



## MY HORSE IS UNDERWEIGHT: WHEN AND HOW TO INTERVENE

Just like their owners, horses come in all shapes and sizes. In the case of a poor body condition, a horse will require treatment that begins by identifying the main causes of its weight loss.

Both the structure and function of the gastrointestinal system play pivotal roles in converting food into chemical components; this process allows the body to obtain the energy it needs for proper functioning (Stull, 2008). Our horses' digestive systems operate inside two main sections:

- Within the stomach and small intestine. Here, digestive enzymes do the majority of the work required to digest the horse's feed and assimilate most of its nutrients (fat, protein, non-structural carbohydrates and minerals).
- Within the large intestine (including the caecum and colon). Here, the hay will be exposed to beneficial micro-organisms and broken down through the fermentation process.

From an evolutionary standpoint, horses were designed to continuously digest food which they would typically graze on all day long. For horses who receive just two meals a day, this sort of digestive function is not optimal, especially when the meals served are large in quantity. And because the digestive system does not adapt well to drastic changes, the underweight horse will need a highly customized diet.

Commonly used throughout the field, the Henneke method provides a universal classification method for evaluating body condition (Henneke et al., 1983). Through visual assessment and palpation, the method estimates the amount of subcutaneous fat present in six locations of a horse's body. On a scale of 1 (emaciated) to 9 (obese), the optimal body condition for an adult horse is between 5 and 6. In case of a below average score, various elements need to be observed in order to identify the potential cause or causes of the low body condition. It is possible for a horse to obtain a score of 4 without having been subject to any intentional neglect. A low body condition may occur due to the following circumstances:

- A specific medical condition (ulcer, diarrhea, injury, cancer, etc.).
- A pregnant or nursing mare whose caloric intake was not properly adjusted.
- A senior horse with a less effective digestive system.
- Deteriorated dental health.

The above examples typically result from a lack of expertise, and not due to malevolence. In such cases, weight loss tends to occur relatively quickly. Adjusting the type and quantity of food should promptly improve the horse's condition.

More often than not, horses who are categorized as thin or emaciated suffer due to their owners' ignorance or negligence. The owners' financial or family problems may also play a role. Numerous reasons may cause a horse to become emaciated. Here are a few examples:

- A lack or absence of food.
- Poor quality food (indigestible, mouldy).
- High levels of parasitism.
- Neglected dental care.

When a horse is in starvation mode, its body must resort to using fat and glycogen stores for all metabolic processes. A healthy horse also relies on these same energy sources, which go towards maintaining all biological functions, including the cardiovascular and nervous systems (Stull, 2012). Unfortunately, once the starving horse has used up its last reserves, it will need to derive its energy by breaking down protein sources. The body is not able to store protein in reserves. Therefore, if the horse is to survive, the body will need to break down muscles and vital organs.

A body condition of between 1 and 3 will require the care and collaboration of an equine veterinarian and agronomist who specializes in equine nutrition. To determine the cause of the emaciation, the veterinarian must first carry out a thorough evaluation of the horse. Next, any observably necessary medical interventions should be implemented. At this stage, it is important to note that any caloric, vitamin or mineral deficiency will compromise the immune system and place the horse at higher risk of infections, lice and other complications.

Obviously, the mouth serves as the entry point for all food. Poor dental health can lead to poor digestion and subsequent difficulty to absorb nutrients. If this is suspected, an equine veterinarian can perform a buccal evaluation and carry out the necessary corrective procedures such as rasping (floating). Sharp edges, also known as enamel cusps, may form and cause cheek, gum and tongue pain whenever the horse chews. Consequently, the introduction of different kinds of food must be done very gradually in order to avoid medical complications.

It is of utmost importance that horses remain well hydrated. Unlimited access to fresh, clean water is essential. On average, an adult horse weighing 500 kg consumes between 25 and 30 litres of water per day, the equivalent of two five-gallon barrels (NRC, 2007). Adding salt (100% sodium chloride) to the horse's ration promotes water consumption while also helping the body to retain water. A white salt block, or granulated salt are both excellent options. For optimal results, aim for one to two ounces at each meal, increasing according to your horse's needs.

For the next step, it is recommended to introduce a small quantity of high-quality hay which should ideally be served six times per day. Choose hay that is green, tender, free of dust, and possessing a fresh, pleasant odour. A few days after beginning to supply fodder, it is time to introduce a highly nutritious horse feed, provided in small quantities at the same frequency of six occasions throughout the day. Depending on the animal's state of health, the introduction of food should take place over a minimum period of 10 to 14 days. Following this period, the number of daily meals can be decreased. Avoid an excessive insulin response in the bloodstream by choosing a diet that contains reduced levels of non-structural carbohydrates (sugars and starches). Feeds made from "Super Fibres" have been shown to be particularly effective. By adding water to these feeds, you can also promote digestion and hydration. Prior to serving, let the product soak for 10-15 minutes. Added nutritional supplements can also benefit the emaciated horse. Prebiotics such as MOS's (mannan oligosaccharides) nourish healthy bacteria and act on intestinal flora health (Thomas, 2009). Similar to prebiotics, probiotics prevent and combat pathogenic bacteria (NRC, 2007). Probiotics possess the additional function of improving digestive health by promoting the digestion and absorption of nutrients. This way, the food consumed by the horse will be much more effective. By reducing variations in pH levels, probiotics also decrease the risk of the intestinal flora going out of balance due to a change in exercise or diet.

In general, the emaciated horse requires a minimum of six months to regain its natural weight. Gradually increasing your horse's exercise levels will allow it to rebuild its muscle mass and cardiovascular fitness levels. During this time, your horse will require as much patience and love as you can spare.



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## Bibliography

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