

Digestive disturbances and feed-related problems



EQUINE NUTRITION #8
CREATED FOR CANADIAN PONY CLUB
EDUCATION
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Colic



Colic



- Colic refers to generalized stomach pain
- Symptoms:
 - Rolling
 - Biting at stomach
 - Pawing
 - Loss of appetite
 - Unable to pass manure
 - Lack of gut sounds or pinging sounds
 - Increased heart rate and respiration
 - General uneasiness and restlessness
- Causes:
 - Sudden changes to diet
 - Reduced water intake
 - Poor quality/rancid/spoiled /unsuitable food
 - Poor health due to worms, etc.
 - Bad teeth
 - Working too soon after feeding
 - Feeding too many concentrates

More about colic



- The length and configuration of the horse's digestive system predisposes the horse to colic
- Colic is a very serious ailment
 - In fact, it is one of the top two killers of horses
- Colic is directly related to the various parts of the digestive tract:
 - Sand colic, when sand that is consumed settles in the stomach
 - Enteroliths, which are thought to be related to the minerals present in soils in certain areas
 - Flatulence (gas) colic, which is often caused by overeating, eating too quickly, or eating easily fermented foods
 - ✦ This can progress to intestinal torsion or twisting
 - Spasmodic colic, which can be caused by an overly active or intensely contracting digestive system
- Other feed-related causes include:
 - lack of water, especially when given too much coarse, fibrous hay
 - abrupt changes in feed which will disrupt the bacteria in the hindgut

Some of the same factors that cause colic also cause laminitis



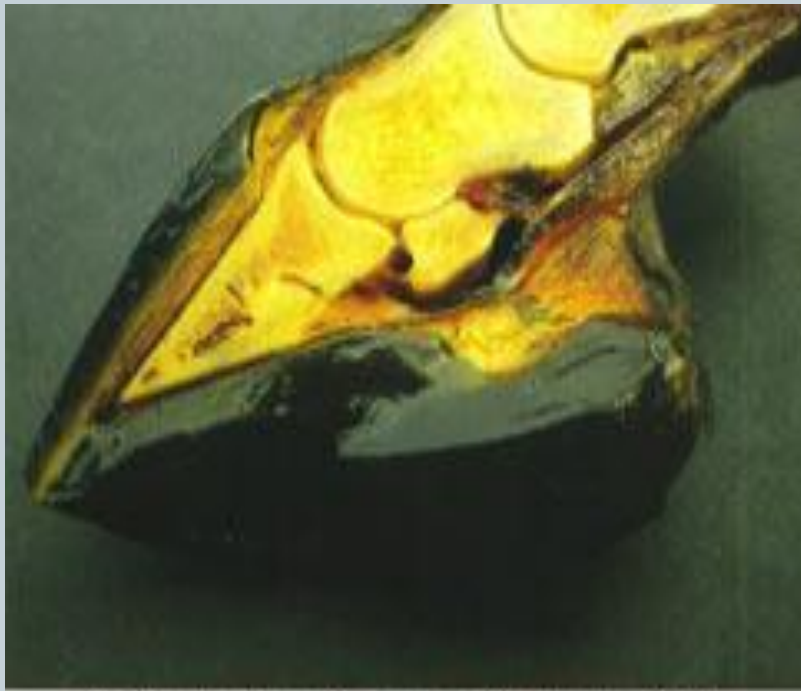
Laminitis



- Laminitis refers to inflammation of the sensitive laminae
- Symptoms:
 - Extreme pain; reluctance to move
 - Hoof walls are hot
 - Laminitis stance with fore feet out in front and hind feet forward
- Causes include:
 - Excess food
 - ✦ Grass in spring or any time sugars are high
 - ✦ Any excess proteins that end up in hindgut
 - Retention of placenta after foaling
 - Severe systemic infections
 - Bruising of feet
 - Allergic reactions to feed

