COMMON ANIMAL DISEASES

Objectives

- To identify the ways of preventing diseases.
- To investigate symptoms, prevention and treatment of common animal diseases.
- To learn to diagnose common animal diseases.

Main Menu

- Introduction to Disease
- Nutritional Diseases
- Bacterial Diseases
- Viral Diseases
- Parasitic & Fungal Diseases
- Genetic Diseases

INTRODUCTION TO DISEASE

Main Menu

Disease

- Is a disorder or incorrect function of an organ, structure or system of an animal's body

Disease

- Is transmitted from infected animals to susceptible animals through the following methods:
  - direct contact
  - indirect contact
  - droplet contact
  - airborne transmission
  - fecal-oral transmission
  - vector-borne transmission

Direct Contact

- Occurs when an infected animal has direct contact with a susceptible animal
- Examples include:
  - touching an infected animal
  - sexual contact
  - contact with oral secretions
  - contact with body lesions

Indirect Contact

- Occurs when an animal comes in contact with a contaminated surface
- Examples include:
  - sharing feed or water bowls with infected animals
  - touching other contaminated surfaces

Droplet Contact

- Occurs when droplets containing microorganisms come in contact with the eyes, nose or mouth
- Examples include:
  - infected animals coughing or sneezing onto susceptible animals

Airborne Transmission

- Occurs when droplets are evaporated or dust particles which contain microorganisms are in the air
- Examples include:
  - animals ingesting or breathing in microorganisms into their respiratory tract

Fecal-Oral Transmission

- Occurs when microorganisms enter the body through ingestion of contaminated food or water
- Examples include:
  - animals eating contaminated food or water

Vector-Borne Transmission

- Occurs when vectors, animals or insects, transfer the disease to other susceptible animals
- Examples include:
  - flies, mites and ticks transfer disease through biting susceptible animals
  - rats spread disease through feces which are then accidentally ingested by susceptible animals

Zoonotic Diseases

- Can be passed between animals and humans
- Can be caused by viruses, bacteria, parasites and fungi
- Are transmitted by coming in contact with body fluids, being bitten by a tick or mosquito or eating or drinking something unsafe

Immunity

- Is an animal's ability to protect and defend their body from infection, disease or other unwanted or foreign organisms and objects
- Includes the following processes:
  - passive immunity
  - active immunity

Passive Immunity

- Is an immunity which occurs due to the injection of antibodies from outside the body to fight an infection or disease
- Is short term and not permanent

Active Immunity

- Is an immunity in which the animal's body produces its own antibodies to fight of infection or disease
- Is long term and permanent

Disease

- Can be caused by the following:
  - nutrient deficiencies
  - pathogens
  - genetics

Nutrient Deficiencies

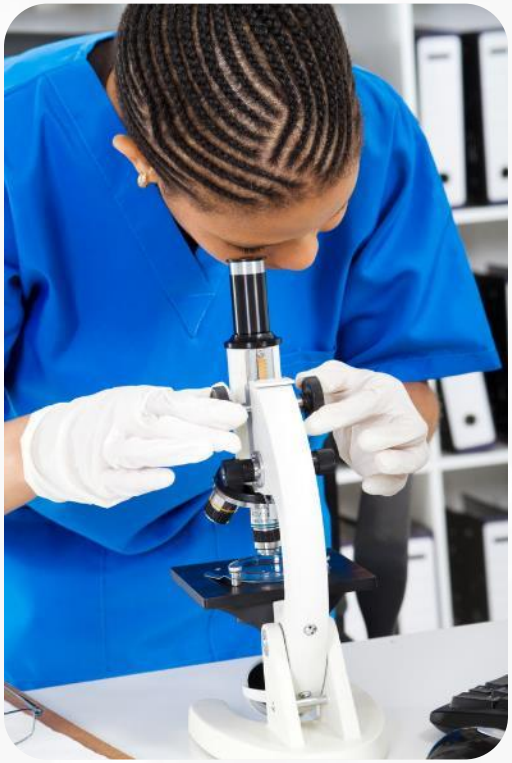
- Result from under consumption of key nutrients
- Can affect the internal processes of animals
- Lower an animal's immune system and increase chances of illness

Nutritional Requirements

- Depend on an animal's age and function
- Allow animals to receive a well-balanced diet
- Include:
  - vitamins
  - fats
  - carbohydrates
  - protein
  - minerals

Pathogens

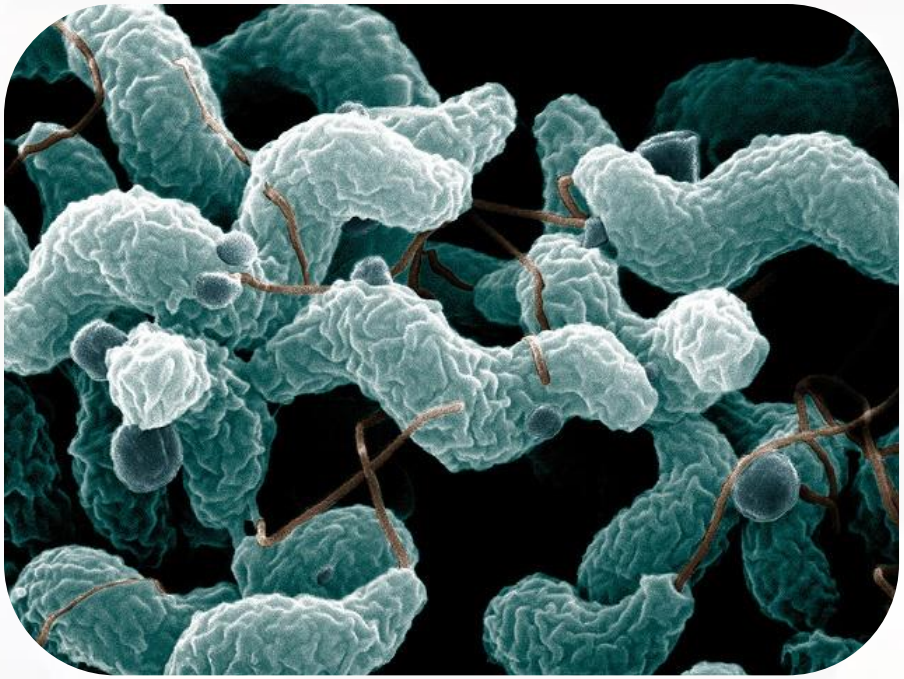
- Are any organism causing a disease
- Can be microscopic or macroscopic



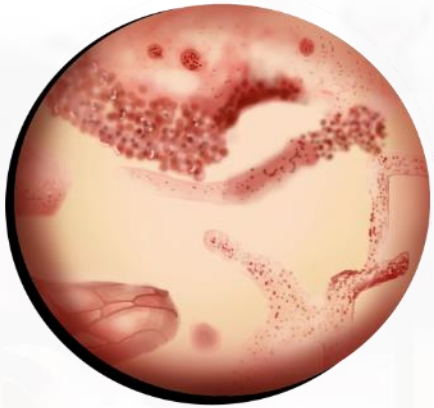
Clinic Corner: Microscopic is defined as an organism too small to be seen by the unaided eye, but large enough to be studied under a microscope. Macroscopic is defined as an organism large enough to be perceived or examined by the unaided eye such as a worm or tick.

Pathogens

- Are classified as follows:
  - viruses
  - bacteria
  - parasites
  - fungi
  - protozoa



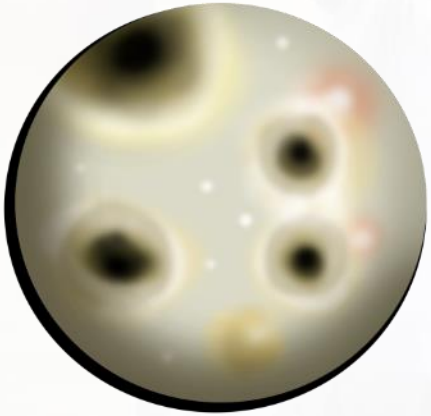
Pathogens



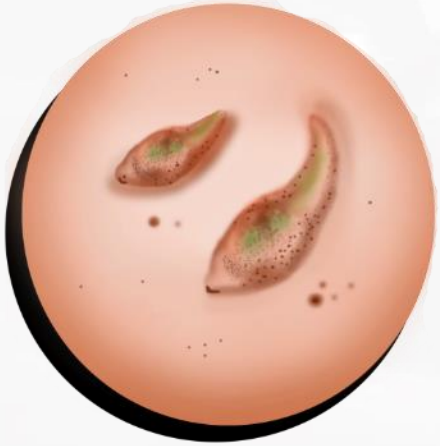
Viruses

Bacteria

Parasites



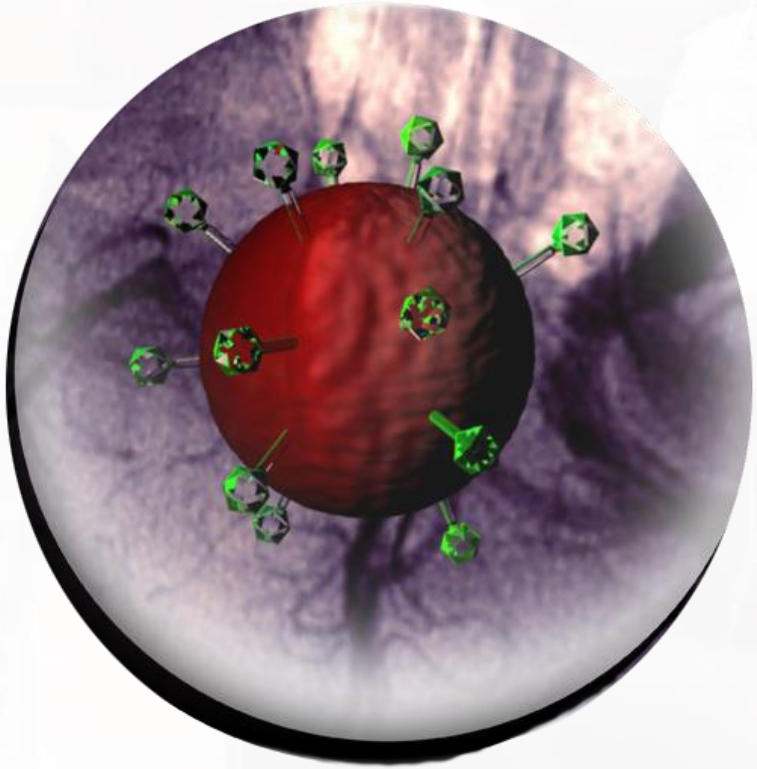
Fungi



Protozoa

Viruses

- Cannot reproduce without a host
- Consist of DNA and RNA
- Can take over the functions of the host cell

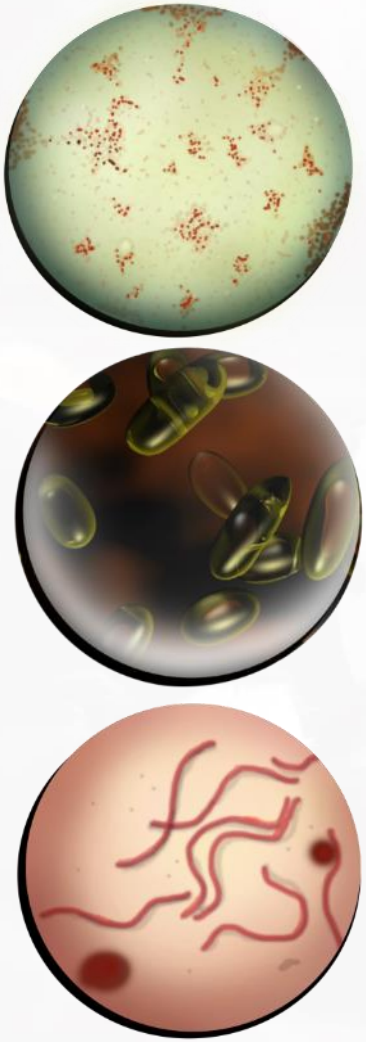


Bacteria

- Are single celled organisms
- May produce toxins harmful to the body
- Multiply rapidly without a host
- Can be identified by shape

Bacteria Shapes

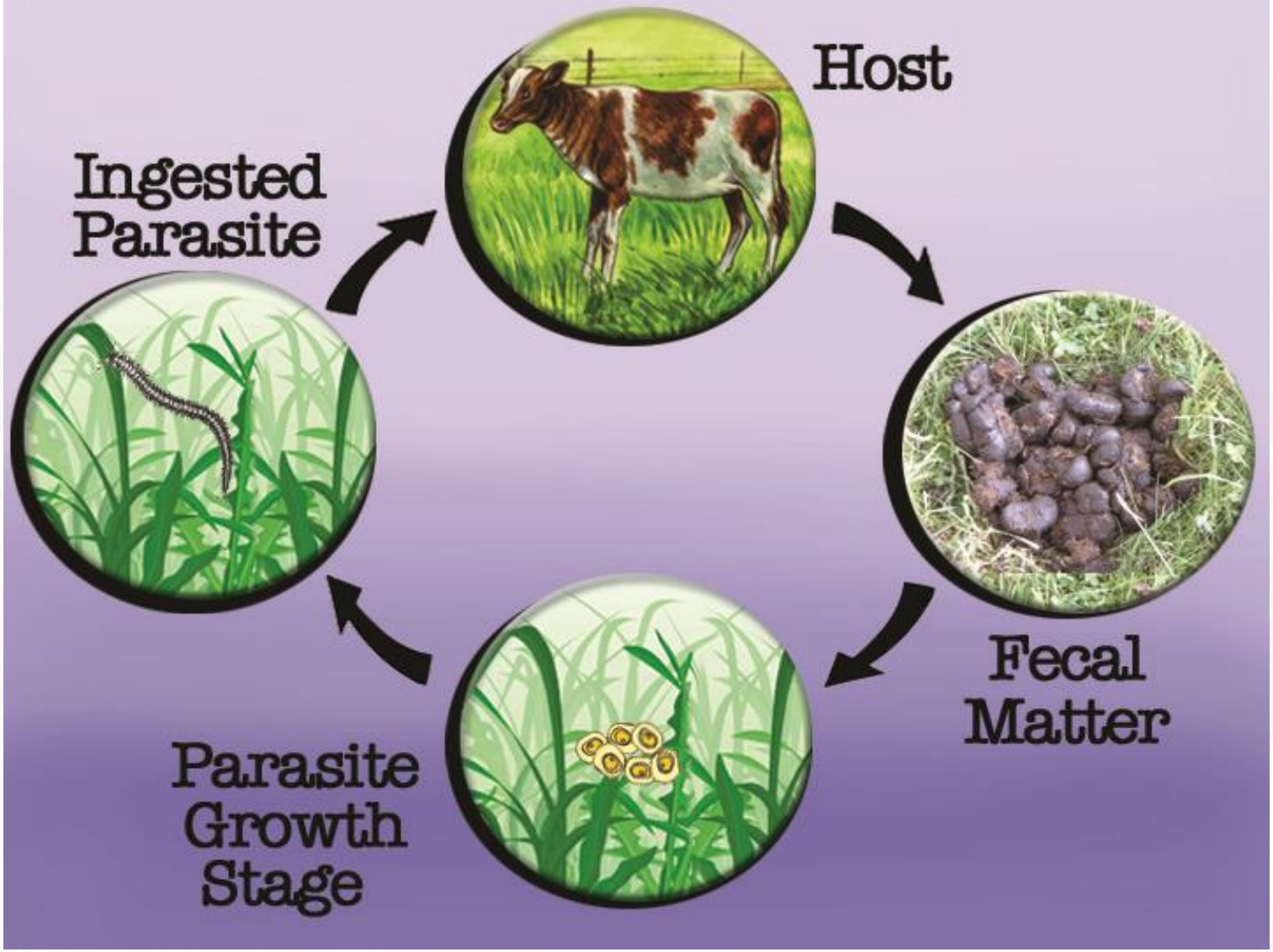
- Include:
  - cocci: spherical-shaped
  - bacilli: rod-shaped
  - spirilli: spiral-shaped



