

Backcountry First Aid Prevention, Triage and Treatment

Montana Equine Medical and Surgical Center

Al Flint DVM, PhD

Prior Planning Prevents

.....

Prevention

- Trip Duration
- Trail Conditions
- Correct Fitting Tack
- Fitness
 - Know the limitations of you and your stock

Prevention

- Check under the hood
 - Lameness issues
 - Worn equipment

Preparation

- First Aid Kit
- Know the signs and symptoms
- Acquire and keep current your skill set



Lameness

What and Where



The Bone Structure

Anatomy



Shoulder

Elbow

Carpus



Scapula

Humerus

Ulna

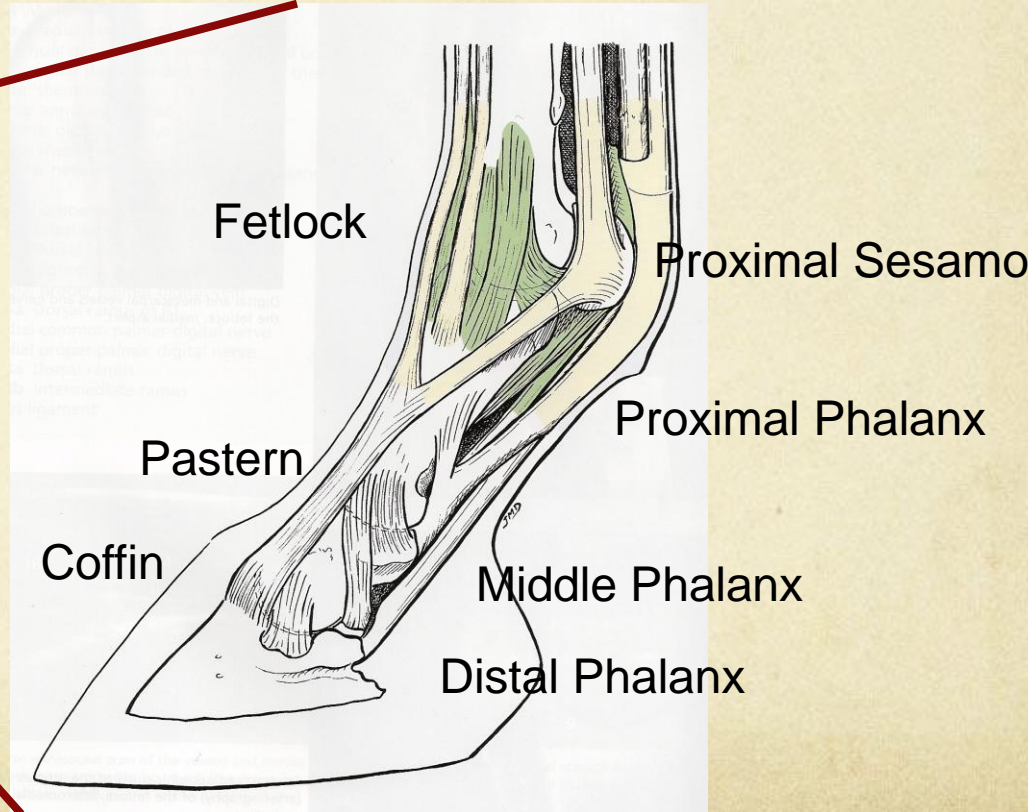
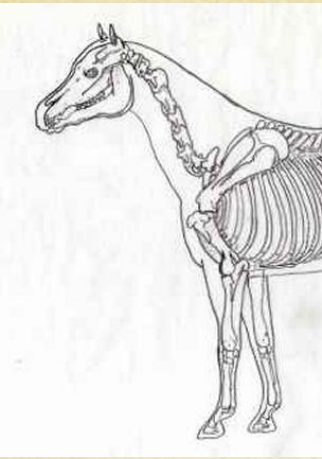
Radius

