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Get the Skinny on the Too-Thin Horse

By Stacie G. Boswell,
DVM, DACVS

This fall, I have evaluated several horses for weight loss. These recent cases bring to light some common themes of weight loss in middle-aged and geriatric horses. The goal of this article is to prepare you for what a veterinary evaluation entails, and give you some tips and information to prepare your thin horse for winter.

Weight Monitoring

One thing that happens – especially in situations where one or two horses are kept by the owner as a pet – is that a horse can gain or lose significant weight without being thought of as abnormal. For trainers, veterinarians, and farriers (who look at dozens of horses daily), the appropriate weight for a horse is more apparent. For owners that look at only one or two horses daily, the weight change a horse experiences can be so gradual and subtle that it is nearly unnoticeable. A person may be aware that one horse is thinner than the other horse(s) in their herd, but changes in the thin horse's weight are less obvious. Quantifying that weight objectively is critical for management decisions and for monitoring to ensure that no further losses occur through the cold season.

Body Condition Score

Body condition scoring of horses is a technique designed by Dr. D.R. Henneke at Texas A&M University in 1983. Horses are scored on a scale of one to nine, with scores 4 and 5 being considered ideal for fit horses (Figure 1). Horses that are scored 3 and below are considered thinner than ideal. A horse with a body condition score of 1 is in a danger zone of metabolic problems developing as the horse's food supply increases. We use this scale to accurately communicate about horses in medical records and to monitor weight loss or weight gain over time. The winter hair coat may mask how thin a horse, so it is important during winter to touch the horse and feel how much coverage there is over the ribs, neck, and rump. I recommend objectively scoring the horse each month, and recording this on a notecard. Noting a trend is important.

More details regarding the body condition score can be found at <http://www.aaep.org/info/horse-health?publication=864>

Weight Tape

Since horses obviously don't fit on our household scales, it seems impossible to determine just how much they weigh. The weight tape is a tool that every horse owner should have and use regularly. It is placed around the horse, just at the withers and behind the elbow (right in line where the girth or cinch goes). The markings on the tape are in pounds, and give an estimation of what the horse's weight is based on the circumference (Figure 2). Again, noting the trend of weight loss and weight gain is what is important, as small, gradual changes may be unapparent. I recommend recording the horse's weight with the weight tape weekly.

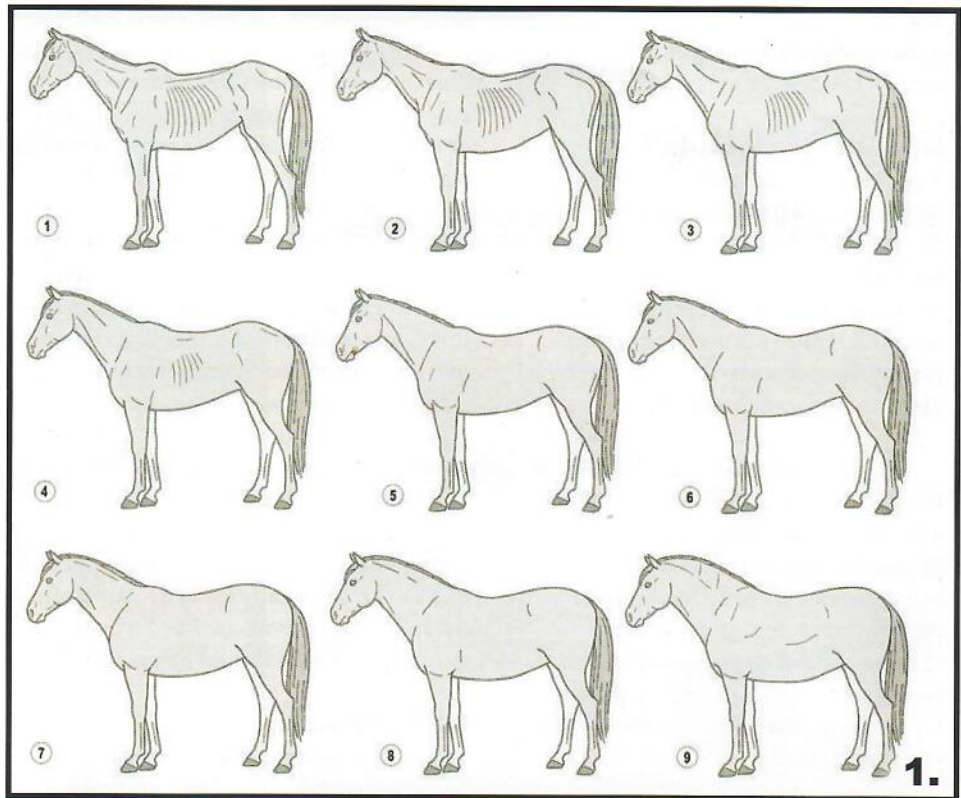
Medical care

There are many reasons that a horse will lose weight. The bottom line is that they are burning more calories than they are ingesting. This can be because of poor digestion, disease or illness, or parasites. A basic medical evaluation for weight loss should include a full physical examination, evaluation of dentition, a bloodwork panel, a fecal evaluation, and palpation of abdominal organs per rectum. Additional information from more specific tests may also be necessary to achieve a diagnosis.

