

How does your donkey score?

Judy Marteniuk, DVM, MS
Michigan State University

Just like humans, many of our animal friends are suffering from waistline expansion. As with humans, being over weight increases the risk of health related concerns. Two of the most common problems seen in donkeys are laminitis (founder) and hyperlipidemia (fatty liver). Also, from a visual standpoint, when a donkey is grossly over weight, its neck becomes very wide and heavy, its back becomes lumpy and it may seem to have lumps on its rear end. These are all stores of excessive fat. If it becomes heavy enough, the neck crest will fall to one side and despite a successful return to a normal weight, the crest will never return to normal.

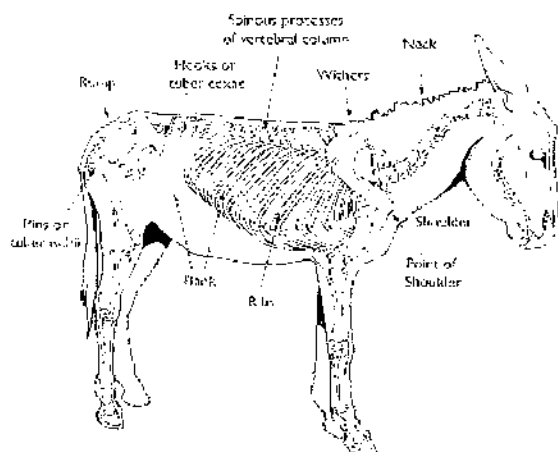
So how does you donkey score? Similar to horses, a donkey's body condition is scored on a 9-point scale. The ideal score is about a 5. If your donkey is greater than a 6.5, it is overweight. If it is less than a 4.0, it is underweight.

Using the following chart as a guideline to determine your donkeys score?

BODY CONDITION SCORING OF DONKEYS

Body condition scoring of donkeys can be done on a scale from 1-9.

Note: The spinous processes are the bony points rising from the spine (backbone). The superspinous muscle is the muscle along either side of the backbone.



If your donkey is overweight, it is important that weight reduction occurs gradually. Sudden weight loss can cause your donkey to develop hyperlipidemia that even with aggressive treatment has the potential for at least a 50% mortality. If you have questions or concerns about how your donkey scores or an appropriate ration for your donkey, contact your veterinarian.

The summer newsletter will continue the discussion of the risks of obesity in your donkey

Hyperlipidemia and Hepatic Lipidosis (Fatty Liver)

Judy Marteniuk, DVM, MS
Michigan State University

In the last newsletter, you were able to determine if your donkey was overweight. Although the risk of hyperlipidemia and "Fatty Liver" is present for all donkeys, ponies and miniature horses, those individuals that are obese are at the greatest risk of developing the problem. Other predisposing factors are: stress, concurrent disease, parasites, late gestation or early lactation. Concurrent diseases are often such conditions such as diarrhea, endotoxemia, kidney disease and neonatal septicemia, but any problem that causes the individual to stop or reduce their food intake puts the individual at risk of hyperlipidemia.

When hyperlipidemia occurs, the clinical signs may occur acutely and include jaundice, lack of appetite, weakness, depression that may range from mild to severe, incoordination, diarrhea, mild colic, fever, ventral swelling, and recumbency. In very severe cases, sudden death may occur due to severe fatty infiltration of the liver, rupture of the liver and fatal hemorrhage. However, one must remember that the primary predisposing problem may overshadow the hyperlipidemia.

Therefore, any time a donkey, miniature horse or pony has a reduced appetite, hyperlipidemia must be considered, monitored and treated. To determine if hyperlipidemia is playing a part in the current medical problem, serum triglyceride levels need to be measured. Normal serum levels should be less than 85 mg/dl, but may be increased to up to 300 mg/dl in healthy pregnant animals. However, if these individuals become inappetent, they are at risk of developing hyperlipidemia. Once triglyceride levels exceed 500 mg/dl, the blood/serum takes on an opalescent appearance. Liver enzyme levels will be increased; while glucose, BUN and albumin will be decreased.

