

# A Better "Weigh"

**W**e've all seen horses around the barn, on neighboring farms, or quite possibly in our own barn that are a little, shall we say—heavy. But what exactly is heavy? For that matter, what determines if a horse is thin? Sure, it's easy to point out those horses at either of the extremes, but for those in between there can be gray areas.

In the early 1980s, as a part of his graduate research project at Texas A&M University (TAMU), Don Henneke, PhD, currently an associate professor at TAMU, developed a scale to evaluate the body condition of broodmares. The scale looked at the amount of fat deposited in different areas of the body in an effort to classify them for research purposes. His study was published in the *Equine Veterinary Journal* in 1983.

Since then, the TAMU Body Condition Score (BCS) system has been used as the gold standard for classifying horses' body conditions by equine health professionals and horse owners. The method uses sight and touch to evaluate the amount of fat over the loin, ribs, tailhead, withers, neck, and shoulders. The horse is then scored overall on a scale of 1 to 9. A BCS of 1 means the horse is very emaciated, a BCS of 9 represents an obese horse, and a BCS of 5 is ideal for the moderately active horse. However, there are variations to this (more on this later).

## What to Look For

Scoring a horse using this technique is relatively simple, but it requires some basic knowledge of anatomy and bone structure. Here's what you should look for in each of these locations:

**Loins** An emaciated horse will have a negative crease and ridge down the back where the spinous processes (the bony column of the vertebrae) project up. This is one of the first areas to begin to fill in as the horse gains weight because fat accumulates around organs for protection.

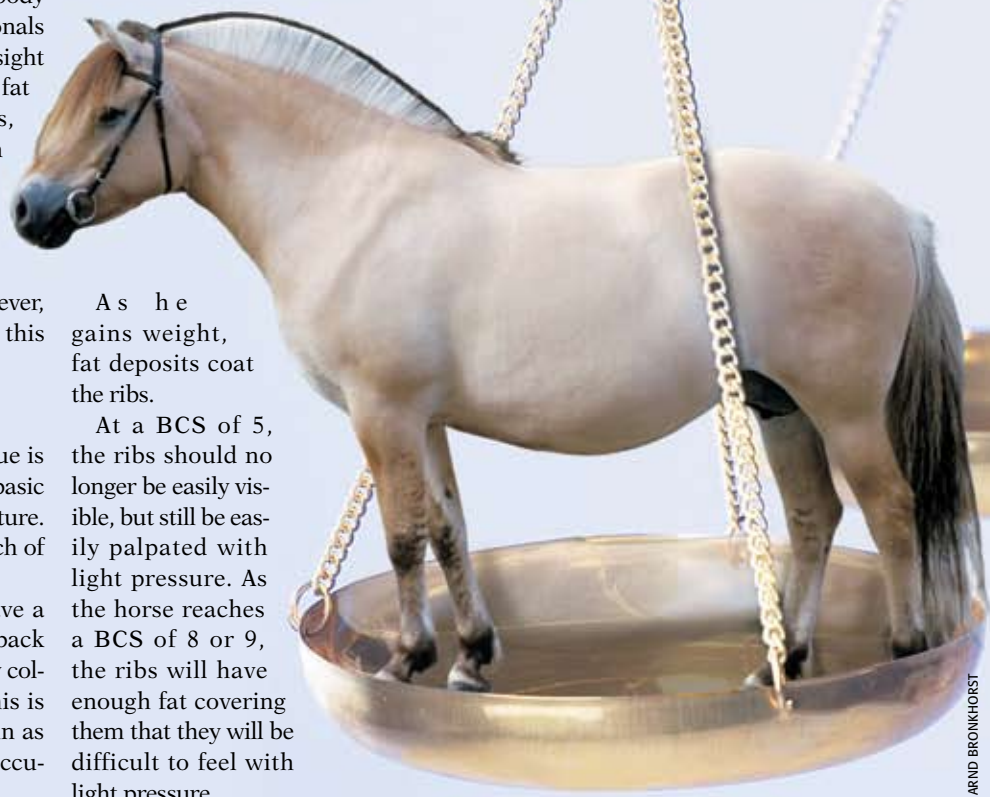
As the horse becomes fatter (a BCS above 5), a positive crease is visible because fat deposits are forming around the processes.