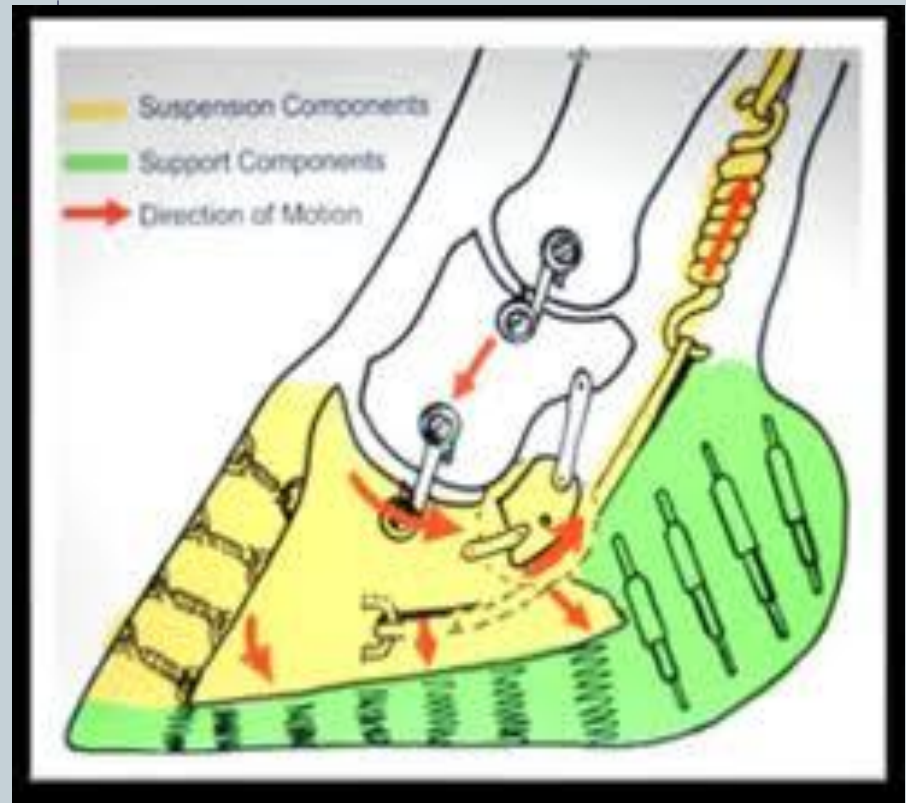
Two views of the coffin bone

A normal foot



Inside the healthy hoof. Note the tightly connected laminae.

A foot with laminitis



Laminitis can result in rotation of the coffin bone



What happens in the system with laminitis?



- Laminitis is still being researched and is not completely understood
- It is thought that, in the case of laminitis caused by high sugars in the feeds, the following happens:
 - Large amounts of sugars overwhelm the hindgut
 - The bacterial population in the cecum and large intestine is altered
 - This increases the number of lactic acid producing bacteria, primarily lactobacillus and streptococcus
 - This increases the concentration of lactic acid
 - This then decreases the pH balance of the intestinal tract
 - The acidic environment that has been created causes the cell walls of the bacteria to break apart
 - This results in the release of toxic compounds called **endotoxins**
 - The endotoxins are absorbed through the cell walls of the intestine
 - It then takes 16-24 hours for the results to become systemic and affect the sensitive laminae in the feet
- A recent study found that laminitis commonly affects all four feet, although the forefeet are the ones in which the horse exhibits most of his pain