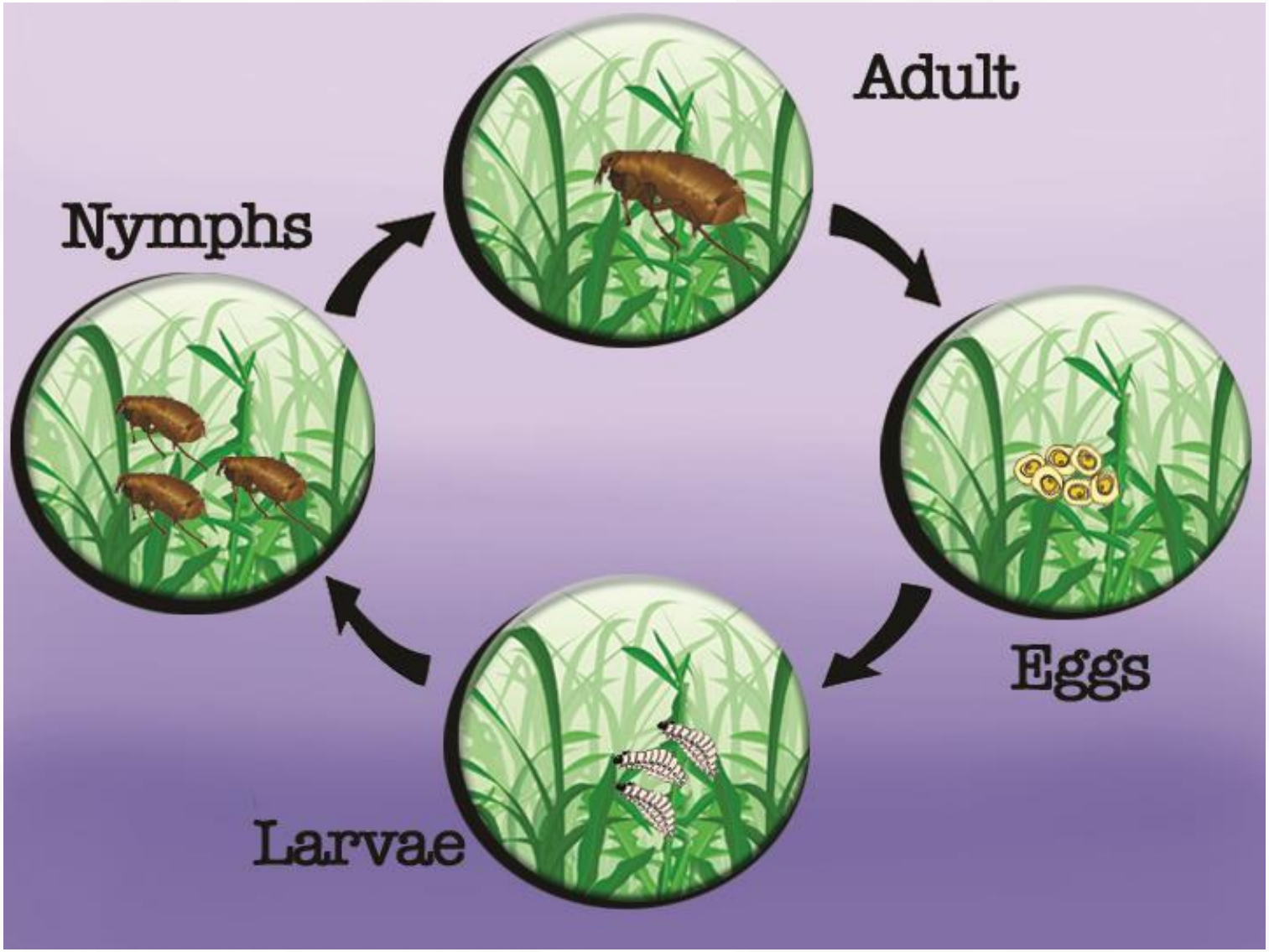
Parasites

- Can be external or internal
- Effect host animals through contact or ingestion
- Have various life cycles
- Are living organisms

Internal Parasite Life Cycle

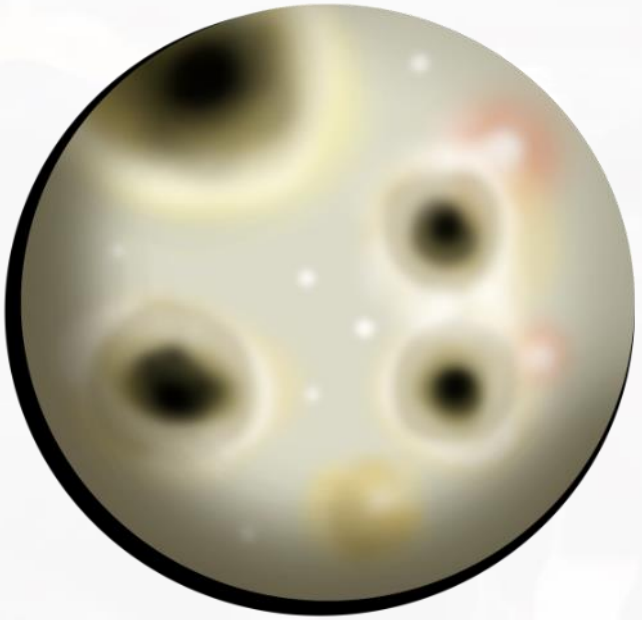


External Parasite Life Cycle



Fungi

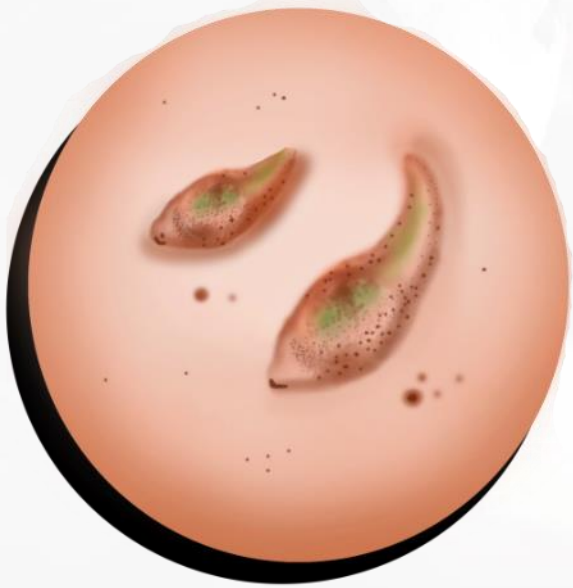
- Studies are known as mycology
- Live in air, soil, plants and water
- Produce transmittable spores which can cause fungal diseases



Clinic Corner: Mycology is defined as the study of the characteristics of fungi.

Protozoa

- Is Greek for first animal
- Is a single-celled organism
- Breath, move and reproduce similar to multi-cellular animals
- Can be classified into many different types



Genetics

- Is the study of heredity, which is a process where parents pass genes onto their offspring
- Causes parents to pass DNA mutations to their offspring which often leads to transmission of disease

Prevention

- Starts with proper management and care
- Reduces chance of disease
- Results in a healthy animals

Proper Management

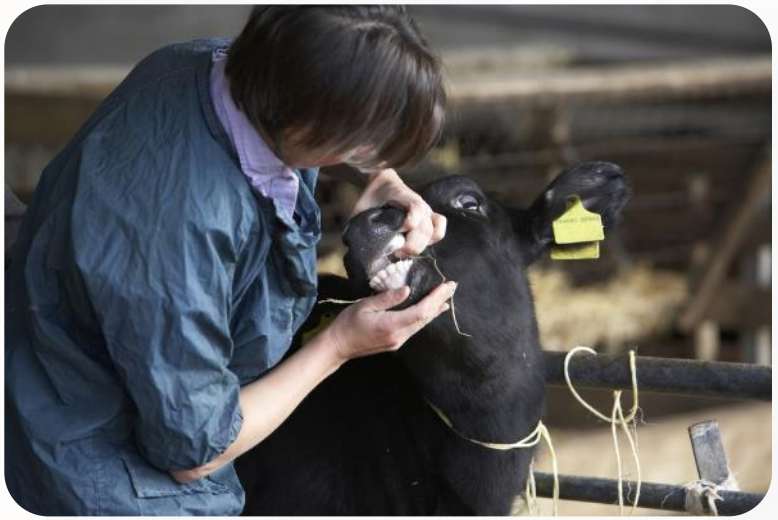
- Allows producers to prevent causes, prevent symptoms and treat diseases
- Involves the following techniques:
  - providing shelter
  - cleaning and sanitizing facilities and equipment
  - rationing adequate diets
  - monitoring herd health daily
  - isolating new animals before introduction to the herd

Signs of Healthy Animals

- Include the following:
  - alertness
  - normal feces and urine
  - normal vital signs
  - sleek coat
  - eating and drinking normally

Signs of Unhealthy Animals

- Include the following:
  - lethargic
  - rough hair coat
  - dull eyes
  - abnormal feces or urine
  - elevated vital signs
  - labored breathing or coughing
  - loss of appetite
  - runny nose
  - swelling



Vital Signs

- Refers to the temperature, respiration rate and pulse of the body
- Provide critical information about an animal's state of health and can be used to not only detect but also monitor medical issues, such as diseases

Temperature

- Is defined as the degree of heat of a living body
- Is considered a fever when it is elevated or above normal or considered hypothermic when it is below normal
- Is measured in degrees Fahrenheit in the U.S.

Respiration

- Is the act of breathing and is determined through the following examinations:
  - rate
    - number of inspirations per minute
  - depth
    - intensity or indication of strain
  - rhythm
    - change in duration of inspiration and expiration
  - sound
    - absence of noise
  - dyspnea
    - labored breathing

Pulse Rate

- Is the measurement of the heart rate or the number of times the heart beats per minute
- Is determined through the following examinations:
  - frequency
    - number of beats per minute
  - rhythm
    - regular repeated pattern of beats
  - quality
    - tension on the arterial wall and volume of blood flow

Vital Signs

Species	Temperature, °F (°C)	Pulse Rate, heart beats/min	Respiration Rate, breaths/min
Cattle	100.4 to 102.8 (38.0 to 39.3)	60 to 70	10 to 30
Sheep	100.9 to 103.8 (38.3 to 39.9)	70 to 80	12 to 20
Goats	101.7 to 105.3 (38.7 to 40.7)	70 to 80	12 to 20
Swine	102.0 to 103.6 (38.9 to 39.8)	60 to 80	8 to 13
Horses	99 to 100.8 (37.2 to 38.2)	32 to 44	8 to 16

Animal Body Systems

- Are complex structures made up of millions of cells
- Each work together to carry out a special job
- Are highly affected by pathogens which disrupt normal cell functions while sometimes resulting in killing cells and tissues