**Ribs** The ribs are the second most noticeable area to identify an over- or underweight horse. An emaciated horse's ribs will be visibly protruding and easily felt when running your hands over his barrel.

*A horse's body condition score can tell a lot about his overall well-being; how does your horse weigh in?*

As he gains weight, fat deposits coat the ribs.

At a BCS of 5, the ribs should no longer be easily visible, but still be easily palpated with light pressure. As the horse reaches a BCS of 8 or 9, the ribs will have enough fat covering them that they will be difficult to feel with light pressure.



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**Tailhead** The bone structure of the tailhead is easily seen in horses with a BCS of 3 or less. These horses have a triangular shape to them when viewed from behind.

As you move to the opposite end of the scale, fat will begin to fill in around the tailhead creating a round, full shape.

**Withers** Determining a horse's body condition based on his withers can be difficult depending on the horse's conformation.

A horse with a high withers might be perceived as thinner than he actually is. Conversely, a horse with low or flat withers can appear fatter than he actually is.

If the horse is very thin, either side of the withers will look concave. As fat content increases, say a BCS of 6 or 7, these deposits become more palpable. At a BCS of 9, the withers will be visibly bulging with fat.

**Neck** In an extremely thin horse, the throat latch will be drawn up, as well. On the other side of the scale (such as a BCS of 8), a thick, "cresty" neck will be visible, and the jugular groove and throat latch will be less defined.

**Shoulder** The horse's shoulder is more useful to determine if the horse is overweight rather than if he's underweight. Fat tends to deposit behind the shoulder and elbow area, over the horse's heart girth. When looking at an obese horse, it can be hard to distinguish between the shoulder and the chest.

## One Size Does Not Fit All

It would be easy to say that a BCS of 5 would be the ideal condition for every horse, but that's not always the case.

Pete Gibbs, PhD, a professor and extension horse specialist at TAMU, Gary Potter, DVM, PhD, professor emeritus at TAMU, along with several other individuals in the university's program, have conducted research and compiled extensive information on BCS and how it relates to the horse's intended usage (you can find and entire listing of these articles at <http://animalscience.tamu.edu>, by clicking on Equine Science, then publications).

A horse's ideal body condition depends on level of activity or breeding status, and in some cases packing on a few extra pounds could be a good thing.

For instance, if a breeding stallion doesn't have a few extra pounds at the beginning of the breeding season (a BCS of 6 or 7), due to the stresses of breeding, he could be rather scrawny come July or August.

Likewise, research has shown that non-lactating mares have a greater pregnancy



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**Broodmares with body condition score greater than 6 have a better chance of getting in foal and will be able to maintain proper weight while nursing.**

rate when they are maintained at a BCS between 6 and 8.

Henneke, et al., wrote, "Recent studies have shown that mares entering the breeding season or foaling in low body condition had prolonged post-partum intervals, reduced conception rates, and required more cycles per conception than mares entering the breeding season in fatter condition."

Establishing and maintaining pregnancy becomes increasingly difficult when the mare's BCS drops below a BCS of 6. Gaining weight while nursing can be very difficult for the mare, and most mares will experience a small to moderate weight loss. To ensure a BCS of 5 or more at the time of rebreeding, ideally they should foal at a BCS 6 or better.

Endurance horses should also be kept in adequate body flesh. Two studies examined the relationship between BCS and the horse's ability to finish the 100-mile Tevis Cup endurance race. Researchers concluded that mean BCS for horses that successfully completed the race was around 4.6. Horses that were eliminated for metabolic reasons such as colic, heat stress, and tying-up had a mean BCS of 2.9.

When a horse exerts energy levels above and beyond his normal limits, the body begins to burn fat reserves. However, at a BCS of 3 or less, there is very little in the way of fat reserves. Instead, the body breaks down muscle protein to use as energy.

However, a BCS above 6 can also be detrimental to these horses because it adds

extra weight to carry, and extra insulation, creating more heat for the horse to combat. Most arena/performance horses should maintain a BCS in the 5 to 5½ range.

Another consideration in BCS variance is geriatric horses. Significant loss in body condition is one of the worst things that can happen to an elderly horse, but it is also fairly common. "Older horses are notorious for having difficulty gaining weight," according to Gibbs. "The owner's challenge and goal is never to let an older horse get thin in the first place."