Laminitis: subacute versus chronic



developmental

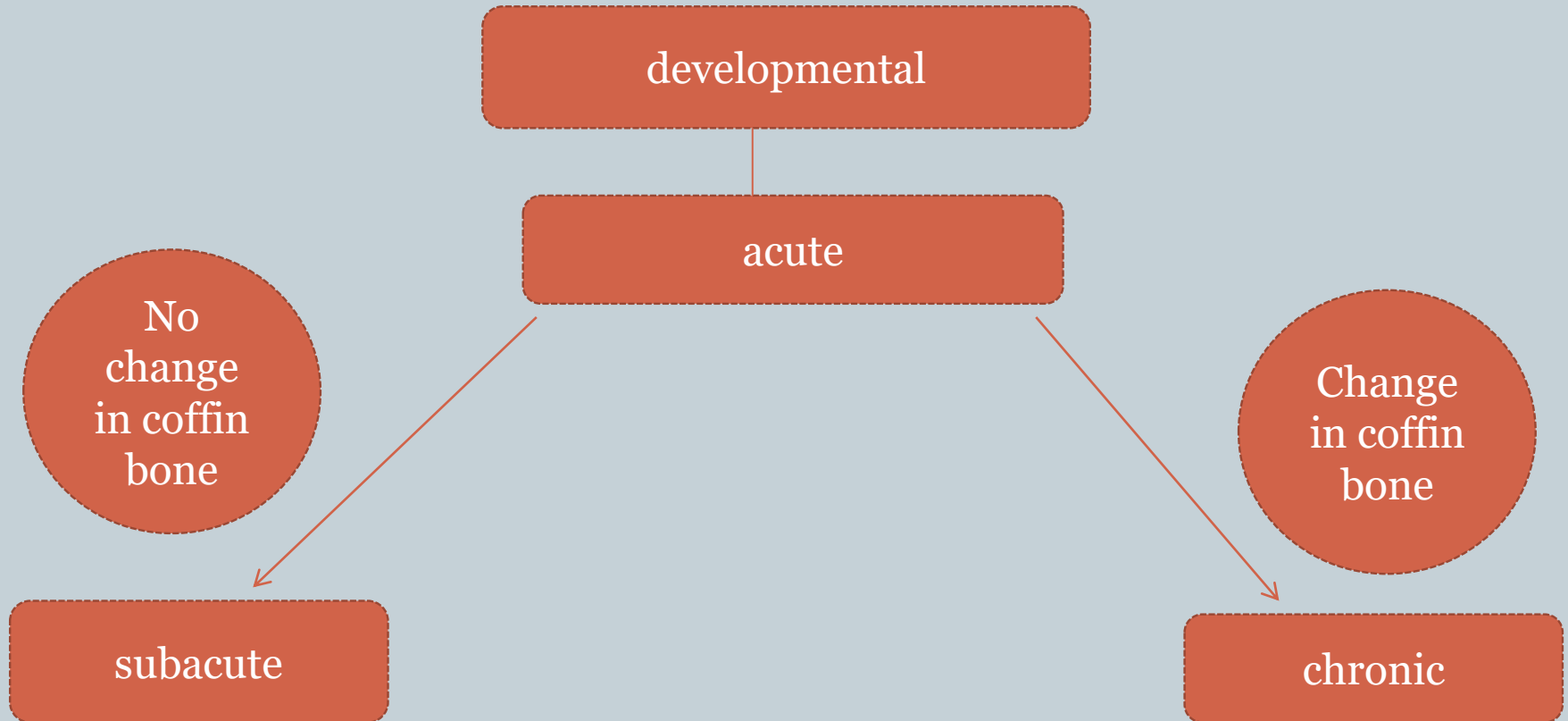
acute

No
change
in coffin
bone

subacute

Change
in coffin
bone

chronic



Symptoms of Laminitis



Rocking horse stance



Heat in the foot



Ulcers



- One study found that 60% of non-race horses and 90% of race horses had ulcers
- Ulcers are caused by over-filling the stomach
- The bottom portion of the stomach has a mucous coating to help protect it from the acids used in digestion
- The top of the stomach lacks a protective coating
- If the stomach is overfilled or if the horse is exercised after feeding, the acids can burn the top of the stomach lining, causing ulcers
- Feeding small amounts of alfalfa or alfalfa cubes can help to protect and coat the stomach due to high levels of Ca
- Some horses are more (or less) susceptible
 - Horses with behaviour problems may be more susceptible to ulcers
 - Horses that eat faster are more susceptible
 - ✦ Those who are bullied over food are often doubly susceptible
 - Some breeds anatomically are more susceptible
 - Ponies have a higher chew rate, which leads to the production of more saliva, which helps to buffer the stomach acids
 - Horses who work more often are more susceptible, as acid levels increase with exercise and prior to exercise
 - Horses who crib produce more saliva AND more acid, which can lead to ulcers and colic

