

Feeding and Management of Weanling Horses for Healthy Skeletal Development

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Weaning results in changes to the nutritional environment of the rapidly growing young horse. During this critical period, skeletal development is still occurring. The skeletal system includes the bones, cartilage, tendons and ligaments, all of which are critical components of the framework that will support athletic production later in life. For the weanling to reach its full potential as an adult, you must manage its total nutritional environment. This publication answers some of the questions related to the nutritional management of weanlings that you, as a horse producer, should be considering.

What is my weanling's nutritional environment?

The varying components of a weanling's nutritional environment include environmental temperature, day length, physical stress, and nutrition. Individual farms can have "micro-environments" that you should factor into the development of your comprehensive farm nutrition program. Research at the Middleburg Agricultural Research and Extension Center has connected the rise and fall in growth with similar seasonal patterns seen in day length, environmental temperature, and pasture quality. This highlights the importance of monitoring these variables and taking action to increase or decrease supplemental feeding before changes in weight or condition occur in the animal. The goal is to maintain a relatively smooth growth curve.

What will my weanling be doing?

The purpose of the horse and the available facilities affect how you house and exercise your weanling. Research has shown that pastured weanlings experience greater bone growth than young horses kept in stalls – possibly due to the self-regulated duration and intensity of exercise and a more consistent feed intake. You can address this by giving stalled weanlings access to plenty of turnout, potentially combined with exercise. Horses

managed on pasture often grow at a slower rate, which requires less intensive management. Weanlings kept on pasture often are supplemented with grain. They can be fed individually in stalls, where feed intake can be precisely monitored, or they can be group fed using individual feeders spread out around the pasture to support the proper intake for each horse.

Those showing or marketing young horses usually prefer to stall weanlings individually. Stalled weanlings often are managed for faster growth and require closer observation to detect skeletal development issues before they become problems. Also, weanlings kept in stalls will need forced exercise programs to manage appropriate bone and muscle growth. Most research recommends exercise periods of short duration to condition growing bones and muscles. During this time, you should watch young horses carefully for signs of mild soreness or joint swelling, indications that the exercise may be too intense and causing damage. Allowing stalled weanlings time for free exercise may aid in sound bone development; however, you should not allow the sudden bursts of physical activity seen in horses kept in the stall too long. Turning them out after their daily exercise program may help moderate their activity level.

How should I prepare my foal for weaning?

There are many options when choosing the appropriate time and method to wean. Most farms wean when foals are between 4 and 6 months of age. Weaning before 3 to 4 months usually requires that you provide some form of liquid milk replacer or specially designed foal pellet, as the foal's digestive tract is not fully able to utilize forages and grains.

Weaning can be a very stressful time for a foal, particularly if it is weaned abruptly, if multiple foals are weaned at the same time, or if it is confined to a stall in

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order to begin an exercise program. Preparing a foal for weaning will help reduce the stress experienced when you remove the mare. Creep feeding is one tool you can use to prepare the foal for the transition from suckling to weanling. This is particularly true if the foal has been denied access to the mare's feed while suckling, as can be the case if the mare's bucket is too high for the foal to reach. A foal accustomed to eating grain while with the mare is more likely to continue eating and experience reduced stress during weaning. As a rule of thumb, a foal about to be weaned should be consuming approximately 1/2 to 1 pound of feed per month of age each day, so a 6-month-old foal could be consuming 3 to 6 pounds of weanling feed per day. A foal for sale or showing is more likely to consume more feed than a foal that will not be working until it is more mature.

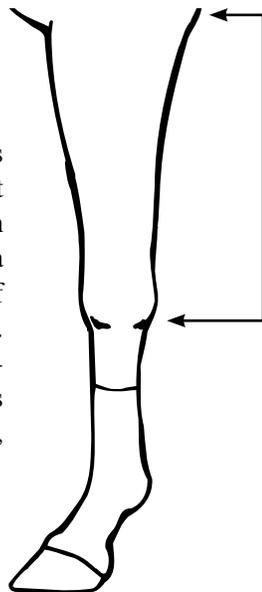
What do I feed him now that he's weaned?