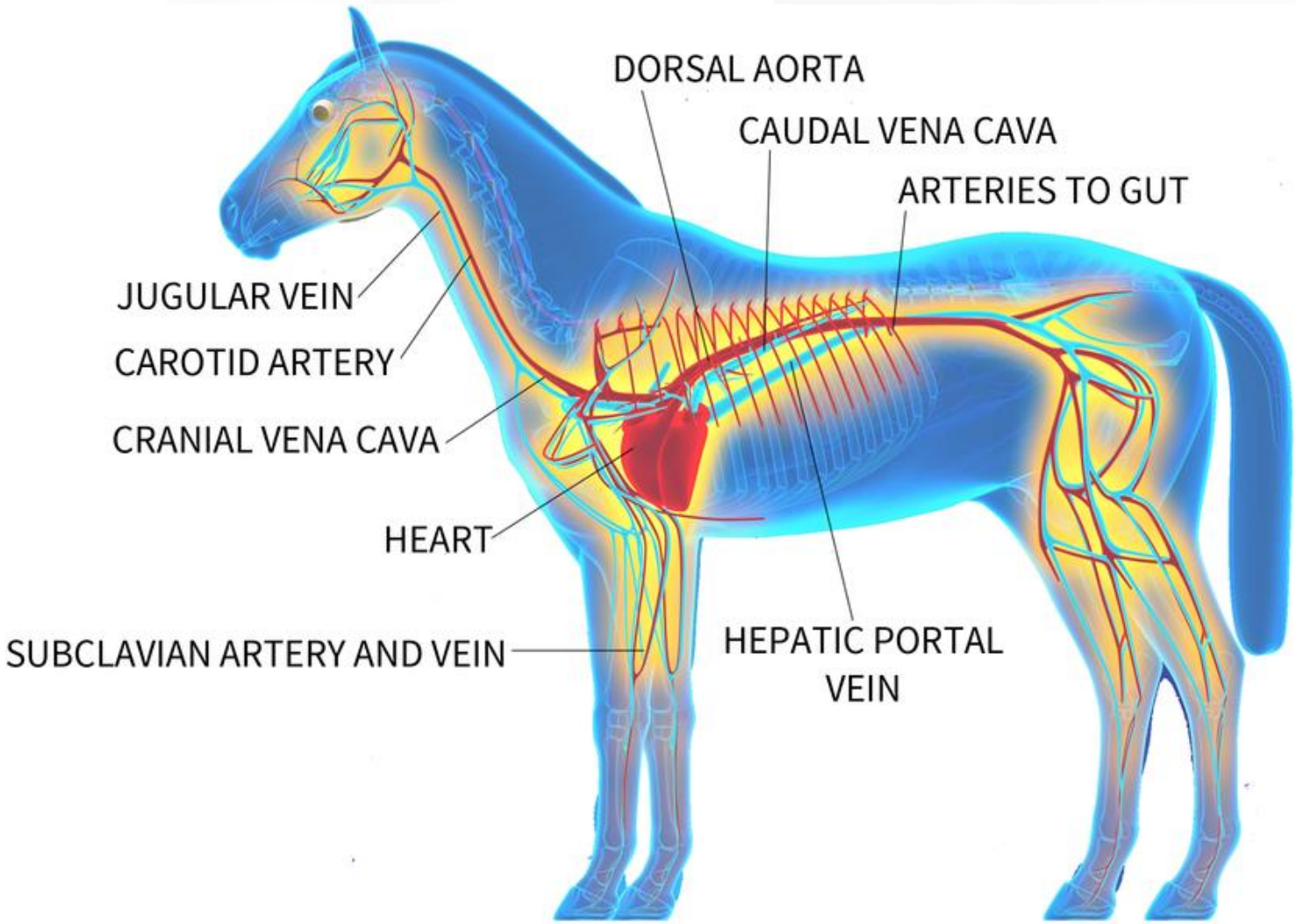
Animal Body Systems

- Include:
  - circulatory
  - respiratory
  - digestive
  - endocrine
  - immune
  - integumentary
  - nervous
  - skeletal
  - reproductive

Circulatory System

- Is designed to pump and deliver blood to the body's tissues
- Is made up of the heart, arteries, veins and blood
- Is affected through disease by changes to blood levels, abnormal heart sounds and beats, fluid around the heart and anemia

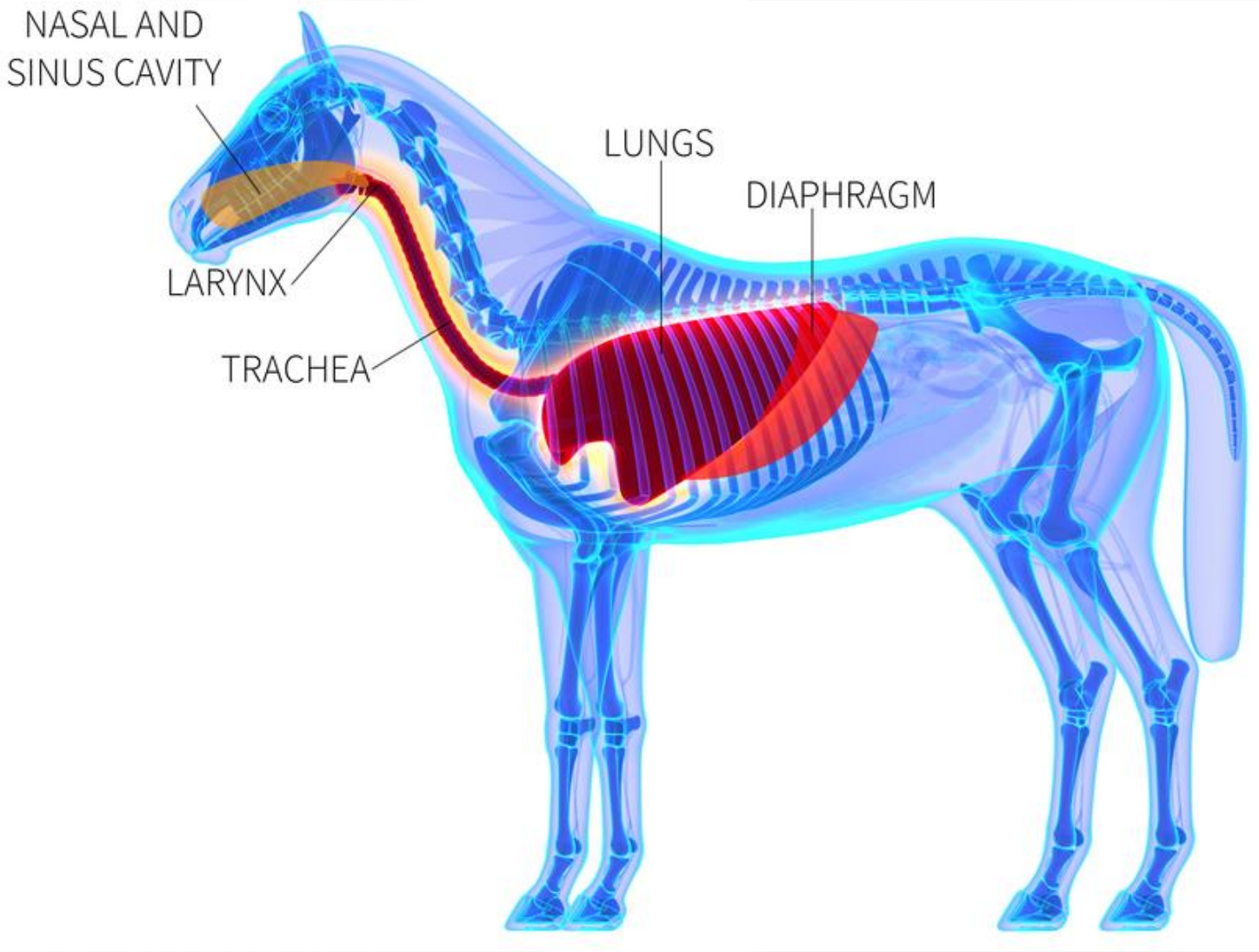
Circulatory System



Respiratory System

- Is made up of the nose, mouth, trachea, bronchi and lungs
- Provides the body with the exchange of oxygen and carbon dioxide
- Is affected by disease through coughing, damage to the lungs and labored breathing

Respiratory System



Digestive System

- Breaks down food into simple substances which can be absorbed by the body
- Absorbs digested parts of food into the blood stream
- Is affected by disease through diarrhea, weight loss, intestinal damage and poor appetite

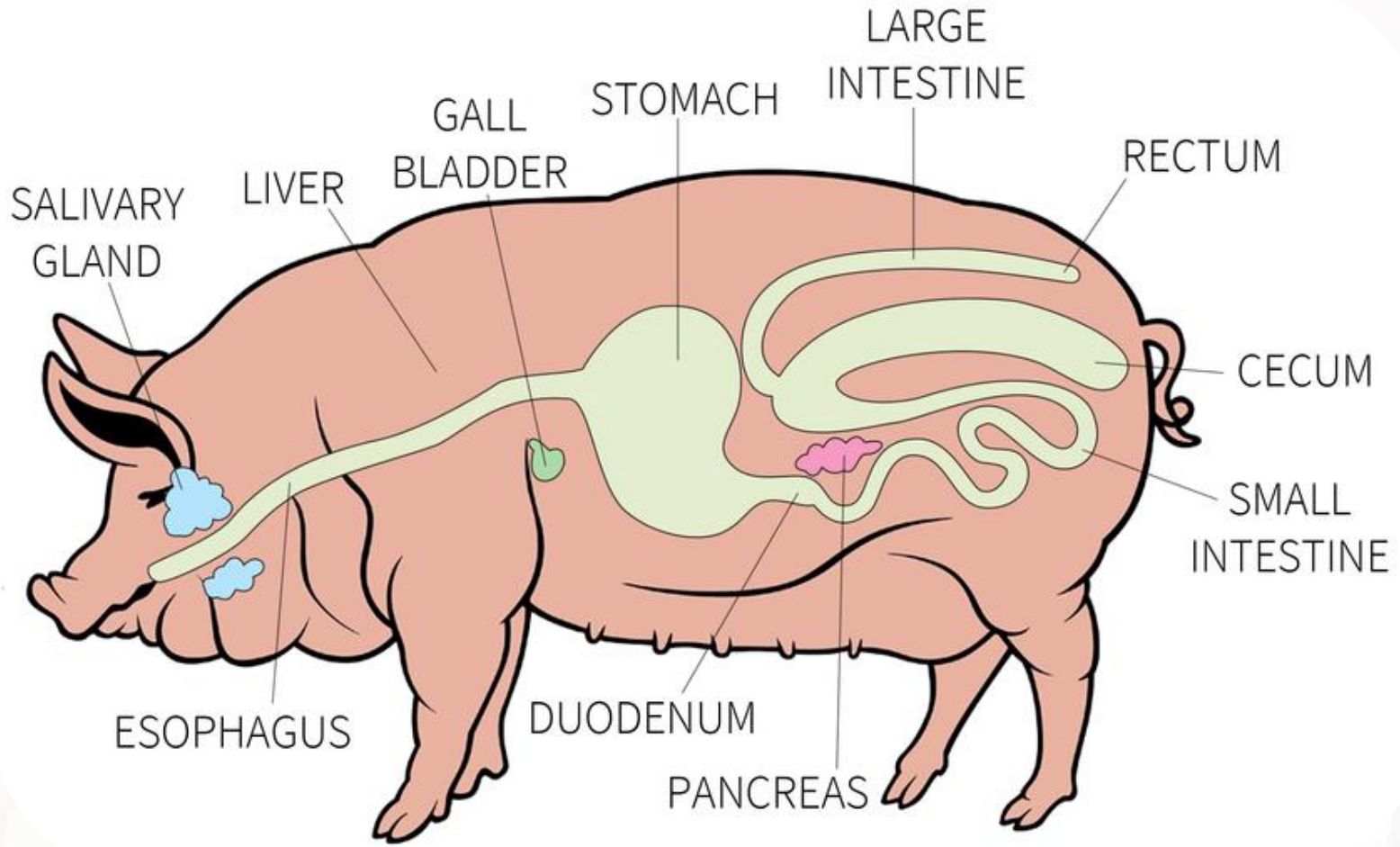
Digestive System

- Includes four basic types of systems:
  - monogastric (simple)
  - ruminant (polygastric)
  - hindgut-fermenter
  - avian

Monogastric Digestive System

- Contains a single-chambered stomach
- Stomach is very muscular and stores ingested food and moves it into the small intestine
- Is found in humans, swine, dogs and cats

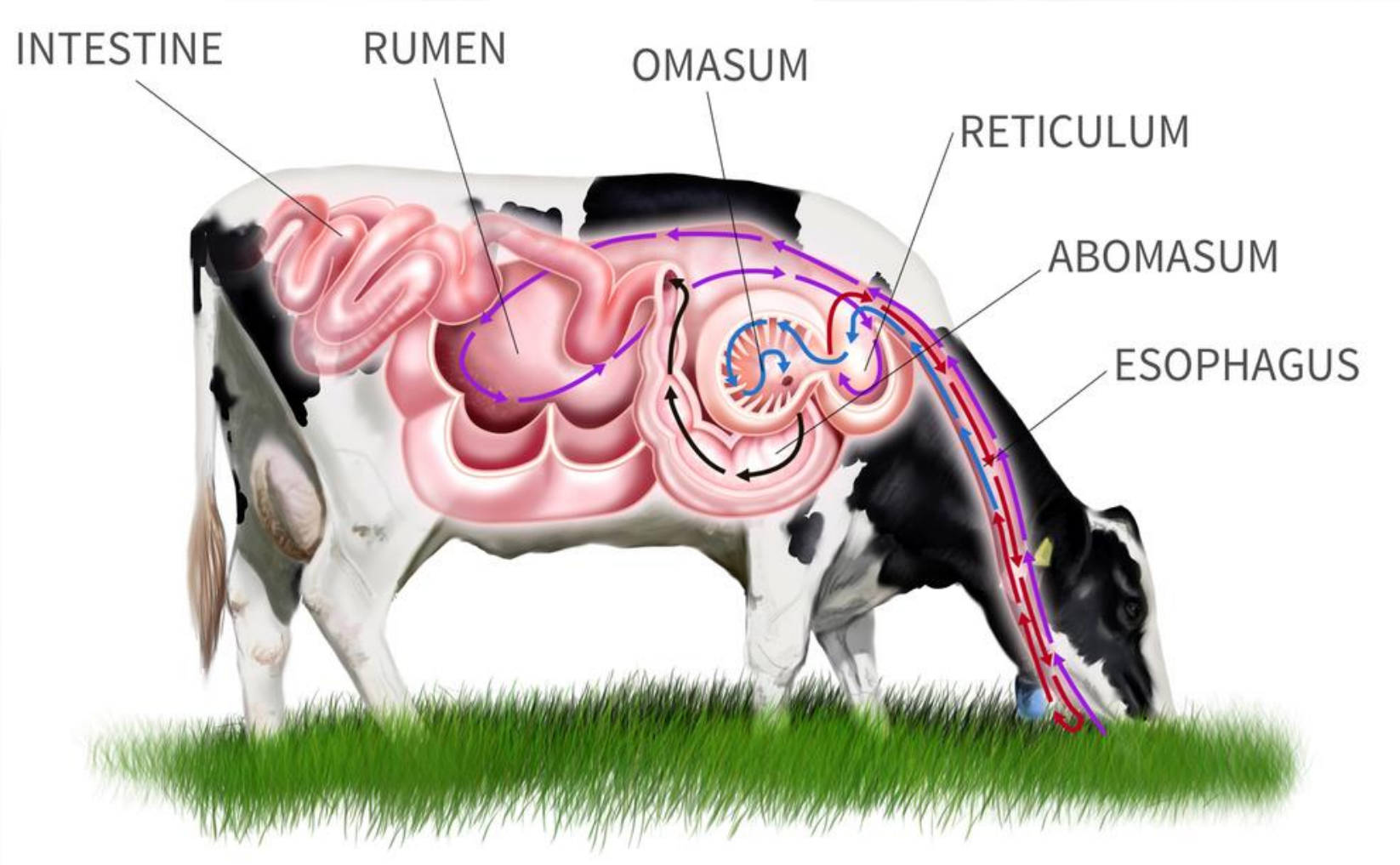
Monogastric Digestive System



Ruminant Digestive System

- Also known as polygastric
- Contains one large stomach which is divided into four compartments
  - including:
    - rumen
    - reticulum
    - omasum
    - abomasum
- Is found in cattle, sheep and goats

