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## Assessing Health & Well-Being of Horses

*Colleen Brady, Ed Pajor, Janice Sojka, Nicole Buck, John Berends, Mark Russell*
*Department of Animal Sciences, Purdue University; Department of Veterinary Clinical Sciences, Purdue University;  
 and Department of Animal Science, Michigan State University*

### Introduction

Equine well-being is a very important issue to the public, the goal of good horse management, and is an extremely important ethical issue. A horse's well-being is based on its physical, emotional, and physiological states. Equestrians and observers of horses should be able to determine if a horse is healthy and is in a good state of well-being. There are many ways to assess an animal's well-being, and it is the purpose of this paper to inform people about the different kinds of assessment. Assessment is critical to determining the humane care and treatment of horses, as it serves as a barometer for horse training, exhibiting, and management practices.

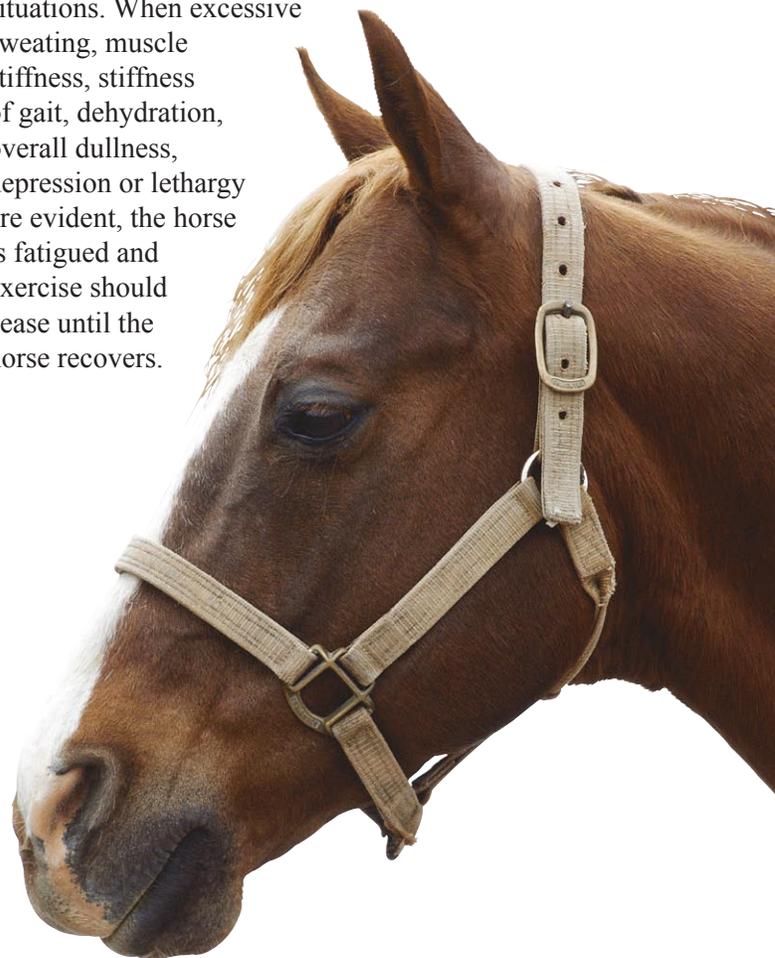
### Behavior

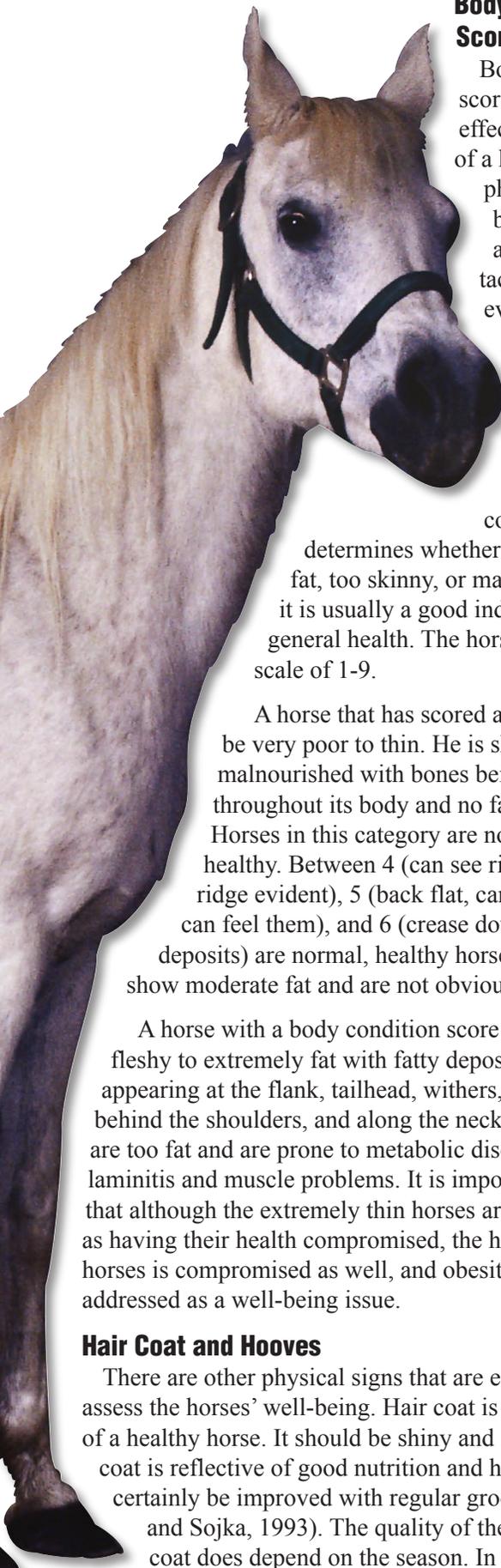
Natural behavior of horses dictates that they normally desire to eat and live in groups. They are herd animals who are, in general, healthier when allowed to be outside grazing continuously in groups. When grazing, horses tend to stay in their herd. If for some reason there is a horse that is by itself, this could be the first sign that the horse is not feeling normal. At feeding time, horses should be in an excited state and should hurry toward the feed. Horses will demonstrate aggressive behaviors toward each other when competing for feed. Submissive ones may not get enough feed to maintain their condition, which may necessitate supplementary management measures. Horses with teeth problems will often tilt their head to one side and may slobber or dribble feed out of their mouths when eating. If horses are not interested in their feed, or are eating and losing weight, your veterinarian should be consulted.

