

Preparation for Foaling



Tremendous efforts are put into selecting a broodmare, choosing a suitable stallion, achieving pregnancy, and maintaining this pregnancy throughout the normal gestation period. With a birth approaching, the “battle has just begun” because many sources of danger await the much-wanted foal.

A horse owner needs to be familiar with certain common diseases or problems in foals. Certain precautions need to be implemented *before*, *during*, and *after* the foaling to help decrease the risk of problems. Prefoaling activities and their time schedules are discussed in this publication.

Management Practices

Before Foaling

Good nutrition for the mare is one of the first steps in development of a normal foal. Two common problems with mares are overnutrition and undernutrition. An

excessively fat mare has less chance of becoming pregnant, and once pregnant, has a greater chance of a difficult delivery than a nutritionally healthy mare. An excessively thin mare may experience difficulty getting pregnant, and her foal may be small and weak because of inadequate nutrition.

The mare should be in good flesh and gaining weight at the time of breeding. During the first two-thirds (approximately 7 months) of gestation, her nutrient requirements are essentially the same as those of a nonpregnant mare. During the last one-third of the gestation, each of her nutrient requirements increases by approximately 50 percent. For example, 9 to 10 percent protein is adequate for a nonpregnant mare, but during the last one-third of the gestation, a pregnant mare requires 14 to 15 percent protein. Detailed ration formulas are available from many sources.

Apply general health practices to all pregnant mares. Keep routine vaccinations current. In addition, administer tetanus toxoid 30 days before delivery to ensure the transfer of adequate immunity to the foal through the

mare's colostrum. If the mare is not immunized for tetanus or if the vaccination status of the mare is unknown, give the foal tetanus antitoxin at the time of birth. Tetanus antitoxin provides immediate but short-term tetanus protection. It is better to immunize the mare instead of administering antitoxin to the foal because of the risk of serum hepatitis from the antitoxin.

The mare, as with all horses, should be on a good parasite-control program. Usually you need to deworm horses once every 2 months, although different climates or concentrations of horses, among other factors, can alter parasite exposure. If the mare's parasites are controlled, the foal has less risk of environmental exposure to all parasites, including *Strongyloides westeri* that is passed from the mare to the foal in the milk or from ingesting feces contaminating the mare's teat, which also can cause several diseases.

During Foaling

With a normal birth, delivery of the foal is within 30 to 60 minutes after the onset of hard labor. Two fetal positions are typical: front feet first with soles of feet pointing down and the nose resting on forelegs and rear feet with soles of feet pointing up. Variation in these positions may require some assistance. Ideally, the mare's tail is wrapped and the foaling area quiet, safe, and familiar to the mare to help decrease anxiety, which can delay labor.

Excessive pulling on the foal is discouraged, but if some assistance is required, apply mild external traction only during hard uterine contractions. Most foal deliveries are totally uneventful; however, consider any difficulty in the mare an emergency situation and immediately get assistance from your veterinarian.

After Foaling

The most important consideration directly after the birth is that the foal breathe immediately and normally. At the moment the foal leaves the uterus, his or her total oxygen requirement shifts from the placenta (after-birth) to his or her own lungs. Breathing efforts should begin immediately (within 30 seconds) with fairly regular respiration occurring within 1 minute. Obviously, the first consideration is removing the placenta from across the nostrils (placenta is normally punctured by the foal's front feet). Sometimes it is necessary to remove mucus from the upper airways. In addition, some foaling facilities routinely provide oxygen to each foal at delivery.

The placenta will not be passed at exactly the same time as the foal. It is extremely important you do not attempt to pull the placenta out but to allow time for its

natural passage. Excessive pulling can result in uterine hemorrhage, tearing of the placenta, or both, leaving tags attached to the uterus. A placenta that remains attached to the uterus for longer than 4 hours is considered a "retained placenta," which is an emergency situation because of the risk of acute laminitis. Check the placenta carefully to make sure the entire placenta has passed and to be certain no tags are remaining in the uterus. If you are concerned about the condition of the placenta, place it in a plastic bag, refrigerate, and retain for veterinary examination.

Umbilical Cord

Another important concern is the umbilical cord. Approximately 25 percent of the foal's normal blood volume is still circulating through the placenta at the time of delivery; therefore, leave the cord intact long enough to allow the passage of this blood into the foal. In most instances, the cord breaks spontaneously at the proper location and without hemorrhage as the mare first stands. If this does not occur, you can break the cord by twisting and bluntly tearing the tissue at the proper location, being careful not to pull excessively on the attachment to the abdominal wall.

Do not cut or tie the cord, which are practices that can cause naval infections. Once it is separated, medicate the umbilical stump by soaking it in iodine. Be careful not to get the iodine on the surrounding abdominal skin as tissue burning can result. A satisfactory method is to dip the stump into a small cup of iodine solution to allow complete soaking of the stump while preventing contact with surrounding skin.