Ulcers (continued)



- Acid is being produced at a consistent rate all day, every day
 - It is always present in the system
- Anti-ulcer medication will not be harmful, and can be helpful even if ulcer is merely suggested rather than confirmed
- Ulcers can heal rapidly on their own
 - The goal is to reduce acidity as much as possible
- Symptoms of ulcers:
 - Weight loss
 - Not gaining weight in spite of being well fed
 - Not eating
 - Colic
 - Negative changes in behaviour and performance

Metabolic syndrome



There is a direct correlation between the development of metabolic syndrome, and the horse being grossly overweight



Cushings



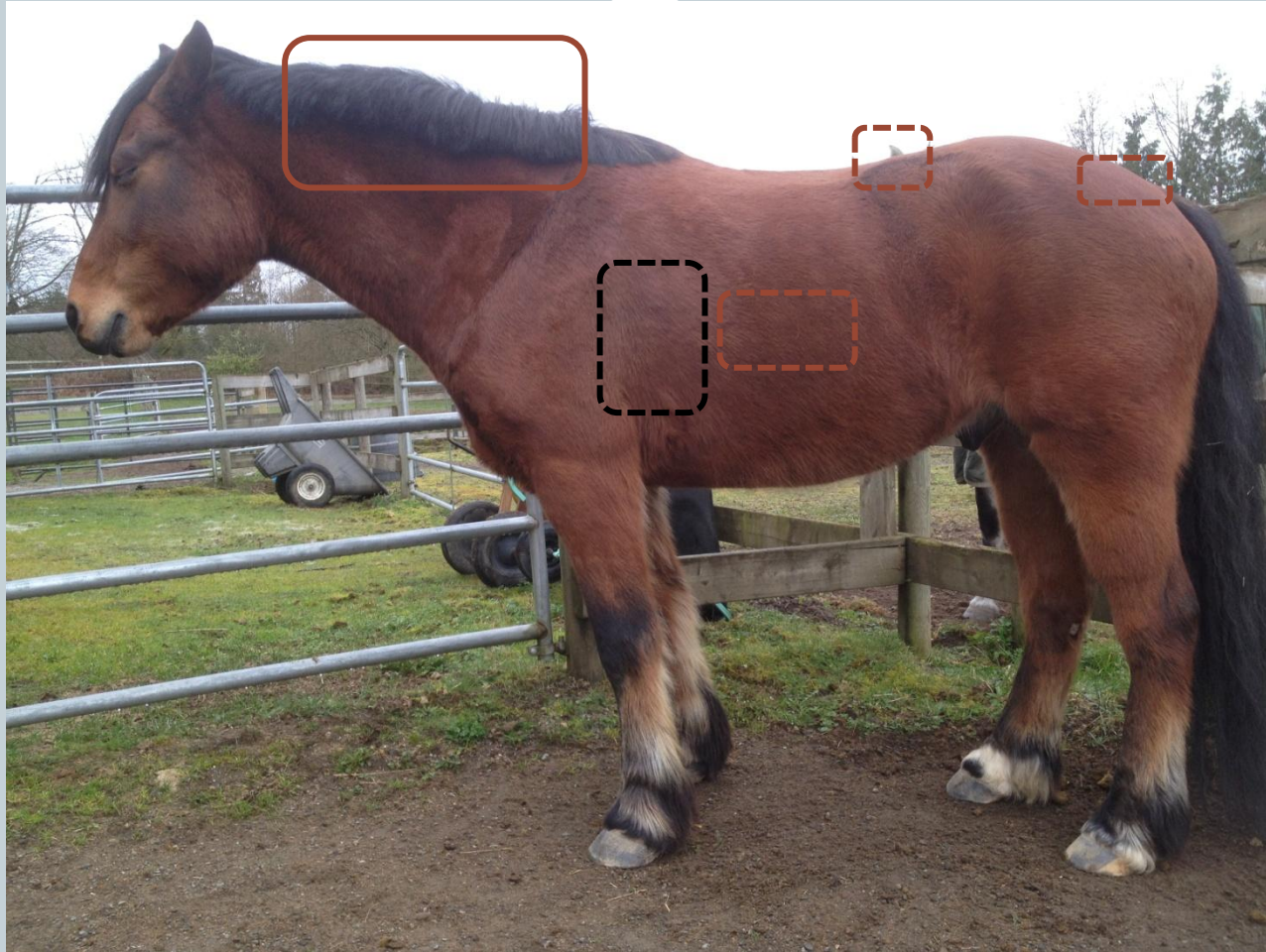
- Direct correlation with being overweight
- This causes lots of alterations in carbohydrate metabolism
- Can also result in pockets of fat, slow shedding and curly hair
- Osteoporosis may also develop in a horse with Cushings