Horses are prey animals, and the instincts developed over generations of surviving in the wild are still present in the domesticated horses of today. Horses are easily frightened, and their first reaction to fear is to run away. Most horses will fight back only if flight is not an alternative, or if they have learned aggressive behaviors from interactions with humans. Horses notice new environments and can be easily startled, especially in

unusual or unfamiliar environments. This is completely natural behavior in horses and should be expected. Trained horses will be obedient and attentive but should still appear bright, alert, and aware of their surroundings.

As prey animals, horses were also forced to make physiological adaptations for survival. Horses have a tremendous capacity for exercise and activity for long periods of time and quickly recover from exercise when they are healthy and fit. The spleen of the horse can hold new red blood cells and the horse can increase its heart rate 5-6 times resting levels, both advantages for emergency situations. When excessive sweating, muscle stiffness, stiffness of gait, dehydration, overall dullness, depression or lethargy are evident, the horse is fatigued and exercise should cease until the horse recovers.





## Body Condition Scoring

Body condition scoring is one effective assessment of a horse's physiological well-being. This test is a visual and tactile test that evaluates the physical appearance of the horse and assesses body fat (Henneke et al, 1988). Body

condition scoring determines whether the horse is too fat, too skinny, or malnourished, and it is usually a good indicator of their general health. The horse is scored on a scale of 1-9.