Dental Disease

All horses should have their teeth evaluated annually. If dental abnormalities are the sole cause of weight loss, a single float will not be a miracle solution. Typically, dental abnormalities develop gradually over time and these can be maintained or corrected more effectively if annual sedated dental evaluation is performed and a routine float is done. A float is basically grinding off the sharp edges of a horse's teeth to restore normal and healthy dental occlusion.

If a horse's teeth do not grind food properly, detrimental effects can occur throughout the digestive tract. If the horse doesn't grind food to small enough particles, the esophagus can become blocked (choke), impactions in the large colon are more likely, and proper absorption of nutrients is impossible.



Bloodwork

Bloodwork may include a serum chemistry panel, a complete blood count (CBC), and potentially other, more specific tests.

A screening serum chemistry panel for horses can detect problems with kidneys, liver, muscles, and electrolytes. Generally 10-20 biomarkers (proteins, enzymes, or electrolytes). Red flags on this panel will be interpreted by your veterinarian relative to other clinical signs the horse is showing.

The CBC evaluates the types of cells in the blood. Red blood cells carry oxygen using a protein molecule called hemoglobin. The CBC screens for anemia by evaluating size of red blood cells (which carry oxygen), the number of red blood cells, and the hemoglobin content within the red blood cells. White blood cells are part of the immune system, and help fight infections. The CBC quantitates all five major cell types. Anemia, decreases in immune status, and increases in certain cell types are red flags that help determine the cause of weight loss.

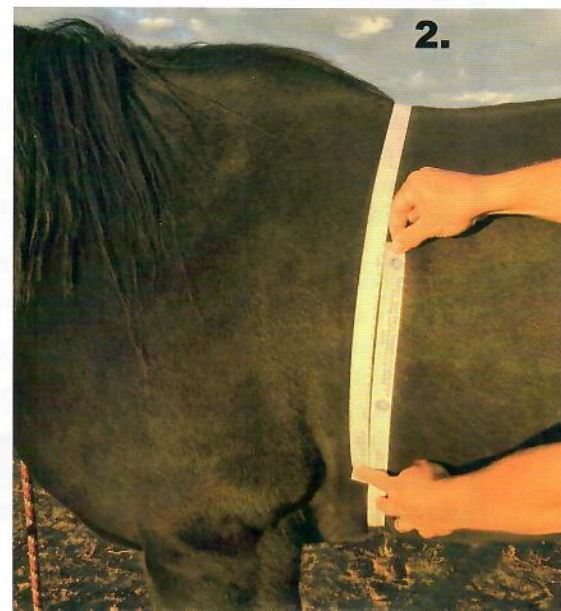
Cushing's Test

A Cushing's test is usually the most relevant to weight loss. Cushing's disease in horses is a result of a benign pituitary tumor. While this tumor doesn't spread, it does have systemic effects. It causes an increase in cortisol, the stress hormone.

In horses this results in an increased hair coat, loss of muscle mass or wasting over the topline, a decrease in immunity, and slows the healing process of wounds. This disease also significantly increases the horse's susceptibility to laminitis (founder). There are several different blood tests that will reveal Cushing's. It is treatable with pergolide, which is available as the FDA-approved product, Prascend.

Fecal Egg Count

Although in New Mexico, our arid climate typically results in very few parasites for most horses. The intestinal parasite life cycle often involves parasite eggs being ingested in grass, so this limits exposure in our state. However, parasite eggs may



also be ingested in feces, so horses living in paddocks with suboptimal manure control can also be at risk.

McMaster's Fecal Parasite Test

A McMaster's fecal parasite test quantifies the number of parasite eggs per gram of feces (EPG). Typically, adult horses with less than 200 EPG are not dewormed, but horses that are shedding more are. This strategy is used to prevent parasite resistance to the drugs used for deworming (anthelmintics).

A McMaster's quantification of EPG in a thin horse can also provide clues to why a horse has lost weight and provide a way to monitor effectiveness of deworming. Scientific data shows that chronic parasite infestation is detrimental to digestive ability. Controlling and documenting parasitism is important for longevity, even when horses appear young and robust.

Palpation per Rectum

Although we can only evaluate the caudal (back) third of the abdomen, this is a straightforward diagnostic that should be performed in any case of unexplained weight loss. This examination technique is often employed in cases of colic, but can occasionally identify tumors or other intestinal abnormalities causing weight loss.

Ancillary Diagnostics

In cases of weight loss other diagnostics may be employed to help find abnormalities. These include evaluation of abdominal fluid, abdominal ultrasound, and rectal biopsy

Abdominocentesis (belly tap) is sampling of the fluid that surrounds the abdominal organs. Total protein, cellular quantification and typing, and cellular appearance are evaluated. Changes in these parameters are red flags that help veterinarians determine more elusive causes of weight loss.