Colostrum

The normal foal will attempt to stand within minutes after birth and will be successful within 30 to 60 minutes. The sucking reflex, which is absent at birth, appears within the first 20 to 30 minutes. Cleanse the mare's udder before you allow the foal to nurse. It is extremely important that the foal nurse as soon as possible to get adequate quantities of colostrum.

Colostrum, or "first milk," has many properties beneficial to this newborn foal. It is high in nutrient content, has laxative properties, and, most important of all, is very high in antibody content. Unlike the human newborn that receives most of its "passive immunity" by transfer of antibodies through the placenta during gestation, the foal is born deficient in antibodies and lacks adequate immunity. A newborn foal is relatively incapable of fighting off diseases before it obtains colostrum. The foal that has received and absorbed adequate amounts of colostrum is able to fight off disease because of this colostrum "passive immunity." This passive immunity protects the foal until it is able to

produce its own “active immunity” or antibodies within its own body. The process of active immunity begins between 2 and 3 weeks of age, reaching full adult capacity around 4 months.

Other important facts about colostrum can help you practice good foaling management. First, colostrum is usually secreted only during the first 24 hours after delivery, with the antibody content being highest at birth. Another factor is that colostrum can be absorbed into the foal’s small intestine for only 24 hours. This antibody-absorption process is most active at birth, declining steadily during this 24-hour period; in fact, it is essentially finished within 12 hours.

Failure of Passive Transfer

Several factors can result in failure of passive transfer (FPT), or the failure to receive adequate colostral antibodies. Probably the most common cause of a failure is low antibody content of the mare’s colostrum, a condition usually found in young maiden mares. Another cause arises from the mare that drips milk before foaling so that the colostrum, which is produced only once, is lost onto the ground. (The mare that begins to lose milk through dripping could be induced to deliver the foal early; however, this is rare and is based on several criteria that would determine her readiness.) Even if the mare produces adequate colostrum, failure of passive transfer can occur if the foal is weak or diseased and is unable to obtain the colostrum. A premature foal may not receive adequate antibodies because the mare may not yet have produced colostrum high in antibody content.

You can attempt to counterbalance any of the causes for failure of passive transfer. One of the most practical methods is to collect small quantities of colostrum from several mares immediately after their giving birth, or a large quantity from a mare that has lost her foal. You can freeze and store this colostrum for when you will need it. The foal of a mare whose colostrum is antibody deficient could be supplemented with this additional colostrum. You can also use frozen colostrum in the case of a weak or premature foal, feeding it with a nursing bottle, or pass a stomach tube if the foal is unable to nurse.

Approximately 25 percent of all foals experience partial or complete failure of passive transfer. These foals are much more susceptible (than a healthy foal) to disease, especially respiratory and gastrointestinal diseases. In fact, most foals with true antibody deficiencies become diseased and many of these will ultimately die.

Mares on Fungus-Infected Fescue Pastures

Pregnant mares maintained on fescue pastures infected with the fungus *Neothyphodium phialum*, formerly known as *Acremonium* (which produces an ergot-alkaloid), may experience one or more of the following complications:

- agalactia (absence of milk production),
- lack of udder development,
- uterine rupture,
- dystocia, and
- rebreeding problems.

The foal may be weak at birth, oversized, or be slow to respond and referred to as a “dummy.” These symptoms are avoidable if the hay is free of fescue and if the mare is removed from fescue pastures at least 1 month (preferably 3 months) before the mare’s anticipated delivery date.

If a mare is allowed to remain on fungus-infected fescue pastures and experiences agalactia following foaling, your veterinarian may administer a treatment to induce the mare to produce milk. This is a situation where you must give frozen colostrum to the foal within a few hours of birth to assure adequate “passive” immunity. Milk that the mare eventually produces may not contain adequate antibodies and what is produced may be too late to be absorbed by the foal.

Fortunately, several tests are available to the veterinarian that can test the foal’s immunity. Depending on the test used, you can determine if the foal’s immunity is adequate, if it has experienced failure of passive transfer, or if it has experienced partial failure. Specific tests are also available that can identify exactly which immunoglobulins are deficient.

Once the foal is delivered and all the discussed management procedures have been practiced to ensure the foal’s health, the foal is probably on its way to normal growth and development. Several common problems and diseases that can affect the newborn foal from this point on are discussed in *Foal Diseases*, Extension Publication 1393.



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Revised by **Fred D. Lehman**, DVM, MABM, DACT, Leader, Extension Veterinary Medicine. Original publication by Clyde E. Taylor, DVM, MS, and Eleanor Greene, DVM.

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