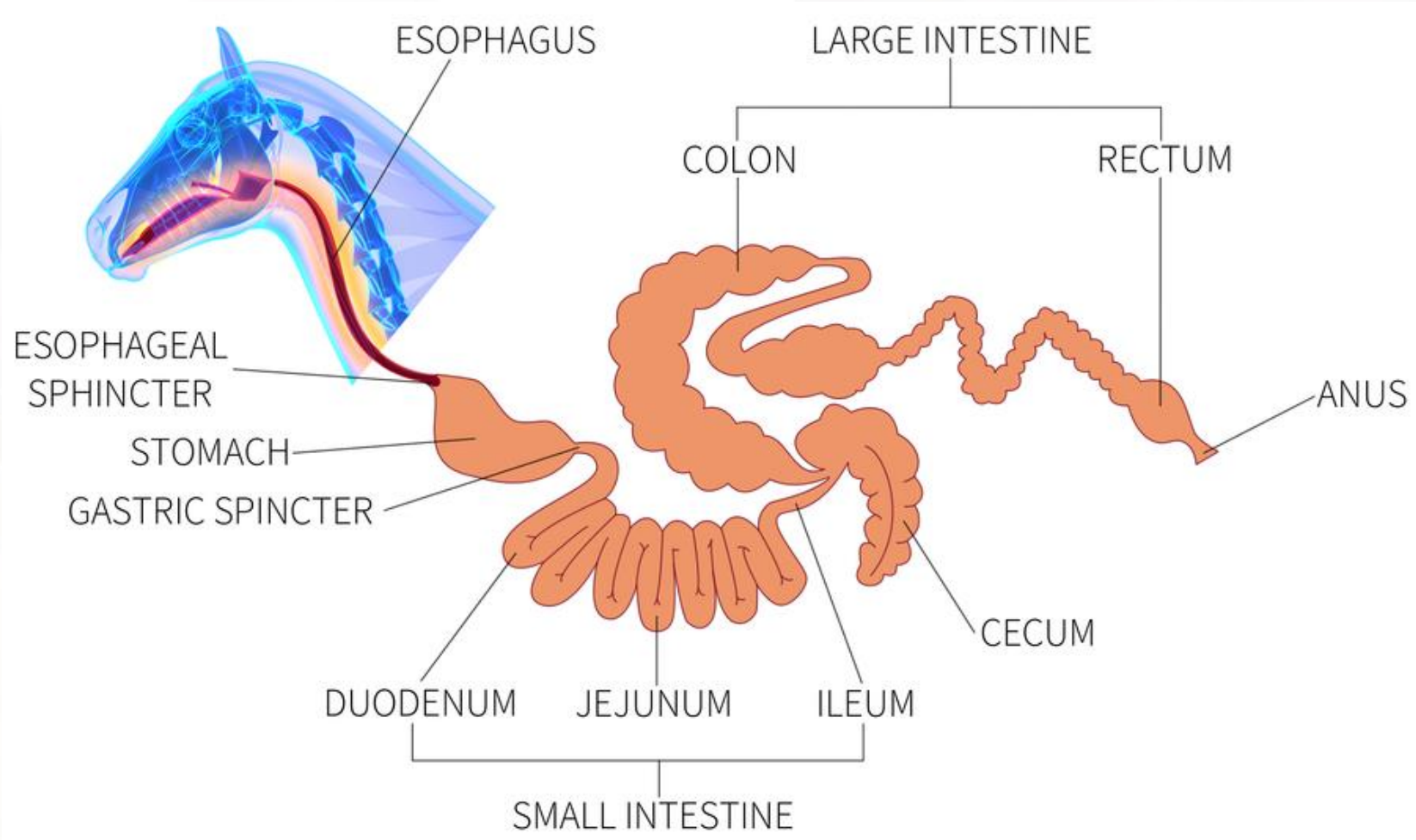
Ruminant Digestive System



Hindgut-Fermenter Digestive System

- Is found in animals who eat large amounts of roughage
- Is similar to ruminants, however does not have stomachs with several compartments
- Is found in horses, rabbits, guinea pigs and hamsters

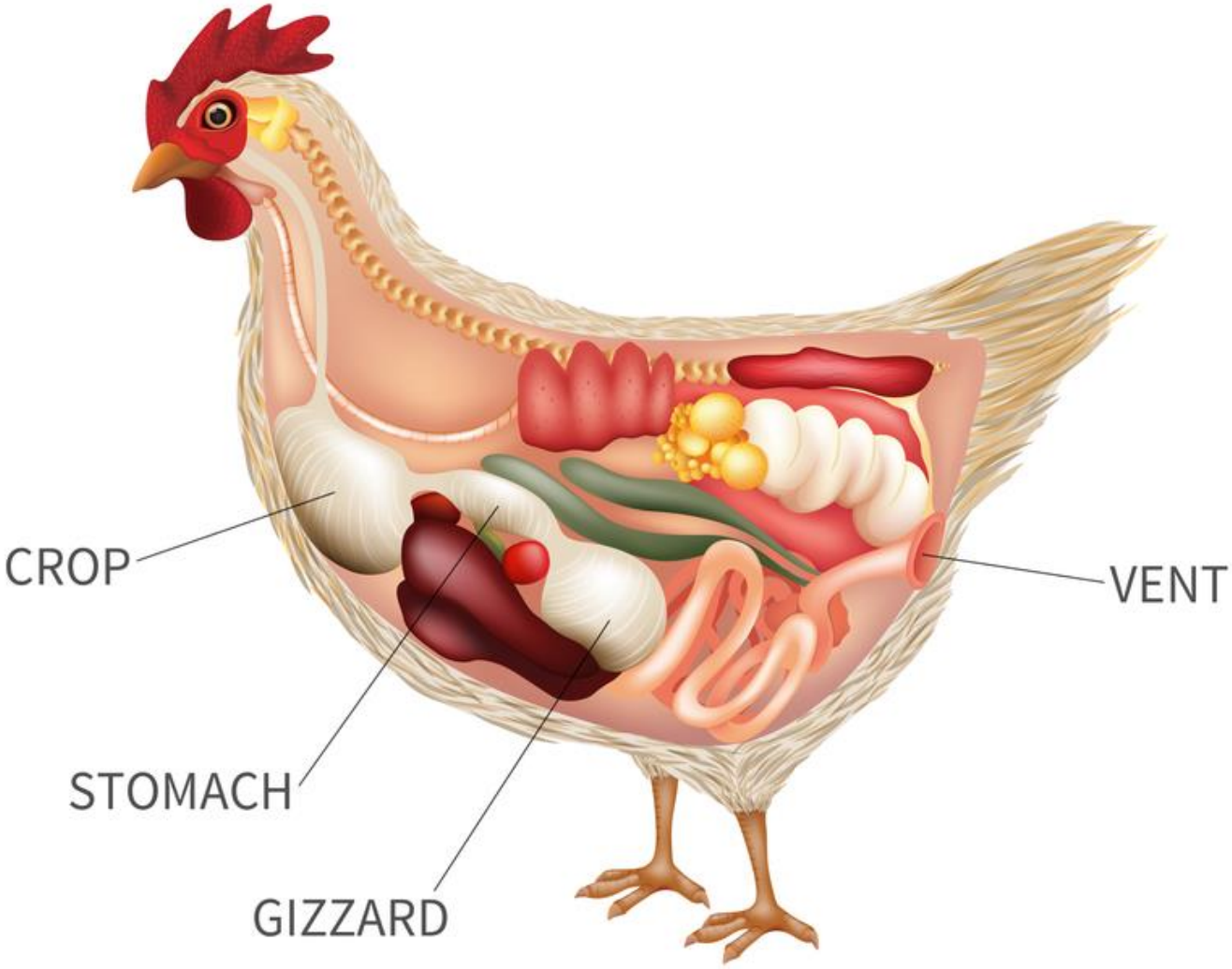
Hindgut-Fermenter Digestive System



Avian Digestive System

- Highly differs from the previous digestive systems because the bird has no teeth
- Is made up of the esophagus which empties directly into the crop, where the food is stored and then grinded by the gizzard with stones or grit
- Is a very fast process

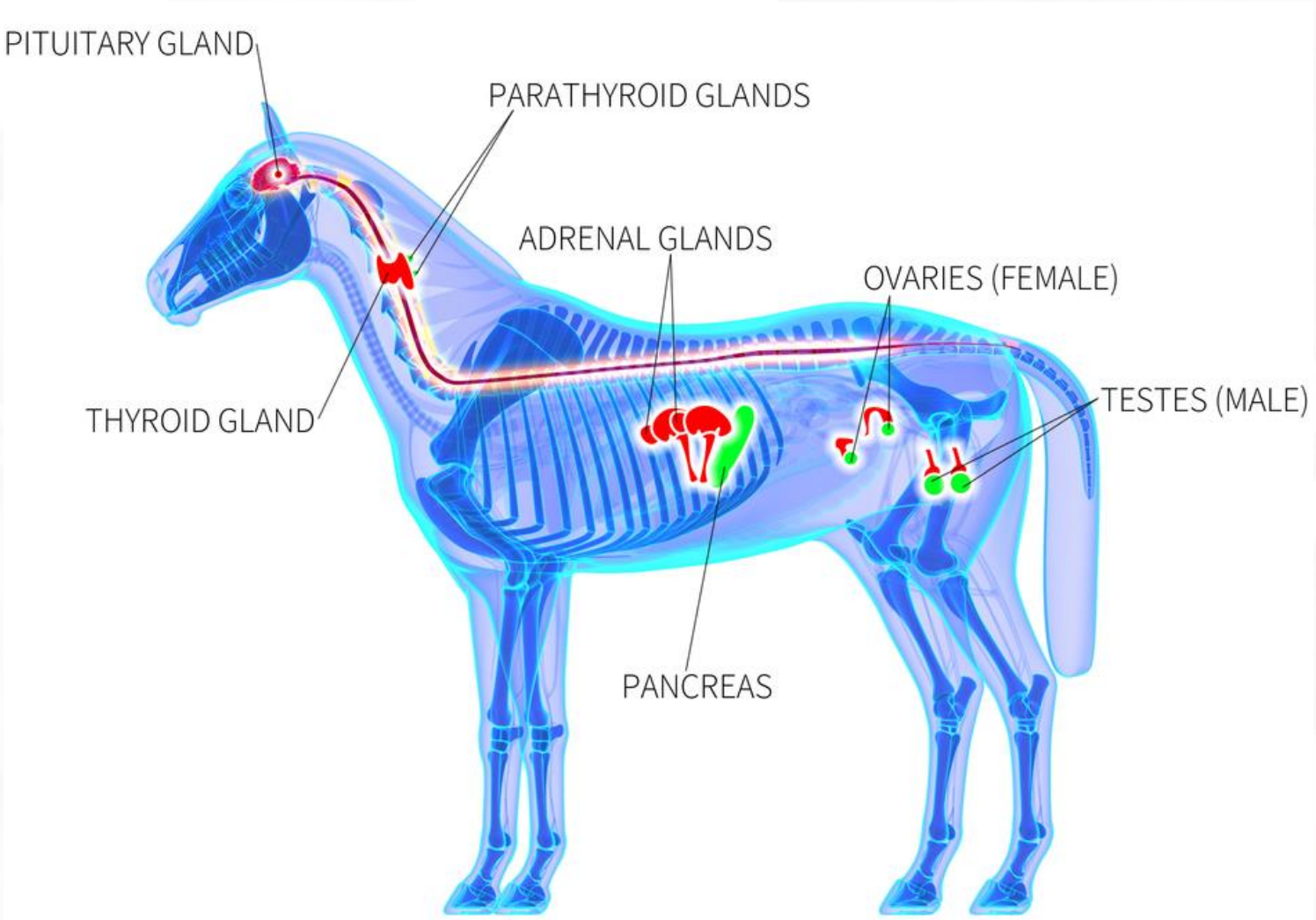
Avian Digestive System



Endocrine System

- Produces hormones which regulate metabolism, growth and development, tissue and sexual function, reproduction, sleep and mood
- Is made up of the pituitary gland, thyroid gland, parathyroid glands, adrenal glands, pancreas, ovaries and testicles
- Is affected by disease through poorly developed or swollen glands