Ultrasound of the abdomen can "see" into the abdomen using sound waves. The ultrasound helps determine relative fluid content of organs. It cannot penetrate through gas, so some portions beneath gas pockets in the colon will not be visible. It also can only penetrate to a

depth of about 10 inches. The deeper the penetration, the more loss of detail occurs. This diagnostic tool, like abdominal palpation per rectum, may reveal tumors or abdominal abscesses that are relevant to weight loss.

A rectal biopsy is a relatively non-invasive tool to take a sample of tissue from the inner surface of the rectum. Changes in this tissue as observed under a microscope may indicate inflammatory disease or other reasons for weight loss.

Finally, if the thin horse has trouble ambulating or is painful while moving, this can affect his or her ability to consume enough forage if he or she is dependent on pasture for their calorie needs. A painful horse should be evaluated and a pain-management plan should be made.

Feed and Feed Supplements

The basis of every horse's diets should be long-stem roughage (hay, grass, or alfalfa) whenever possible. The thin horse that has experienced calorie deprivation (starvation) should be started on grass and alfalfa in small amounts, with a gradual increase. All food changes should occur gradually over weeks to months. After 2-4 weeks, concentrated feeds (sweet feed or pellets) can be added to the diet

For a horse already receiving hay and concentrated feeds, the roughage must account for a minimum of 50% of the horse's dry matter intake. Dry matter intake (DMI) is a measure of feeds with the water eliminated from them. The weight of hay will be similar to its DMI, but spring grass will be very different due to the high water content.

For horses unable to consume long-stem roughage due to dental disease, a complete feed (such as Purina or Triple Crown Equine Senior feeds) has roughage incorporated in the formulation. These feeds typically use beet pulp as the roughage.

How to Feed a Thin Horse

It is critical now in the late fall that horses that are thin due to age-related changes in digestion or due to illness are fed to increase their body condition prior to winter. As stated above, roughage is the basis for weight maintenance

and important to proper maintenance of the horses gastrointestinal organs. Additionally, fermentation of long-stemmed roughage is one of the main ways the horse's body maintains its temperature.

In addition to good-quality hay, thin horses should be receiving a concentrated feed. Depending on their dental health and other factors, this may include sweet feed, an equine senior feed, or a pelleted diet. All of these choices have pros and cons, so each horse and situation is different. For example, a horse with Cushing's disease (caused by a pituitary adenoma) should not have feed with a high molasses or sugar content.

One of the most critical factors is that that horse must have an area where he or she can spend at least 4-6 hours eating away from the herd. If the thin horse is a slower eater, or is lower in the herd rank, they may be able to ingest and chew enough to maintain themselves or gain weight, but they may not eat as rapidly as they once did. Even older horses that rank high in the herd may have a difficult time defending their food and eating at the same time.

Many weight-building or weight-gain supplements are available on the market. Perhaps the simplest and most cost-effective of these is corn or vegetable oil. Starting with one tablespoon and top-dressing the grain or pellets and working up to 2 cups per day can really help horses maintain their body condition through the winter. Horses that are unable to chew properly really benefit from this extra source of calories that is easily digestible, and doesn't require chewing.

There is evidence that horses with a compromised digestive tract benefit from a vitamin supplement. Vitamin C is important for immunity (10 grams per day) and B vitamins are the vitamins that have been documented.

Other Winter Requirements

Horses are a cold-adapted species, and many well-conditioned horses do not need blanketing with adequate shelter. However, a horse that has a decreased fat cover (body condition score of 3 or less) will need blanketing to maintain body heat

and prevent further weight loss due to the increased energy demands of cold weather. Shelter from precipitation and wind is critical for every horse, but especially for thin horses.

Summary

Weight monitoring is important for all horses, and is a critical part of a weight-maintenance program for the thin horse. Veterinary evaluation and care is necessary, and regular dental care and maintenance is important. Roughage is the basis for a horse's diet, and supplemental calories through concentrated feeds or fat supplementation helps the thin horse maintain or gain weight. Vitamins supplementation may enhance the horse's immune system and health status.

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Cowgirl Christmas

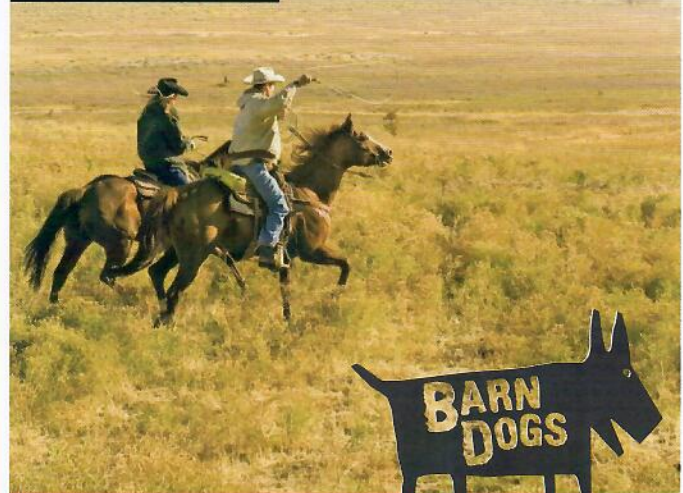
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