That's not to say that elderly horses should be kept fat, especially if they are still being ridden or have a history of weight-related problem such as laminitis. These horses should be kept a little on the fleshy side, without going overboard.

## Take-Home Message

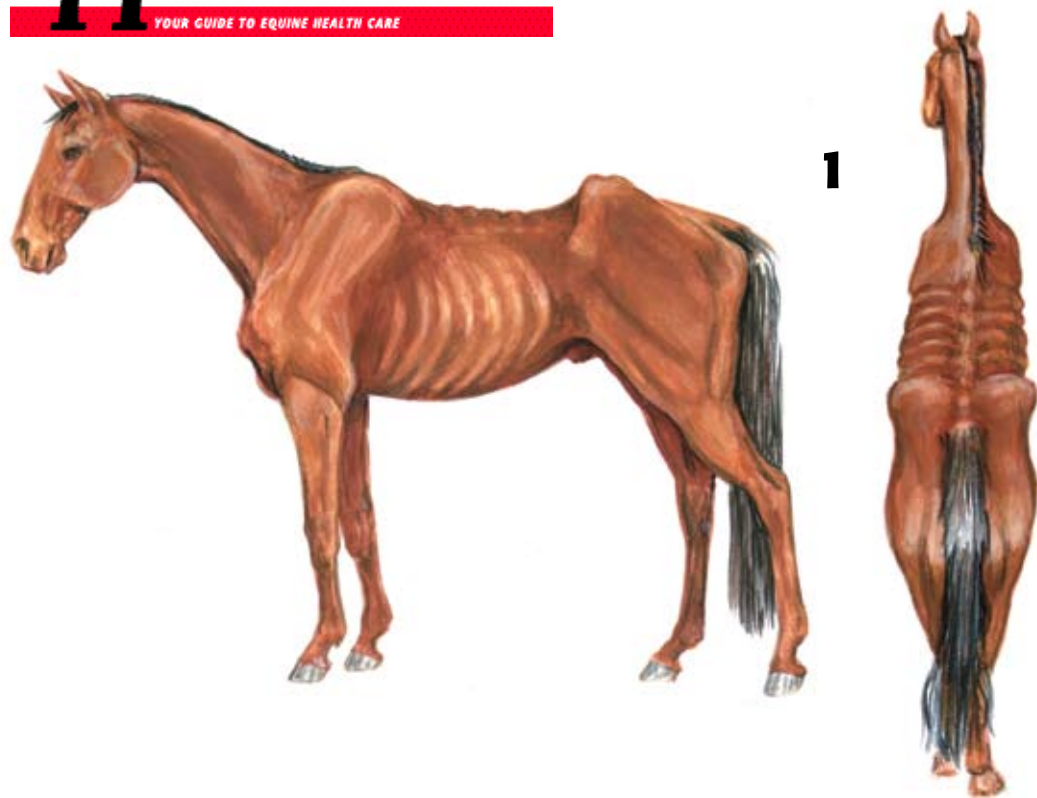
The TAMU Body Condition Score System gives a reference guide that is universally understood by veterinarians and horse owners alike. It can help take the guesswork out of vague phrases such as "he's a little thin" or "he's fat" and help gauge the horse's over-all health and wellbeing. So, how does your horse score? 🐾

## FURTHER READING

"Nutrition and Feeding Management of Broodmares," by Pete Gibbs, PhD; Gary Potter, PhD; and Martha M Vogelsang, PhD.