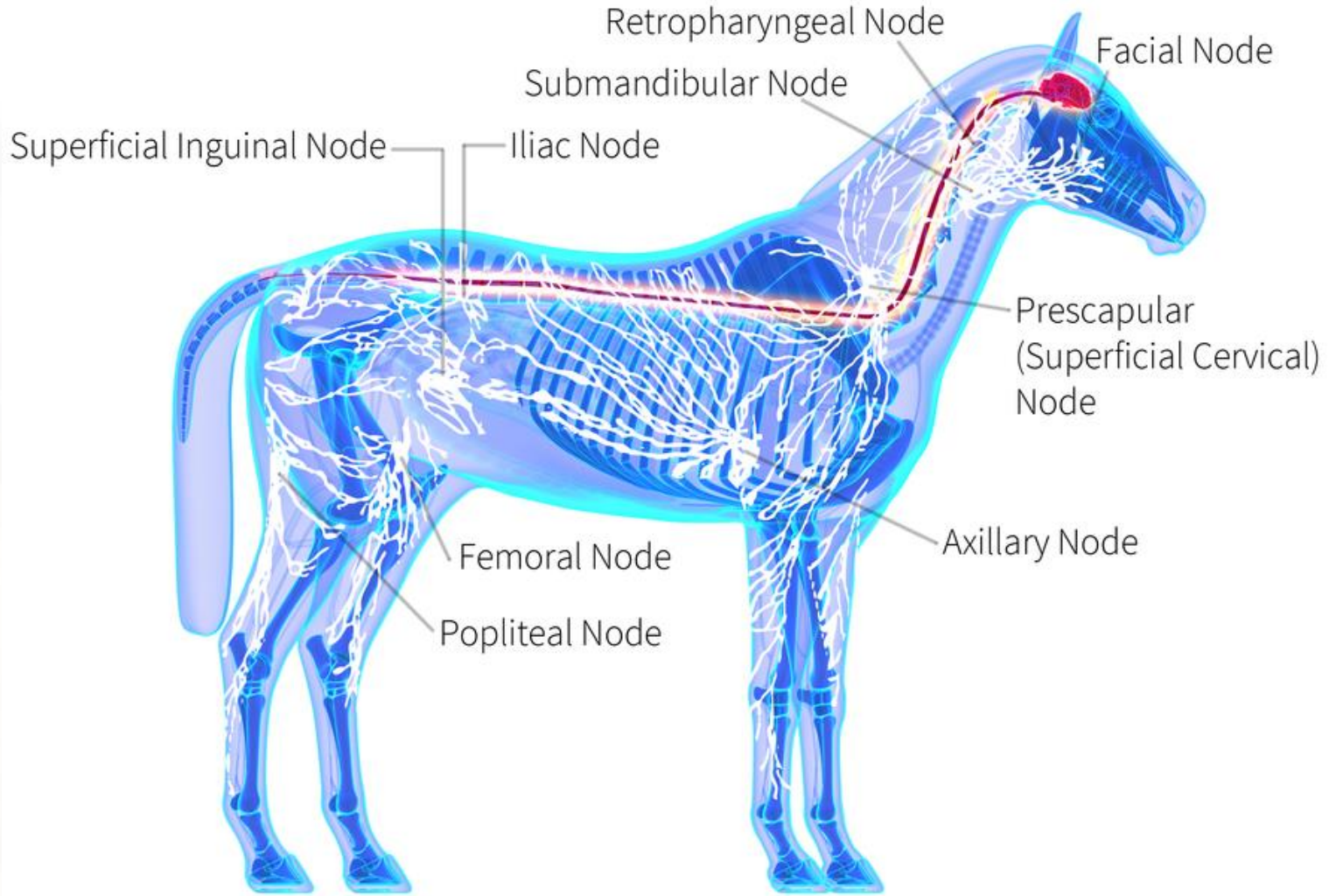
Endocrine System



Immune System

- Defends the body against infectious organisms and other invaders
- Attacks organisms and substances which invade an animal's system and causes diseases
- Is made up of lymph nodes, cells, proteins, tissues and organs
- Is affected by disease through reduced immune response

Immune System



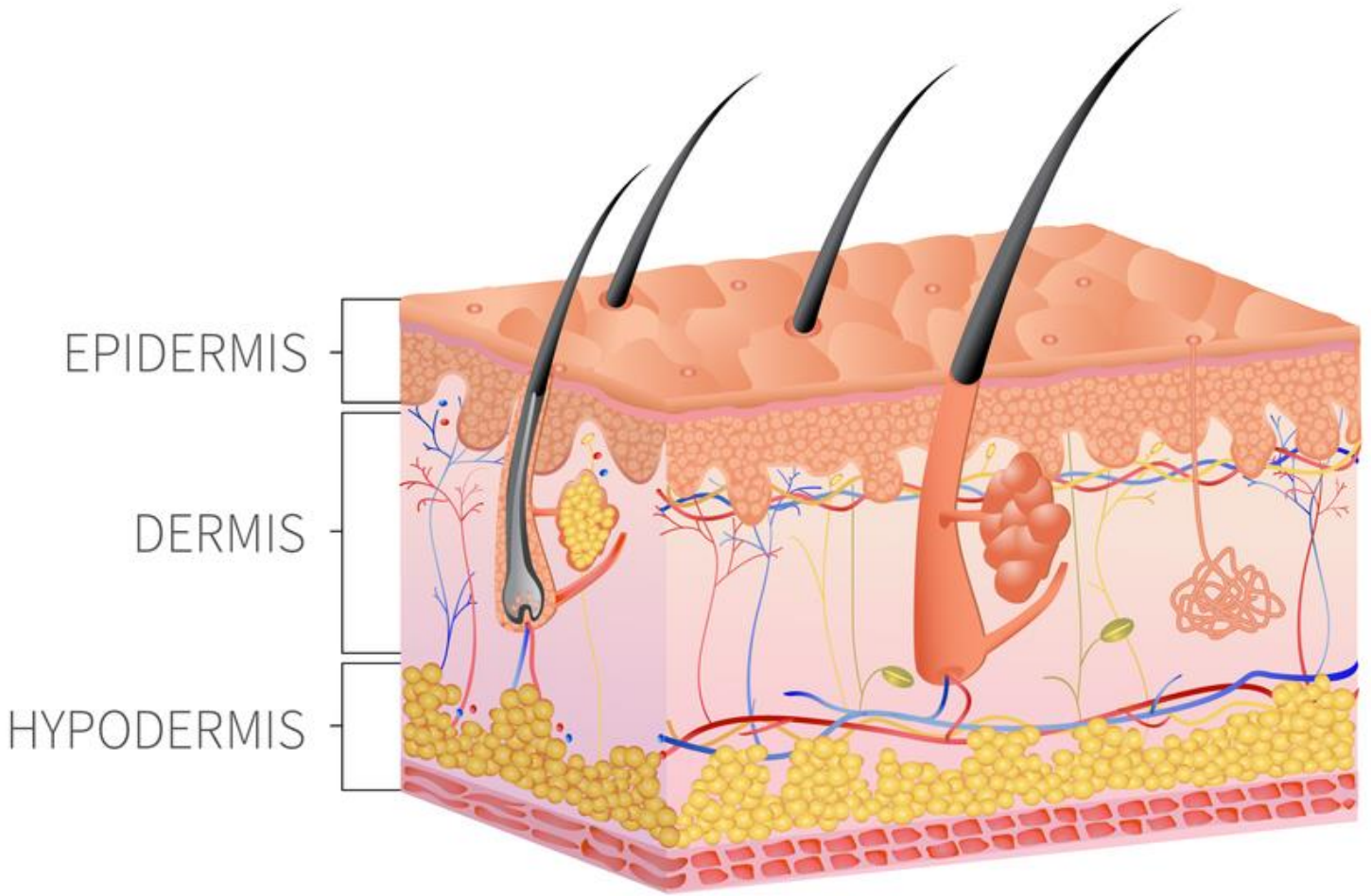
Integumentary System

- Protects the animal's body from disease by providing a barrier to viruses and bacteria
- Protects the body from dehydration, overheating or freezing
- Is affected by disease through irritation, itching, scratching, rough hair coat, hair falling out, crusty skin and lesions

Integumentary System

- Is the largest organ in the body and includes the following:
  - hair
  - feathers
  - scales
  - nails
  - hooves
  - horns
  - skin

Integumentary System



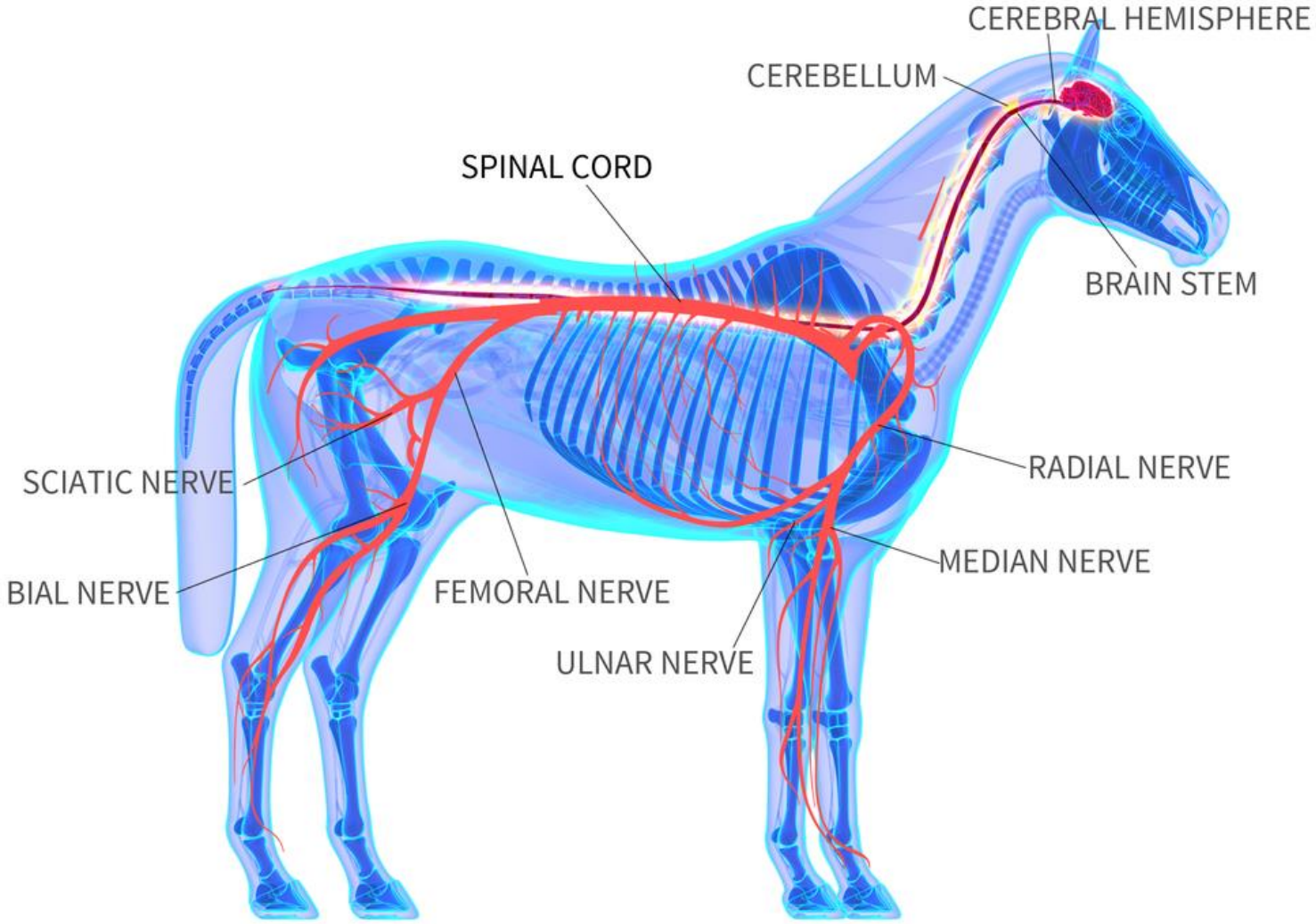
Nervous System

- Transmits signals to different parts of the animal's body and operates basic body functions like breathing and digestion
- Is affected by disease through poor coordination, tremors, convulsions and changes to behavior

Nervous System

- Includes:
  - central nervous system
    - which is the brain and spinal cord
  - peripheral nervous system
    - which is made up of the nerves and ganglia

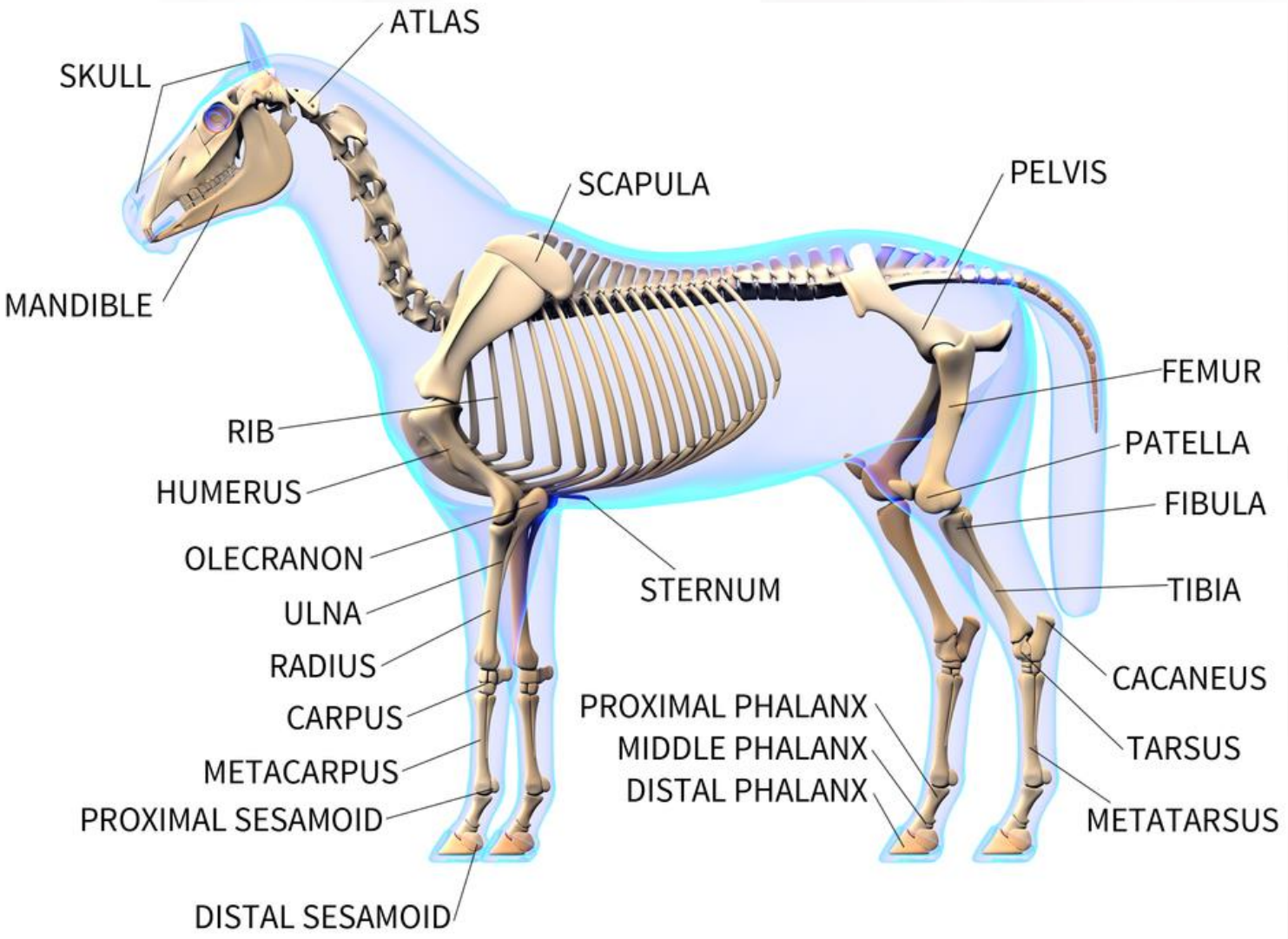
Nervous System



Skeletal System

- Protects and supports the body tissues and internal organs
- Is made up of bones and other connective tissues
- Is affected by disease through poor growth, muscle weakness, stiffness, lameness and muscle tremors

