



The foaling mare: preparation is key

By Sarah Figley, DVM, PhD

If you ask anyone who has bred horses, they will tell you that it's no easy feat. However, when it is done properly (and everything goes right), having an energetic and healthy foal is an exciting and rewarding experience.

Dr. Stephen Manning is a board-certified theriogenologist and an associate professor at the Western College of Veterinary Medicine (WCVN). Based on his training and experience, Manning has some helpful information and guidelines on breeding, pregnancy requirements, normal foaling and foaling complications that can happen before, during or after birth.

Breeding

The first step is getting the mare pregnant which can be a challenging task. It's not always clear when to breed your mare or easy to confirm pregnancy — especially without access to technology and equipment.

Manning explains that the classical way to determine pregnancy, commonly used by breeders and owners, is to observe a non-return to estrus (heat). Between 14 and 21 days after breeding, the owner re-introduces his mares to a stallion. If a mare will not stand for the stallion, her lack of co-operation may indicate that she's already pregnant.

A more definitive method involves trans-rectal palpation. In pregnant mares, the cervix will be long and tight. Depending on the stage of pregnancy you may feel a bulge, or later on, you may actually palpate the fetus in the uterus. Manning notes that this procedure takes some skill, and it's not necessarily easy to confirm pregnancy since changes can be subtle — especially early on when most mare owners are requesting a diagnosis.

Ultrasonography is the most reliable method of determining pregnancy. It's the only way to determine if a mare is pregnant with a healthy embryo, and it's the only way to detect twins (a problem in horses because they almost never carry twins to term successfully).

Not all horse breeders may have access to a veterinarian who is skilled in this technology, although ultrasonography is commonly used by practitioners who do any amount of equine work. Ultrasound examinations can also be used at various stages to assess pregnancy:

- **Day 11-14:** Can see embryonic vesicles
- **Day 16:** Destruction of one vesicle if twins are present
- **Day 25:** Can confirm pregnancy with a fetal heartbeat
- **Day 55:** Can attempt fetal sexing
- **Day 340:** Approximate gestation period for a mare (can range from 320 to 365-plus days).

Gestation

Once the pregnancy has been confirmed, keeping your mare in optimal physical condition is important. For the first eight months, mares on good quality feed do not need additional feed requirements. However, since 65 to 70 per cent of fetal growth occurs from eight to 11 months, pregnant mares will require more energy in the last three months of gestation.

Manning says owners “don’t need to double the energy provided in the feed, they just need to increase it by about 20 to 30 per cent. Sometimes this just means an increase in quality by adding in a concentrate and mineral.”

While late gestational complications can be devastating, they are not the norm. However, breeders should be prepared to call a veterinarian if problems arise at any point in the pregnancy since many issues can be life threatening to the foal and mare. Here are several of the most dangerous, late gestational problems:

- **Twins:** “Twins can be an epic failure and can end up costing a lot of money. We try to avoid these at all costs,” says Manning.
- **Placentitis** is caused by an infection in the uterus and results in a thickened placenta. This development ultimately compromises the oxygen and nutrients delivered to the foal. Placentitis is considered serious and veterinarians treat aggressively with antibiotics — often for the remainder of the pregnancy. To reduce the occurrence of placentitis, veterinarians often recommend performing a Caslick’s procedure (surgically closing the upper part of the vulva).
- **Uterine torsion** (twisting of the uterus) results in a reduced blood supply to the foal. Mares will usually present with signs of colic: sometimes those signs are acute and severe, but sometimes, the clinical signs are more subtle. “These [situations] are always serious for both the mare and fetus and usually require surgical correction in order to allow the pregnancy to continue successfully to term. If you don’t deal with the problem right away, you will often lose the mare,” says Manning.
- **Ruptured pre-pubic tendon, or ventral lateral abdominal hernia,** is a serious health issue that’s more commonly seen in older mares. It disrupts the mare’s abdominal wall to the point that she’s unable to support the weight of the foal or properly contract her abdominal muscles during parturition. If the pregnancy is past 320 days, a veterinarian will perform a planned caesarean section. An affected mare doesn’t usually survive, and if the hernia occurs before 320 days, her foal generally doesn’t survive either.

While some *in utero* complications can’t be prevented or predicted, there are many things that can be done in advance to give foals and mares the best possible outcome.

In preparation, Manning recommends that breeders think about completing the following steps about 30 days before the anticipated date of foaling:

- **Vaccinate:** Foals are born completely naïve and can be susceptible to many diseases and infections. Vaccinating mares provides antibody-rich colostrum, which will protect the foal for the first six months of life. Check with your veterinarian to determine what is recommended for your particular situation.
- **Deworm:** In addition to deworming your mare in advance, veterinarians also recommend deworming about one week after foaling. Parasitic larvae can be transferred to the foal by the milk and may cause illness or unthriftiness.
- **Open Caslick’s:** Caslick’s operations are done to seal the mare’s vulva and create an extra barrier to protect the pregnancy. To prevent tearing and allow for an uncomplicated delivery, a veterinarian needs to reopen the vulva lips before foaling occurs.
- **Fetal well being assessment or rectal ultrasound examination:** Veterinarians use this procedure to confirm a live pregnancy, to identify the foal’s body position, to assess the vital signs (foal’s growth measurements and heart rate), to assess uterus structure and placental attachments, and to look for signs of placentitis.

