

FOALING THE MARE And WHEN TO CALL FOR VETERINARIAN ATTENTION





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Foaling the Mare

Pre-Foaling

Mares usually foal about 330 to 345 days after a successful breeding, but they may foal a little earlier or later than their due date. Experienced broodmare managers know some of the usual signs that show a mare is close to giving birth. However, first time breeders may not be as familiar with these signs. In order to be prepared for delivery of a foal, anyone keeping a pregnant mare should watch for some indications of impending labour and always ask advice from an experienced person.

Changes to the mare's udder will be seen during the last month of pregnancy. In the weeks before foaling, the udder may appear fuller in the morning and less full as the mare exercises during the day. When the udder stays distended all day, and especially when the teats enlarge and begin to point slightly to the side rather than straight downward, foaling is getting close, and the mare should be checked frequently.

Many mares will develop beads of colostrum at the ends of the teats within 12 to 36 hours of foaling. This "waxing" is different for each mare and may occur earlier or not at all; however, it is considered a strong indication that the mare will foal soon. Some mares will actually begin to drip colostrum, losing fluid and antibodies (the immune boosting goodness from the milk) that are vital to the newborn foal's protection from disease. If the mare is losing a lot of colostrum, it should be collected, frozen and fed to the foal after birth. Feel free to contact the clinic for advice on this if you are having any concerns.

Muscles in the mare's pelvic area will begin to relax a few weeks before foaling occurs. Watch for the appearance of hollowed areas on either side of the top of the tail. Like other signs, this change is more obvious in some mares than in others. Within the last day or two before foaling, the mare's vulva will also swell and relax.

Toward the end of pregnancy, mares may show the same signs of discomfort that are seen in horses with colic. These include restlessness, kicking at the belly, looking at the flanks and generally seeming irritable or anxious. An increase in these signs may indicate that the first stage of labour has begun, especially if the mare also shows patches of sweat on her neck and flanks. However, the actual delivery may still be hours away – if you are inexperienced and in any doubt, ask an experienced person for advice.

As prey animals, mares instinctively look for a quiet, safe place to deliver their foals. This same instinct keeps some mares from showing obvious signs that foaling is near, even if they are in familiar surroundings and in the company of trusted caretakers. Even among experienced foaling assistants, the saying is, "Only the mare knows exactly when she's going to foal...and she's not telling."

Owners should be sure mares are in a secure, quiet place (foaling stall or paddock) if the mare is showing definite signs of labour. Entering the stall or even being visible outside it will keep some mares from proceeding and stories abound of mares seeming to be asleep and then producing a foal while the caretaker runs to the house for a quick cup of coffee. A remote camera mounted in the foaling stall allows an owner to keep track of a mare's progress without interfering.

Early Labour and Foaling

The majority of mares give birth without difficulty, moving smoothly through the various stages of labour and parturition. However, mare owners and foaling managers need to know when the mare is not making progress and may require some sort of intervention to ensure the well-being of mare and foal.

The first stage of labour in horses normally lasts from one to four hours. Early signs resemble those seen in a colicky horse: restlessness, lying down and getting up repeatedly, looking at the flanks, nipping or kicking at the abdomen, sweating and pawing the ground. The mare's signs of discomfort may ease for a while and then resume. During this period, uterine contractions are moving the foal into position for delivery. Instead of lying on its back with legs flexed, as it has for most of the pregnancy, the foetus is rotated onto its belly with its forelegs and head extended toward the mare's vagina. As the contractions become stronger and the foal begins to move into the birth canal, the mare's membranes will rupture and release a large quantity of fluid. This marks the end of the first stage.

