Introduction

- Riders are expecting more from their horses and a longer extended competition career for these horses is normal.

- The pertinent areas of management are discussed; general health, wounds, nutrition, training, lameness management, and competition preparation for these types of horses.

- There are 3 main types of sport horses;
  - The School Master
  - Amateur Performer/Hobby Horse
  - Higher Level and Elite Competition Horses
The “Schoolmaster Horse/Pony”
The “Schoolmaster Horse/Pony”

A schoolmaster horse can be described as a horse that has a rich and sophisticated vocabulary or understanding of aid pressures. Generally a schoolmaster is a mature horse that is very receptive to a range of riding challenges. They have a depth of understanding of the finer nuances of aid pressures that can help a less sophisticated rider develop better feel and timing.

The role a schoolmaster often undertakes is a teaching one; where the rider can learn and develop more advanced riding skills from the horse ie the horse “trains” the rider rather than the other way around. For many riders, schoolmaster horses are often “downgraded” in their competition status/qualifications so that the rider may compete at a lower level than the horse is graded at.

For obvious reasons schoolmaster horses are highly sought out by younger riders (and their parents) looking to progress their riding and competition skills. Most successful elite riders will have owned or ridden a schoolmaster horse/pony at one stage in their formative riding years.

Generally it takes a lot of effort over many years for a horse to become a schoolmaster. This often entails years of training, equitation and competing. Often after such a hard working lifestyle like this a schoolmaster horse can present with a range of serious health problems that can limit or terminate its useful riding career and reduce its sale value.
Higher Level and Elite Competition Horses
Higher Level and Elite Competition Horses

- Many of the elite and higher level performance horses are older horses.
- It takes many years of training and competition to reach elite status and competency. They are more well travelled than most of us. Peak in mid teens.
- These are high investment horses that can maintain very high value, they are bought and sold readily into national and international markets.
- Often carry range of disease and lameness problems/issues – thus they have complicated management programmes.
- They are all “unsound” to varying degrees.
Key Veterinary Areas

- Nutrition
- Training
- Disease Management/Poor Performance
- Vices
- Wounds/Skin
- General Health
- Unsoundness/Lameness
The type of horse used for each discipline often determines the approach to feeding. Horse owners are often confused and mistaken in their choice of appropriate diet for their competition horses. Owners often incorrectly formulate diets upon the basis of "high or low" protein, rather than looking at the correct dietary energy component.

There are a number of horse diet analysis services (online algorithms/KER) that offer tremendous value for the naive horse dietician.

Dressage horses tend to be large, well-conditioned Warmbloods. Hacking horses tend to be overweight Thoroughbreds. These types of horses are typically fed feeds lower in energy density in an attempt to reduce excitability that is believed to be related to high carbohydrate intake. These horses can suffer from over nutrition and diseases associated with obesity such as laminitis and PIPD.

Eventing horses tend to be lighter horses with a large proportion of Thoroughbred breeding. Their levels of exercise and energy requirements are often greater, so they tend to require more energy-dense feeds. During the course of the competition season these horses have more difficulty maintaining body condition. Show jumpers are intermediate to large in body size, body condition, and dietary energy requirements.

The dominant breed used in endurance is the Arabian, which tends to have a high proportion of slow-twitch muscle fibres that are very efficient at burning fat. These horses usually require high-fat diets along with high levels of roughage/hay.
The 2 most important clinical conditions related to nutrition of the older competition horse are **obesity and poor condition**.

The factors contributing to obesity are over feeding, hormonal factors/disease (PPID, insulin resistance), lowered geriatric metabolism and a lack of sufficient exercise. For these horses a complete assessment of the training program along with blood testing (ACTH and insulin) is appropriate.

Poor condition or weight loss can have underlying the factors of; underfeeding/low energy diet, poor appetite, Equine Gastric Ulcer Syndrome (EGUS), over training, poor dentition, and over stabling/confine ment. Diet correction (increasing the ration, fat feeding and soaked grains) often delivers a rapid solution to the otherwise "healthy" poor conditioned horse. But with those horses that either fail to respond to diet changes or have other signs further investigation is warranted.