Foaling

Predicting parturition (birthing or foaling) is a fine science and pregnancies will vary. While no single sign will fully determine the onset of foaling, Manning says that owners will notice a saggy or swollen vulva, udder development, wax

production or vaginal secretions, and/or restless behaviour. If owners notice any, some or all of these signs, they should suspect foaling within hours to days and keep a watchful eye on their mare.

Most mares will foal at night and this isn't by coincidence. Mares, to some degree, are able to control the timing of early parturition stages if they are uncomfortable being watched. With this in mind, Manning advises breeders to "be discreet when watching your mare" and recognize that each of the three parturition stages "is a fine balance of knowing when to act and when to watch."

- **Stage 1 (uterine contractions begin):** This stage can last hours, and a mare may mask early signs if she is being watched. Signs will be consistent with colic: the mare may be agitated and show excessive movement (walking, pacing). The mare's cervix will relax and open, and the fetal position will begin to change.
- **Stage 2 (expulsion of the fetus):** This stage is very rapid and forceful, lasting from five to 30 minutes. The mare's chorioallantoic membrane ruptures, resulting in fluid discharge. Most mares will lie down (but not always) during this stage. A foal is born surrounded by the translucent-grey/bluish amniotic sac. A foal will usually break the sac on its own, but if this fails, the foal can suffocate without human intervention.

Stage 3: (passing of fetal membranes or placenta): This stage can take from five minutes to a few hours. Mares will often lie down and continue to show signs of colic and uterine contractions as they attempt to expel the placenta.

As a guideline, Manning likes to use the "1-2-3 rule" of foaling: "Your foal should stand within one hour, it should suckle within two hours, and your mare's fetal membranes should be discharged within three hours."

If any of the stages are notably delayed, Manning recommends that owners contact their veterinarian. Difficult births (dystocia) are not common, but they do require fast physical intervention by trained personnel to save the lives of both the foal and mare.

Foals normally come out of the birth canal with their front feet first, followed by their nose and the rest of their body. The most commonly seen dystocia would be a malpresentation of the foal – meaning that its body is somehow positioned incorrectly in the uterus or in the birth canal. Any malpresentation that delays Stage 2 and/or compresses the foal's umbilical cord is extremely dangerous since it will cut off the foal's only supply of oxygen and blood. If it isn't corrected quickly, a malpresentation can be fatal for a foal.

Even after you have a live, healthy foal on the ground, you might not be out of the woods just yet. Mares are susceptible to a number of post-partum complications that are serious and need to be swiftly resolved. These complications predominantly occur in mares experiencing dystocia.

- **Retained fetal membranes:** After three hours, if the placenta has not been expelled, you should contact your veterinarian. Mares with retained placentas are at a high risk of developing infections, going into shock and developing laminitis.
- **Uterine prolapse:** Excessive contractions during and after parturition can push the uterus out. This can also occur if retained fetal membranes are improperly removed or taken out too suddenly. This is an emergency — and potentially fatal situation — since the blood supply to the uterus is completely blocked.
- **Prolapsed rectum:** Parturition contractions can be so strong that mares can rupture their rectums. If the rectum is pushed out over five inches, the blood supply is destroyed and the prognosis for the mare is poor. If you see this happening during foaling, call your veterinarian and push hard against the rectum (if you can accomplish this safely) to limit its movement and the distance it prolapses.
- **Foaling injuries** can occur to the mare when the Caslick's isn't removed before parturition, or if the foal's hooves cause lacerations to the mare's birth canal or rectum. These injuries can be fixed with surgery but are not repaired right away.

Manning has a few points of additional advice for breeders:

- Stay calm.

- Remember that your mare won't be as friendly as usual. She may be easily frightened or become aggressive so be careful while standing near her.
- Make sure you have competent help — especially if this is your first foaling.
- Be prepared for foaling problems *before* starting to foal. Being prepared will give you the best outcome.
- Discreetly observe the mare from a distance; otherwise, foaling can be delayed.
- Call your veterinarian sooner than later if you think there is a problem.

It may seem like an overwhelming number of things could go wrong during the breeding and foaling process – but don't be discouraged.

“More than 90 per cent of pregnancies and foalings are normal,” says Manning, adding that it's just good to be informed and prepared.

“If you're prepared for everything, it's Murphy's Law that nothing bad will happen.”

Dr. Sarah Figley of Saskatoon, Sask., is a graduate of the Western College of Veterinary Medicine (WCVM). Reprinted with permission from the WCVM Townsend Equine Health Research Fund (www.tehrf.ca) and Canadian Horse Journal (horsejournals.com).