After weaning, the young horse no longer has access to milk and relies on forages and concentrates to supply the nutrients and energy required for growth. The horse owner has a great deal of control as to what is fed in the barn. A quality grass or grass/legume-mixed hay with a low acid detergent fiber (ADF, 30 percent to 35 percent) and a crude protein content of between 10 percent to 16 percent is suitable for the weanling. Straight alfalfa forage does not contain balanced energy, protein, or minerals (particularly calcium and phosphorus), so feed it with care. Introduce concentrate slowly and use it to correct any nutrient deficiencies, particularly energy and lysine (protein), that may be lacking in the forage. Ideally, more than 50 percent of the ration should be made up of forage, but in some cases you may feed more concentrate than forage.

How do I monitor growth? How do I know if my weanling's growth is optimal?

Growth can be defined simply as an increase in size over time. It is important to monitor growth because most owners have, as a long-term objective, some sort of athletic purpose for their animal. Skeletal and muscular development are important components of athletic potential. Generally,

Figure 1. Where to measure forearm length and cannon circumference.



horse owners monitor growth by measuring changes in body weight, wither height, or body condition. Body weight, which incorporates the growth of all tissues in the body (fat, muscle, and bone), can be tracked by using a weight tape, while wither height gives a closer indication of skeletal development. Skeletal development is the most important aspect of development during this time; therefore, other more precise measures may be useful. Research at the Middleburg Agricultural Research and Extension Center indicates that forearm length and front cannon circumference are pertinent measures of skeletal development (Figure 1). Forearm measurement is useful because it represents a bone that grows a considerable amount (approximately 15 cm in Thoroughbreds) and gives a good indication of skeletal development. Cannon circumference is a measurement that has been used by horsemen for many years to evaluate "bone" maturity or development. Growth should be consistent across all these measurements. Sudden large increases or any decreases should be an indicator of potential problems.

What is my weanling's body condition?

Body condition scoring (Figure 2) can be an important tool to indicate whether the nutritional needs of the growing weanling are being met. Body condition is a subjective evaluation of subcutaneous fat deposition, and uses a 9-point standardized scale with a 1 being poor condition and a 9 being extremely fat. There are numerous factors that influence the condition of a weanling, but generally an animal of this age should have a condition score of between a 4 and 6. A condition score of 4 is described as having a negative crease along the back with a faint outline of ribs discernable. The tailhead prominence depends on conformation, but fat can be felt around it. The hip bones are not discernable, and the withers, neck, and shoulders are not obviously thin. A 6 is described as having a slight crease down the back. Fat over the ribs feels spongy and around tailhead feels soft. Fat is beginning to be deposited along the sides of the withers, behind the shoulders and along the sides of the neck. Evaluate and record body condition every two weeks so that you can detect any change in condition early.

Conclusion

There are many ways to manage and positively affect skeletal development in a weanling horse. Managing exercise and nutrition correctly will improve the long-term usefulness of your young horse. Visit www.ext.vt.edu or talk to your local Extension agent for more information.