The diagnosis and management of EGUS horses has become commonplace for veterinarians that treat performance horses. EGUS should be suspected when there are the following signs - poor appetite, chronic/intermittent colic, and teeth grinding, poor hair coat, mental dullness or attitude changes, poor performance, lying down more than normal, slow/incomplete/fussy eating.

Diagnosis is best confirmed via gastroscopic examination; however in practice a medication trial with daily omeprazole can be helpful. Omeprazole and management changes seem to be highly effective in the treatment and management of EGUS, but selected cases are often recurrent.

In most EGUS cases it is difficult to impossible to fully heal gastric ulcers using medication alone. EGUS is associated with an "abnormal lifestyle" - appropriate management changes include increased access to pasture and roughage, reduced confinement, increased feeding frequency, and the reduction in dietary grains and concentrates.
Training the Older Competition Horse

- A training regime that doesn’t stress or strain the limits of the soundness of the horse is the best approach.
- Usually, older competition and schoolmaster horses don’t need as much training as other horses and as such they shouldn’t be ridden “into the ground” or over trained. It is not a good idea to put a heap of extra “miles” on the legs of these horses just for the sake of training.
- Don’t confuse training with fitness – a schoolmaster that is competing still needs to be fit, strong and supple, but they often don’t need to be trained that much. Once a horse is fit, the maintenance of the level of fitness is generally easier than the attainment phase.
- For some older competition horses long periods (i.e. months) of rest/turned out maybe contraindicated. During the spelling phase older horses can suffer from significant loss of weight/muscle mass and basal fitness than similarly spelled younger horses. Light and regular work in smaller amounts is better for older horses that are in between competition seasons.
Poor Performance in Older Sport Horses

- The signs of poor performance often depend upon the horse's discipline;
- For example:
  - Dressage horses may have trouble coming onto the bit, or may refuse to perform a manoeuvre that they have had no trouble with in the past. Becoming disengaged during the canter gait, and resisting higher level movements (piaf, passage etc) are all signs of concern in a dressage horse.
  - Jumpers may start to refuse, or may take down rails.
  - Event horses may show poor recovery - such as prolonged high heart rate, respiratory rate, and temperature - from the more strenuous phases of the event, or may have trouble making times.
  - Pleasure horses may stumble, or show signs of irritation (tail swishing, head bobbing).
  - Endurance horses, like event horses, may show poor recovery, or inability to finish the ride (vetting out)
- Lameness from DJD is the most common cause of poor performance in older sport horses.
- Chronic low grade lameness is more common in older horses rather than overt acute traumatic lameness/arthritis. "wear and tear" lameness.
- A thorough prepurchase like examination is required to assess these horses. A direct correlation between the degree of radiographic pathology and the level of joint pain is not always applicable.
- Relationship with your vet, regular check-ups, pre season/during season.
What is DJD? – Radiology
What is DJD? – Radiology
Disease Management of the Older Sport Horse

- Lameness, metabolic and respiratory diseases dominate the diseases that affect older competition horses. Lameness can account for up to 70% of all reasons for time off training/competition in sport horses. Estimated that 60% of all lameness in sport horses is related to osteo-arthritis.

- The incidence of specific diseases vary between breeds, use, and age of the horse – although many diseases are common to all competition horses

- In these horses the common lameness diseases are;
  - Joint inflammation (arthritis) – all joints
    - Tarsal joints (western, jumping horses, dressage horses)
    - Forelimb distal interphalangeal joints (dressage and jumping horses)
    - Fetlocks (jumping horses)
  - Hoof inflammation – laminitis, heel pain syndrome
  - Soft tissue inflammation – tendonitis, suspensory ligament desmitis, sacroiliac sprain, myositis (muscle pain)
  - Soft tissue dysfunction – stifle lock
  - Bone inflammation – splints, pedal bone osteitis, navicular disease
  - Chronic back pain is a problem in some horses (endurance)

- The common respiratory diseases are those that result from lower airway inflammation – “asthma”, COPD, allergic disease
Sport Horse Inflammation

- Cyclic trauma -> Chronic Inflammation -> Pain -> Deleterious mediators -> Osteoarthritis
What is joint inflammation and DJD?
What is inflammation?

Inflammation has five clinical manifestations;

- Pain
- Heat
- Redness
- Swelling
- Loss of function
  - Poor performance
What is arthritis? – Looking at the leg
How do we treat DJD in sport horses?