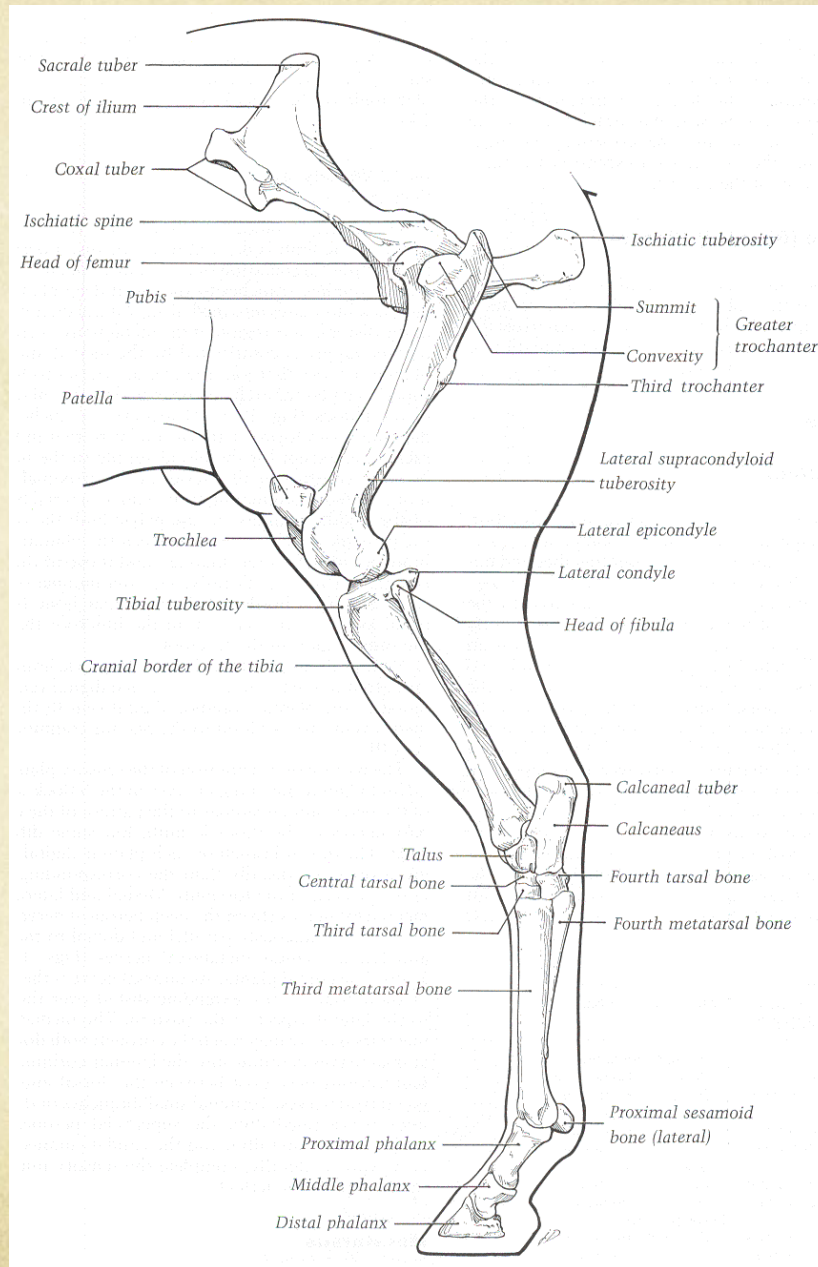
Carpal bones

Metacarpus

Distal Extremity

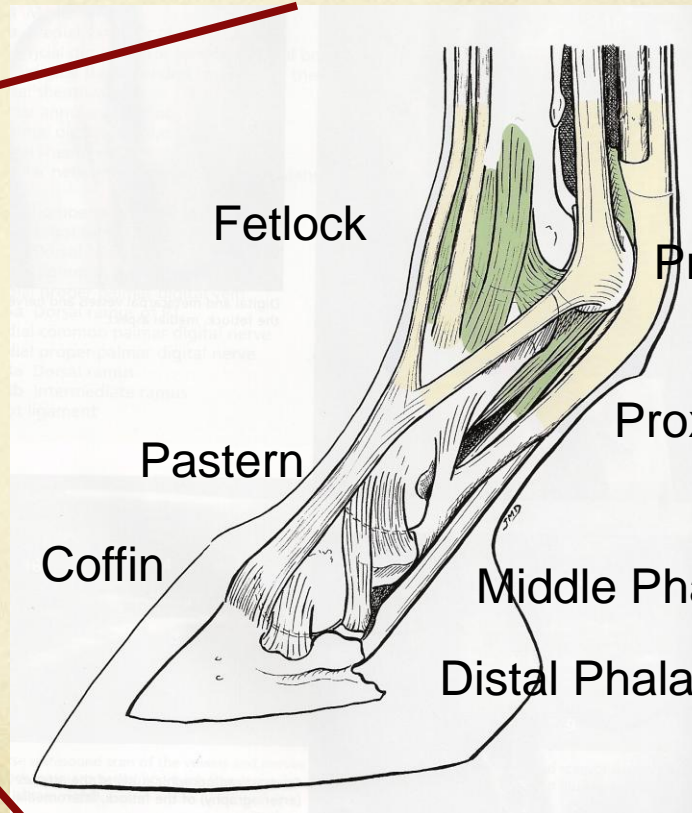
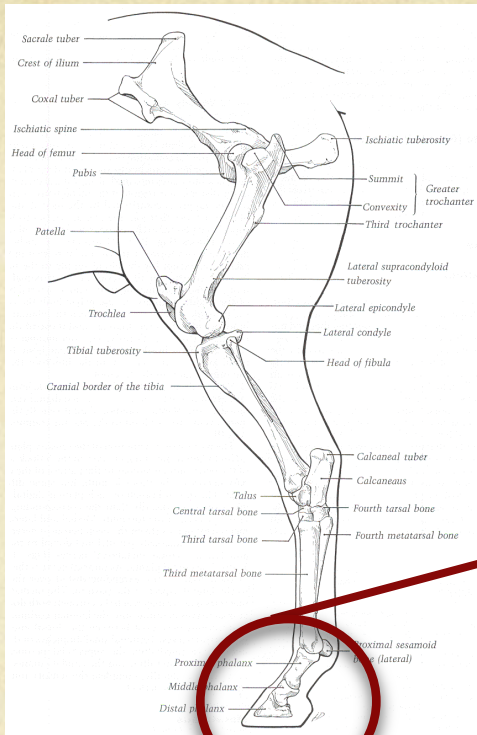
Distal Extremity





