

Body Condition Scoring System Benefits for Horses and Owners



Body condition score (BCS) is a numerical scoring system from 1 to 9, with 1 indicating extremely emaciated and 9 indicating extremely fat. It is based on the visual and palpable appraisal of the amount of fat covering on the body at certain locations, such as the ribs, tailhead, withers, neck, behind the shoulder, and along the back (Henneke et al.) (Figure 1). This evaluation tool can help horse owners, breeders, and managers maintain proper nutrition practices in order to most effectively keep horses at peak performance and optimum health.

Horses that are too thin may have performance and reproductive problems. An adequate amount of body fat is necessary for females to achieve normal reproductive processes. For example, proper body condition following parturition is beneficial for achieving a quick pregnancy in the mare. Studies have concluded that females that are too thin as a result of inadequate nutrition may suffer from reproductive inefficiencies, such as longer interovulatory intervals, decreased pregnancy rates, and decreased ovarian activity (Dunn et al. 1969; Rutter and Randel 1983; Richards et al. 1986).

While providing a cheaper feed source may seem reasonable to the underlying economy of some horse owners, the result may be a lower-quality horse with lower energy. For example, if you are maintaining your horse at a BCS 4 and trying to use the horse in an athletic setting, you may not see the same performance as you would if the horse had greater body fat. In addition, a broodmare maintained at a BCS 4 may have a harder time breeding because of interovulatory interval lengthening; she will struggle even more as the BCS falls below 4 if she is lactating, which will reduce the potential for a foal the next year.

While low BCS is certainly a problem, it is important to note that high BCS may pose problems, too. Overfeeding is associated with insulin-resistant horses that may not do well on high-starch feeds, or horses that may be too "hot" (too energetic and hard to handle). Reproductive problems are not typically seen in horses with high amounts of body fat. Overfeeding mares in a BCS of 9 during gestation did not adversely affect postpartum reproductive performance (Kubiak et al. 1989). Additionally, fleshy-conditioned (BCS 7) mares are not prone to demonstrate subfertility as compared to mares in moderate condition (BCS 5) (Cavinder et al. 2009).

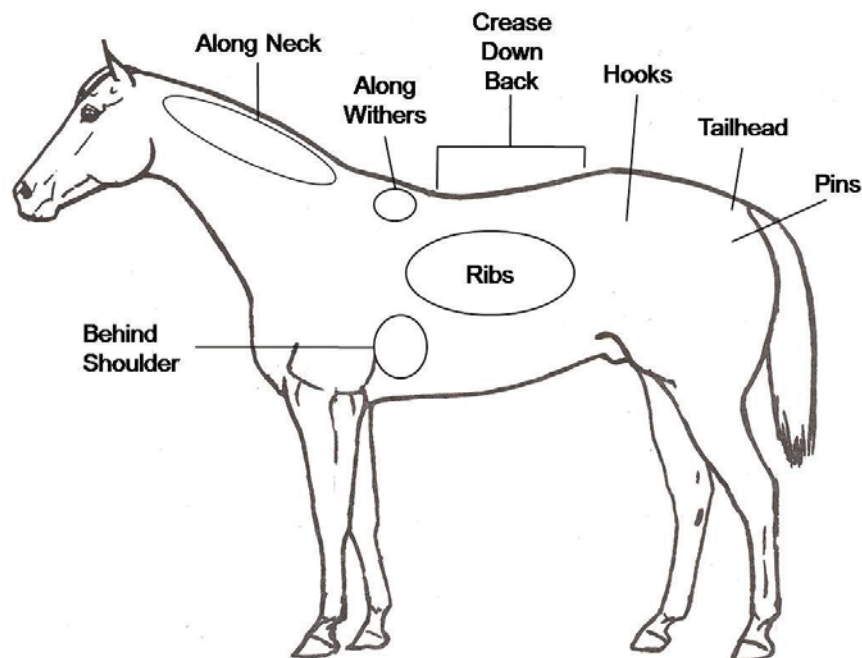


Figure 1. Areas emphasized in the condition score. Adapted from Henneke et al. 1983.

On a practical note, it requires more energy, thus more overall feed, to achieve a high level of adiposity, so you will have to spend more money to achieve a higher BCS. If the overall benefit of maintaining horses in moderate condition (BCS 5 to 6) is not significant, then spending more money to maintain horses in a fat condition (BCS 7 to 9) may prove wasteful.

The BCS system is a useful tool for horse owners that will help effectively evaluate the nutritional status of all horses. However, assigning a BCS to a horse is subjective and not foolproof. One way to avoid as much error as possible when assigning a BCS is to use your hands to feel the areas of the horse outlined in **Figure 1**. Additionally, reading the definitions of each BCS will improve accuracy of the scores assigned to the horse. Also note that the

definition of each score does not fit all horses. Horses are individuals, and variation may exist on fat deposition from horse to horse. This is one reason that some people use half-points when scoring (5½, 6½, etc.).