- The aim of any treatment for DJD is to:
  - (1) returning the joint to normal as quickly as possible, and
  - (2) preventing the occurrence or reduction of the severity of osteoarthritis.

- In this way, treatment is intended to:
  - (1) reduce pain (lameness), and
  - (2) lessen the progression of joint deterioration.

- The resolution of any synovitis and capsulitis is the critical part of the medical treatment of joint disease because of the principal role of the synovitis in causing cartilage destruction.

- The progression of joint wear and tear is mainly addressed by medical treatment, but it is important to remember surgical assessment and "debridement" (chips/osteophytes) via arthroscopy is can be an important part of the treatment plan to manage osteoarthritis.
How do we treat DJD in sport horses?

- Medications and methods that reduce inflammation and the inflammatory process.
  - Physiotherapy Techniques/Physical Modalities – cooling, pressure, support, immobilisation, orthotics, hydrotherapy
  - Management Programme – REST (tincture of time)
  - Herbal Treatments and Complementary Therapies (e.g. acupuncture)
  - Medicines – Non Steroidal Anti-Inflammatory Drugs (NSAIDS)
    - Phenybutazone, Flunixine, Aspirin, Ketoprofen, Naproxen
  - Medicines – Corticosteroid Anti-Inflammatory Drugs (cortisones)
    - Triamcinolone, Betamethasone, Methyl Prednisolone, Dexamethasone
  - Surgery
  - Extracorporeal Shock Wave Therapy (ESWT)
  - Newer Technologies
    - IRAP (interleukin-1 receptor antagonist protein)
  - Joint Medications
    - Hyaluronic Acid, Pentosan, Polysulfated glycosaminoglycan (PSGAG), 4Cyte Gel etc

- Combination Therapy – Treatment Programmes
- Pre and Post Competition Medical Management
- 2 types of treatment – proven and unproven
Treatment of DJD

Maintaining or improving range of motion

- Rest - useful for acute onset of arthritis, chronic cases generally benefit from exercise, whether is turn out or riding. Occasionally full rest is required but this is usually only a temporary solution that will eventually lead to an exercise program. It is very important to be diligent in warming up and cooling down and building up condition gradually.

- Activity - can yield numerous benefits to the arthritic horse, including strengthening of supporting soft tissue structures and promoting circulation of synovial fluid, which lubricates joints. This is why arthritic horses tend to stiffen up if confined to a stable all day.
What are the practical aims of precompetition medical management?

- Treatment of inflammatory diseases and pathology in horses
- Ensuring maximised “fitness to compete”
- Normalising “soundness” and athleticism
- Promoting longevity of the competition career
- Increasing the frequency of competition efforts/reducing recovery periods

- It's not just about pain relief and using “drugs” – a holistic approach is advocated
Precompetition Use of NSAID’s and Corticosteroids

- Ubiquitous in higher level sport horse competition, therapeutic reality for most competition horses
- Permitted under rules and code of conduct, there is no “out of competition” MCP testing. They are not BANNED substances, they are regarded as legitimate therapeutic medications.
- NSAIDs/Corticosteroids are ‘Controlled Medication Substances’: they have a genuine therapeutic role in horses, but must be undetectable* at the time of competition.
- Although their application can be abused, they mostly deliver better welfare outcomes for horses
- These medications can have concerning side effects
- **They may not be used DURING competition**
- Their use has a long history in the sport, since the invention of aspirin 1853 (Hippocrates 460-370 BC)
NSAIDS

- Highly efficacious, inexpensive, very long therapeutic history, different routes of administration, infrequent side effects with correct use
- Standard of care for first line of treatment for traumatically induced inflammation
- Routine pre- and post-orthopaedic surgery
- The most commonly used NSAIDs are Phenylbutazone, meloxicam and flunixin meglumine
- How do NSAIDs work
  - COX (cyclooxygenase) enzyme inhibitors (inflammatory mediator). All NSAIDs inhibit COX to some degree. With Phenylbutazone & flunixin meglumine this effect is marked.
  - They inhibit the process of prostaglandin synthesis during inflammation
  - Prostaglandins act to contribute to diverse physiological functions and to pain perception
    - COX-1: Constitutively expressed (housekeeping) enzyme, present in almost all cells, including thrombocytes = “GOOD COX”
    - COX-2: Induced upon (acute and chronic) tissue injury and inflammation = “BAD COX”
  - Major effects: analgesic, anti-inflammatory (PG-mediated)
  - Selected effects: antipyretic and anti-clotting properties
  - Undesirable effects are tissue/cell dependent and related to physiological functions of prostaglandins in platelets, gastric cells and renal tissue
NSAIDS