Distal

Extremity



Soft Tissue Structure

Anatomy

Musculature

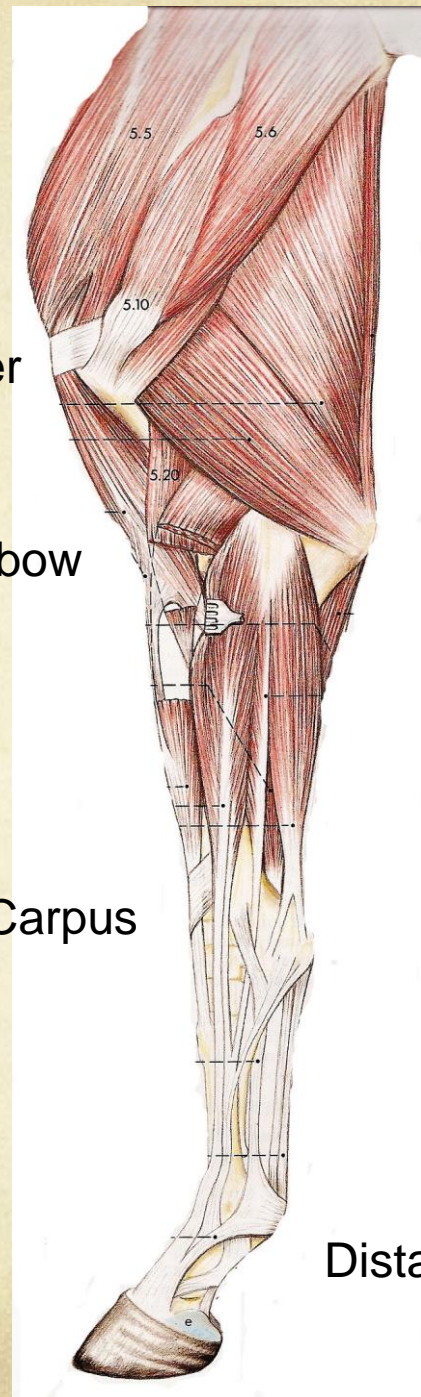


Shoulder

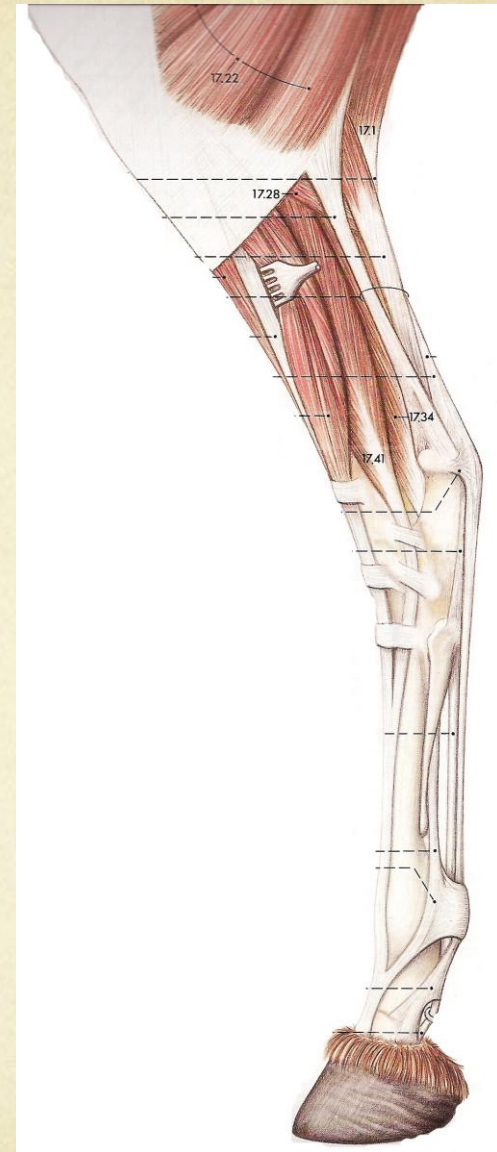
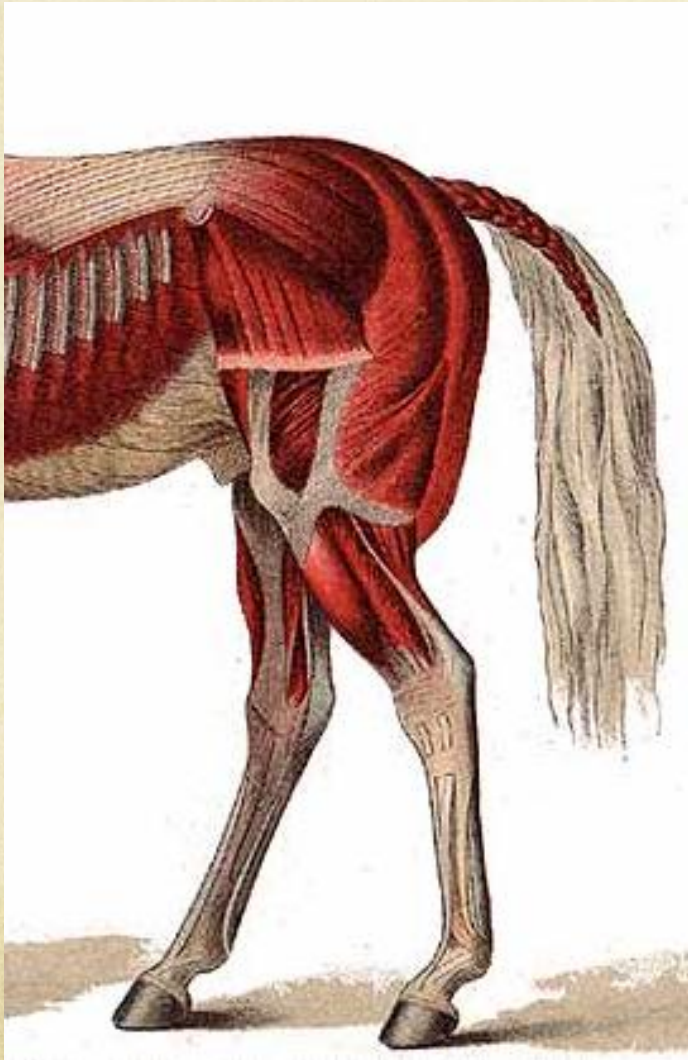
Elbow

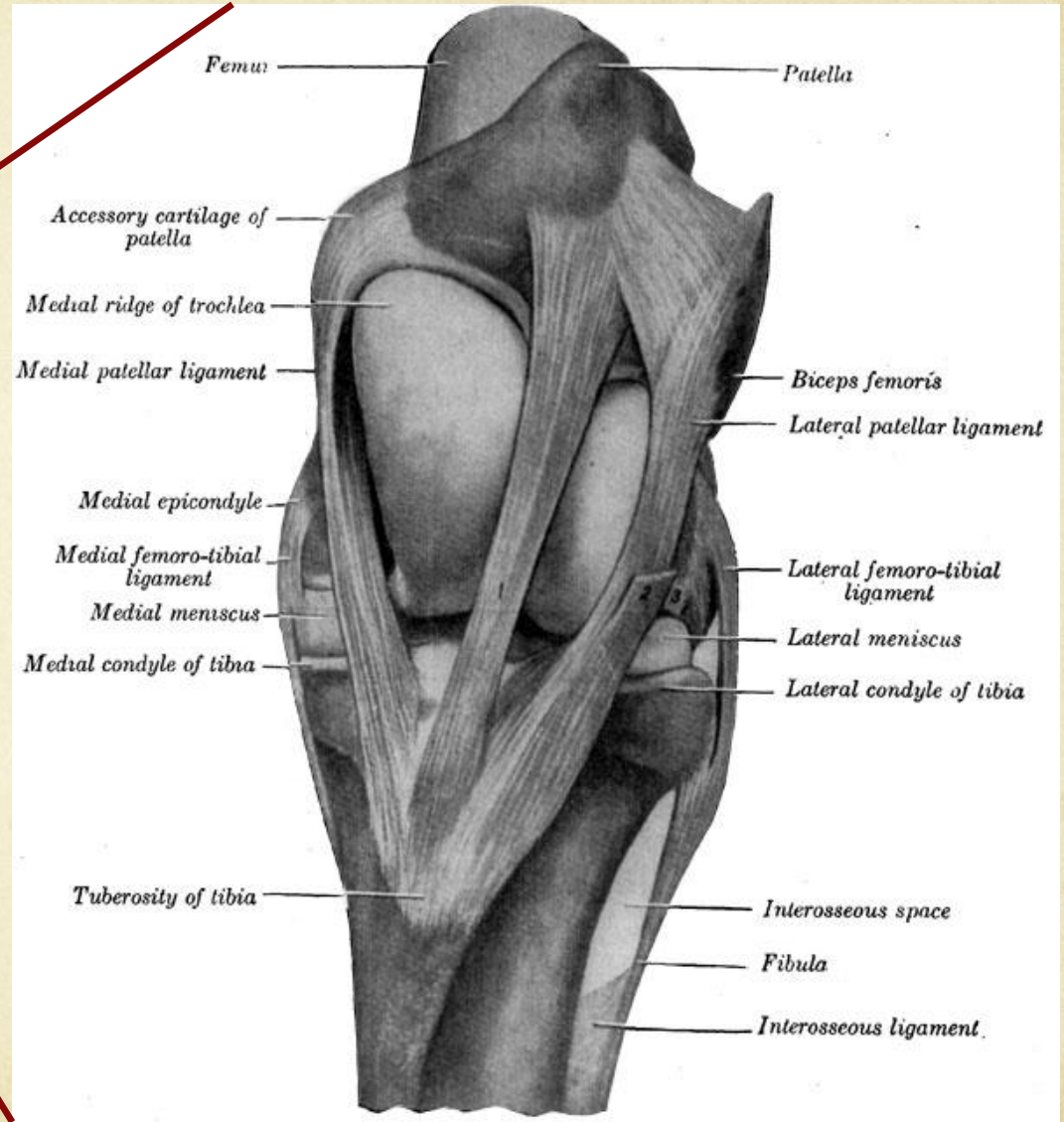
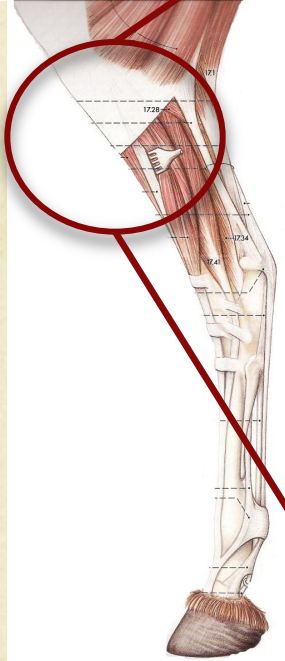
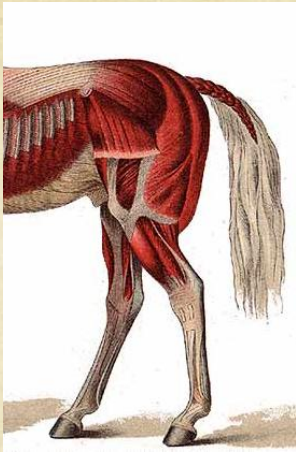
Carpus

