

Daniel P. Keenan, DVM
Ron McAlister, DVM
Lynsey D. Makkreel, DVM



FOALING

The expected birth of a foal from a favorite mare is an exciting time. Ideally, help and advice should be sought from your veterinarian or someone with experience in foaling mares during the pregnancy. It is most important to know what is 'normal' both in terms of the foaling process and how to expect the foal to behave once born.

How should I prepare my mare for foaling during pregnancy?

Your mare should have been in good condition throughout her pregnancy. Mares that are too thin or too fat often produce small foals. She will need to be vaccinated against viral abortion in the 5th, 7th and 9th month of pregnancy, and be vaccinated against common diseases approximately one month prior to foaling as this will boost antibody levels in her colostrum (first milk) and provide protection for the foal after birth. If your mare is to foal away from home, she should be moved four to six weeks prior to foaling so that she can develop specific antibodies to microorganisms in her new environment. If your mare has a Caslick's suture, this must be opened a few weeks before her due date.



Healthy pregnant mare

You should prepare a large clean stall heavily bedded with straw. Shavings or chips should not be used. Mares should foal where they can be discretely observed and where help can be easily given if problems arise. Mares can also be foaled outside in a clean grass paddock if the

weather is good and they can be clearly observed and helped if needed. The stall should have good lighting available, but most mares prefer to foal without glaring lights. A red light bulb allows observation of the mare, yet doesn't disturb them as much as regular lighting. A kit containing scissors, navel dip, an umbilical clamp and lots of clean towels should be on hand.

Foals are born after about 11 months of gestation. Some mares foal earlier and some later, depending on their age and time of year they foal. Foals arriving more than two weeks early or late of this date usually have a problem. It is the foal, via its hormones, which decides the time to be born, and an unhealthy foal will often have problems with this process. Mares have some control over the last stages of labor and will delay foaling if the surroundings are disturbing them. Most mares foal during the night, an instinctive means of helping to protect their vulnerable new-born foals from predators, but this cannot be relied upon and full term mares should be watched day and night. In the weeks leading up to foaling, your mare will start producing milk, resulting in gradual enlargement of her udder. This is called 'bagging-up'. One to two days before foaling, small amounts of colostrum may ooze from her teats, creating wax-like droplets which stick to the tip of the



Was on the tips of a mare's teats

teats. This is called 'waxing up'. This is the time to start watching the mare closely. The ligaments over the pelvis and under the tail head relax slightly giving a 'dropped' appearance to the hindquarters. During the 24 hours prior to foaling the mare may appear restless and uncomfortable and may re-arrange bedding as if 'nest making'. These are signs of first stage labor. She should be moved to the foaling stall as soon as it looks as though she is ready to foal.

The key to good management of foaling is to observe discretely without interfering unnecessarily. Closed circuit television can be used and can be very helpful but should not be relied upon. Various foaling alarm systems are commercially available, but are fairly expensive for the single horse owner. Small samples of early milk can be collected and tested with 'dip stick' tests for calcium and electrolyte concentrations to help determine whether mares are 'ready for birth' and likely to foal that night. However, mares behave very differently as individuals and from pregnancy to pregnancy, and cameras, monitors and milk tests cannot be relied upon. There is no real substitute for experienced 'sitting up'.

What is first stage labor?

During first stage labor, where the foal gets itself into the final birth position in the birth canal and the mare's cervix relaxes, the mare will look restless and will get up and go down several times with abdominal discomfort. The mare will raise and lower her tail and produce small quantities of droppings and urine frequently. Most mares sweat but some do not. This stage may last for several minutes to several hours and ends when the mare 'breaks water' (the placenta ruptures and allantoic fluid is released). Placental rupture can be differentiated from urination because the mare does not straddle in the urinating stance and the volume of fluid is too large in consideration of the fact that the mare has already passed small quantities of urine repeatedly.



Mare showing signs of pain during 1st stage labor

Your veterinarian should be called if your mare is excessively distressed or is in prolonged, non-productive discomfort. If the placenta does not rupture, it may appear at the vulva as a red velvety structure. This is called 'red bag' delivery and is a sign that the normal site of rupture is too thick and the mare is separating her placenta to expel her foal. The foal needs the placenta to be attached to the mare's uterus at this time to allow oxygen to pass across from the mare's blood. If this happens it is important to tear or cut through the 'red bag' placenta immediately or the foal may suffocate. This is an emergency.