- The properties of individual NSAIDs are linked to the preference for COX-1 or COX-2 and are dose dependent
- Non-selective COX inhibitors: aspirin, flunixin, phenylbutazone, suxibutazone, dipyrone/metamizole, meclofenamic acid, naproxen (acetaminophen/paracetamol),
- Preferential COX-2 inhibitors: ketoprofen, carprofen, vedaprofen, tolfenamine, etodolac, naproxen
- Selective COX-2 inhibitors: meloxicam
- Super-selective COX-2: -coxibs: firocoxib, robenacoxib

**NSAID use in athletic horses**
- Very commonly administered to athletic horses - 56% of 14,599 TB horses racing in USA over 2 week period were administered PBZ
- Frequency of out of competition use for horses training to compete in FEI events is not widely reported Sydney Olympics - 25.6% human athletes declared use of NSAIDs

- **Both, desirable and undesirable effects of NSAIDs, are dose (tissue concentration)-dependent.**
What is the difference between a true emergency and just a serious health problem?

- Pain
- Shock
  - High heart rate
  - Pale or purple gums
  - Prolonged refill time
- Injuries to Vital Structures/Organs
- Fever especially with diarrhoea and/or breathing distress
Normal Values

- Normal ranges for adult horses are:
- Pulse rate: 30 to 42 beats per minute

**Determine Pulse Rate:**
Horse should be calm, rested and relaxed to obtain an accurate heart rate. Press your fingers against an artery. There are several locations where an artery can be felt.
1. back edge of lower jaw
2. inner surface of the groove under the jaw
3. inside the elbow, up and forward against the chest wall.
4. under the tail, close to the body
5. the inside or outside pastern.

- Respiratory rate: 12 to 20 breaths per minute
- Rectal temperature: 37.0° to 39.0°. If the horse's temperature exceeds 39.5°, contact your veterinarian immediately. Temperatures of over 39.5° indicate a serious disorder.
- Capillary refill time (time it takes for colour to return to gum tissue adjacent to teeth after pressing and releasing with your thumb): 2 seconds.
Other Factors

- Skin pliability is tested by pinching or folding a flap of neck skin and releasing. It should immediately snap back into place. Failure to do so maybe evidence of dehydration.
- Color of the mucous membranes of gums, nostrils, conjunctiva (inner eye tissue), and inner lips of vulva should be pink. Bright red, pale pink to white, or bluish-purple coloring may indicate problems.
- Color, consistency, and volume of faeces and urine should be typical of that individual's usual excretions. Straining or failure to excrete should be noted.
- Signs of distress, anxiety, or discomfort. Lethargy, depression, or a horse that's "off-feed."
- Presence or absence of gut sounds.
- Evidence of lameness such as head-bobbing, reluctance to move, odd stance, pain, unwillingness to rise.
- Bleeding, swelling, evidence of pain.
- Seizures, paralysis, or "tying-up" (form of muscle cramps that ranges in severity from mild stiffness to life-threatening illness).
Basic First Aid

- Stay calm, keep horse calm and still
- Lameness – sprains, fractures etc - immobilise
- Wounds and bleeding – hose and bandage, compression
  - Leave high wounds uncovered; put low wounds under wraps
  - Leave shallow wounds unbandaged; keep “full-thickness” wounds covered
- Haematomas
- Puncture wounds
- Eyes – bathe with saline and cover
- Colic
- Tying Up – fluids, warmth, excercise
- Choke – remove all food and water
- Laminitis – confine, foam pads
- Poisonings
Horse First Aid Flow Chart