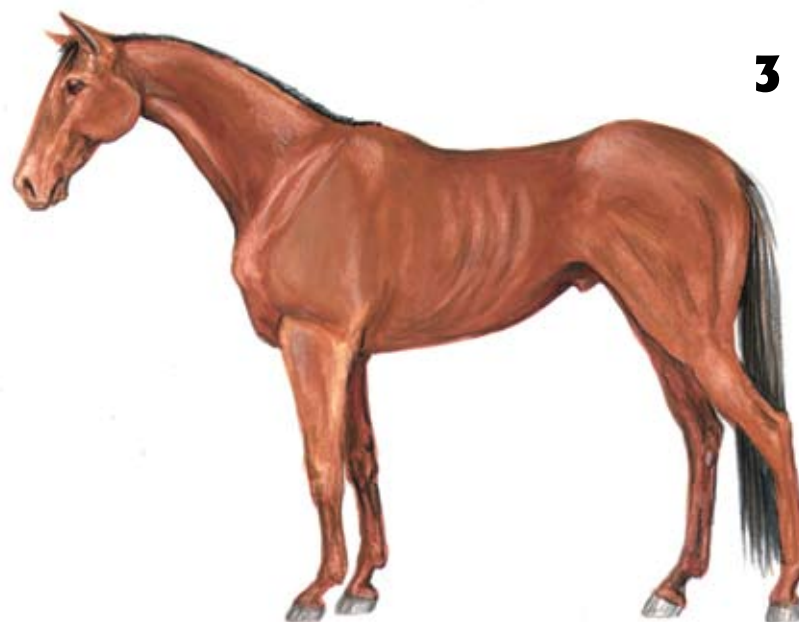
"Feeding the Arena Performance Horse," by Pete Gibbs, PhD; Gary Potter, PhD; and Brett Scott, PhD.

"Condition Scoring for Your Horse," [www.uky.edu/Ag/AnimalSciences/pubs/asc145.pdf](http://www.uky.edu/Ag/AnimalSciences/pubs/asc145.pdf).

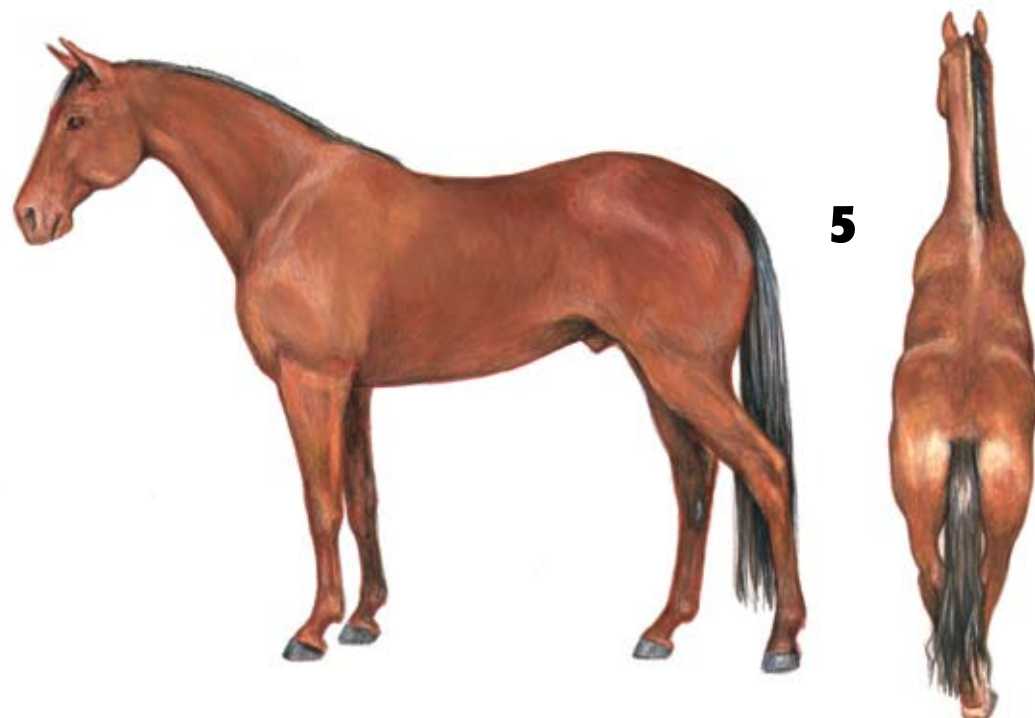


SCORE	DESCRIPTION
<b>1</b>	<b>POOR</b> Horse is extremely emaciated. The backbone, ribs, hipbones, and tailhead project prominently. Bone structure of the withers, shoulders, and neck easily noticeable. No fatty tissues can be felt.
<b>2</b>	<b>VERY THIN</b> Horse is emaciated. Slight fat covering over vertebrae. Backbone, ribs, tailhead, and hipbones are prominent. Withers, shoulders, and neck structures are discernible.