A horse that has scored a 1-3 would be very poor to thin. He is skinny and malnourished with bones being seen throughout its body and no fatty tissue felt. Horses in this category are not considered healthy. Between 4 (can see ribs with vertebra ridge evident), 5 (back flat, can't see ribs, but can feel them), and 6 (crease down back, fat deposits) are normal, healthy horses. These horses show moderate fat and are not obviously thin.

A horse with a body condition score of 7-9 is fleshy to extremely fat with fatty deposits on the body appearing at the flank, tailhead, withers, over the ribs, behind the shoulders, and along the neck. These horses are too fat and are prone to metabolic diseases such as laminitis and muscle problems. It is important to note, that although the extremely thin horses are often identified as having their health compromised, the health of obese horses is compromised as well, and obesity is seldom addressed as a well-being issue.

## Hair Coat and Hooves

There are other physical signs that are equally useful to assess the horses' well-being. Hair coat is a good indicator of a healthy horse. It should be shiny and glossy. Hair coat is reflective of good nutrition and health but could certainly be improved with regular grooming (Russell and Sojka, 1993). The quality of the horse's hair coat does depend on the season. In the summer, the horse's hair coat should be short, sleek, and shiny.

In the winter, the horse should have longer, thicker hair to keep itself warm for protection from colder weather. Springtime is when the horse will lose its winter coat and shed out to have its summer coat. The long winter hair should shed out completely and somewhat uniformly in the spring. If the winter hair coat stays on into the spring, or the horse stops shedding, the horse may be having health problems. The hair coat quality and texture also depends on the horse's age. Older horses generally have longer hair all year long, while younger horses shed out more in the spring time and keep this short hair all summer long. If the hair coat also appears curlier or wavier than normal, it may be an indicator of a health problem. (A notable exception is a breed such as the Bashkir Curly which is characterized by a curly hair coat).

A horse's hooves should be round and smooth with minimal chips and no cracks or sections missing. The hoof wall should grow approximately  $\frac{1}{4}$  to  $\frac{1}{2}$  an inch per month, and it should form a straight line with the front of the pastern when viewed from the side. The heels should be wide, and the frog should be supple and flexible. Horses that are shod must be re-shod and trimmed regularly to maintain this shape. Excessively long toes and toes curving upward in front are evidence of need for attention by a competent farrier.

## Eyes and Ears

Horses' eyes should be bright, fully open and clear, without discharge of any kind. Eyes should not be glazed or have a dull appearance. Horses can see very well at a distance but are primarily monocular in that they see with one eye at a time and often have trouble focussing and seeing objects near them—directly in front or behind. If a horse allows your hand to move close to an eye or the horse bumps into objects, be suspicious of its vision in that eye. If the horse squints in the light, or if there is swelling or discharge around the eye socket, the eye should be evaluated by a veterinarian.

The horse's ears and facial expressions indicate the horse's mood or disposition toward others. The horse's ears should be erect and forward if in a curious or content mood. If the ears are relaxed and somewhat off to the side of the head, it generally means that the horse is bored, sleeping, resting, or in a state of relaxation. When approaching a horse with this body posture, make sure the horse is aware that you are coming, because it is in an inattentive state, and can be startled. When a horse has its ears pinned back to its neck, the horse is angry, irritated, or aggressive. Take extra precautions when approaching a horse that displays this body language, as the horse could try to hurt anyone who comes around it. Often horses that are not healthy are not bright and alert in their ear expression.

## Hydration and Mucous Membranes

Adequate water intake is essential to horse health – especially in performance horses and in extremely hot or cold weather. Horses can dehydrate quickly if they do not drink enough water. Dehydration can lead to serious problems, including colic. Winter is frequently ignored at a time when dehydration can be a problem. However, if the water is too cold for the horse to drink comfortably, or is frozen, the horse can become dehydrated quickly. Snow is not an efficient water source for horses, and should not be depended upon as such.

There is an easy test that can be done to see if a horse is well-hydrated. The “skin fold test” is done by pinching a fold of skin on the horse’s neck, pulling it out, and releasing it. Count how many seconds it takes for the skin to go back to its original position. One-half to one second is normal. If the skin remains in the “tented” position, the horse is dehydrated.