Distal Extremity

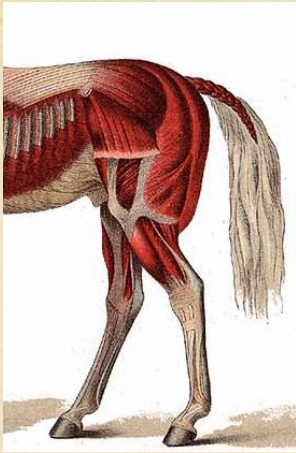


Musculature





Stifle



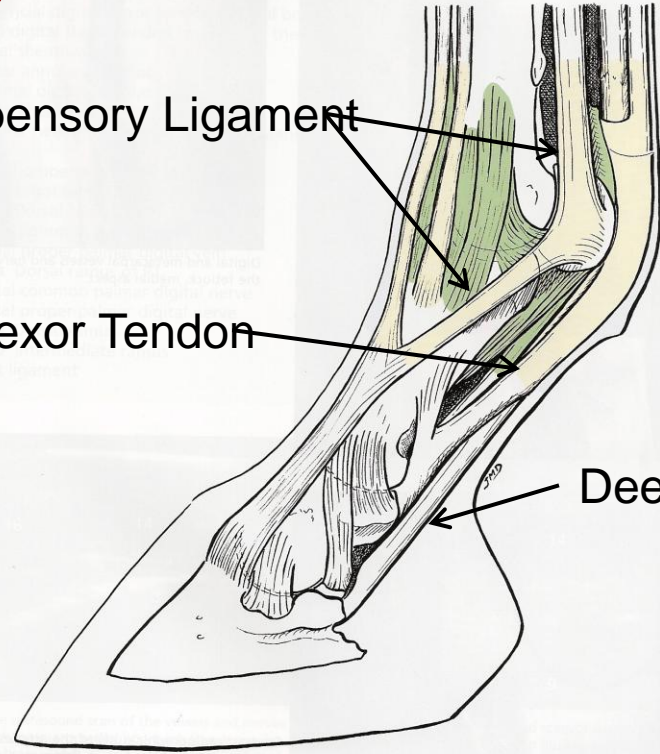
Distal Extremity



Suspensory Ligament

Superficial Flexor Tendon

Deep Flexor Tendon



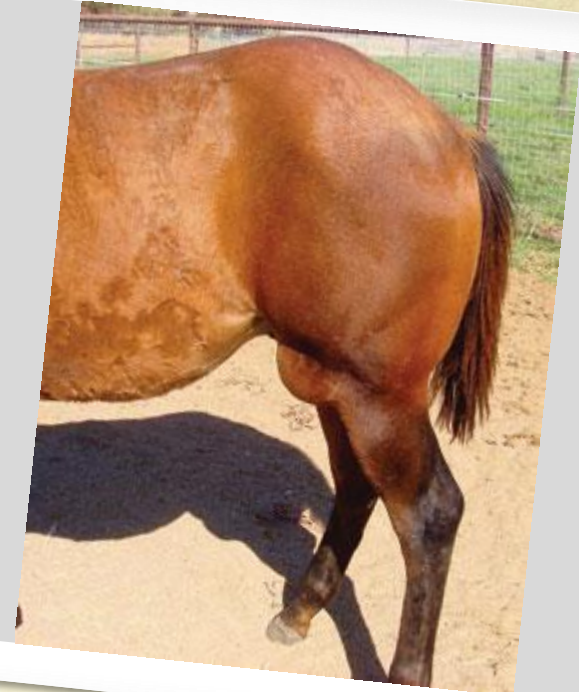
Palpation

**A Story of lumps, bumps,
heat and swelling**



Effusion vs.. Edema

Both are valuable diagnostic tools



Edema vs.. Effusion

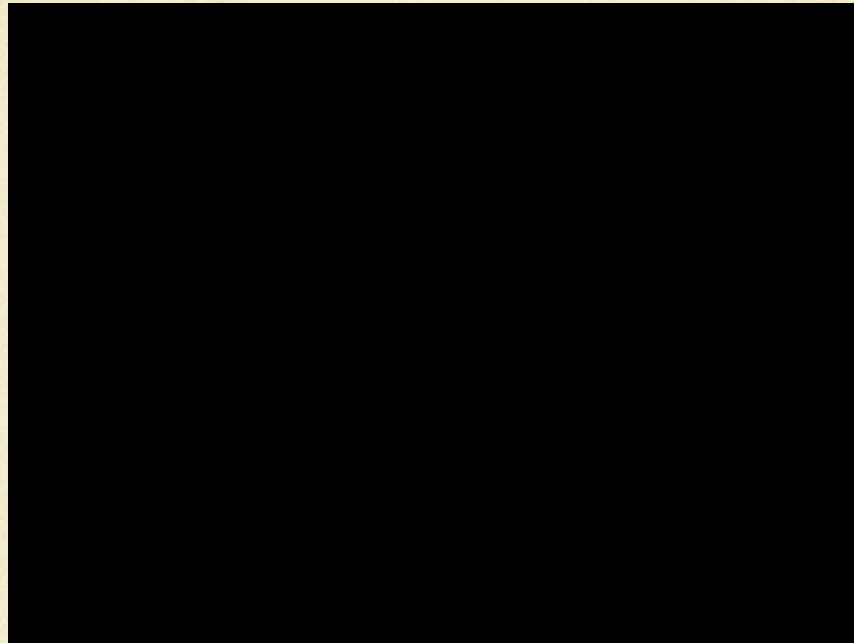


Edema vs.. Effusion

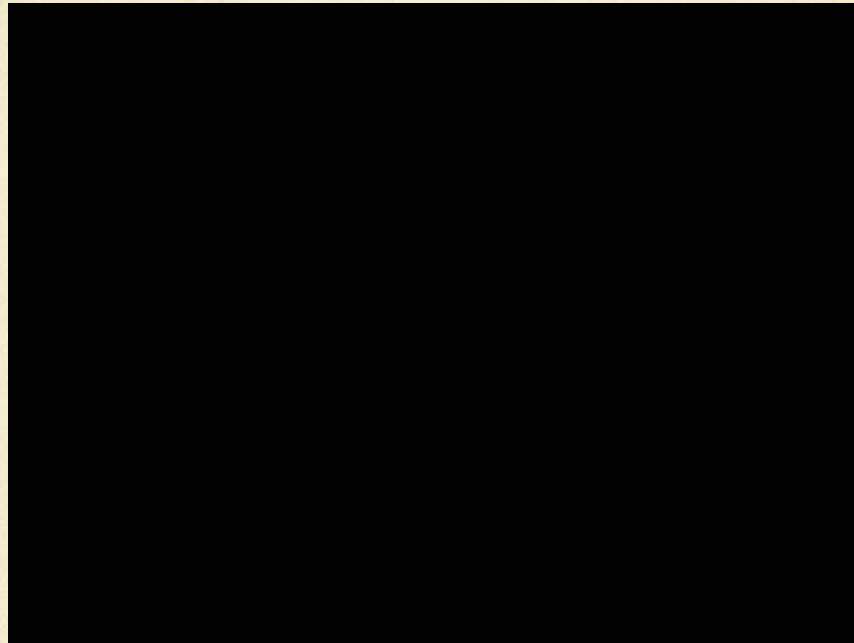
Movement

**Characterizing:
Foot Flight and Head Bob**

Left Front Lameness



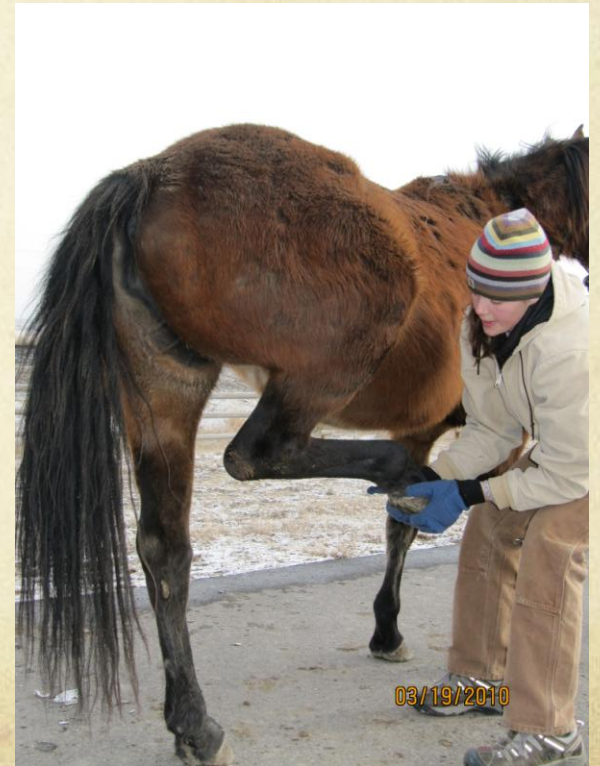
Left Hind Lameness



Flexions

Regionalizing Pain





Common things are Common

85% of lameness is at or below the fetlock

Common Problems

- Stone Bruise
- Sole Abscess
- Heel Pain
- Bowed tendon
- Fracture

Treating

Using symptomatic therapy to get you home

