

I own a Warmblood gelding that shows in conformation hunter classes. Because of the division in which he competes, he carries around a little more weight than some of the other hunters in the barn. With veterinarians and nutritionists urging horse owners to be cautious about keeping horses from becoming obese, I am becoming a little concerned about my horse's excessive weight. He is ridden regularly, receives the best of preventive care, and maintains his weight easily. Should I worry about insulin resistance?

The equine research community has focused considerable attention on insulin resistance and other metabolic conditions recently. Obesity has been associated with insulin resistance in both horses and ponies, so your concern for your horse is justified. Performance horses such as racehorses, endurance horses, and polo ponies are usually kept in relatively light body condition, but many sport horses such as dressage horses, show hunters, and jumpers typically carry greater body condition.

Is obesity an indication of potential metabolic problems in active horses?

Researchers at Kentucky Equine Research (KER) wanted to know. They evaluated almost 200 horses during the winter show season in Florida to quantify the body condition of horses and ponies involved in several disciplines and to determine whether body condition was related to resting levels of insulin, glucose, and triglycerides. Dressage horses, show hunters, show jumpers, pony hunters, and medium- to high-goal polo ponies were used in the study.

In addition to analysis of blood samples for insulin, glucose, and triglycerides, body weight, withers height, and circumferences at the midpoint of the neck were measured. Body condition score (1 to 9, with 9 denoting extreme obesity) and neck crest fatness score (0 to 5, with 5 denoting extreme adiposity) were also noted. Neck characteristics were measured because horses and ponies diagnosed with insulin resistance often have cresty necks.

Results of the study indicated that dressage horses, show hunters, and show jumpers carried more body condition than polo ponies but have similar resting insulin, glucose, and triglyceride values. As a group, pony hunters are significantly fatter than all other horses measured, and have significantly higher resting insulin and significantly lower resting glucose levels.

Other studies have revealed that half of those horses with a body condition score of 7 or greater were hyperinsulinemic (high concentrations of insulin were found in blood), but KER researchers found that only about 10% of horses and ponies with the same body condition score were hyperinsulinemic. In previous studies, 43% of sedentary horses and 50% of sedentary ponies with a cresty neck score of three or greater were hyperinsulinemic. In the KER study, none of the 17 individuals with a cresty neck score of three or greater was hyperinsulinemic.

Therefore, it appears that overweight sport horses and ponies involved in regular training are less likely to be hyperinsulinemic than those that lead an inactive lifestyle. Physical conditioning has been shown to improve insulin sensitivity in horses, so perhaps these horses and ponies were more insulin sensitive because of their training regimes.

As it stands, it appears as though horses can carry extra weight for show purposes as long as they are maintained in an exercise program that includes 30 minutes or more of daily exercise.

If you would like to submit a nutrition question, please contact Eileen Phethean at [ephethean@ker.com](mailto:ephethean@ker.com) or mail to: EQUESTRIAN Nutrition Questions, c/o Kentucky Equine Research, 3910 Delaney Ferry Road, Versailles, KY 40383.