Actual delivery of the foal occurs in the second stage. The mare's contractions become very powerful at this time. She may lie down, remain standing, or walk around at any time, even after the foal's feet are visible outside the vulva. In a normal presentation, the foal's forelegs are extended with one hoof slightly ahead of the other, with the head stretched along the forelegs. As the feet become visible through the amnion, the mare is pushing the foal's shoulders through the cervix, after which she usually takes a brief rest before pushing the rest of the foal's body out. During this time the foal is still receiving some oxygen via the umbilical cord. The attendant should be sure that the foal's nose is uncovered and free of fluid, especially if the membrane has not ruptured naturally. The foal's hind legs may remain inside the mare for a few minutes as the mare takes another break. This stage may go quickly for some mares, while others take up to half an hour for complete delivery. Anything over this amount of time is cause for concern. If there is a great amount of vaginal bleeding at any time or if the mare becomes exhausted without producing the foal, these are also signals that she is in distress and needs veterinary help immediately.

The last stage of labour is expulsion of the placenta. This usually occurs within a few hours after delivery of the foal. It is important not to pull on the placenta but to let it detach from the uterine wall by itself. If the mare is up and moving around and the placenta is hanging out but has not yet

Completely released, it is a good idea to gather it and tie in a bundle so that it doesn't get stepped on and the weight of the placenta creates some traction for removal. The attendant should examine the placenta once it is passed to be sure it is complete (or place in a black bag or bucket with lid for an experienced person to examine e.g., Vet), as any retained placental tissue is likely to cause uterine infection. If there is a long delay in passing the placenta, a veterinarian should be called to examine the mare. Mares that appear to have severe abdominal discomfort or excessive bleeding after the third stage should also be examined.

In most cases, mares give birth quickly and without complications. The foal stands and nurses within an hour or two and a few days later is following the mare around the pasture and snoozing in the sunshine. Sometimes, however, complications just before, during, or after birth can result in a decreased oxygen supply to the foal's brain. Various terms such as hypoxic ischemic encephalopathy or neonatal maladjustment syndrome have been used to describe the manifestations of oxygen deprivation. Around the barn, managers refer to these foals as wanderers, sleepers, barkers or dummy foals.

What Factors Lead to Oxygen Deprivation?

Anything that reduces the amount of oxygen reaching the brain can rapidly affect brain cell function. The problem can be depleted blood flow, or normal blood flow with depleted oxygen, or a combination of these factors. One reason for interrupted oxygen supply before birth might be premature separation of the placenta from the uterus. Uterine infection, twin pregnancy and fescue toxicoses are other risk factors. If the birth is difficult and delivery is delayed, compression of the umbilical cord may reduce the foal's blood supply. When the umbilical cord is broken soon after delivery, the foal's heart and lungs must assume circulatory functions that were previously supplied by the mare. Any delay in this process can cause a drop in the amount of oxygen that is delivered to the foal's brain. When blood supply is restricted and again when it is restored, chemical changes lead to cell death, swelling of brain tissues and impaired neurological function.

Other organs in the respiratory and gastrointestinal systems are frequently affected if oxygen deprivation is severe or prolonged.

What Signs Does an Affected Foal Show?

The various names for this condition are descriptive of an affected foal's behaviour. Some foals don't seem to recognize the mare and are unable to nurse. They may wander around the stall, getting stuck in a corner and being unable to find their way out. Others slip into frequent periods of deep sleep or have seizures. Other signs may include increased respiratory effort or rate. These signs may be present shortly after birth, but it is also common for newborn foal to seem completely normal and then begin to exhibit signs in a day or two. Abnormal behaviour that begins as long as a week after birth may be due to an oxygen deficit at the time of foaling. If the foal shows any abnormal behaviour after birth or fails to nurse within a few hours, veterinary advice should be sought.

Are there Other Conditions That Can Cause Similar Signs?

Newborn foals may be affected by a number of problems, several of which might be mistaken for oxygen deprivation.

If the foal "just doesn't seem right", any of the following could be the cause of abnormal or depressed behaviour:

- **Infection:** Diarrhea and pneumonia from bacterial infections frequent plague foals.
- **Injury:** Broken ribs are not uncommon in large foals and shock and pain can lead to unresponsiveness.
- **Hypothermia:** While most foals are able to maintain sufficient body temperature, some may need help staying warm.
- **Poor Nutrition:** The mare may not be producing milk or may not be allowing the foal to nurse.
- **Discomfort:** The foal may have ulcers, lameness, internal deformities, or other sources of pain.