Treatment

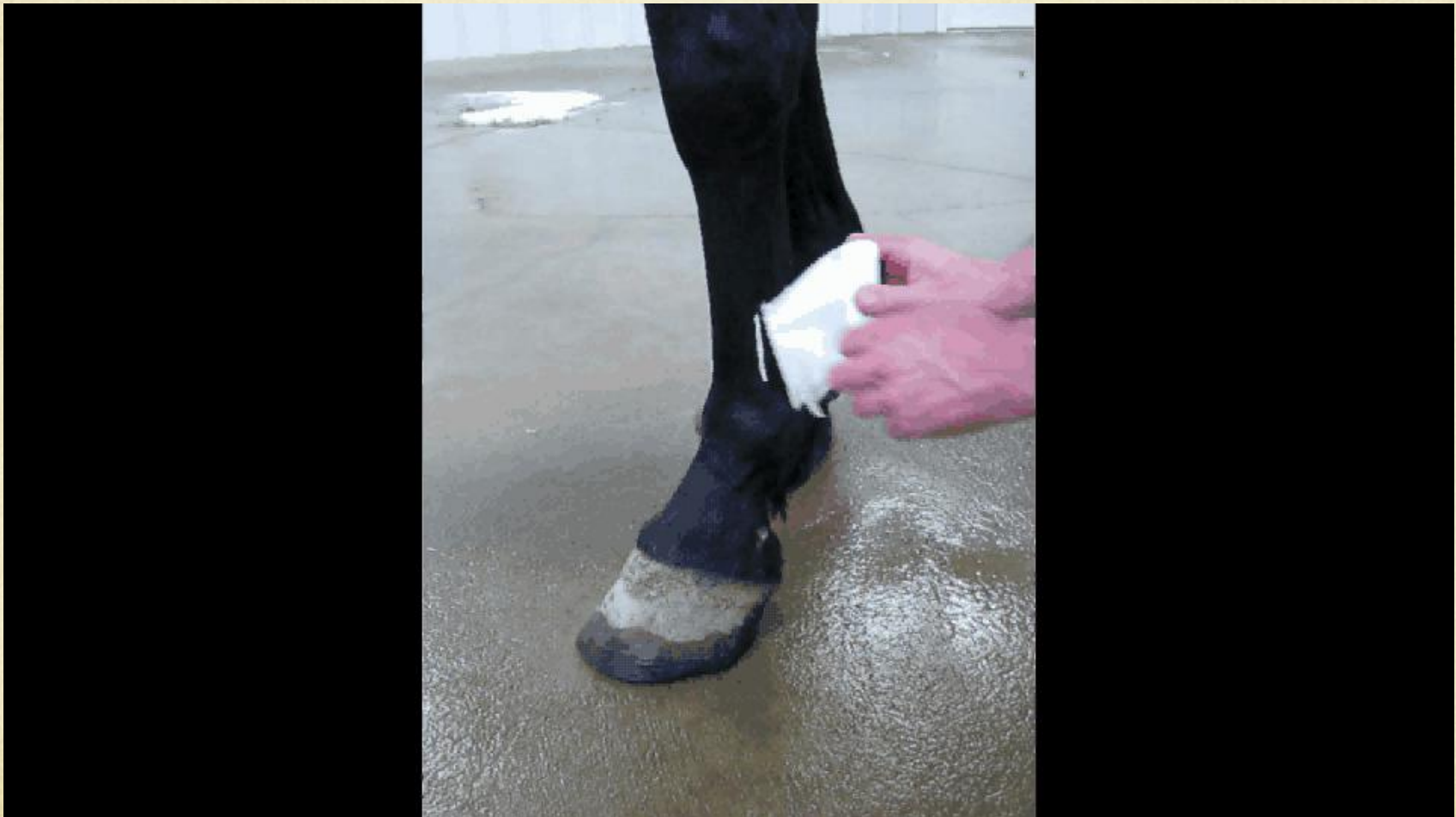
- Basics
 - Decrease swelling/inflammation
 - Support

Swelling

- Initial injury
 - 24-36 hrs cold therapy
 - Anti-inflammatories
 - Bute
 - Surpass
- Chronic Therapy
 - Heat
 - Anti-inflammatories

Support

- Wrapping
 - Minimize Swelling
 - Soft tissue healing
 - Padding is Critical



Feet

No Foot No Horse



Common Problems

- Stone Bruise
- Abscess
- Laminitis
- Coffin Bone Fracture

Stone Bruise

- Deep contusion to a bone and/or associated soft tissue
- Acute lameness
- Short duration
- Sore to hoof tester
 - Point Location
 - Soft sole but no soft spot

Stone Bruise

- Not Serious
- Treatment
 - Cold therapy
 - NSAID's
 - Padding if needed

Abscess

- Acute severe lameness
 - Fracture lame
- 7-30 day duration
- Very sore to hoof tester
 - Point location
 - Soft spot in the sole