Treatment is aimed at early recognition of both the initiating cause and hyperlipidemia. The sooner both are recognized, the better the outcome. It is important to keep a positive energy balance in individuals at risk (donkeys, ponies, miniature horses) of developing hyperlipidemia. If they cannot be encouraged to consume adequate calories orally, they need to be hospitalized and placed on a constant infusion of IV dextrose along with close monitoring of blood glucose levels. If an individual is not eating at all, partial parenteral nutrition may be required. If the gastrointestinal tract is normal, but the individual is just not interested in eating, a stomach tube may be placed and some nutrition can be given orally. Insulin has also been used successfully to augment therapy.

However, despite aggressive treatment, the prognosis for individuals suffering from hyperlipidemia is guarded to poor. Reports in the literature, range from 60% to 100% mortality. Therefore, prevention is the best treatment. Provide adequate nutrition, but closely monitor your donkey's body condition to prevent obesity. Provide good routine health care and promptly treat any medical problems. Finally, minimize stressful conditions whenever possible. Activity goes a long way to control weight gain. Allow your donkeys to enjoy exercise as a means to control weight gain and reduce the risk developing hyperlipidemia.

Note: The fall newsletter will discuss another complication of obesity - laminitis (founder)

SCORE	DESCRIPTION OF THE DONKEY
1. Very thin	Animal markedly emaciated: bone structure easily seen over body; little muscle present; animal weak, lethargic
2. Thin	Animal emaciated; individual spinous processes, ribs, hooks, pins, shoulder blades and spine all prominent, sharply defined; some muscle development; neck thin; prominent withers; shoulders sharply angular
3. Less thin	Vertebral column prominent and individual spinous processes can be felt; little fat, but superspinous muscle over spinous processes apparent; ribs, pins and hooks prominent; loin area and rump concave; little muscle or fat covering over withers and shoulders
4. Less than moderate	Vertebral column visible; pins can be felt but not visible; hooks rounded but visible; rump flat rather than concave; ribs can be felt but not obvious; withers, shoulders and neck have some muscle and fat cover; shoulder blades less clearly defined
5. Moderate	Superspinous muscles developed and readily apparent; vertebral column can be felt; hooks rounded; rump rounded, convex; pins not visible; some fat can be felt in shoulder area region and at base of neck; can feel ribs, but not visible
6. More than moderate	Cannot feel spinous processes easily; back becoming flat well covered; rump convex and well muscled; some fat can be felt on neck, base of neck and shoulder area; neck filled into shoulder; hooks just visible
7. Less fat	Back flat; cannot feel spinous processes; hooks just visible; flat on neck and shoulder area beginning to expand over ribs; flanks filling, neck thickening
8. Fat	Animal appears well covered with body rounded with fat and bones not discernible; flanks filled, broad back
9. Very fat (obese)	Bones buried in fat; back broad or flat, in some cases crease along the backbone; large accumulations of fat on neck, over shoulder area and ribs; flank filled with fat

This table and figure come from *R. Anne Pearson & Mohammed Ouassat. 2000. A guide to live weight estimation and body condition scoring of donkeys: 15-16*

Laminitis

Judy Marteniuk, DVM
Michigan State University

Laminitis is the last article in the series on "How does your donkey score?". Laminitis, often called founder, is an inflammation in the lamina in the foot. First, a review of anatomy of the equine foot will facilitate a better understanding of laminitis. All equids walk on a single digit. For comparison, our fingernail is equivalent to their hoof capsule and the connection of our fingernail to the deeper tissue is the lamina. During laminitis, the attachment (lamina) of the hoof wall (fingernail) is disrupted from a critical element of the underlying tissue, the coffin bone (Figure 1).