A thorough veterinary examination is necessary to determine the cause of the foal's behaviour. To give the foal the best chance of complete recovery, this examination should be done as soon as the owner notices a problem. Foals can deteriorate very rapidly and 'wait and see' approach is not suitable with neonates.

How can Neurologic Deficits be Prevented or Minimized?

In a difficult foaling, immediate intervention can make the problem less severe. Foaling managers attending the birth can watch for conditions that may lead to oxygen deprivation. One of the most common is a “red bag” delivery in which the placenta, a red velvety membrane, is the first thing to protrude from the mare’s vulva. In most deliveries the placenta ruptures but remains inside the mare until after the foal is delivered. The appearance of the placenta is a warning that the birth is not proceeding in the normal manner and that the foal is in danger of suffocation. The placenta needs to be torn or carefully cut so that the foal’s nose can be uncovered and cleared of fluid. The thin whitish membrane that normally encloses the foal usually ruptures as the birth progresses but may also need to be torn away from the muzzle.

Even without other birth complications, the foal may not immediately begin to breathe on its own. Foaling attendants can clear the nostrils by suction or by stroking down the outside of the foal’s face. Rubbing the foal with dry towels can help to trigger breathing but vigorous rubbing may cause further injury if the foal has broken ribs from a difficult delivery. Mouth-to-nostril resuscitation can be performed (on a firm surface, extend the foal’s neck, cover one nostril and breathe into the other nostril every two to three seconds, introducing enough air to see the chest expand) until the foal can breathe on its own and a regular heartbeat is confirmed).

What to expect when you are expecting: A Guide to Foaling.

Pre-Foaling (the days and weeks before).

Organisation weeks before your mares due date is crucial for a smooth delivery. This may include:

- Talking to your vet about the physical condition of your mare and if complications are expected make a plan with your vet about what will happen when she is foaling (i.e., Will the vet attend, will the mare go to a clinic or farm to be foaled down as high risk).
- If she is caslicked, she should be opened usually about 2 weeks before due date.
- Foaling Kit should consist of: towel, torch, mare's tail bandage, lubricant, long and short gloves, umbilical dip, string to tie up placenta, fleet enema, sample pot to test colostrum, heavy duty bag or bucket with lid for placenta.



Signs your mare is getting ready may begin up to 3 weeks before foaling and include:

- "Bagging up": Increase of milk in the udder resulting in an increase in size of the udder.
- "Waxing": Small beads of wax may develop at the end of the mares' nipples. Increasing amounts of wax may indicate that labour is approaching.
- Dripping milk is usually an indication of approaching labour. Some mares may run milk for days even weeks before foaling. This is loss of vital colostrum and contact the clinic for advice of how to manage these cases.
- Loosening of the vulva and surrounding muscles
- Maiden foalers may foal 2 weeks before or after their due date and will often show little or no pre-foaling signs



Stage 1: Signs of Impending Labour

- This stage can last up to 4 hours.
- Caslick should be well and truly open (sometimes they try to heal closed again if it's been a few weeks since opening).
- The mare will often begin to isolate herself and show signs of discomfort/agitation (these signs may resemble colic e.g., Getting up and down, rolling onto side, kicking/biting/looking at belly, sweating, pawing and general restlessness)
- Vet wrapping the tail and washing then during the vulva and anus with a disinfectant scrub and water can reduce mess and potential infection.

Stage 2: Delivery

(PPE such as gloves and a mask will protect yourself, the mare and the foal from possible infection).

- Begins with 'water breaking' and appearance of amnion (translucent/pink or yellow tinged membrane)
- Should only last around 30 mins or less

Signs of potential problems and when to call the vet:

- No progression of the delivery within 10 minutes of the water breaking
- Failure of foetal (foal) front legs or amnion (sack) to appear at the vulva within 5 mins of the water breaking.
- Incorrect foal presentation: upside down hooves or one or more legs bent. Inability to feel the head, ability to feel a tail, abnormal combination of limbs at the vulva.
- Absence of strong contractions
- Presence of a red 'velvet' bag – palpate the bag to make sure you feel a bony foetus or hooves underneath before cutting the sack with a blade.