Is the wound fresh?
- Yes
  - Is the wound bleeding heavily?
    - No
      - Control the bleeding by applying pressure. Use dressings, bandages and clean towels to apply the pressure.
    - Yes
      - Bleeding stops
      - Are any other structures involved? (Bone, tendon, joints or muscles)
        - Yes
          - Move the horse to a safe place and hose the wound with clean water.
          - Hose the wound and then apply antiseptics such as Cetrigen® or Septicide®. Monitor the wound condition daily and apply Cetrigen® or Septicide® as required.
        - No
          - Move the horse to a safe place
    - Bleeding does not stop
      - Call the Vet

Does the wound look infected?
- Yes
  - Call the Vet
- No
  - Control the bleeding by applying pressure. Use dressings, bandages and clean towels to apply the pressure.

Important: If in doubt at any stage, please seek veterinary advice.
Dr. Kellon’s Guide To
FIRST AID FOR HORSES

Eleanor Kellon, vmd
Includes special sections by the Center for Equine Health, UC Davis School of Veterinary Medicine, and Dr. Rebecca Gilchrist, Technical Large Animal Emergency Rescue.
Wounds
Wounds
Choke
Eyes
Colic

Colic Causes

- Primary Hypomotility
  - Impactions
  - Sand
- Feed/Dehydration
  - Foreign Body
- Tumours
- Worms

- Hypermotility
  - Infections
  - Poisonings

- Ulcers
Colic in General Practice

- Most colic cases encountered in field practice are non-surgical
  - Medical 72%
  - Flatulent 5.5%
  - Surgical 7%
  - Pelvic Flexure Impaction 5%
  - Other Impactions 9.5%
  - Colitis 1%

Hoof Abscess

- The hoof is a vital structure that simply consists of modified skin covering a digit. The modified skin, or hoof capsule, is a rigid structure that protects many important structures within the hoof. These include the coffin bone, coffin joint, hoof cartilages, navicular bone, tendons, ligaments, blood vessels and nerves.

- What is a hoof abscess?

- The simple hoof abscess is one of the most common causes of lameness in horses. A hoof abscess is an infection in the sensitive laminae of the hoof, leading to a build-up of purulent material within the rigid hoof capsule. This results in increased pressure and severe pain. Inciting causes include hoof nails being placed close to or within the sensitive laminae, any penetrating foreign body, hoof cracks or sole bruises.

- Bruising results in bleeding beneath the sole, and blood is a very good growth medium for bacteria.
Hoof Abscess – Clinical Signs

- Hoof abscess typically cause a sudden, severe lameness where the horse may be non-weight bearing on the affected limb. This is often referred to as ‘fracture lame’ as this degree of lameness is on par with that seen with fractures. The hoof may feel warm to touch, and the digital pulses are usually increased in rate and amplitude. The affected hoof is often held forward, and there may be some generalised swelling in the lower limb. These findings are often enough to give a strong suspicion that the problem is in the hoof, but sometimes nerve blocks are required to confirm this.

- Diagnosing and Treating
- With this suspicion in mind, the Veterinarian will likely examine the hoof and apply hoof testers to find the area of pain. If the horse is shod, the shoe may need to be removed and the nail holes closely examined for signs of moisture, as these are a potential source of the infection. Drainage is the key in treating hoof abscesses, so treatment usually consists creating an outlet for the purulent material and applying a poultice. Once drainage has been established, the horse will become much more comfortable. Occasionally, it can take days to weeks of poulticing to establish drainage in a deep abscess. Radiographs may be needed to rule out other problems if an abscess cannot be found.
Hoof Abscess - Treatment

- Non-Steroidal Anti-inflammatory drugs such as Phenylbutazone (Bute) are indicated in the early stages of treatment, when lameness is severe. Antibiotics are usually not necessary in treating a routine hoof abscess, and can actually delay healing time if used. Tetanus prophylaxis is always indicated, and depending on the horse’s vaccination history this may include an antitoxin and a toxoid injection.

Possible outcomes
- When treated promptly and adequately, a hoof abscess will usually resolve within days to weeks with no further complications. However, sometimes the infection can extend deeper into the hoof and affect the pedal bone, causing an infectious pedal osteitis. The infected area of bone has a compromised blood supply and may break off to form a sequestrum. Radiographs are needed to diagnose this, and changes may not take place for weeks.