The mucous membranes of the horse’s gums and lips should be a healthy pink color and slightly moist. Mucous membranes that are a pale, white, yellow, or deep purple color are indicators of a problem. The circulation of a horse can be tested on the horse’s gums by gently pressing the thumb against the gums of the horse, releasing the thumb and counting the number of seconds it takes for the gums to go from white back to their original color. This is called capillary refill and should take one to two seconds.

## Manure and Urine

The manure and urine can be assessed as well. Horses generally have firm manure balls that are not loose and watery, and do not show undigested grains. Whole grains may indicate dental and chewing problems. Loose manure can indicate nervousness, a change of diet, or more serious digestive tract infections. Urine is normally wheat-straw colored and not brown or dark red in color.

## Normal Vital Signs

A horse’s pulse can be taken on the inside of the jaw or on the ankle (Figure 1). The heart rate can also be measured using a stethoscope behind the elbow. The resting pulse/heart rate should be between 32 to 48 beats per minute in a 50 to 80 degree Fahrenheit climate. Age (younger horses have a higher heart rate than older horses), ambient (outside) temperatures, humidity, exercise and excitement levels can all cause elevations in heart rates.

The horse’s respiratory rate is measured by watching the nostrils or flanks, and counting the number of times the horse breaths out. On average, this number should be 12-16 breaths per minute. As with the heart rate, the respiration rate can be influenced by environmental factors and excitement. If the horse’s respiration rate exceeds



Figure 1. Locations to check a horse's pulse.

the heart rate, the horse is in physiological distress, and a veterinarian should be contacted immediately.

The horse’s temperature can be taken rectally using a digital or fluid thermometer and should be between 99 to 101 degrees Fahrenheit. It can increase by 2 to 3 degrees due to environmental temperatures, exercise, and changes in hydration.

## Physiological Measurements

Cortisol is a hormone that is released into the blood by the adrenal gland in response to distress or excitement, and it helps prepare the body to cope when it has to make an effort. Cortisol levels in a horse are not necessarily a measure of pain, but rather an indication of the overall level of excitement (both physical and emotional) caused by an experience, and thus are not particularly helpful in assessing well-being. The horse’s response to stress takes a while to elevate the blood cortisol levels. In order to be of any value, the amount of cortisol in repeated samples must be compared. There is a lot of variation in cortisol levels in individual animals, so numerous samples are necessary to make an accurate assessment of the animal’s state. Many horse owners think that if they record high levels of this hormone, the animal is suffering. However, cortisol increases when animals are performing pleasurable behavior, as well. For example, this hormone goes up in the same way in a stallion when he is mating, as when he is severely injured. Cortisol is not an adequate measurement of horse well-being by itself.

In addition, scientists and veterinarians can measure the white blood cell count and hematocrit (red blood cell

volume) count in a blood sample as a way of assessing an animal's health. These measures can be hard to interpret because there may be no symptoms of poor welfare, and the measures can be affected by many factors. Horses that are not healthy can also have lower immunoglobulins and suppressed immune systems that then fail to protect the horse from disease. Veterinarians can test for immune status and determine the horse's health status and prognosis. This can be very useful in young, new-born foals as well as in older horses.

## **Stereotypies**

Stereotypies (sometimes called vices or bad habits) are repetitive behaviors that do not have an obvious function or purpose (McDonnell, 1999). These abnormal behaviors are common in 5-20 percent of horses kept in captivity but are not seen in the wild. These behaviors can be the result of training difficulties, frustration, boredom, or be a symptom of pain or disease. Treatment of these behaviors involves addressing all the causal factors, but there is no recipe for success in every case. Oral, locomotor, and self-mutilation are different kinds of stereotypies. Oral stereotypies are cribbing, tongue movements, wind sucking, and lip movements. Locomotor stereotypies include head movements like bobbing, tossing, shaking, swinging, nodding, throat rubbing, pacing, weaving, fence or stall walking, circling, stomping, kicking, pawing, and digging. Self-mutilation is self-biting on the flank, chest, and shoulder, wall-kicking, and lunging into objects.