Abscess

- Pare out if indicated
- Soak
 - Strong betadine / Epsom salt
 - 15-20 min until resolved
 - Over coronary band



Abscess

- No antibiotics
 - Lengthens treatment
 - Unless secondary swelling and infection
 - Then PPG for 7 -10 days
 - 30-40ml 2 times daily
- NSAID's
 - Controversial

Foot bandage

- Pack and wrap
 - Sugar-dine
 - Icthamal
 - Dmsso/Furisone
- Number 3-4 diaper
- Duct tape

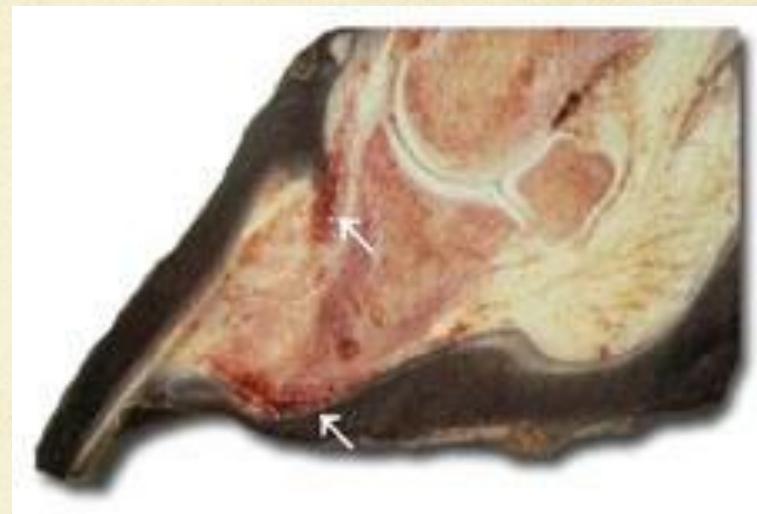


Laminitis

- Mild to severe lameness
- Rocked back appearance
- Sore to hoof tester
 - Coffin bone perimeter
- Elevated heart rate
- Increased digital pulse



Laminitis



Treatment

- Cold therapy
- NSAID's
 - Decrease pain
 - Decrease inflammation
- Support boney column
 - Sand stall
 - Foam board and duct tape
- Rest



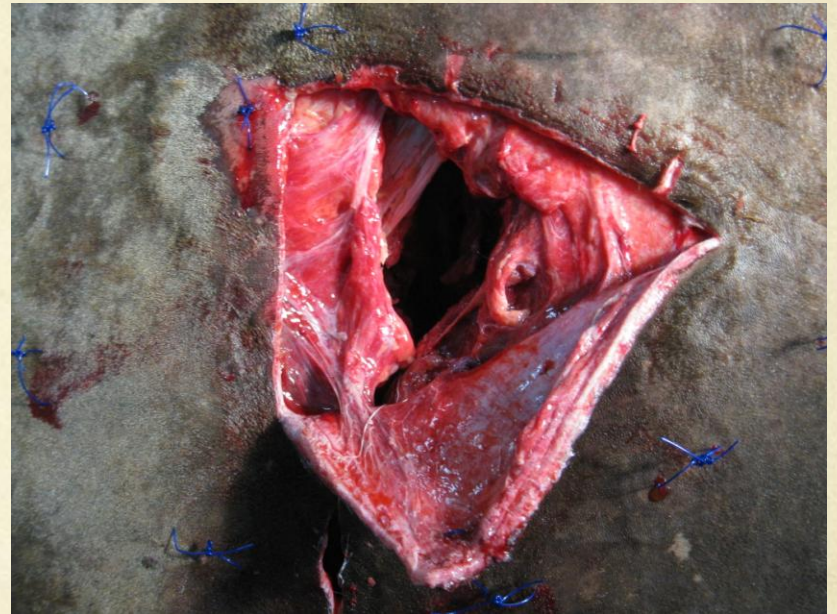
Wounds

Location, Location, Location

Which is Worse ?