Prevention
- Hoof abscesses are common during wet periods, when hooves are soaked in moisture and mud all day. In these conditions, prevention is difficult as moving horses to dry areas is not always possible. Maintaining good hoof care, with regular shoeing and trimming is important, especially for horses that seem to be prone to hoof abscesses.
Common Horse Shoeing Tools

- Nippers
- Clincher
- A Shoeing Hammer
- Hoof Knife
- Hoof Pick
- Hoof Rasp
What Can You Catch From Your Horse??
(Zoonosis)

HENDRA
RINGWORM
ALLERGIES (HUMANS FROM HORSES) – DUSTS MOULDS AND FUNGI
ANTHRAX
TETANUS
ROSS RIVER
SALMONELLA
WORM PARASITES
POVERTY/DIVORCE
What Can You Catch From Your Horse??
(Zoonosis)

EXOTIC DISEASES
(HOW LUCKY ARE WE THAT WE DON'T HAVE THEM!)

RABIES
LYME DISEASE
WEST NILE VIRUS
JAPANESE ENCEPHALITIS
EAST/WEST VENEZUELAN VIRUS
REducing the risk (Biosecurity)

• Practising good personal hygiene
• Providing prompt and effective first aid treatment to cuts and scratches
• Using personal protective equipment eg overalls, gloves, boots, goggles, aprons
• Cleaning and disinfecting work spaces and equipment
• Vaccinating pets and livestock
• Worming pets
• Controlling rodents
• Isolating and treating sick animals.

What Can You Catch From Your Horse??
(Zoonosis)
Biosecurity can be **simple!**

Its easy
The infectious diseases that are clinically relevant to competition horses are;

- **Equine Influenza** – a highly infectious respiratory viral disease. It is on track to being eradicated. High impact disease due to its classification as an exotic disease. Australia will have to maintain vigilance into the future to prevent its reintroduction and to detect any surfacing of the disease again.

- **Strangles** – a contagious, upper respiratory tract infection of horses and other equines caused by a bacterium, Streptococcus equi. This disease is uncommon in performance horses, but has a high impact on horse health and deaths can occur. Recovery and treatment is prolonged.

- **Head Colds/Flu/Respiratory Diseases** – these are usually viral diseases caused by endemic pathogens like Equine Herpes Virus, Equine Arteritis Virus, Equine Rhinitis Viruses, Equine Adeno Virus. These are common infectious viral diseases of Australian horses. These diseases are common but mostly have a low impact on the horse’s health and horses usually recover without difficulty or complication after a brief illness.

- **Ringworm** - a contagious superficial fungal skin disease. This disease can affect humans (ie is a zoonosis). A disease spread very easily that has a low impact on horse health and is relatively commonplace. The disease has short term recovery period.

- **Diarrhoea** – serious bacterial infection of the bowel ie Salmonella, Clostridial disease. Rare diseases that are often fatal.

- **Hendra Virus** - Rapid onset of acute febrile (fever) respiratory disease and collapse. Mostly fatal disease of horses in QLD that have been exposed to bats. Rare
Equine Influenza – a highly infectious respiratory viral disease. The main clinical signs of EI are usually a sudden increase in temperature (38.5°C or higher - see Taking a horse’s temperature); a deep, dry, hacking cough; and a watery nasal discharge, which may later become mucopurulent (pus discharge).

Other signs can include depression, loss of appetite, laboured breathing, and muscle pain and stiffness.
Head Colds/Flu/Respiratory Diseases – The most common clinical sign is nasal discharge. In early stages, the discharge is watery, free-trickling and frequently goes unnoticed by attending personnel. This clear nasal discharge is loaded with infectious virus. By the second or third day, this discharge changes to a thicker, white-coloured mucous.
Strangles – a contagious, upper respiratory tract infection of horses and other equines caused by a bacterium, Streptococcus equi. This disease is uncommon in performance horses, but has a high impact on horse health and deaths can occur. Recovery and treatment is prolonged. Clinical symptoms are characterised by fever, nasal discharge or pus, and swollen or enlarged mandibular lymph nodes - around the neck and face. Affected animals may also stop eating and have a dull affect.
Ringworm - a contagious superficial fungal skin disease. This disease can affect humans (i.e., it is a zoonosis). A disease spread very easily that has a low impact on horse health and is relatively commonplace. The disease has a short-term recovery period. Multiple areas of hair loss, scaling, and crusting that enlarge outwards, and then heal in the centre. The lesions are not usually very itchy,
Other Horse Welfare Issues and Diseases

There are a number of other diseases that are commonly observed in horses at horse events. These include:

- Lameness
- Wound/injuries/lacerations
- Swollen legs
- Colic
- Eye Disease
- Blood Nose
- Skin Diseases

On occasion horses will present at horse events with a disease/symptoms from the list above.

