

# Down on the Farm



## Trouble in Paradise: Premature Foals

*The birth of a foal is usually a joyous occasion. . . .  
but what do you do when everything is not as it should be?*

by **KAREN BRIGGS**

If you're a breeder, you await the birth of each foal with a mixture of excitement and anxiety. While the vast majority of equine deliveries are uncomplicated, and 'most' foals have a normal, healthy introduction to life, there's always the chance, however slight, that not everything will go according to nature's plan.

Several different conditions, including placentitis (infection of the placenta), umbilical torsions, twinning, breech presentations, and congenital problems, can trigger one of the most difficult situations a breeder can face—the birth of a premature foal. You can also end up with a 'preemie' when the health of the mare is threatened and your veterinarian is forced to induce foaling prematurely or perform an emergency caesarean section. Any foal which arrives prior to 320 days of gestation is considered to be premature and being a preemie can have a huge impact on his future as a racehorse.

Many of a foal's systems don't complete their development until the critical final week of gestation. So for many

reasons, foals pushed out into the world even a week early have difficulty adapting to life outside the uterus. A premature baby will be abnormally small and ribby, and have a very thin, silky haircoat and a characteristically domed forehead and soft, floppy ears, due to incomplete development of his cartilage. He'll also have unusually pliable hooves, and often, dropped fetlocks (due to lax flexor tendons and/or suspensory ligaments), especially in the hind limbs. Often, he'll be too weak to stand and nurse.

Depending on how premature a baby's arrival is, his internal organs may be immature, as well, leaving him vulnerable to disorders ranging from respiratory distress to poor thermoregulation (the ability to maintain the internal body temperature). Angular and flexural limb deformities are also common. And because a premature newborn has little in the way of fat stores, he is susceptible to hypoglycemia (low blood sugar), a condition which can take him from bright and alert, to weak and fading, in a matter of hours. Compli-

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cating this is the fact that some preemies have such underdeveloped gastrointestinal tracts that they're unable to digest milk—so in order to provide them with the glucose they need, without triggering bloating and colic, they have to be fed intravenously. Even foals whose digestive tracts are relatively mature may have a weak sucking reflex, which again may have to be addressed with IV feeding.

As most breeders know, there's tremendous variability in the length of gestation in horses. And curiously, the duration of a mare's pregnancy isn't related to fetal maturity, as it is in humans. Sometimes even a baby who is born after a 'normal' length of gestation will still have the characteristics of an immature foal (a condition technically called "dysmaturity"). But whether a foal is truly premature, or dysmature, the good news is that veterinary science has come a long way in the past 15 years. Many major universities now have equine neonatal units, where the success rates tend to be 65 percent or better, and even foals born prior to day 300 of gestation have been reported to survive with aggressive intensive care.

Research on preemies has revealed that foals born spontaneously have a better chance of survival than those who arrive early because of human intervention (induction of labor or caesarean section). The reasons for this aren't entirely clear, but researchers postulate that because many preemie births are triggered by chronic uterine infections in the mare, such a foal may have been exposed to high levels of endogenous steroids released while the dam's system was struggling to fight the infection. These steroid compounds, circulating in the womb, stimulate the foal's lungs to mature faster—so a spontaneously arriving preemie may have a headstart on his respiratory development over a foal who was, in essence, ripped from the womb with no warning. Foals born from mares with uterine infections have a better than 70 percent chance of survival, if treated within the first 24 hours after birth.

If you're faced with a preemie, you'll be wise to ask yourself whether you're prepared, financially and emotionally, to deal with the intensive therapy needed to help a critically ill foal. You'll need to consult with your veterinarian as to the baby's prognosis. It's no longer true that every preemie is a lost cause—many can, and do, go on to enjoy normal athletic careers. But your foal's future as a racehorse will depend largely on the types of problems he has to overcome in the critical first few weeks of his life.

### Health Challenges

Most crucial to an athletic future is the state of the foal's limbs. Knees, hocks, ligaments and tendons are generally not fully developed in a preemie, and the result is angular and/or flexural deformities. Slack tendons may cause the foal to stand down on his fetlocks, a condition which usually resolves as the foal grows and becomes stronger. Angular deformities caused by incomplete ossification of the bones of

the knees and hocks are more problematic—your veterinarian will probably want to do radiographs to assess the degree of development of the bones, and may recommend splints or tube casts to help support the limbs and prevent the soft bones and cartilage from becoming crushed when the foal stands. In many cases, with prompt assistance, even very wobbly foals eventually grow straight and true, and have a good chance of becoming useful racehorses.

Another pivotal consideration is the health of the preemie's lungs. Respiratory problems can occur, ranging from infections to lung collapse to oxygen deficits because of the immaturity of the lung tissues. Many premature foals need to be given supplemental oxygen through a nasogastric tube—some may even need to be placed on a respirator if the lung dysfunction is severe. If pneumonia develops, radiographs can help reveal the severity of the infection and guide your vet as to treatment options. (Though infections like this can be seriously life-threatening, studies have shown that foals who get through it often go on to perform as adults, with no significant differences from horses who didn't suffer pneumonia.)

Preemie foals also have immature immune systems, a problem which can be further complicated if the foal is unable to take in his dam's colostrum in those crucial first few hours after birth. (If the foal was delivered by caesarean or induction, it's very likely the mare had no colostrum to offer in any case.) Such babies will be extremely vulnerable to neonatal diseases such as salmonella, pneumonia, and rotovirus.

Because of their delicate lungs, compromised immune systems, and need for IV feeding, the vast majority of premature foals need to be dealt with in a veterinary hospital setting. Being vulnerable to chilling, they're susceptible to hypothermia, so they need to be kept inside, away from drafts and rain, and may need the assistance of heat lamps or blankets. An isolation unit, specially designed to reduce the risk of contagion and provide veterinarians with easy treatment access, is the housing of choice. Many preemies, because they have little body fat, also have to be provided with special padding on which to lie so as to prevent bedsores. In most cases, preemie foals have to be separated from their dams during treatment, and may need to be hand-raised or placed with a nurse mare afterwards.

Whether or not your preemie foal will have a productive future is largely dependent on the degree of immaturity he starts out with. The lower the 'gestational age', the more health challenges he'll face—those born at less than 300 days of gestation will need round-the-clock intensive care and may never fulfill their genetic potential. On the other hand, foals who are only a week or so premature might require only close observation or minimal treatment, and will quickly catch up with their more fortunate peers. In the end, your decision will be based on the value of the foal, his condition at the time your vet first sees him, how accessible appropriate hospital facilities are to your farm and, of course, the eventual cost of days or weeks of intensive treatment.