So how do you change the BCS of your horse? The simple answer is to increase or decrease the digestible energy of the diet the horse is eating. The complex part is determining how much to increase or decrease. Research is currently being conducted that will provide horse owners with an exact method to alter BCS in their horses (Cordero et al. 2013). Until then, horse owners should start by increasing or decreasing horses' diets gradually and assessing body condition every 3–4 weeks until the desired results are seen.

BCS	Description
1	Poor. The horse is emaciated. The spinous processes (backbone), ribs, tailhead, and hooks and pins all project prominently. The bone structures of the withers, shoulders, and neck are easily noticeable, and no fat can be felt anywhere.
2	Very Thin. The spinous processes are prominent. The ribs, tailhead, and pelvic bones stand out, and bone structures of the withers, neck, and shoulders are faintly discernable.
3	Thin. The spinous processes stand out, but fat covers them to midpoint. Very slight fat cover can be felt over the ribs, but the spinous processes and ribs are easily discernable. The tailhead is prominent, but individual vertebrae cannot be seen. Hook bones are visible but appear rounded. Pin bones cannot be seen. The withers, shoulders, and neck are accentuated.
4	Moderately Thin. The horse has a negative crease along its back, and the outline of the ribs can just be seen. Fat can be felt around the tailhead. The hook bones cannot be seen, and the withers, neck, and shoulders do not look obviously thin.
5	Moderate. The back is level. Ribs cannot be seen but can be easily felt. Fat around the tailhead feels slightly spongy. The withers look rounded, and the shoulder and neck blend smoothly into the body.
6	Moderate to Fleshy. There may be a slight crease down the back. Fat around the tailhead feels soft, and fat over the ribs feels spongy. There are small deposits along the sides of the withers, behind the shoulders, and along the sides of the neck.
7	Fleshy. There may be a crease down the back. Individual ribs can be felt, but there is noticeable fat between the ribs. Fat around the tailhead is soft. Fat is noticeable in the withers, the neck, and behind the shoulders.
8	Fat. The horse has a crease down the back. Spaces between ribs are so filled with fat that the ribs are difficult to feel. The area along the withers is filled with fat, and fat around the tailhead feels very soft. The space behind the shoulders is filled in flush, and some fat is deposited along the inner buttocks.
9	Extremely Fat. The crease down the back is very obvious. Fat appears in patches



BCS 1



BCS 3



BCS 4



BCS 5



BCS 6



BCS 7



BCS 8

References

- Cavinder, C. A., M. M. Vogelsang, P. G. Gibbs, D. W. Forrest, and D. G. Schmitz. 2009. Variances in reproductive efficiency of mares in fat and moderate body conditions following parturition. *Prof. Anim. Sci.* 25:250-255.
- Cordero, V. V., C. A. Cavinder, L. O. Tedeschi, D. H. Sigler, M. M. Vogelsang, and C. E. Arnold. 2013. The development and evaluation of a mathematical model to predict digestible energy intake of broodmares based on body condition changes. *J. Anim. Sci.* 91:2159-2177.
- Henneke, D. R., G. D. Potter, J. L. Kreider, and B. F. Yeates. 1983. Relationship between condition score, physical measurements, and body fat percentage in mares. *Equine Vet. J.* 15(4):371-372.
- Kubiak, J. R., J. W. Evans, G. D. Potter, P. G. Harms, and W. L. Jenkins. 1989. Postpartum reproductive performance in the multiparous mare fed to obesity. *Theriogenology* 32 (1):27-36.
- Richards, M. W., J. C. Spitzer, and M. B. Warner. 1986. Effect of varying levels of postpartum nutrition and body condition at calving on subsequent reproductive performance in beef cattle. *J. Anim. Sci.* 62:300-306.
- Rutter, L. M., and R. D. Randel. 1983. Postpartum nutrient intake and body condition: Effect on pituitary function and onset of estrus in beef cattle. *J. Anim. Sci.* 58: 265-273.

Publication 2947 (POD-04-16)

By Dr. Clay Cavinder, Associate Professor, Animal and Dairy Sciences.



Copyright 2016 by Mississippi State University. All rights reserved. This publication may be copied and distributed without alteration for nonprofit educational purposes provided that credit is given to the Mississippi State University Extension Service.

Produced by Agricultural Communications.

We are an equal opportunity employer, and all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, national origin, disability status, protected veteran status, or any other characteristic protected by law.

Extension Service of Mississippi State University, cooperating with U.S. Department of Agriculture. Published in furtherance of Acts of Congress, May 8 and June 30, 1914. GARY B. JACKSON, Director