Obesity and Insulin Resistance



- Match intake to output
 - 'Calories in' (feed) need to equate to 'calories out' (work)
- Obesity is 8-9 on Henneke scale
- Dealing with obesity:
 - Remove high calorie feedstuffs
 - Watch feeding of treats
 - Embark on a weight management program
 - ✦ Feed 2% of BW per day
 - ✦ Can reduce to 1.5% of BW per day
 - ✦ 1% of BW per day is considered severe restriction
 - Never go below this

Areas to check for weight



Weight Loss



- Unexplained weight loss needs to be investigated by a vet
- Two main causes:
 - Disease
 - ✦ This can include problems with dentition
 - Inadequate nutrition
 - ✦ Neglect
 - ✦ Ignorance



Factors affecting unplanned and unexplained weight loss



- **Causes:**
 - Marginal diet
 - ✦ Insufficient food
 - ✦ Inadequate energy in diet
 - ✦ Deficiencies in diet
 - ✦ Aged horses may lack the ability to absorb nutrients
 - Poor dentition
 - Worms
 - Disease
 - ✦ Unhealthy horses will typically refuse food

Feeding the underweight horse



Feeding the Underweight Horse



- A horse is considered severely underweight if it is below 3.5 on the Henneke Body Condition Scale
- To feed the severely underweight horse:
 - Be very careful
 - Introduce foods gradually
 - ✦ Avoid Re-feeding Syndrome
 - Will occur 3-5 days following diet change
 - Extremely dangerous
 - Severe effects on the cardiac system

Re-introducing Food



- **What to feed:**
 - Avoid lots of starches, sugars, fructan, non-structural carbohydrates (NSC)
 - Give fats
 - Give alfalfa (high in protein, low in NSC)
 - Soak hay to remove NSC
 - Give several small feeds a day
 - ✦ 6 times a day, 0.5 kg. Per feeding
 - Give lots of forage
- **Gradually increase over 10 days**
 - After that, add cereal grains and access to pasture

Other digestive disturbances



- **Choke**

- Choke is a complete or partial blockage of the oesophagus
- It can be the result of the horse bolting its feed

- **Exertional Myopathy:**

- Exertional myopathy is also known as:
 - ✦ Tying up syndrome
 - ✦ Monday morning disease
 - ✦ Exertional rhabdomyolysis
 - ✦ Blackwater
 - ✦ Myositis
 - ✦ Myohaemoglobinuria
- This condition occurs typically when a horse in hard work who is receiving a high energy diet has a day or two off with no reduction in feed
- Symptoms include severe pain and stiffness in the large muscle masses
- The exact mechanisms are not fully understood but a build up of lactic acid is involved
- Horses deficient in vitamin E and/or selenium are often susceptible

QUESTIONS



- Using the DACCT (description, anatomy, characteristics, causes and treatment) framework, discuss the following ailments:
- Colic
- Laminitis
- Ulcers
- Typing up
- Choke