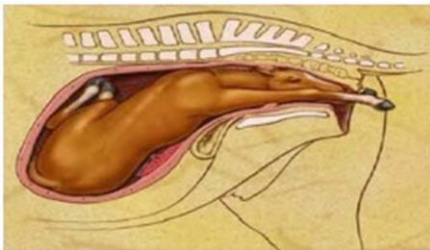


Left: normal amnion and presentation of foal.

Right: red bag delivery

- **Red Bag:** will need to be torn immediately and quick removal of the foal is imperative. However, this may also be a prolapsed bladder or vagina etc. this can be differentiated by feeling for the presence of the foal's hooves inside the bag finding such will mean a red

- To check the presentation of the foal – gently slide your hand inside the vulva feeling for 2 front hooves, one slightly ahead of the other and a nose. The foal should have its belly to the bottom of the vagina. If you are unconfident, seek experienced help.



Left: normal foal presentation.

Right: Hind limbs still within mare, foal's nose and head clear of membranes



- If it's not progressing seek experienced help.
- Once the shoulders and hips have passed the hind legs may remain in the mare as the foal receives its last transfer of blood from the mare. The sack should be removed from the foal's nose and cleared of anything that may obstruct normal breathing.
- The umbilical cord should detach from the foal as the mare and foal separate.

Stage 3: Expulsion of Foetal Membranes

- The placenta will remain attached to the mare for around 1-2 hrs post foaling. This should not be pulled on as damage can be caused to the uterus. Instead, the placenta should be tied in a knot around the height of the hocks, this will create a natural wight to encourage passing.
- If the placenta has not passed within 4 hrs, this is also cause for concern and a vet should be called as the mare may become toxic or lamanitic and in the worst-case scenario, die.
- Once passed, the placenta must be checked to make sure it is intact, and none has detached remaining in the mare. Failure to recognise and act on such will also result in toxicity or laminitis. If you are unsure, place the placenta in a bucket with a lid or a light proof bag so your vet can examine.
- Finally, clean the mare with a gently disinfectant to reduce fly's and mess.

About the Healthy Foal – 1, 2, 3 Rule

The foal should begin attempting to stand almost immediately and be stable on its feet within an hour and nursing within 2 hours. Failure to do so may indicate an issue with the foal and so a vet should be contacted.

Meconium (the first sticky dark stool) should be seen within 3 hours, and this may continue to be passed for up to 12 hours after foaling.

When nursing, the foal should show a good strong suck with a nice pink tongue curl around the nipple. A hand on the throat will help you feel mil being swallowed.

Cross nursing is when the foal is able to nurse both nipples from the one side of the mare and the foal should begin to get competent at this after a few nursings.

Foals should be bright and alert hours after foaling following their mothers closely.

Normal foal parameters	Under 12 hours	24 hours
Heart rate (beats / min)	100 – 200	80 - 100
Respiratory rate (breaths / min)	20 - 40	20 - 40
Body temperature (degrees Celsius)	37–39 degrees	37–38.5 degrees

Signs of potential problem – call a veterinarian

- If the foal comes out covered in brown staining
- Bleeding from the mare of foal
- Mare showing signs of colic post foaling
- Foal is very dull once born does not attempt to stand or nurse
- Increase in Foal respiration rate or effort
- Not passing meconium or urinating within 12hr birth, or showing signs of colic
- Mares' placenta does not pass within 4hr of birth
- Mare dull, depressed or foot sore any period of days after foaling
- *At any stage if you are worried or have any concerns, please call your veterinarian.*

Knowing what to expect during a normal delivery is the key to staying calm during this exciting period but we would encourage you to contact us sooner rather than later if you have any concerns.