



Infectious Diseases of the Respiratory System

PHYSICAL EXAMINATION: REVIEW





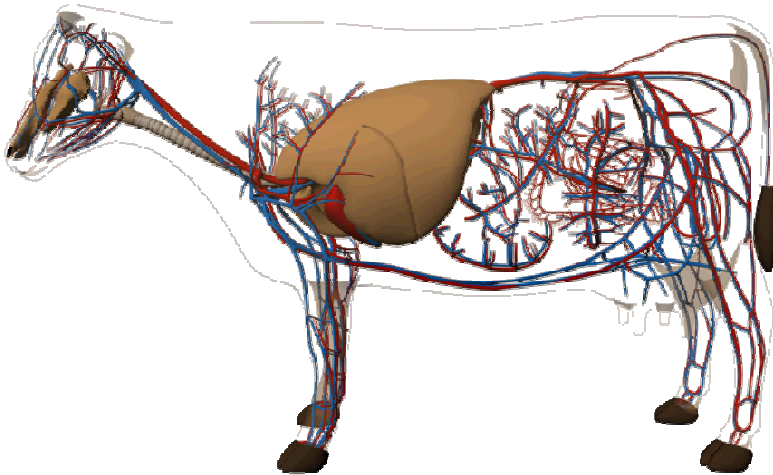
Infectious Diseases of the Respiratory System

- **Infectious diseases of the respiratory tract are a major cause of morbidity and mortality in cattle and horses**
- **In livestock (in the United States), respiratory disease causes serious economic losses for farmers and large producers**
 - Production loss
 - Veterinary costs
 - Increased labor
- **In horses, respiratory diseases are one of the most common causes of exercise intolerance and poor performance in horses**
 - Race, polo, rodeo, show jumping, endurance
 - Could impact the performance of Buzkashi horses?



Respiratory System: Anatomy

- The respiratory tract consists of external nares, nasal passages, throat (larynx and pharynx), trachea, and lungs
 - Horses have guttural pouches
 - Extension of the Eustachian tubes





Respiratory System Examination

- **A complete clinical examination with emphasis on the respiratory system should be conducted**
- **The examination should include:**
 - Evaluation from a distance
 - Collection of a complete history from the owner
 - Thorough physical examination
- **Once the examination is completed the veterinarian should consider completing an assessment that includes:**
 - Subjective findings – observations
 - Objective findings – physical examination parameters
 - Assessment – conclusions based on subjective and objective findings
 - Plan – establishing a plan to confirm the clinical diagnosis and therapeutic plan



Examination from a Distance: Respiratory

- **The animal being examined should be handled as little as possible to allow for a more accurate assessment**
 - Animal should be as relaxed as possible
- **Examination of the respiratory system from a distance should include:**
 - Breathing pattern: Does breathing require more work than normal? Are the respirations deep or shallow? Is the respiratory rate rapid?
 - Stance: Is the animal standing with its elbows outward? Animals having difficulty breathing have base wide stance with elbows pointing outward. Does pain seem to be associated with breathing?
 - Coughing: Is the animal coughing?
 - Sneezing
 - Nasal Discharge
 - Facial symmetry



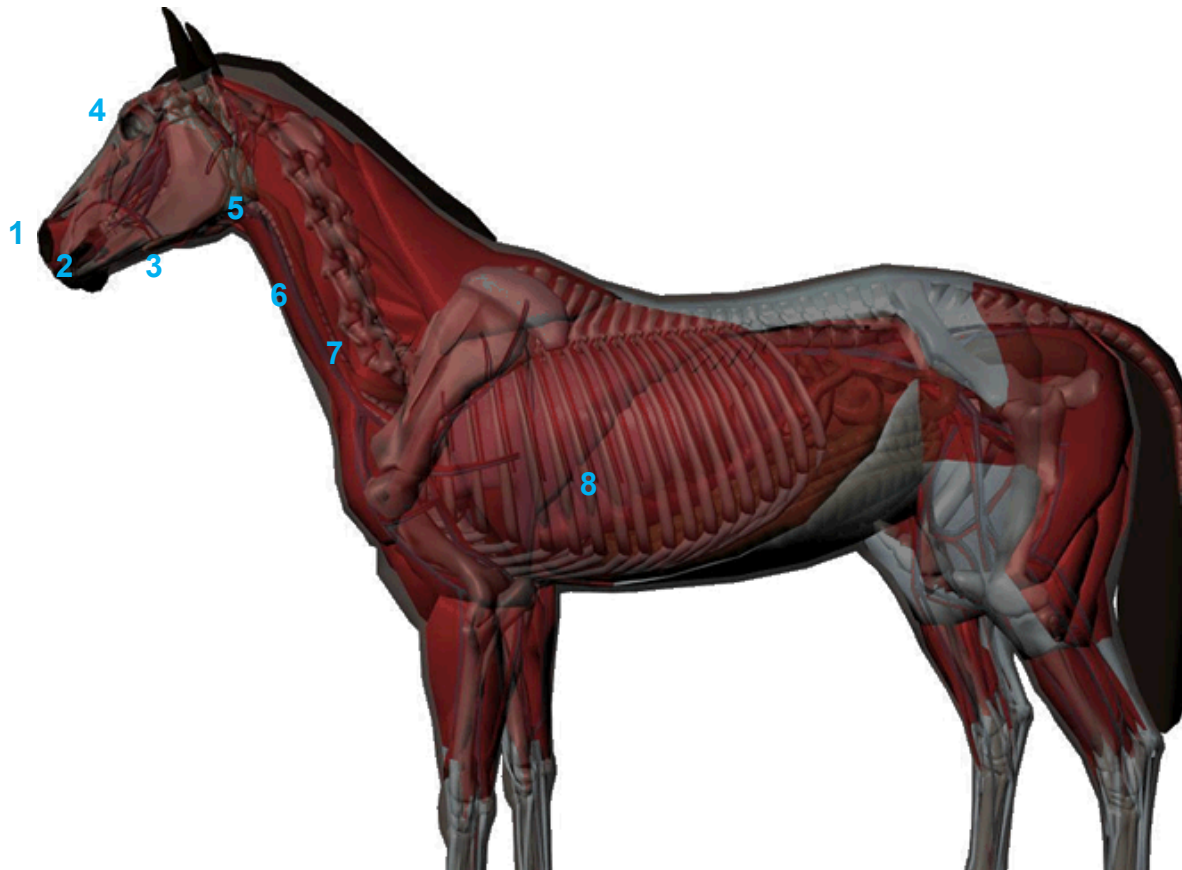
Examination from a Distance: Respiratory