Evaluation



Deep Structures



Deep Structures



Wound Treatment

- Infection
 - Irrigate, Irrigate, Irrigate
 - Clean Water
 - Antiseptic Solutions
 - Betadine, Chlorhexidine
 - Infection occurs in 6 hours
 - 2 – 4 – 16 – 256 – 65,536 – 4,294,967,296
 - Vaccination
 - Antibiotics
 - Topical, Oral, IM, IV



Wound Treatment

- Closure
 - Primary Healing
 - Sutures, Staples
 - Secondary Healing
 - Wrapping

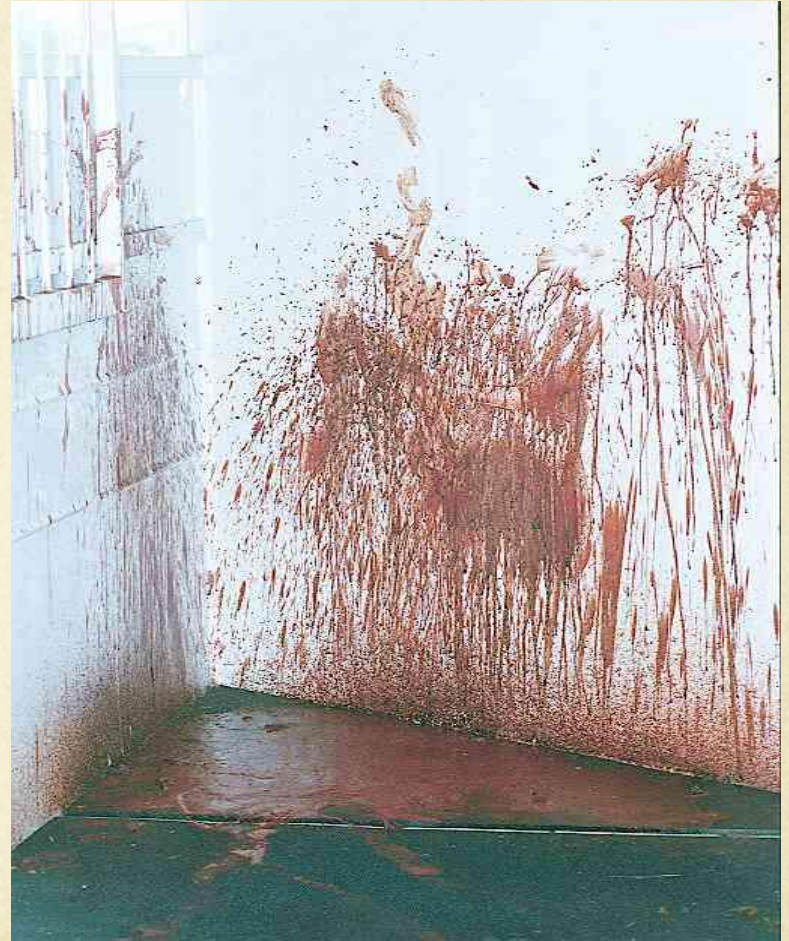
Hemorrhage

How much is too much



Blood Loss

- Total Blood Volume
 - 8 – 10 % of body weight
 - 1000 lb horse = 450kg
 - 36 – 45 L
 - A total loss of 1/10
 - 3.6 – 4.5 L
 - Over a Gallon



Treating Hemorrhage

- Stop the Flow
 - Most stop spontaneously
 - Arterial vs. Venous
 - Color and Flow
 - Apply Pressure



Fractures

Not all are Fatal

Signs

- Swelling
- Severe lameness



Treatments

- Bute
 - Up to 2 grams twice a day
- Stabilize
 - Bandage
 - Splint
 - Joint above and a Joint below





04/24/2010

Eyes

What to look for



The Equine Eye



Common Injuries

- Eyelid Lacerations
- Corneal Trauma
 - Squinting
 - Excessive Tearing
 - Swelling



Corneal Trauma



Corneal trauma



Eye Lid Laceration



Eye Treatments

- Clean Wounds with Saline
- Use Only Ophthalmic Antibiotics
- No Steroids



Tying up

More than sore muscles



Factors

- Out of Shape
- Dehydration
- Excessive grains
- Muscle Disease

Signs

- Lethargy, Trembling
- Stiffness, Sweating
- Soreness along top line
- Red – Brown urine

Treatment

- Prevention
 - Know your horses limits
- Encourage to drink
- Try to keep Standing
- Don't Force to Walk
- Avoid Medications
 - Bute/ Banamine



Colic

Not all belly aches are created equal

Colic Is....

- General abdominal pain
- The number 1 killer of horses
- Mostly mild (90-98%)



Preventable



Colic IS NOT....

- A disease
- Strictly GI related
- **Predictable by its signs**

Signs and Symptoms

- Leaving Food
- Flank Watching
- Pawing
- Biting/kicking at the belly
- Stretching out
- Abnormal head position



Signs and Symptoms

- Repeated laying down
- Repeated rolling
- Inappropriate
 - Bowel movement
 - Sweating
 - Tachycardia (increased heart rate)
 - Tachypnea (increased respiratory rate)



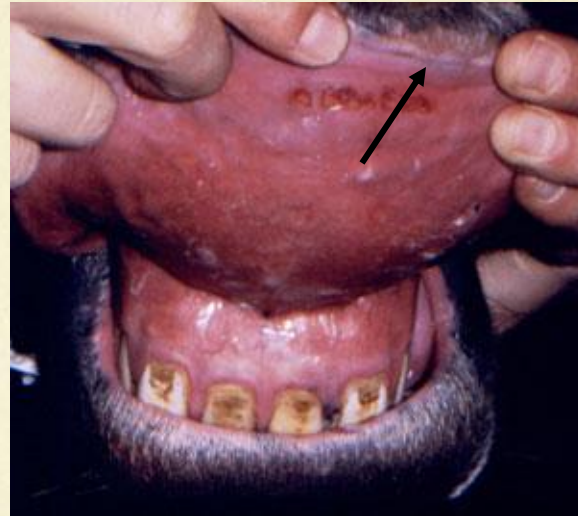
Signs

- Increased Heart Rate
 - >60 resting
- Increased Respiratory Rate
 - >20 Resting
- Flank Watching
- Kicking at the belly
- Up and Down / Rolling