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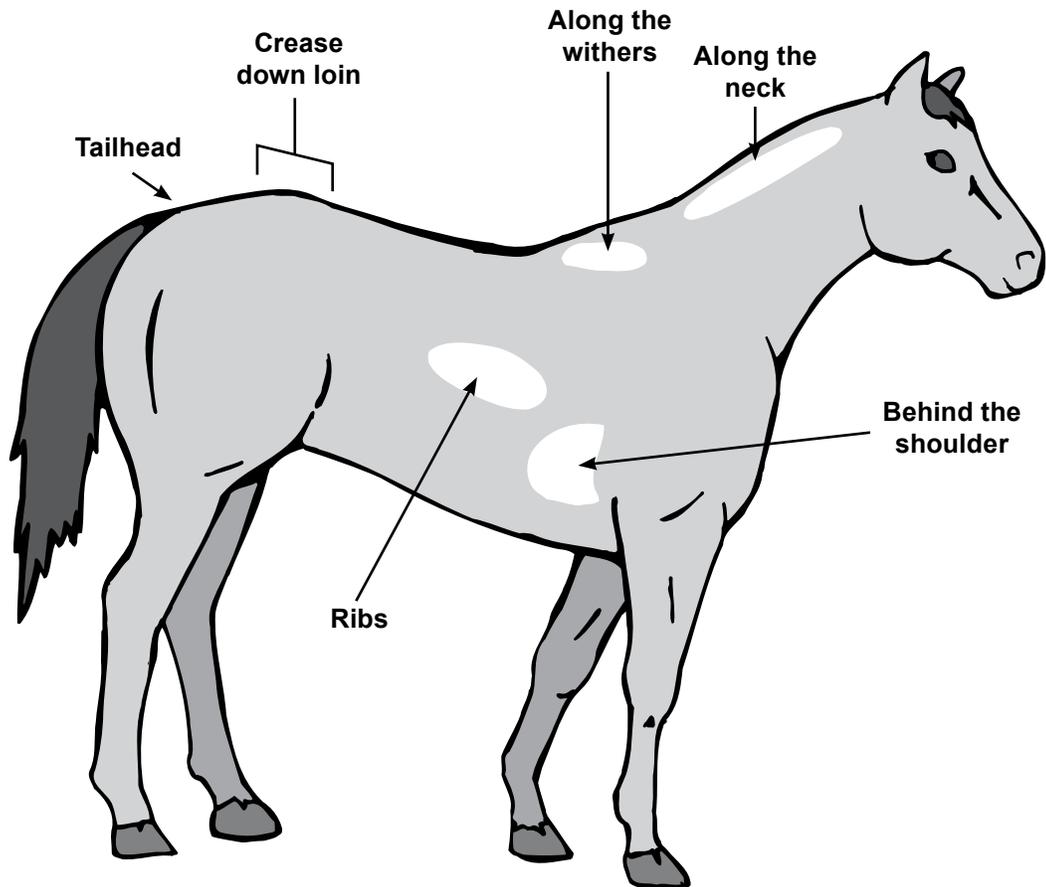
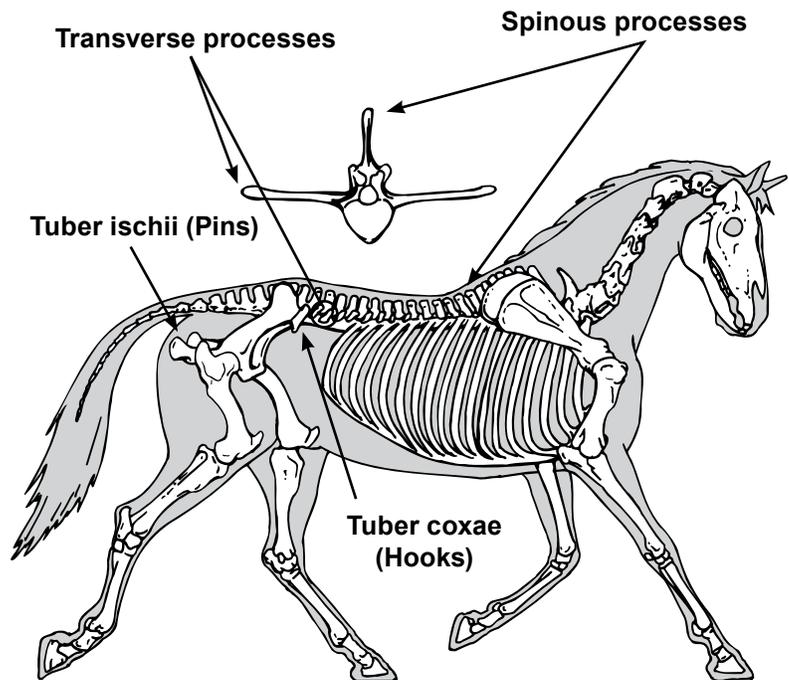


Figure 2. Anatomical locations and features used in the definitions of individual body condition scores.