Respiratory System

Examination from a Distance:



- 1 – External nares
- 2 – Mouth
- 3 – Lymph node
- 4 – Sinuses and face
- 5 – Larynx
- 6 – Trachea
- 7 – Jugular vein
- 8 – Chest and lungs
- The same structures should be evaluated on small ruminants and cattle



Respiratory System: Physical Examination

- **External nares**

- Evaluate the nostrils for:
 - Flaring nostrils indicate difficulty breathing
 - Evaluate airflow from each nostril
 - Note the presence or absence of discharge

- **Mouth**

- Determine odor of the breath – foul smell may indicate anaerobic infection
- Mucous membrane color – purple or blue membranes may indicate hypoxemia
- Mucous membrane moisture – dry membranes indicate dehydration
- Evaluate the mucous membranes and tongue for the presence of ulcers





Respiratory System: Physical Examination

- **Submandibular lymph nodes**

- May be enlarged with sinusitis or an upper airway infection

- **Sinuses**

- Sinusitis may manifest as a unilateral swelling
 - **Evaluate for facial symmetry**
- Sinuses may be inflamed without swelling and require percussion to detect
 - **Percussion requires the veterinarian to tap the sinuses and at the same time listen for changes in sound**
 - **Evaluate for pain associated with percussion or palpation of the sinuses**
- Facial symmetry
 - **Eyelid, lip, and or ear droop may indicate middle or internal ear infection**





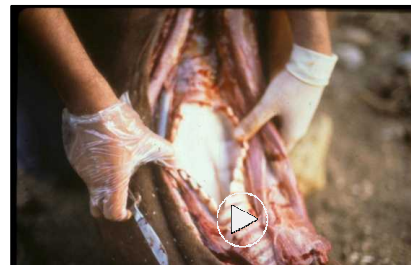
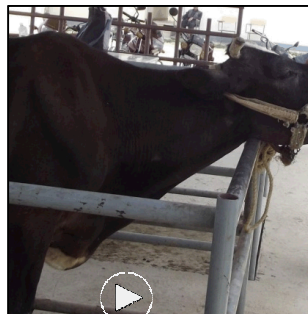
Respiratory System: Physical Examination

- **Larynx**

- The larynx should be palpated for swelling and pain
- Gentle pressure on the larynx should not induce a cough
 - **Cough may indicate laryngeal irritation**

- **Trachea**

- The trachea should be palpated to assess the area for trauma, pain, swelling, and/or irregularities in the cartilage
 - **Gentle pressure should not induce a cough**
 - Cough during palpation may indicate inflammation
- The trachea should be auscultated





Respiratory System: Physical Examination

- **Jugular vein**
 - Examine for patency and filling – does the vein fill adequately
 - **Lack of filling may indicate dehydration**
 - Evaluate for distention or pulsation
 - **Pulsating or distended jugular veins may indicate pleural effusion or a mass in the cranial chest cavity that is obstructing the return of blood to the heart**





Respiratory System: Physical Examination

- **Chest**

- Palpate intercostal spaces for pain – pain may indicate pleuritis
- Examine for edema – pleuritis often causes an obstruction of blood flow that can cause edema

- **Lungs**

- In cattle the lungs can be heard in a region that is defined by the triceps cranially, the vertebral column dorsally, and a line joining the eleventh intercostal space with the point of the elbow
- In horses the lungs can be heard in a region that is defined by the triceps cranially, the vertebral column dorsally, and a curve that joins the last intercostal space with the point of the elbow





Respiratory System: Physical Examination

- **Auscultation**



- Normal respiratory rates ruminants are very similar

- **Adults**

- Cattle: 18 – 35
- Horse: 10 - 24
- Goat: 15 - 30
- Sheep: 12 - 20

- **Young animals**

- Calf: 20 – 40
- Foal: 20 - 40
- Kid: 20 – 40



- Lung sounds can be enhanced with a rebreathing bag
 - The bag forces the animal to rebreathe carbon dioxide and take deeper breaths that are more easily heard



Assessment and Plan

- **Make note of all subjective and objective findings**
- **Assessment:**
 - Compile the results of your findings and develop a list of differential diagnoses
- **Plan:**
 - Use your assessment to develop a plan
 - Additional diagnostic testing to confirm or rule out a diagnosis
 - Treatment plan
 - Address epidemiology and transmission concerns if appropriate