Important Information

- Take Heart Rate
- Note Gum Color
- Note Gum Moisture
- Note Capillary Refill Time (1-2 sec)



Prevention

- Maintain Hydration
- Consistent Diet

Treatment

- 500 mg (10ml) Banamine
- 1 – 2 grams Bute
- Walking
- Hold Feed

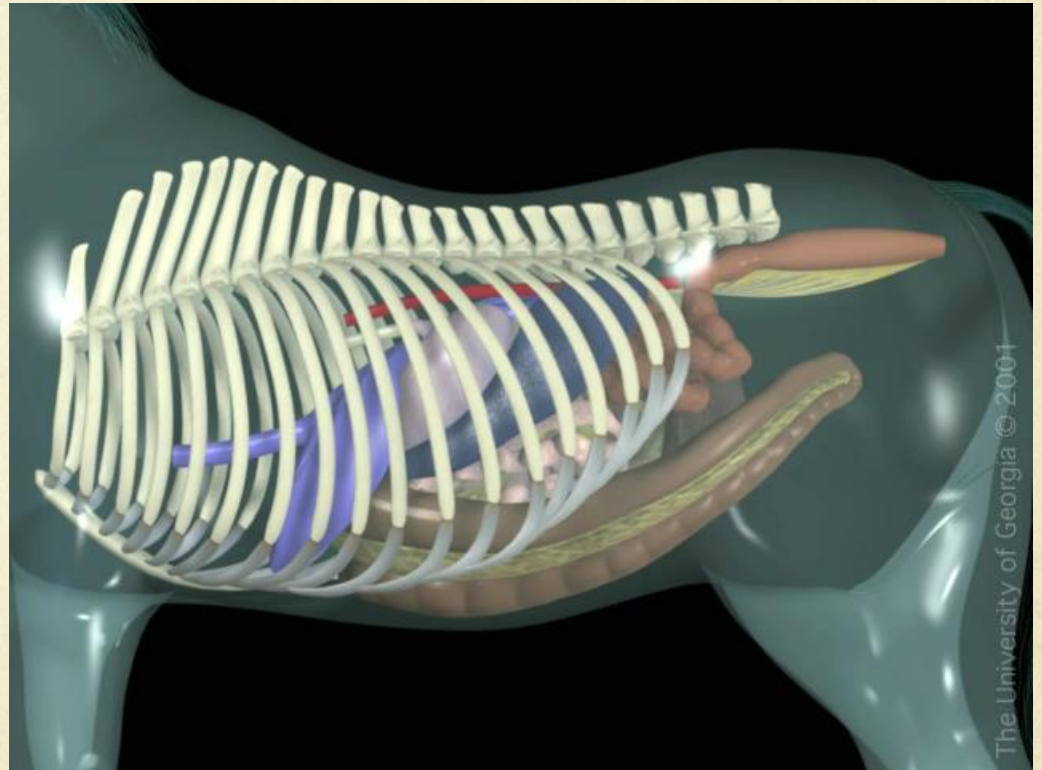
When is it serious

- Minimal response to Pain Meds
- Overt Pain
- Resting Heart Rate > 80



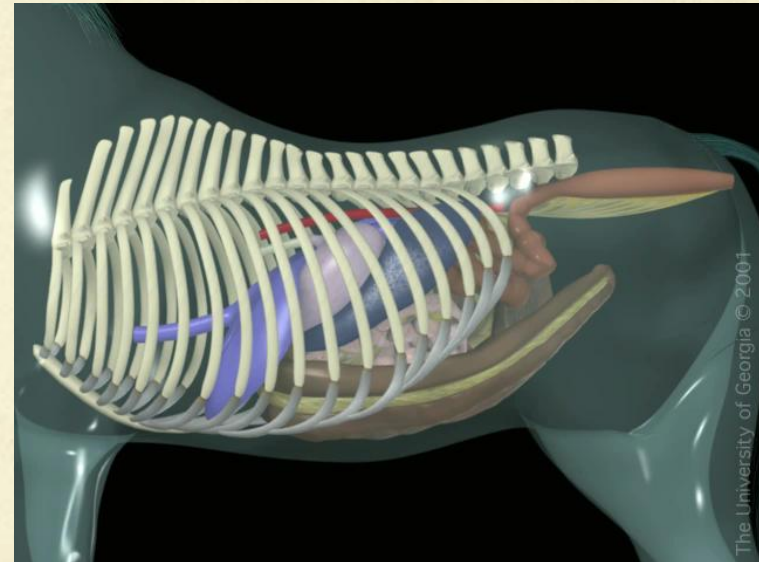
GI Dysfunction

- Gas
- Impaction
- Motility disorders



GI Accident

- Loss of blood flow
 - Entrapment
 - Strangulation
 - Twist



Choke

When what goes down gets stuck



Signs

- Distress
 - Coughing
 - Stretching neck out
 - Feed coming from the nose

Treatment

- Preventing Aspiration
- Keep Head Down
- Massage Neck
- Pass a Tube
- Start on antibiotics
- Hold Feed



Restraint

Safe Handling of a flight animal

Restraint

- Physical
 - Twitch
 - Foot rope
- Chemical
 - Oral
 - Injectable

Physical Restraint

- Halter
- Twitch
 - Shoulder
 - Lip
 - Ear
- Foot rope



Chemical Restraint

- Acepromazine
 - Injectable
 - IM, IV
 - Oral
- Alpha 2's
 - Combine with opioids
 - Injectable
 - IM, IV
 - Oral



First Aid Kit

What you need to get it done

Euthanasia

The means to an end

Euthanasia

- Ability to induce loss of consciousness and death without causing pain, distress, anxiety, or apprehension;
- Time required to induce loss of consciousness;
- Reliable, safe and irreversible
- Safety for predators/scavengers should the carcass be consumed.

Euthanasia

- Methods
 - Chemical
 - Barbituate over-dose
 - Gunshot
 - cerebral hemisphere and the brainstem must be disrupted by the projectile to induce sudden loss of consciousness and subsequent death
 - Exanguination

Duct Tape and Baling Wire

- Use what is available
 - Creek water for cold therapy, and irrigation
 - Duct Tape
 - Clean cotton rags can be used as dressings
 - Sugar can clean an infected wound
 - Small poles, 1 inch board

In the Kit

- Antiseptic
 - Betadine,
Chlorhexidine
- Antibiotics
 - SMZ's
- Anti – inflammatories
 - Bute and Banamine
- Gloves
- Needles and Syringes
- Skin Stapler
- Local Anesthetic
- Bandage Materials
 - Cotton Padding
 - Vet wrap
 - Telfa
 - Gauze
 - Roll Gauze
- Eye Ointment

