Defining Acute and Chronic Laminitis

- **Laminitis:**
  - Inflammation of the laminae (-itis -- denotes inflammation of an organ or tissue)

- **Acute laminitis:**
  - From the time the inciting cause initiates the cellular changes in the laminae up to the time that PIII begins to rotate or sink in the hoof capsule

- **Chronic Laminitis:**
  - Begins when PIII rotates or sinks in the hoof capsule

- **Founder:**
  - The term used to describe the rotation or sinking of PIII within the hoof capsule
Factors Initiating Acute Laminitis

- Colic from impactions and torsions
- Supporting Leg Laminitis
- Dystocia in mares
- Extensive infections i.e., pneumonia and peritonitis
- Stress or exhaustion
- Dehydration
- Excessive concussion or road founder
- High fevers

- Steroid drugs
- Systemic Infections
- Colic from grain or feed
- Endocrine dysfunction
- Mechanical or fat pony founder
- Toxins in molds
- Black Walnut toxicity
Biopsies of the laminae in acute laminitic horses reveal histological evidence of tissue necrosis occurring up to 36 hours before any physical symptoms or tissue inflammation.
The eventual outcome of a laminitic episode is determined by the severity of the initial metabolic insult to the Laminae.
Data suggests that the rate of change and the distance PIII descends in the hoof capsule are useful indicators in the prediction of the outcome.
Early Acute Symptoms

- Restlessness, shifting weight from one foot to another
- Reluctance to turn and walk
- Stance, Weight is shifted to the rear feet if the front are affected, or placed close as if standing on a box when all four are affected
- Pulses are elevated in the digital arteries
- Fever in the feet
First aid

- Call the vet
- Provide some sort of support to the frog to help reduce the strain on the laminae by:
  - Sand or mud footing
  - Padding taped to the frog: roll of gauze, foam insulation, cotton
  - A “Lily Pad” available from farrier and vet suppliers
- Ice
- Hot and cold packs alternately
- Possibly hand walking cases that aren’t too severe
- Elevate the heels of the hoof with wedges up to 1” or 1½”
- Trim toes blunt to relieve breakover stress
Treatments during the acute stage

- Treat the inciting cause if possible
- Nonsteroidal anti-inflammatory drugs i.e. Butazolidin, Banamine
- DMSO via IV or stomach tube
- Vasodilators - acepromazine, isoxuprine and nitroglycerine
- Support and protect the foot to provide an optimal opportunity for healing
- Follow progress of the displacement of the coffin bone with frequent radiographs
- Deep flexor tenotomy in severe refractory cases as a temporary salvage procedure
Factors used to predict the outcome of a Laminitis Episode

- Initial cause
- Duration of Acute Phase
- Medical support
- Rotation or Sinking
  - Hoof capsule - PIII relationship changes
    - Degrees of rotation
    - Rate of rotation or sinking
    - Dorsal hoof wall thickness
    - Descent of PIII in the hoof capsule
    - Thickness of the sole
Effects of PIII Rotation

- Tearing of Laminae
- Compression of Corial tissues and loss of blood flow
  - Coronary Band
  - Sole
  - Sensitive Laminae
Chronic Changes

- Changes in the feet:
  - depression in the coronary band
  - flattened sole
  - Stretched White line
- Downward bulging sole
- Perforation of the sole by PIII
- Separation of the wall at the coronary band
Basic Functions of the Shoe

- Support the bone column
- Protect the sensitive tissues from further damage due to founder
  - Protect the sole from pressure
  - Reduce mechanical forces on the laminae
- Provide an environment for healing
Shoe modifications used in the treatment of Chronic Laminitis

- Wide web shoe
- Pads
- Heart Bar shoes
- Reversed shoes
- Treatment plate
- Heel elevation
- Foot Wraps
- Frog support
  - “Lilly Pads”
  - Gauze roll
First Aid Frog Supports
Heart bar shoes
Medial Sinker w/ Wide web bar shoe
Reversed w/ flexible heart bar and treatment plate
Shoe w/ Leather pad
Reversed Sneaker w/ Urethane fill
Reversed shoe w/ treatment plate
Once Chronic Laminitis is present the affected structures continue to deteriorate regardless of the management.