

MAKING SURE YOUR FOAL IS GETTING ENOUGH NUTRITION

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Caring for a newborn foal is a very demanding job; it is like having a new baby in the house and just like most moms new mares need a little help to keep their foal healthy.

The first 8-10 days of life are critical for foal survival and provide a good foundation for future growth and development. Right from birth foals need that first milk from their mare called colostrum. Horses have a very non-invasive placenta meaning unlike humans where we pass antibodies or immunity to our unborn children mares do not pass antibodies to their foals. This makes it critical to feed colostrum, which is rich in antibodies. It is recommended that 500mL (approximately 2 cups) of solution be fed every 2 hours 10 times within the first day of life. After the first day, the foal's gut begins to develop enough for milk, whereby milk proteins are the most absorbable and nutritious food that can be provided. Like all newborns, they need to be fed small amounts often to avoid stomach upset while providing enough energy for their rapid growth. They absolutely need sufficient milk; their intake of milk starts at 10% of their body weight (day 1) and increases to 25% of their body weight (day 10). If the mare is struggling to provide all of their needs, a substitute is critical.

At this early stage in life foals undergo rapid bone development, so it is necessary to offer them a ration that is rich in calcium and phosphorus as well as copper and zinc. Calcium and phosphorus are the minerals that lead to strength in bones; copper and zinc are involved in the regulation of calcium and phosphorus metabolism. If the foal is deficient in energy or minerals once weaned from milk the foal will undergo a period of compensatory growth that could lead to bone deformities (developmental orthopedic diseases – DOD's). When it comes to foal rations everything is based on energy, the more energy they take in the more nutrients they have to digest, absorb and grow. However, too much energy and they will grow too fast for their internal organs and bones to keep up, which can also lead to DOD's. This is why a mare's ration is not optimal for the foal. It is important to remember that the nutritional needs of the foal are completely separate from the mare and a ration based on milk and grain needs to be fed to ensure that the foal is getting enough energy to grow and develop at their own pace.

It will not be long before the energetic foal needs more than just milk. As the foal grows, mare's milk changes composition as a natural way to wean her foal. The National Research Council (1989) published that mare's milk protein content drops by 33% from the first week of lactation to the ninth week of lactation. A drop of 23% in fat within mare's milk was reported throughout this same time period. Schryver et al, 1986 reported that normal mares meet foals' needs for about two months. This is when a grain supplement, milk based for optimal digestion is best, must be offered. They do not need hay at this point. Nursing foals need milk and grain, hay may be introduced for them to sniff, play with and munch on, but it will not be a significant source of energy. Their gut is not fully developed enough to break down the hay and turn it into energy, leave that for the mare.

When balancing the foal ration with milk and grain it becomes imperative to ensure that it has all of the necessary nutrients. Foals need protein, they need it to build muscle mass, they need it to build a strong immune system and they need it as fuel for their muscles. If there are not enough carbohydrates or fat in the diet then they will use protein for energy, they will also struggle to grow if they are in this situation – this would be like putting your foal on the Atkins diet! The building blocks for protein are amino acids, if there is a limiting amino acid then all of the protein requirements cannot be met and growth will be inhibited. For foals the limiting amino acid is lysine, which can be found in milk ingredients. General rule of thumb is if lysine requirements are met, protein requirements are met.

Foals need fat, it is an important energy source that can be stored and allow them to gain weight, and it also helps with the absorption of some vitamins and minerals. As the foal's gut develops their hindgut will produce volatile fatty acids from eating hay. In the hindgut, hay is broken down and fermented by healthy bugs, which produces volatile fatty acids. Volatile fatty acids are an excellent energy source for the horse. Vitamin and mineral needs can be met through milk. These micro-ingredients are essential for developing eyes, to keep cells healthy, coat shiny, bones strong and for overall vitality. Because of rapid growth at this stage they require higher amounts of minerals than at any other time in their lives.

Milk and milk replacer is the perfect food for the young foal, they can utilize milk proteins at almost 100%. Milk proteins have many functional properties that allow for the foal to remain healthy, these proteins will improve immune function, act as an antimicrobial agent, help absorb vitamins and minerals and provide enough energy to get that newborn foal onto their feet. When milk needs exceed the availability, supplemental grain is necessary. If the grain also contains milk proteins then that high level of digestibility can be maintained for optimal growth and development in the foal.

Let's help that busy mare by remembering that foals are demanding newborns that need constant care and attention to get them off to a great start! The key to providing balanced nutrition to your foal is to remember "FOALS",

Feed them often

Orthopedic diseases are preventable with good nutrition

Always feed balanced *foal* rations

Lysine is a limiting amino acid when meeting protein requirements

Supplement is important for foals drinking milk