Combination of the root and combining vowel.
  - Suffix
    - Word part found at the end of a word.
    - Usually indicates procedure, condition, disease, or disorder.

# Anatomy of a Medical Term

- Understanding the meaning of the word parts allows one to dissect medical terms in a logical way.
- By breaking down unfamiliar terms into recognizable word parts, one's medical vocabulary can be greatly increased.



# Prefixes

- Prefixes are added to the beginning of a word or root to modify its meaning.
- For example, the term operative can be modified using various prefixes.
  - The prefix **pre-** means before. **Preoperative** means before or preceding an operation.
  - The prefix **peri-** means around. **Perioperative** means pertaining to the period around an operation or the period before, during, and after an operation.
  - The prefix **post-** means after. **Postoperative** means after an operation.

# Prefixes

- Many prefixes have another prefix whose meaning is opposite of its own.
- Initially, when learning prefixes it is helpful to learn them in these pairs or in similar groups.

# Contrasting Prefixes

- Contrasting Prefixes see Handout 1.

# Directional Prefixes and Their Meanings

- See Handout 2

# Combining Vowel

- A combining vowel sometimes is used to make the medical term easier to pronounce.
- The combining vowel is used when the suffix begins with a consonant, as in the suffix **–scope**.
- An **arthroscope** is an instrument to visually examine the joint.
- Because the suffix **–scope** begins with a consonant, the combining vowel “o” is used.

# Combining Vowel

- “O” is the most commonly used combining vowel; however, “i” and “e” may be used as well.
- A combining vowel is not used when the suffix begins with a vowel, as in the suffix **–itis**.
- **Gastritis** is inflammation of the stomach.
- Because the suffix **–itis** begins with a vowel, the combining vowel “o” is not used.

# Combining Vowel

- A combining vowel is always used when two or more root words are joined.
- For example, when **gastr/o** (stomach) is joined with **enter/o** (small intestine) the combining vowel is used with **gastr/o**, as in the term **gastroenteritis**.
- A combining vowel is not used between a prefix and the root word.

# Combining Forms

- A word root plus a vowel is the combining form.
- Combining forms usually describe a part of the body.
- New words are created when combining forms are added to prefixes, other combining forms, and suffixes.



# Combining Forms

- For example, the term **panleukopenia** is composed of the word parts:
  - **pan-**, a prefix meaning all
  - **leuk/o**, a combining form meaning white
  - **-penia**, a suffix meaning deficiency or reduction in number.
- **Panleukopenia** is a deficiency of all types of white blood cells.

# Suffixes

- Suffixes are attached to the end of a word part to modify its meaning.
- For example, the combining form gastr/o means stomach and can be modified using various suffixes.
  - The suffix **–tomy** means cutting into or incision. **Gastrotomy** is incision into the stomach.
  - The suffix **–stomy** means a surgically created opening. **Gastrostomy** is a surgically created opening between the stomach and the body surface.
  - The suffix **–ectomy** means surgical removal or excision. **Gastrectomy** is surgical removal of the stomach.

# Suffixes

- Many suffixes can be grouped together by meaning or by the category they modify.
- Initially, when learning suffixes it is easiest if the learner groups them by meaning or category.

# Suffixes

- “Pertaining to” Suffixes
- Surgical Suffixes
- Procedural Suffixes
- Double “R” Suffixes
- Conditional Suffixes
- HANDOUTS

# Suffixes

- Suffixes may change the part of speech of a word.
- Different suffixes may change the word from a noun (naming people, places, or things) to an adjective (descriptor).

# Suffixes

- Examples of these may include:
  - **Cyanosis**
    - A noun meaning condition of blue discoloration whereas **cyanotic** is an adjective meaning pertaining to blue discoloration.
  - **Anemia**
    - A noun meaning a blood condition of deficient red blood cells or hemoglobin, whereas **anemic** is an adjective meaning pertaining to a blood condition of deficient red blood cells or hemoglobin.
  - **Mucus**
    - A noun meaning a slime-like substance that is composed of glandular secretion, salts, cells, and leukocytes, whereas **mucous** is an adjective meaning pertaining to mucus.
  - **Ilium**
    - A noun meaning a part of the hip, whereas **iliac** is an adjective pertaining to the hip.
  - **Condyle**
    - A noun meaning a rounded projection on a bone, whereas **condylar** is an adjective meaning pertaining to a rounded projection on a bone.
  - **Carpus**
    - A noun meaning the joint between the radius and ulna and metacarpal bones, whereas **carpal** is an adjective meaning pertaining to the joint between the radius and ulna and metacarpal bones.

# Analyzing Medical Terms

- Medical terminology can be more easily understood if the following objectives are adhered to:
  - Dissect
  - Begin at the end
  - Anatomical order
    - i.e. Ovariohysterectomy

# Analyzing Medical Terms

- Dissect
  - First, analyze the word structurally by dividing it into its basic components.
- Begin at the end
  - After dividing the word into its basic parts, define the suffix first, the prefix second, and then the roots.
  - If there are two roots, divide each and read them from left to right.



# Analyzing Medical Terms

- Anatomical Order
  - Where body systems are involved, the words usually are built in the order in which the organs occur in the body.
  - For example, **gastroenteritis** is the proper term for inflammation of the stomach and the small intestine.
  - Because food passes from the stomach into the small intestine, the medical term for stomach appears before the medical term for small intestine.
  - The order of word parts in a medical term may also represent the order of blood flow through organs.
  - The exception to this involves some diagnostic procedures in which tools or substances are passed retrograde or in the opposite direction of anatomic order.
  - In these cases, the words are built in the order in which the equipment passes the body part.

# Analyzing Medical Terms

- Using these guidelines, analyze the term **ovariohysterectomy**.
  - First, divide the term into its basic components: **ovari/o/hyster/ectomy**.
  - Defining from back to front, the suffix **–ectomy** is surgical removal, one combining form **ovari/o** means ovary, and the other combining form **hysteri/o** means uterus.
  - Together, the term **ovariohysterectomy** means surgical removal of the ovaries and uterus.
  - This term is based on the order in which the ovaries and uterus are found in the body.

# Does Spelling Count?

- Be aware of spelling when using medical terminology.
- Changing one or two letters can change the meaning of a word.
- **Hepatoma** is a liver mass, whereas **hematoma** is a mass or collection of blood.
- The **urethra** takes urine from the urinary bladder to the outside of the body, whereas **ureters** collect urine from the kidney and transport it to the urinary bladder.

# Does Spelling Count?

- Medical terms may be pronounced the same but have different meanings, so spelling is important.
- For example, ilieum and ilium are pronounced the same.
- However, **ileum** is the distal part of the small intestine (e=enter/o or e=eating), whereas **ilium** is part of the pelvic bone.

# Does Spelling Count?

- Some medical terms actually have the same spelling as terms used for other body parts.
- For example, the combining form **myel/o** represents the spinal cord and bone marrow (it originates from the term meaning white substance).
- Other terms have different spellings depending on how the term is used grammatically.
- For example, when used as a noun, mucus (the slimy stuff secreted from mucous membranes) is spelled differently than when it is used as an adjective (as in mucous membrane).

# Review

- Complete the review exercise.