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By Sarah Ralston, VMD, PhD, Dipl. ACVN

Foals and Weanlings - Jun 16th, 02

Genetics, exercise, and nutrition all play a role in the occurrence of developmental orthopedic disease (DOD) in young horses. There are, however, conflicting theories regarding the role of each. Breeds selected for rapid growth are at an increased risk, but growth rate alone does not cause the problem. For example, trauma due to excessive concussion might increase the incidence of DOD. However, restricting exercise also unfavorably affects bone growth and development. Turning the foals out for as long as possible is highly recommended, but strenuous, forced exercise should be avoided.

The most confusion re-garding DOD is related to nutrition. Mineral imbalances have been well-documented as a cause of DOD. Excessive protein was blamed as a cause in the 1970s, but later studies disproved the connection. Restricting protein *will not* result in improved bone growth, and actually can be harmful to the animal. On the other hand, overfeeding energy--greater than 100% of the National Research Council's (NRC) 1989 recommendations--will result in problems, especially if mineral intake is not increased at the same time.

Nutritional Recommendations

1. Foals should be introduced to concentrates when they are one to two months of age. The concentrate should contain 14-18% protein and have added calcium, phosphorus, copper, and zinc (see table) in a formulation designed specifically for growing horses. The higher percentages of protein and calcium should be used if only grass hay is available. The lower percentages of protein and calcium can be used with legume or legume/grass mix hays. Concentrates should be fed at the rate of 0.5-1.0% of body weight with the emphasis on maintaining good body condition. The dam should be fed the same concentrate if the foal has access to the mare's feed.
2. Don't let the foal get obese (with an obvious crease down the back and ribs that cannot be felt easily) or excessively thin (ribs that are easily visible, hip bones that are prominent, hair coat that is dull and shaggy).
3. Weanlings should be fed the same type of concentrate as when they were nursing and at the same rate mentioned earlier (not more than three to four pounds of concentrate per meal). The goal is to maintain steady growth and good body condition. Plain white or trace mineral salt and a good, clean source of water should be available free choice.

4. If signs of epiphysitis (inflammation of the growth plates of bones), such as heat or swelling at the growth plates above the knee or fetlock, or other deformities appear, the amount of concentrate should be reduced *temporarily* while the total ration's nutrient content is assessed. Any deficits or excesses should be corrected, and a properly balanced ration should be re-introduced as soon as possible. Feeding only grass hay and oats for a prolonged period of time will result in weight loss and poor growth, and will not correct the problem.

Sarah Ralston, VMD, PhD, Dipl. ACVN, is an associate professor in the Department of Animal Science at Cook College, Rutgers, The State University of New Jersey. Her research over the past eight years has focused on glucose/insulin metabolism and growth in young horses. She has also done studies on vitamin supplementation, transportation stress, and nutrition of aged horses. Lydia Miller, DVM, is the AAEP Owner Education Consultant.

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American Association of Equine Practitioners

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