Ideally event organisers should have a basic practical understanding of the significance of these problems and how they impact on the “fitness of the horse to compete”.

Event organisers will be expected to take advice from a veterinarian on the diseases that are listed.

IT IS NOT APPROPRIATE TO ACT OR ADVISE ON HORSE WELFARE AND HEALTH ISSUES WITHOUT FIRST SEEKING ADVICE FROM A VETERINARIAN
Nose Bleed
Swollen Leg
Taking a Horse's Temperature

Two types of thermometers are available:

- Mercury bulb thermometer – cheap but easily broken
- Electronic thermometer – more expensive but longer lasting and easy to read

You can purchase a thermometer from your veterinarian or chemist.

Technique

❖ Stand to the near side (left hand side of the horse), close to the horse to avoid being kicked. Make sure the horse knows you are there.
❖ Lubricate the end of the thermometer with soapy water.
❖ If using a mercury thermometer gently shake the mercury down to the bottom of the tube.
❖ Lift the tail and gently insert the thermometer into the horse’s rectum. Make sure the tip of the thermometer rests against the rectal wall (i.e. make sure it is not inserted into dung).
❖ Hold the end of the thermometer to stop it disappearing into the rectum.
❖ If you are using a mercury thermometer, wait at least 60 seconds before removing thermometer and reading it.
❖ Electronic thermometers will ‘beep’ when an accurate reading is obtained.
❖ Clinical signs of EI are usually a sudden increase in temperature (38.5°C or higher).
Biosecurity can be **simple**!

It's easy
What is LAMINITIS?

➢ Also referred to as FOUNDER

➢ Laminitis=acute inflammation

➢ Founder=chronic laminitis
What is LAMINITIS?

- Inflammation that leads to disruption of the blood-flow to the sensitive & insensitive lamina – arterio-venous shunts

- Disruption of the attachment mechanism between the sensitive & insensitive lamina

- Lamina attach the coffin bone to the hoof capsule.
What are the signs of LAMINITIS?

- Lameness especially when turning in circles
- Shifting weight back and forth.
- Pain in the toe region when hoof testers are applied.
What are the signs of LAMINITIS?

- Saw-horse stance
- “walking on eggshells”
- Increased digital pulse
- Heat in the feet
What are the signs of LAMINITIS?

- Reluctant or unable to rise
- Hemorrhage visible on sole
- Separation and abscess formation
What are the signs of LAMINITIS?

CHRONIC FOUNDER

• Chronic lameness
• Rings in hoof capsule
• Aladdin's shoe
• Chronic abscesses
What are the signs of LAMINITIS?

CHRONIC FOUNDER

- “seedy toe”-widened white line

- Dropped soles or flat feet

- Dished hooves
What are the causes of LAMINITIS?

- “Grass Founder”
- “Grain Overload”
- Abrupt changes in diet
What are the causes of LAMINITIS?

- Endotoxemia
- High fever or illness
- Severe colic or diarrhea (colitis)
What are the causes of LAMINITIS?

- Retained placenta
- “Road founder”
- Injury to another limb causing excessive weight bearing
Hoof Pastern Axis – Xray Assessment
Digital DR Radiography
The Future of Equine Veterinary Medicine

- DIAGNOSTICS
- Blood Chemistry/Gene Typing
- Digital Imaging
  - Digital Xrays, Ultrasound
  - MRI, CT Scan
Laminitis: Rotation

- In the normal position, the coffin bone sits parallel to the hoof capsule.
- Rotation occurs when the coffin bone (P3) rotates away from the hoof capsule.
Laminitis: Rotation
ROTATION OF PEDAL BONE
Laminitis: Rotation