## **Soundness/Lameness**

The horse's way of going is a good indicator that the horse is in good condition or that something is bothering it. Horses should not show any form of lameness or injury when they are moving. A horse that appears stiff, uneven, or uncomfortable is not healthy. According to the American Association of Equine Practitioners, there are degrees of lameness with a horse being considered obviously lame when the lameness is consistently observable at a trot under all circumstances; there is marked nodding, hitching, or shortening of the stride; or there is minimal weight-bearing in motion and/or at rest and inability to move. In most competitions a horse that is "obviously lame" is disqualified and must be asked to leave the arena or competition by the officials.

Soundness is a term meaning that the animal is physically fit and showing no signs of weakness or illness. Many veterinarians are asked to do pre-purchase soundness exams that include examination of the legs for absence of lameness as well as soundness in sight, respiration, and possibly reproduction. Experienced horsemen can determine the presence or absence of obvious lameness but a more complete pre-purchase soundness exam should be conducted by an equine veterinarian prior to buying

a horse. It is important to remember that the veterinarian makes a judgement based on that examination, and it is not a guarantee of future soundness.

## **Neglect**

Occasionally, horse owners fail to provide what horses need in order to maintain health and well-being. This frequently stems from an ignorance of the horse's needs rather than a conscious unwillingness to meet those needs.

According to Indiana law a "person having a vertebrate animal in the person's custody who recklessly, knowingly, or intentionally abandons or neglects the animal commits cruelty to the animal" and this is a class B misdemeanor. The public most commonly suspects neglect when they see thin horses outside in a paddock or overgrazed pasture without feed, water, or shelter.

## **Cruelty and Abuse**

In the State of Indiana animal cruelty and abuse are addressed legally as "a person knowingly or intentionally tortures, beats, or mutilates a vertebrate animal resulting in serious injury or death of the animal commits cruelty to an animal and this is a Class A misdemeanor (note, this is different from the class B misdemeanor above, which addresses neglect or abandonment). The enforcement of these acts is usually vested in the local municipality or county authorities and it is important that concerned citizens follow the process as directed by these agencies. Obviously the well-being of the horse is compromised by any abuse and all states have laws or guidelines to protect the animals' well-being in extreme cases.

There are serious consequences for any abusive action toward horses, and most horse organizations that sanction events have statements addressing this behavior. The following are just examples of association position statements:

*"An action, or failure to act, which a reasonable, prudent person, informed and experienced in the customs, accepted training techniques and exhibition procedures or veterinary standards would determine to be cruel, abusive, inhumane or detrimental to horses' health."*

NSBA Official Handbook, 2003, pg. 38.

*"No person on show grounds, ... may treat a horse in an inhumane manner which includes, but not limited to:*

- *Placing an object in a horse's mouth so as to cause undue discomfort or distress;*
- *Tying a horse in a manner so as to cause undue discomfort or distress in a stall, trailer, lounging or riding;*
- *Use of inhumane training techniques or methods."*

Official Handbook of Rules & Regulations, AQHA, 2003, rule 441, pg. 128.

“All animals must be sound, humanely treated and healthy” ..... “The judge must excuse any animal from the ring he/she deems unsafe, bleeding from the mouth or in any way being treated inhumanely;”  
Indiana 4-H Horse & Pony Handbook, 9<sup>th</sup> ed., 2003, page 6.

## Conclusion

The majority of horseowners in the United States own horses for recreation, family enjoyment, and/or sport. It is important that they are able to assess the well-being of their horses as a guide to ensuring proper care and management. On occasion someone else is needed to assist in this process, and it is best that it be an experienced horse manager or equine veterinarian. It has been the intent of this paper to provide horseowners and others concerned with assessing the well-being of horses the tools and considerations with which to knowledgeably conduct the evaluation.

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