Skeletal System



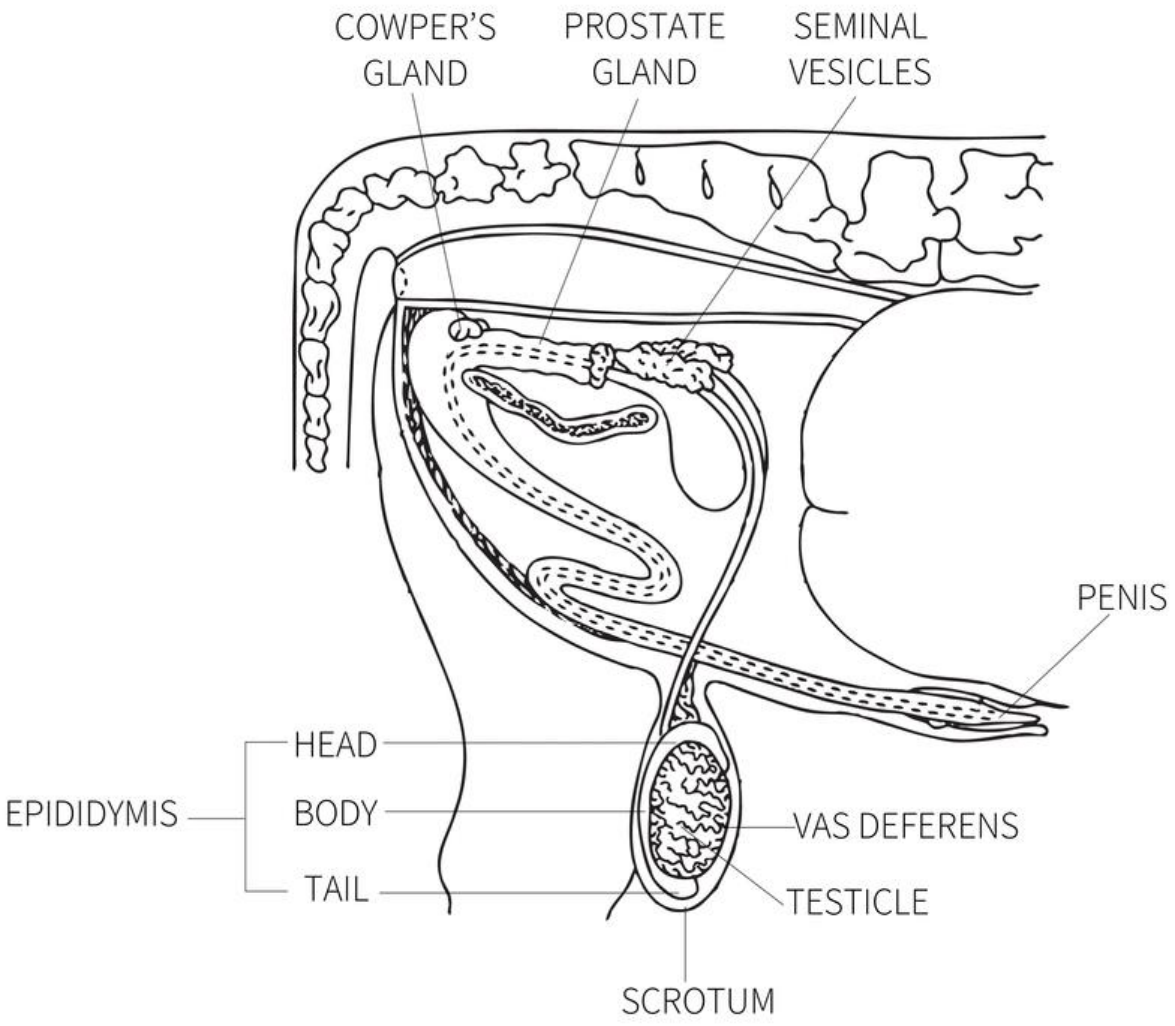
Reproductive System

- Is a system of sex organs within animals which work together for the purpose of sexual reproduction
- Is affected by disease through lowered fertility rates, lactation problems and reproductive unsoundness

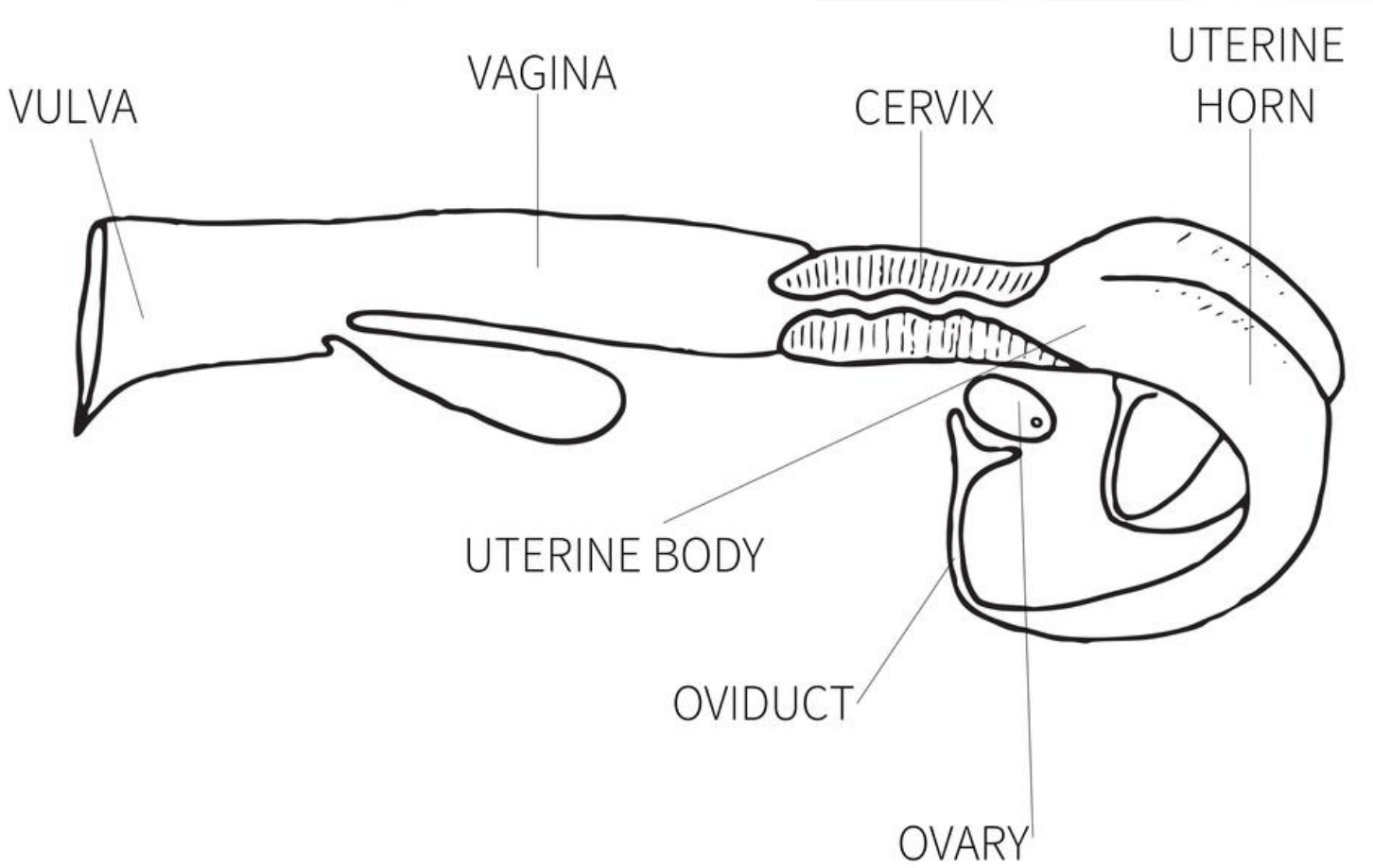
Reproductive System

- Female anatomy includes:
  - ovaries
  - uterus
  - vagina
  - vulva
  - udder
- Male anatomy includes:
  - penis
  - testes

Reproductive System



Reproductive System



NUTRITIONAL DISEASES

Common Nutritional Diseases

- Include the following:
  - grass tetany
  - bloat
  - colic
  - enterotoxemia (overeating disease)
  - lactic acidosis
  - milk fever
  - white muscle disease
  - hardware disease

Grass Tetany

- Is a serious and often fatal metabolic disorder caused by low levels of magnesium in the blood
- Is also called “Grass Staggers” or “Wheat Pasture Poisoning”
- Primarily affects cattle and sheep

Clinic Corner: Magnesium is an important electrolyte needed for proper muscle, nerve and enzyme function.

Grass Tetany

- Symptoms include:
  - uncoordinated gait
  - convulsions
  - coma
  - death

Grass Tetany

- Treatment includes:
  - restoring blood magnesium levels through the following methods:
    - adding magnesium oxide powder onto feed or pasture
    - magnesium lick blocks, concentrates or pellets
  - veterinary administration of an intravenous calcium and magnesium solution

Grass Tetany

- Prevention includes:
  - avoiding grazing animals on immature grass
  - providing a magnesium supplement
    - increases blood magnesium levels

Bloat

- Can occur in all ruminants
- Refers to rapid fermentation, producing excess gas or foam in the rumen
- Is caused by consuming highly concentrated rations and lush legume pastures

Clinic Corner: Fermentation is the breakdown of carbohydrates by enzymes.

Bloat

- Symptoms include:
  - abdominal distention on left side
  - loss of appetite
  - respiratory distress
  - difficulty walking or moving

Bloat

- Treatment includes:
  - keeping animal on feet and moving
  - drenching with mineral oil or poloxalene
  - putting stomach tube down throat to relieve pressure from gas
- Prevention includes:
  - feeding dry roughage with a mix of grasses
  - keeping animals from eating an excess of lush green grass, especially alfalfa

Colic

- Is the general term referring to abdominal pain
- Mainly impacts horses because they are unable to vomit
- Is caused by a wide range of conditions affecting the digestive tract, including:
  - sudden changes in feed
  - a predominantly concentrate diet
  - cribbing
  - lack of water
  - presence of bloodworms

Colic

- Symptoms include:
  - distended abdomen
  - rolling and kicking
  - excruciating pain
  - sweating
  - constipation
- Can result in a twisted intestine

Photo Source: Tiffanie Brooks, D.V.M., Texas Tech University

Colic

- Treatment includes:
  - walking the horse
  - administering Banamine
  - taking to veterinarian
    - animal might need sedatives, laxatives, pain medicine or surgery
- Can be prevented by:
  - feeding small rations
  - feeding good quality roughages
  - providing clean water
  - monitoring eating habits
  - controlling internal parasites

Enterotoxemia (Overeating Disease)

- Is caused by toxins produced by naturally occurring intestinal bacteria
  - Clostridium perfringens types C and D
- Commonly affects sheep and goats
- Usually occurs when an animal consumes excessive amounts of high energy feeds or milk
- Produces a quickly absorbed toxin
- Can cause acute death

Enterotoxemia (Overeating Disease)

- Symptoms include:
  - sudden death
  - diarrhea
  - neurologic signs
    - circling
    - head pressing
    - incoordination
    - convulsions

Enterotoxemia (Overeating Disease)

- Treatment includes:
  - administering antitoxins
  - administering oral antibiotics
  - feeding hay

Enterotoxemia (Overeating Disease)

- Prevention includes:
  - slowly introducing concentrates
  - carefully regulating energy intake
  - administering a vaccination against Clostridium perfringens types C and D to pregnant and young animals at approximately four weeks of age

Clinic Corner: Vaccination is defined as an injection of a killed microbe in order to stimulate the immune system against the microbe, thereby preventing disease.

Lactic Acidosis

- Is also known as carbohydrate engorgement
- Is caused by a sudden shift from a forage-based to a high concentrate diet
- Results from low rumen pH due to an increase of propionic acid production

Clinic Corner: Propionic acid is an acid produced by bacteria in the rumen with a very low pH

Lactic Acidosis

- Symptoms include:
  - abdominal distension or bloat
  - dehydration
  - diarrhea
  - sore hooves
  - liver abscesses
  - decreased milk production

Lactic Acidosis

- Treatment includes:
  - gradually adding more roughages to the diet
  - adding feed additives to help raise the rumen pH
  - giving oral antacids
  - giving oral fluids

Lactic Acidosis

- Prevention includes:
  - maintaining a roughage diet of 10 percent or more
  - utilizing ionophores as feed additives

Clinic Corner: Ionophores are known as a group of organic compounds and facilitate the transport of ions across the cell membrane.

Milk Fever

- Is a metabolic disorder
- Is also known as hypocalcemia
- Affects cattle, sheep and goats
- Occurs when the animal has low blood calcium levels during lactation

Milk Fever

- Symptoms include:
  - muscle tremors
  - wobbly
  - downer cow
    - inability to stand
  - low body temperature
  - unconscious/coma

Milk Fever

- Treatment includes:
  - injecting a solution of calcium borogluconate subcutaneously or intravenously
  - providing a combined mineral solution

Clinic Corner: Subcutaneous injections are injected into the skin. Intravenous injections are injected into the vein.