What is second stage labor?

Very soon after the water breaks (the mare's point of no return), you should start to see the foal's two front feet and then muzzle appear at the vulva, covered by a thin white membrane (amnion). The feet are just ahead of the muzzle and one foot should be just ahead of the other. The foal can often be seen to move. If the head or one or both legs are back, or if more than two feet are present, or if only the foal's neck or back can be felt, you should call your veterinarian immediately. Horses foal very quickly and delay in correcting the problem could result in



Mare during 2nd stage labor – foal's feet visible in amniotic sac

death of the foal. While you are waiting for the veterinarian to arrive, keep the mare up and walking around the stall to prevent straining and impacting the foal in the birth canal. This will cause less stress for both mare and foal, and the veterinarian will find re-positioning of the foal much easier. If you feel the mare needs some minor assistance, you can pull one leg at a time as the mare pushes. If you pull both legs together too early, you will maximize the width of the foal across its shoulders and this will make passage through the birth canal more difficult than it should be.

Once the placenta has ruptured, most mares will lie down for quite rapid delivery of their foal. With the foal in the normal position, foaling should progress quickly. The mare will usually lie on her side to push and the foal's forelegs, head, trunk and hindquarters should be delivered within a few minutes. Second stage labor is a short and violent process, in contrast to first stage labor. The hind legs may remain in the birth canal while the mare recuperates and until she moves or the foal starts to struggle. The umbilical cord should rupture naturally at a point of natural constriction which develops just below the umbilicus. There should be minimal bleeding unless the cord has broken prematurely. The cord should only be clamped and cut if it is too thick to break naturally or if it breaks prematurely and the foal is hemorrhaging. The umbilical stump should be dipped into disinfectant solution (0.5% chlorhexidine or iodine). The foal should be rubbed vigorously with towels to dry it and stimulate circulation and respiration. After the foal is dry, step out and let the mare and foal be alone. The mare will usually turn to see, sniff and lick her foal and will often make a soft nickering sound.

Occasionally, mares try to foal standing up. If this happens the foal should be supported as it is born, at the level of the mare's vulva, so it does not fall to the ground and while the blood passes through the umbilical cord from the placenta. When the cord stops pulsing, it can be broken just outside the navel and the foal can be laid in the straw.

What is third stage labour?

This is the stage of placental release. During this stage the uterus contracts and this can cause the mare discomfort until the placenta is passed. When the mare stands, the placenta should be tied up into a ball so that it does not flap around the mare's hocks and frighten her, she does not walk on it and tear it, and so that its weight will help its gradual separation from the mare's uterus. When it drops from the mare it should, collect it and put it in a bucket or other safe place so that your veterinarian can examine it.



Mare smelling newborn foal

What happens after the mare has foaled?

The mare usually stands and starts to lick her foal a few minutes after birth. She may squeal and nicker at it and generally make a fuss over it. This is an important time of instinctive bonding and this should not be confused by unnecessary human interference. The time line should be that the foal stands within one hour, nurses by two hours, and the mare will pass the placenta by three hours. These things may happen faster than that, but if they take longer than the 1-2-3 rule, consult with your veterinarian.

Many mares will lie down again soon after foaling. This may be just to rest or may be because of abdominal pain (colic). She may paw or roll indicating her discomfort. If this does not pass within an hour, or the pain gets progressively more severe, your veterinarian should be called without delay.



Foal sucking colostrum

The foal should make attempts to stand and then to nurse. These are difficult things for a minutes-old foal to accomplish, but it is best to let the foal do it on his own. Being too helpful and trying to rush things can frustrate and tire the foal, and interfere with the mare's bonding actions.

If both mare and foal are bright and well there is no reason why they cannot be turned out into a small paddock for a few hours the next day, providing the weather is suitable. Exercise is beneficial to help the

mare's uterus recover after foaling and to help the foal strengthen and straighten its legs.

All in all, foaling should go smoothly with little involvement (other than observation) from you. In fact, jumping in too fast often causes more harm than good. Many mares will not foal with a barn full of people (especially noisy children) watching. They will hold off until everything is quiet and still to get the job done.