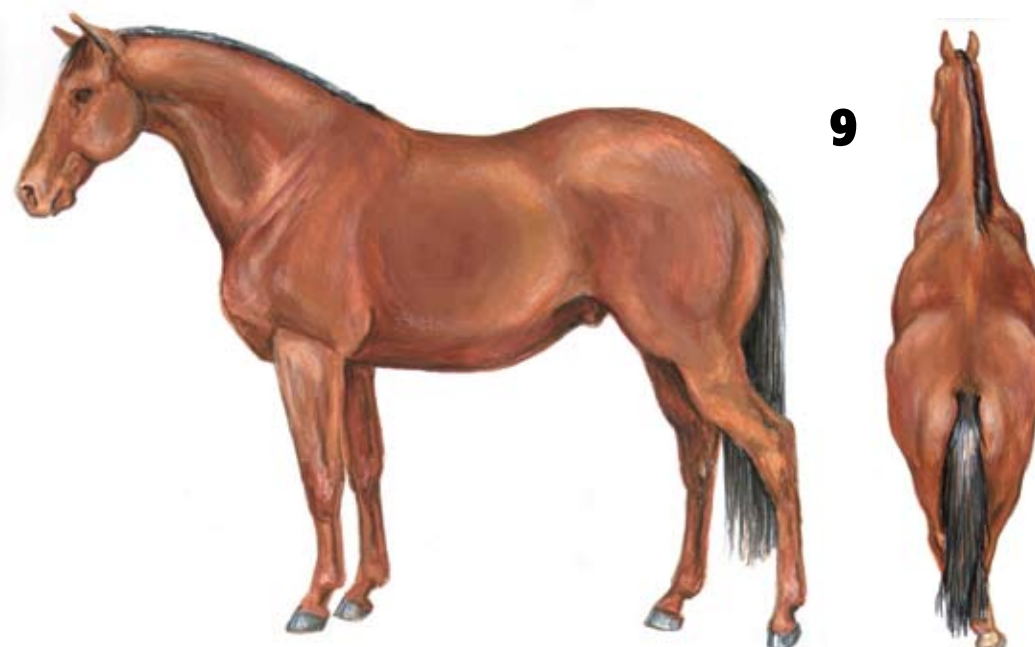
<b>3</b>	<b>THIN</b> Fat built up about halfway on vertebrae. Slight fat layer can be felt over ribs, but ribs easily discernible. The tailhead is evident, but individual vertebrae cannot be seen. The hipbones cannot be seen, but withers, shoulder, and neck are emphasized.
<b>4</b>	<b>MODERATELY THIN</b> Negative crease along back. Faint outline of ribs can be seen. Fat can be felt along tailhead. Hip bones cannot be seen. Withers, neck, and shoulders not obviously thin.



ILLUSTRATIONS BY DR. ROBIN PETERSON; BASED ON TAMU BODY CONDITION SCORE



<b>5</b>	<b>MODERATE</b> Back is level. Ribs can be felt, but not easily seen. Fat around tailhead beginning to feel spongy. Withers are rounded and shoulders and neck blend smoothly into the body.
<b>6</b>	<b>MODERATELY FLESHY</b> May have a slight crease down the back. Fat on the tailhead feels soft. Fat over the ribs feels spongy. Fat beginning to be deposited along the sides of the withers, behind the shoulders, and along the neck.
<b>7</b>	<b>FLESHY</b> A crease is seen down the back. Individual ribs can be felt, but noticeable filling between ribs with fat. Fat around tailhead is soft. Noticeable fat deposited along the withers, behind the shoulders, and along the neck.



<b>8</b>	<b>FAT</b> Crease down back is prominent. Ribs difficult to feel due to fat in between. Fat around tailhead very soft. Area along withers filled with fat. Area behind shoulders filled in flush with the barrel of the body. Noticeable thickening of neck. Fat deposited along the inner buttocks.
<b>9</b>	<b>EXTREMELY FAT</b> Obvious crease down back. Fat is in patches over rib area, with bulging fat over tailhead, withers, neck, and behind shoulders. Fat along inner buttocks may rub together. Flank is filled in flush with the barrel of the body.