Milk Fever

- Prevention includes:
  - providing vitamin D, five to seven days before parturition
  - keeping animals on a low calcium diet while not lactating
  - providing high doses of calcium one day before and one day after giving birth
    - alfalfa hay is high in calcium

White Muscle Disease

- Is generalized as nutritional muscular dystrophy
- Affects young, rapidly growing lambs/kids (from dams with selenium deficient diets)
- Affects calves and foals
- Is the result of a selenium and/or vitamin E deficiency

White Muscle Disease

- Affects two different muscle groups, cardiac and skeletal systems
- Cardiac symptoms include:
  - sudden death
  - respiratory distress
- Skeletal symptoms include:
  - muscular weakness
  - inability to stand
  - muscle tremors

White Muscle Disease

- Treatments include:
  - injections of selenium
  - oral drenches of selenium/vitamin E
- Prevention includes:
  - supplementing the diet of susceptible animals with selenium and vitamin E

Clinic Corner: Warning - too much selenium can cause toxicity in animals!

Hardware Disease

- Affects cattle and is also known as “gastritis” or “traumatic reticulitis”
- Occurs when a sharp object, such as a nail or piece of wire pierces the stomach wall and gains access to the heart

Hardware Disease

- Symptoms include:
  - poor appetite
  - depression
  - indigestion
  - signs of pain when defecating
  - bloat
  - fluid around the heart and abnormal heart sounds

Hardware Disease

- Treatment includes:
  - elevating forelimbs to stop forward movement of the nail or wire from the reticulum
  - administer antibiotics to prevent infection
  - surgery to remove the object

Hardware Disease

- Prevention includes:
  - administering a magnet into the reticulum
    - keeps foreign metallic objects together and reduces the chances of penetration
  - keep feed bunks, pastures and lots free of hazardous objects

BACTERIAL DISEASES

Bacterial Diseases

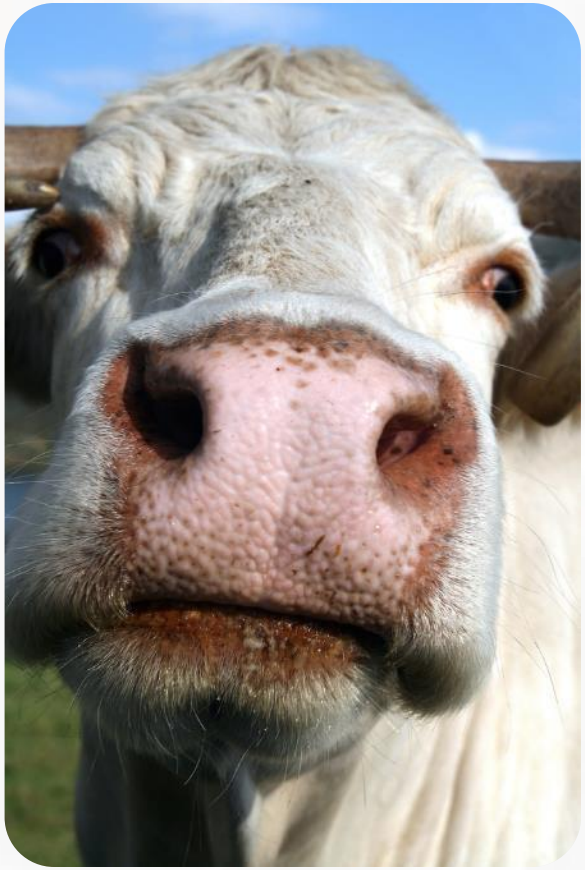
- Include:
  - bovine respiratory disease (BRD)
  - leptospirosis
  - brucellosis
  - vibriosis
  - strangles
  - pinkeye
  - foot rot
  - erysipelas
  - Johne's disease

Bovine Respiratory Disease (BRD)

- Is one of the most common diseases affecting cattle
- Affects the respiratory tract
- Is defined as a “disease complex” and can be caused by a variety of pathogens
- Is a major cause of economic loss for cattle producers

Bovine Respiratory Disease (BRD)

- Symptoms include:
  - fever
  - depression
  - lack of appetite
  - rapid, shallow breathing
  - coughing
  - bloody or discolored nasal and eye discharge
  - salivation
  - death



Bovine Respiratory Disease (BRD)

- Treatment includes:
  - separating sick animals into a different pen
  - administering antibiotics
  - administering anti-inflammatories to reduce fever and damage to lungs
- Prevention includes:
  - utilizing proper management techniques to reduce stress on cattle
  - vaccinating

Leptospirosis

- Is a zoonotic disease caused by bacteria of the genus Leptospira
- Affects cattle, sheep, goats, pigs and horses
- Can damage the liver, kidneys and other organs in the animal
- Is spread through urine, which gets into water and soil

Leptospirosis

- Symptoms include:
  - fever
  - reproductive problems
  - reddened eyelids
  - diarrhea
  - stiffness
  - depression
  - muscle pain

Leptospirosis

- Treatment includes:
  - administering antibiotics to eliminate infection
  - segregating infected animals
- Prevention includes:
  - vaccinating annually
  - utilizing proper management techniques to reduce transmission

Brucellosis

- Is an infectious disease affecting cattle, goats and swine and is caused by Brucella bacteria
- Is also known as “bangs disease”
- Is highly contagious and spread from the vaginal discharge of an infected cow or from an aborted fetus

Brucellosis

- Symptoms include:
  - abortion
  - stillborn
  - weak calf born
  - retention of fetal membranes
  - infection
  - swollen testicles in bulls

Brucellosis

- Has no available treatment, which makes detection and prevention imperative
- Prevention includes:
  - vaccinating to increase resistance to infection
  - utilizing proper management techniques and good sanitation

Vibriosis

- Is a venereal disease spread by infected bulls when they mate with cows and heifers
- Is caused by the bacteria Campylobacter fetus
- Is considered to be one of the major causes of infertility in cattle

Clinic Corner: Venereal disease is defined as an infection transmitted through sexual contact.

Vibriosis

- Symptoms include:
  - abortion
  - poor conception rates
  - long calving interval
  - uterine infection

Vibriosis

- Treatment includes:
  - providing antibiotic treatment
  - vaccinating
- Prevention includes:
  - vaccinating bulls and cows annually
  - utilizing biosecurity and screening of bulls
  - treating new bulls with antibiotics before breeding

Strangles

- Is a bacterial infection of the upper respiratory tract of horses
- Causes enlargement of the lymph nodes in the throat and impairs breathing

Strangles

- Symptoms include:
  - fever
  - swelling around the throat
  - abscesses
  - difficulty breathing and swallowing
  - nasal discharge

Strangles

- Treatment includes:
  - administering antibiotic and anti-inflammatory medications
  - washing abscess or cavities with antiseptic solution
- Prevention includes:
  - isolating new horses for at least three weeks
  - vaccinating annually

Pinkeye

- Affects cattle and is caused by Moraxella Bovis bacteria
- Damages the cornea and conjunctiva

Clinic Corner: Conjuctiva is the mucous membrane which covers the front of the eye and lines the inside of the eyelids

Pinkeye

- Symptoms include:
  - excessive tearing
  - frequent blinking or squinting
  - decreased appetite
  - corneal ulceration and cloudiness
  - eye rupture

Pinkeye

- Treatment includes:
  - administering antibiotics using topical applications in the eye
  - feeding antibiotics
- Prevention includes:
  - controlling flies
  - reducing dust and exposure to sunlight
  - vaccinating

Foot Rot

- Is a contagious disease of sheep, goats and cattle
- Is caused by an interaction of two anaerobic bacteria
  - Fusobacterium necrophorum
  - Bacteroides nodosus

Clinic Corner: Anaerobic is defined as organisms living without oxygen.

Foot Rot

- Bacteria must penetrate the interdigital epidermis
- Symptoms include:
  - moist and reddened hooves
  - inflamed interdigital space and coronary band
  - foul odor
  - lameness

Foot Rot

- Treatments include:
  - foot trimming
  - administering antibiotics
  - providing zinc sulfate or copper sulfate footbaths
  - utilizing zinc sulfate as a dry chemical

Foot Rot

- Prevention includes:
  - avoid using facilities used by infected animals in the last two weeks prior to foot trimming
  - trimming and treating the feet of all new animals

Erysipelas

- Is caused by the bacterium Erysipelothrix rhusiopathiae, which affects swine and sheep
- Is transmitted by animals ingesting the bacteria from contaminated feces in the soil

Erysipelas

- Symptoms include:
  - fever
  - poor appetite
  - stiff movement
  - skin discoloration
  - swollen joints
  - lameness

Erysipelas

- Treatment includes:
  - administering penicillin (antibiotic)
  - medicating feed with phenoxymethyl penicillin
- Prevention includes:
  - vaccinating
  - utilizing proper management
    - provide a clean environment

Johne's Disease

- Is an incurable wasting disease of adult cattle
- Is caused by organisms in the intestinal cells and lymph nodes
  - organisms are passed out in feces and easily survive in manure
- Causes progressive thickening of the intestinal walls
- Affects young animals and may not show symptoms until adulthood

Johne's Disease

- Can be determined with tests performed by a veterinarian
- Symptoms may not be present
- Symptoms include:
  - chronic diarrhea
  - weight loss
  - lowered milk production

Johne's Disease

- Has no effective treatment
- Can be prevented by checking health history of animals before purchase

VIRAL DISEASES

Common Viral Diseases

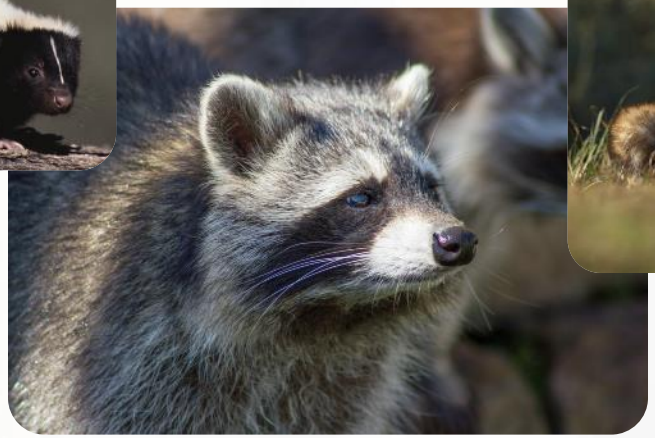
- Include:
  - rabies
  - porcine parvovirus
  - sore mouth
  - bluetongue
  - bovine virus diarrhea
  - foot and mouth disease
  - infectious bovine rhinotracheitis
  - clostridial disease
  - porcine circovirus

Rabies

- Is an acute, fatal viral disease
- Is a zoonotic disease
- Has two genotypes
  - classic (fox, raccoons, skunks)
  - bat variant

Rabies

- Is transmitted by:
  - rabid skunks, foxes, raccoons or bats who bite an animal, ultimately infecting them with the virus



Rabies

- Symptoms include:
  - behavioral changes
  - difficulty swallowing
  - abnormal gait
  - paralysis of limbs
  - hyper salivation
  - may appear colicky
  - obscure lameness
  - fever

Rabies

- Treatment includes:
  - euthanizing is recommended in cases with clinical signs of disease, there is no curable treatment
- Prevention includes:
  - vaccinating annually
  - inspecting horses daily, especially if they live outside year round
  - controlling wild animals which could potentially carry the rabies virus

Porcine Parvovirus

- Is highly contagious and the most common cause of infectious infertility in swine
- Affects the fetus of a pregnant sow

Porcine Parvovirus

- Symptoms include:
  - fetal death
  - fetal mummification
- Does not have a known cure
- Prevention includes:
  - quarantining and confining new animals

Sore Mouth (Orf)

- Is the most common skin disease affecting sheep and goats
- Is a viral infection and zoonotic disease which can produce painful human infections
- Affects young animals more frequently

Photo Source: Dr. CV Kimberling, CSU Veterinary Extension

Sore Mouth (Orf)

- Symptoms include:
  - loss of appetite
  - vesicles appear on lips, gums and tongue, causing redness or swelling
  - vesicles break and form sores

Sore Mouth (Orf)

- Is a self-limiting infection
- Treatment includes:
  - applying antibiotic ointment to the sores
  - tube feeding young individuals if not nursing
- Prevention includes:
  - maintaining proper sanitation
  - vaccinating

Photo Source: Dr. CV Kimberling, CSU Veterinary Extension

Bluetongue

- Is a viral disease mainly affecting sheep and goats, but can also affect cattle
- Can be transmitted through the following:
  - insects
  - in-utero
  - infected needles
  - semen

Photo Source: Dr. CV Kimberling, CSU Veterinary Extension

Bluetongue

- Symptoms include:
  - abortion
  - weak, “dummy lamb” births
  - fever
  - excessive salivation
  - nasal discharge
  - inflamed mouths
  - swelling of muzzle and ears
  - blue tongue

Photo Source: Dr. CV Kimberling, CSU Veterinary Extension

Bluetongue

- Does not have a known cure
- Prevention includes:
  - controlling vectors
  - using insecticides

Photo Source: Dr. CV Kimberling, CSU Veterinary Extension

Bovine Virus Diarrhea

- Is a viral disease affecting cattle of all ages
- Spreads by contact
- Is a transplacental pathogen

Clinic Corner: Transplacental is defined as relating to or involving passage through or across the placenta.

Bovine Virus Diarrhea

- Is transmitted by blood feeding flies and contact with fomites
- Is an incurable disease
- Can appear in the following forms:
  - mild
  - acute
  - chronic

Clinic Corner: A fomite is defined as any inanimate object or substance capable of carrying infectious organisms. Examples include: soil, holding pens, chutes, feeding troughs, etc.