Figure 1. Normal

Imagine the pain that occurs when your fingernail is torn back into the sensitive tissue or bent back, now imagine having to bear all your weight and walk on that fingernail. This gives you an idea of the pain involved with the acute form of the disease. Typically, only the front feet are involved, but in severe cases all four feet may be involved. During the acute (active) stage of laminitis, the individual feet are extremely painful. Depending upon the severity of the inflammation, the pain may be short-lived without obvious changes in the foot; or so severe that the coffin bone alters its position within the hoof capsule. Two types of movement are possible. The one type that most people are aware of is "rotation of the coffin" within the hoof capsule (Figure 2). With rotation only, the lamina at the toe is disrupted. The other type is the breakdown of entire laminar connection between the coffin bone and the hoof wall that leads to the coffin bone sinking within the hoof capsule (Figure 3). If this form is severe enough, the hoof capsule may be left behind, i.e. the coffin bone comes out of the hoof capsule- just like stepping out of a shoe.

Figure 2. Rotation

Figure 3. Sinking

The severity of the disease and the commitment of the owner will determine the outcome, with euthanasia one of the scenarios. Studies reviewing long-term outcomes of laminitis in horses, report that 75% of those affected were euthanized. Since donkeys seem to be much more pain tolerant than horses, are not usually "athletes" and are more inclined to keep off their feet during the acute aspect of the inflammation, they seem to have a better outcome for long-term survival.

The form of laminitis most commonly seen by the Rescue is the chronic form. When the lamina of the foot is damaged by inflammation, hoof growth often changes. The heels grow faster than the toe, leading to the characteristic "elf slipped" appearance of the foot. In the absence of routine, regularly scheduled farriery, the hoof walls of affected donkeys may actually curl. As can be imagined, the donkeys become very painful on their feet and are very reluctant to walk. Also, due to inflammation, the white line area of the hoof is damaged, and becomes quite wide and spongy in consistency. This is most prevalent at the toe for those suffering rotation. White line damage can lead to an increased incidence of "gravel" or hoof abscesses involving the white line.

Treatment of laminitis involves removing/correcting the inciting cause, pain control and regular hoof care. If your donkey has foundered due to being overweight, then dietary changes are necessary. Other causes of laminitis include sudden feed changes, especially eating too much concentrate/grain; severe illness, especially if the intestinal tract is involved; and injuries to the opposite leg that require more weight to be placed on the supporting leg. Adequate pain control may be very difficult to achieve in severe cases. The simultaneous use of several methods is often necessary. Medications, such as phenylbutazone (Bute) and Banamine, are the most commonly used for pain control. These medications are non-steroidal anti-inflammatory drugs (NSAID's) and are in the same group of drugs as aspirin and ibuprofen. It is important to remember that these drugs can have severe and even life-threatening side effects if not used correctly. Other pain medications, such as detomidine, may also be used. In addition during the acute phase of the disease, it is important to keep the donkey confined to a stall or very small paddock, whether it is a new occurrence or a flare-up of chronic disease. This, along with a soft, well-bedded surface, will help relieve

pain by providing both support to the foot and encouraging the donkey to lie down and take weight off its feet. Stall confinement may be necessary for only a few days or may be required for months. It takes about a year for a hoof to re-grow fully. Finally, it is essential to have a close working relationship with a farrier who is experienced both in trimming donkey feet and dealing with laminitis. In contrast to the goal of routine trimming of horses' hooves, donkeys are meant to have a normal more upright hoof wall. More heel should be left on a properly trimmed donkey hoof. This correct, more upright stance and trim becomes even more critical for donkeys affected by laminitis. A donkey-knowledgeable farrier or veterinarian may also elect to place pads on the hooves to provide extra sole support. Therefore, if faced with a severe case of laminitis in your donkey, a successful outcome will be greatly enhanced by a strong working relationship between you, your veterinarian and your farrier, coupled with your willingness and dedication to follow their directions for care.

In closing, if your donkey founders, it is going to be a potentially long, involved, expensive, and most importantly, an emotionally draining experience. It is extremely difficult to watch your donkey in pain during the healing process. Prevention of laminitis is preferable, but treatment should be considered and may be rewarded.