In severe cases the bone and hoof wall separate and the coffin bone may be displaced downward.
CHRONIC LAMINITIS

More susceptible to:
- Sole bruises
- Abscesses
- Flaring & separation of the wall at the toe
- Infection beneath the separated wall
- Hoof wall cracks
- Degeneration of the tip of the pedal bone
- Chronic lameness
- Slowed hoof wall growth
LAMINITIS – FOUNDER
Contributing Factors

- **Bacterial Toxin**
  - Colic
  - Colitis
  - Pleuropneumonia
  - Endometritis
  - Water founder
  - Postoperative colic
Laminitis: Sinking

- In the most severe cases the coffin bone can sink and penetrate the bottom of the sole.

- This can lead to sloughing of the hoof capsule.
Venograms

Used for laminitis cases where venograms (radiographs taken of the foot after contrast dye has been injected to show the blood vessels) have changed the horses' and their owners' worlds.

- Venograms aren't just for laminitis they can be used to gain additional information on many foot problems. The digital venogram can provide rapid and relatively inexpensive insight into cases of laminitis, abscessation, bruising, scarring, tumors and osteitis.

- Radio opaque dye should fill all of the blood vessels. Where it doesn't, damage or compression from imbalance or swelling has compromised blood flow and areas of the foot without blood flow are destined to die (in high-scale laminitis cases) if blood flow isn't restored. But when it's known where blood flow is compromised, the foot's mechanics can be changed to restore it in a window of opportunity provided by the disease and healing processes.

- Venographic studies suggest that laminitis is not an all-or-nothing disease, and that by better defining the problems within each individual foot, specific therapies can be applied to address the problems within that foot.
Venogram

Terminal Papillae

Heel Perfusion
Venogram

Terminal Arch

Dorsal Lamellar Vessels
Venograms
Venograms
What are the other causes of LAMINITIS?

- Previous laminitis
- Endocrine diseases
- EMS SYNDROME
- CUSHINGS DISEASE (PPID)
What is the treatment for LAMINITIS?

GRAIN OVERLOAD

- CALL VET IMMEDIATELY

- NG tube-pump stomach & administer charcoal or oil

- Anti-inflammatories

- Anti-endotoxins

- Vasodilators
What is the treatment for LAMINITIS?

- **Identify & treat primary problem**
- **The sooner the better!**
- **Anti-inflammatories**
  - Gastric Ulcer Tx/Px
- **IV fluids +/- DMSO**
- **MANAGE INFLAMMATION**
What is the treatment for LAMINITIS?

- Antibiotics?
- Anti-Inflams – bute, Metacam, Finadyne
- Vasodilators-acepromazine, isoxiprine
- Sand or deep bedding
- Pull shoes/Padded Support
- Radiographs
  - TRIMS
  - SPECIAL SHOES
    - Heart Bar Shoes
    - Open Toe Shoes
    - Rocker/Clogs
- Surgery - tenotomy
What is the treatment for LAMINITIS?

- Open and drain abscesses
- Frog support
- Dietary restrictions
- Exercise
- Hormonal Balancing
What is the treatment for LAMINITIS?

- Ice legs/feet

- COOPERATION BETWEEN VET AND FARRIER!!!!

- Regular trims/xrays

- LONG TERM TREATMENTS.....
What is the long term prognosis & maintainance for LAMINITIS?

- Some horses suffer an acute episode and go on to live normal lives.
- Most require maintenance treatments
- Some horses are so severe that they are euthanized for humane reasons
What is the long term prognosis & maintenance for LAMINITIS?

- Radiographs before shoeing and resetting shoes.

- Important to have good working relationship with vet and farrier.

- Dietary restrictions: little or no grass, low carb high fat grain.
What is the long term prognosis & maintenance for LAMINITIS?

- Good with health maintenance program to prevent other diseases that may induce laminitis.
- Anti-inflammatory medications - BUTE
- Hoof growth supplement
How do I prevent LAMINITIS?

- Prevent obesity – challenge for show horses
- Good hoof care
- Good preventative health care program
- If you suspect laminitis - work with farrier – x rays/bloods essential to rule out EMS/PPID (Cushings Disease)
- Exercise reduced EMS
- Reduce confinement
The End
The End