Bovine Virus Diarrhea

- Symptoms include:
  - lethargy
  - poor appetite
  - diarrhea
  - fever
  - nasal discharge
  - oral erosions
  - abortions

Bovine Virus Diarrhea

- Treatment includes:
  - providing supportive therapy
- Prevention includes:
  - vaccinating

Foot and Mouth Disease

- Is a severe, highly contagious zoonotic viral disease
- Leaves recovered animals debilitated
- Virus survives in lymph nodes and bone marrow at neutral pH

Photo Source: Dr. A.P. Knight, CSU Veterinary Extension

Foot and Mouth Disease

- Can be spread by physical contact with the virus by susceptible animals
- Virus includes more than 60 subtypes

Photo Source: Dr. A.P. Knight, CSU Veterinary Extension

Foot and Mouth Disease

- Symptoms include:
  - blisters
  - erosions in the mouth, on teats and hooves
  - excessive salivation
  - fever
  - lameness

Photo Source: Dr. A.P. Knight, CSU Veterinary Extension

Foot and Mouth Disease

- Treatment includes:
  - vaccines must be matched to the specific type and subtype of the virus
- Prevention includes:
  - observing excessive salivation or lameness
  - reporting any signs of disease to a veterinarian
  - not bring prohibited animal products or other at-risk materials from other countries into the United States

Infectious Bovine Rhinotracheitis (IBR)

- Is a contagious respiratory disease of cattle caused by bovine herpes virus type 1 (BHV-1)
- Can be spread through direct contact with infected animals or indirect contact with contaminated surfaces

Infectious Bovine Rhinotracheitis (IBR)

- Symptoms include:
  - fever
  - loss of appetite
  - nasal discharge
  - difficulty breathing
  - redness in the whites of the eyes
  - conjunctivitis

Infectious Bovine Rhinotracheitis (IBR)

- Treatment includes:
  - administering antibiotics
  - utilizing proper management techniques to reduce stress
  - isolating infected animals and providing fresh food and water
- Prevention includes:
  - vaccinating

Clostridial Disease

- Is also known as “black leg”
- Is caused by a spore forming bacterium attacking skeletal muscles
- Spores can live in soil for years
- Can cause death without any symptoms

Clostridial Disease

- Symptoms include:
  - lameness
  - swelling over neck, shoulder and thighs
    - will make a crackling sound when rubbed
  - wounds and bruises occur in young calves from four months to two years old
  - death occurs in one or two days

Clostridial Disease

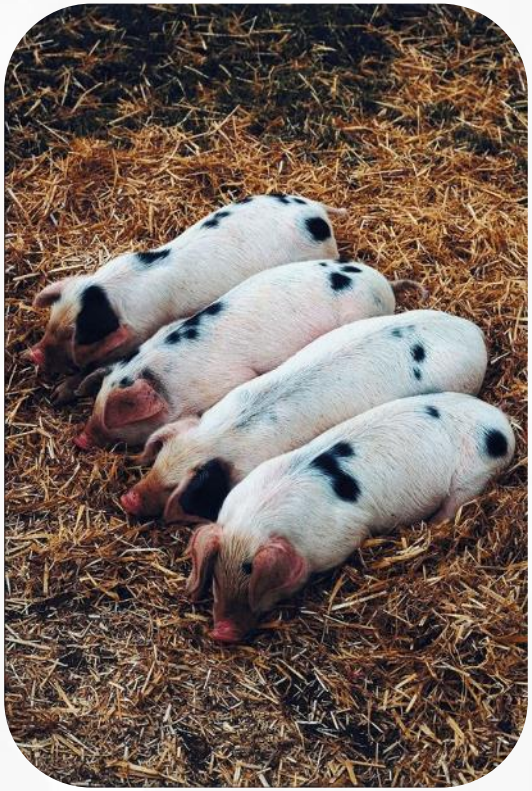
- Treatment includes:
  - administering massive doses of antibiotics which may save the animal if detected early, not always effective
- Prevention includes:
  - administering a vaccination at three to four months of age

Porcine Circovirus

- Is an emerging problem in the United States
- Includes the following strains:
  - PCVD1
  - PCVD2, zoonotic strain
- Is a member of the virus family Circoviridae
- Type II is the strain which affects pigs

Porcine Circovirus

- Can be present with no symptoms
- Symptoms include:
  - poor growth
  - increased mortality
  - weight loss
  - enlarged lymph nodes
  - jaundice



Porcine Circovirus

- Treatment includes:
  - providing vaccines administered to piglets three to five weeks of age in two doses
- Prevention includes:
  - sanitizing facilities
  - quarantining new and sick animals from the herd
  - lowering stress of animals
  - increasing immune systems through proper nutrition

PARASITIC & FUNGAL DISEASES

Common Fungal Diseases

- Include:
  - ringworm
  - facial eczema

Ringworm

- Is known as Club Lamb Fungus
- Affects all animals
- Is highly contagious
- Can be transmitted to humans, therefore it is a zoonotic fungal disease
- Is a fungus which invades the skin and hair (wool)

Ringworm

- Symptoms include:
  - lesions appearing on the head, neck and back
  - hair loss around infected area

Photo Source: Dr. A.P. Knight, CSU Veterinary Extension; Dr. C.V. Kimberling, CSU Veterinary Extension

Ringworm

- Treatment includes:
  - applying anti-fungal ointments to lesions
- Prevention includes:
  - utilizing proper sanitation practices of brushes, clippers and bedding
  - minimizing contact with infected animals

Facial Eczema

- Is a type of sunburn
- Affects grazing animals
- Is caused by a poisonous substance "sporidesmin" produced by fungus on pasture plants
- Causes liver damage

Facial Eczema

- Symptoms include:
  - sunburn
  - puffy eyes
  - puffy face
  - rapid weight loss
  - jaundice

Facial Eczema

- Treatment includes:
  - sheltering animals from direct sunlight
  - removing animal from infected field
  - contacting a veterinary practitioner

Facial Eczema

- Prevention includes:
  - keeping track of fungi counts in pastures
  - minimizing close grazing of pasture
  - shifting livestock to the pastures with low fungi counts

Common Parasitic Diseases

- Include:
  - mange
  - coccidiosis
  - ostertagious
  - haemonchus contortus
  - ascaris
  - anaplasmosis

Mange

- Affects all animals
- Is caused by an external parasite
- Can be identified in various types, including:
  - sarcoptic mange
  - psoroptic mange
  - chorioptic mange
  - demodectic mange
  - psorergatic mange
- Is most commonly identified as Chorioptic Mange in the United States

Mange

- Symptoms include:
  - lesions
  - itchiness
  - crusts and scabs
  - hair loss
  - ulcerations on the legs
  - weight loss
  - decreased milk production
  - increased susceptibility to other diseases

Photo Source: Dr. A.P. Knight, CSU Veterinary Extension

Mange

- Treatments include:
  - spraying the animal with a medicated solution at high pressure
  - using a lime-sulfur dip weekly on cattle
- Prevention includes:
  - avoiding close confinement
  - keeping animals outdoors as much as possible
  - quarantining new animals

Coccidiosis

- Is caused by a number of protozoan from the family Coccidia
- Is caused by protozoan rupturing the intestinal cell lining
- Can be found in all animals, mostly in poultry and cattle

Coccidiosis

- Symptoms include:
  - diarrhea (bloody at times)
  - straining
  - loss of appetite
  - fever

Coccidiosis

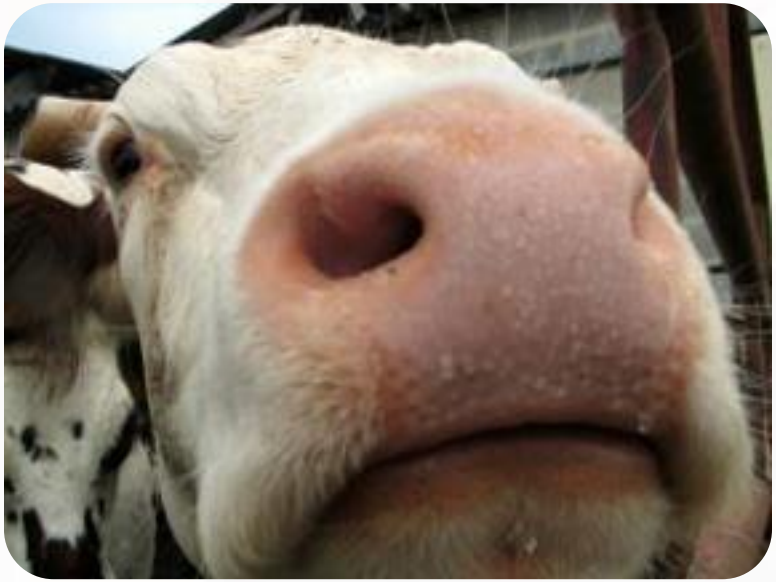
- Treatment includes:
  - administering sulfonamide drug
- Prevention includes:
  - utilizing proper sanitation techniques
  - placing sulfa guanidine or nitrofurazone in feed or water
  - using a feed with correct minerals and antibiotics

Osteragious

- Is the principal worm parasite of beef and dairy cattle
- Attacks the lining of the abomasum
- Causes irritation and interferes with the digestive function

Ostertagious

- Symptoms include:
  - decreased weight gain
  - decreased milk production
  - loss of blood protein
  - diarrhea



Ostertagious

- Treatment includes:
  - administering the following at three-week intervals:
    - thiabendazole
    - ivermectin
- Prevention includes:
  - administering one or more anthelmintic treatments during a production cycle
  - providing higher levels of protein in the diet
  - arranging a late turnout onto pasture in the spring

Haemonchus Contortus

- Is better known as the "barber pole" or wire worm
- Is the single most deadly stomach worm
- Affects sheep in warm, moist climates
- Pierces the lining of the abomasum, causing protein loss

Haemonchus Contortus

- Symptoms include:
  - anemia
  - pale mucous membranes
  - swelling under the jaw

Haemonchus Contortus

- Treatment includes:
  - de-worming animals with medicines, such as:
    - levamisole
    - ivermectin
    - thiabendazole
- Prevention includes:
  - de-worming at birth
  - monitoring herds carefully

Ascaris

- Is a common parasite affecting swine of two to three months of age
- Is a zoonotic parasite
- Is generally known as roundworms
- Resides in the stomach, intestinal tract and even the lungs of swine
- Can be transmitted to humans through ingestion

Ascaris

- Symptoms include:
  - weight loss
  - slow weight gain
  - abdominal pain
  - coughing or trouble breathing
  - pneumonia

Ascaris

- Treatment includes:
  - de-worming animals using medicines, such as:
    - fenbendazole
    - soramectin
    - levamisole
- Prevention includes:
  - utilizing thorough cleaning and sanitation techniques
  - controlling pests and rodents
  - minimizing traffic
  - providing good nutrition

Anaplasmosis

- Is also known as yellow-bag or yellow-fever
- Can affect all animals
- Is a blood disease caused by Anaplasma marginale and Anaplasma centrale
- Is transmitted and spread by ticks

Anaplasmosis

- Symptoms include:
  - anemia
  - fever
  - weight loss
  - shortness of breath
  - jaundice (yellowing of skin)
  - uncoordinated movements
  - abortion
  - death

Anaplasmosis

- Treatment includes:
  - administering blood transfusions
  - administering antibiotics, such as:
    - tetracycline
- Prevention includes:
  - administering an antibiotic called oxytetracycline every three to four weeks when animals are at risk

GENETIC DISEASES

Common Genetic Diseases

- Include:
  - hypotrichosis
  - mulefoot
  - cryptorchidism
  - hyperkalemic periodic paralysis (HYPP)
  - porcine stress syndrome
  - spider lamb syndrome

Hypothrichosis

- Is also known as hairlessness
- Occurs in several breeds of beef cattle
- Is a complete or partial loss of hair and calves are often born with no hair
- Causes animals to be more prone to environmental stress and skin infections

Hypothrichosis

- Symptoms include:
  - lack of hair on the body
  - lesions
  - infection
- Treatment includes:
  - there is currently no treatment available
- Prevention includes:
  - known carriers should be removed from breeding stock

Mulefoot

- Is also known as Syndactyly
- Occurs when two toes are joined together to create only one toe
- Is commonly found in pigs and cattle
- Symptoms include:
  - lameness
  - high-step gait
  - slow walk

Mulefoot

- Treatment includes:
  - there is currently no treatment available
- Prevention includes:
  - carrier animals should be removed from the breeding program

Cryptorchidism

- Occurs when one or both testicles on a male animals fail to descend into the scrotum
- Affects all species
- Symptoms include:
  - infertility
  - fail to produce sperm
  - spermatic cord torsion

Cryptorchidism

- Treatment includes:
  - surgical removal of the cryptorchid testicle
- Prevention includes:
  - removing cryptorchid animals from the breeding herd will decrease the probability of the disease

Hyperkalemic Periodic Paralysis (HYPP)

- Is a muscle disease found among Quarter Horses who are offspring of a sire named, Impressive
- Symptoms include:
  - muscle spasms
  - tremors
  - weakness
  - labored breathing
  - paralysis of the muscles in throat

Hyperkalemic Periodic Paralysis (HYPP)

- Treatment includes:
  - there is currently no treatment available
  - attacks may be reduced with controlled diets and exercise
- Prevention includes:
  - testing horses for the genetic mutation before breeding

Porcine Stress Syndrome

- Is a neuromuscular disorder found in pigs which is often caused by the following physical stressors:
  - exercise
  - fighting
  - vaccination
  - mating
  - parturition
  - hot weather

Porcine Stress Syndrome

- Symptoms include:
  - muscle and tail tremors
  - labored breathing
  - reddening of skin
  - increased body temperature
  - collapsing
  - rigid muscles
  - death

Porcine Stress Syndrome

- Treatment includes:
  - spraying the pig with cold water to control temperature
  - injecting calcium gluconate
  - sedating the pig with stresnil
- Prevention includes:
  - testing for the gene and remove possible carriers from the breeding herd

Spider Lamb Syndrome

- Is a genetic disorder which causes skeletal deformities in young lambs
- Symptoms include:
  - abnormally long limbs
  - bent limbs
  - twisted spines
  - flattened rib cages
  - long necks
  - shallow bodies

Spider Lamb Syndrome

- Treatment includes:
  - there is currently no treatment available
- Prevention includes:
  - DNA testing animals before breeding
    - carriers often do not show symptoms of the disease

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