



Bringing Up Baby

Early Foal Health Care

By Heather Smith Thomas • Photos by Shannon Brinkman

The first hours, days, and weeks of life can be crucial to the future health of a foal. Even though most mares give birth with no problems, it pays to be there during birth, and to keep a close watch on the new foal during his first weeks of life. Remember, these are guidelines, and you should consult your veterinarian immediately if it appears your foal is in trouble.

First, make sure the foal begins breathing as soon as he is born; gently take the sack away from his head if it has not already broken—and do it with speed if it is still intact and full of fluid.

Right after birth most foals position themselves upright, enabling the lungs to expand. If a foal lies flat, he can't breathe as well; his lungs cannot fill completely. Some foals show signs of weakness and lack of oxygen (lying flat, unable to roll up onto their chests), while others may appear normal at first and then begin gasping for breath. These foals can usually be helped by vigorous rubbing with a towel to stimulate circulation, and by moving their legs to increase heart and lung action.

After a foal is born, the mare and foal usually lie there for a few moments. The foal will often be trying to stand before the mare does. The umbilical cord breaks when the mare gets up. The navel stump should then be dipped in iodine (seven-percent solution) or chlorhexidine as soon as the cord breaks, to prevent infection. The easiest way to apply the disinfectant is to completely immerse the navel stump in a very small jar of it—pressed up against the foal's abdomen so the stump is fully immersed.

The normal foal will try to get up soon after birth. If he's in a stall, make sure the bedding is not so deep that it impedes his efforts, and that there are no obstacles for him to crash into in his wobbly attempts.

He'll usually fall down several times and it's tempting to help him, but it's best to refrain. Occasionally a foal will have a fractured or cracked rib from the pressures of birth, which heal nicely under normal circumstances. But too much handling (as when trying to pick him up or help him stand) may displace the broken ends and cause them to puncture a lung. Just monitor his progress in finding the udder—helping him only if he needs it.

It is important that the foal nurse within the first two or three hours, and gets an adequate amount of colostrum by the time he is six hours old, to get the most benefit from maternal antibodies. His intestinal lining begins to thicken soon after birth, and he loses the ability to absorb these large molecules. A foal that fails to nurse quickly gets only a fraction of the protection he needs.

If for some reason he may not have gotten enough colostrum, a veterinarian can check a blood sample for immunoglobulin levels. If he did not receive enough, the foal can be transfused with plasma from the mare or with a commercial plasma preparation to give him that crucial protection.



Colostrum not only provides antibodies against diseases, but also serves as a gut stimulant to help the foal pass his first bowel movements (which are often firm and hard-packed). Sometimes an enema is necessary to help the foal get rid of all these hard pellets, but in most cases the laxative effect of colostrum will get things moving.

Some foals are slow to nurse due to foaling complications, but others are slow for no apparent reason. In these instances, you may have to milk a little from the mare and feed the foal via bottle or stomach tube until he begins to nurse on his own. If he will nurse a bottle, that's the easiest way to get him fed, and you can use the bottle to help lead him to the teat. But if he is weak and unable to suck, he may have to be fed by syringe or stomach tube. A veterinarian needs to help determine this.

During the first day of life, make sure he is passing bowel movements and urinating. Sometimes a foal will be constipated and uncomfortable even if you gave him an enema soon after birth. If he has trouble passing bowel movements or shows discomfort, consult your vet.



First Weeks

A barn stall is not a healthy place for a mare and foal. Even if the foal was born in a stall, the pair should be turned out for exercise as soon as possible. If they have to stay in a barn, make sure the stall is large, and the bedding is changed often and free of

Photos this page: Make sure the foal begins breathing as soon as he is born; gently take the sack away from his head if it has not already broken—and do it with speed if it is still intact and full of fluid.

Right page photo: Soon after birth the foal will try to stand up.





dust. A dirty stall increases the risk for navel ill and parasite infection, and the increased ammonia level from urine and manure can damage a young foal's lungs.

Of primary importance when managing the foal's environment is minimizing his exposure to internal parasites. This effort should start with keeping the mare dewormed during pregnancy. The last treatment should be about a month before she's due to foal, and she should be dewormed again the day she foals, with ivermectin. Some worms (threadworms) can pass through the milk to the foal. Young foals also eat their dam's fresh manure to obtain microorganisms necessary for digestion of roughages. If the mare has not been dewormed, the foal picks up parasite eggs at the same time. The foal should be dewormed at about one month of age, and every eight weeks thereafter.

Foals are very susceptible to the effects of stress. The hormones produced during stress can eventually hinder the immune system, making a foal more vulnerable to disease. Stress includes physical and emotional factors (extreme cold or heat, confinement, major disruptions in daily routine, a long trailer trip, etc.) and can also cause ulcers in the foal's digestive tract. Nearly half of all foals raised in confinement suffer from stress ulcers, and occasionally an ulcer will perforate

the stomach wall and cause fatal peritonitis. Ulcers are even more common in sick foals.

Signs of ulcers may be very subtle and might go unnoticed. Some foals die suddenly from perforated ulcers without having shown obvious signs. Clues may include discomfort, lethargy, mild or intermittent colic, salivation and drooling or grinding the teeth. The foal may start to nurse and then abruptly stop. He may shift his weight from one foot to the other, back into a corner and tread his feet, or lie on his back. Only a small percentage of foals with serious ulcers display the classic signs, however. If you suspect a problem, have your veterinarian check the foal. Ulcers can be successfully treated if diagnosed before they become too severe.

A young foal is also very susceptible to digestive tract infections. Some of these can quickly prove fatal unless treated. A foal has less immunity to many pathogens than does an adult, and also dehydrates more quickly (due to smaller body size and shorter intestinal tract that cannot absorb as much fluid). It's important to recognize the early signs of illness and treat the foal with fluids (and antibiotics if needed) to prevent or halt dehydration.

Loose bowel movements during the first week of life can be an emergency condition. This should have immediate attention, to determine whether it is

an infection or something else. In a young foal, the most common cause of non-infectious diarrhea is too much milk. A heavy-milking mare should have no grain until after her foal heat (which can occur from four to nineteen days after foaling) or after her foal is old enough to handle the increase in milk.

Young foals often scour during the mare's first heat, but this diarrhea is usually not a health problem. The foal keeps nursing and does not feel sick. The only treatment needed will be to coat his buttocks with petroleum jelly to keep the skin from being irritated and prevent hair loss. But the foal should be watched closely to make sure his scours don't get worse. If diarrhea persists for more than a few days he may need extra fluids to keep from becoming dehydrated. If he becomes dull, dehydrated or quits nursing, he should have immediate medical attention.

It pays to detect signs of illness early. The normal, healthy foal is bright and alert, very active, and nurses often. If he doesn't feel well he'll be dull, with less interest in what's going on around him. If the mare is standing over him, worried, with a full udder, you will know he is sick.

Pneumonia is another serious threat, and is most common in foals two to six months of age (though it can occur any time from birth to 12 months). With prompt treatment, most bacterial pneumonias respond quickly and completely, but viral infections may be harder to halt. Your veterinarian can determine what is best to use in treatment, and for supportive care. Prevention is an important factor, making sure the foal grows up in a clean, dust-free environment. Dust often contains bacteria; the dust irritates the airways and opens the way for bacteria to gain entrance to the delicate tissues. Foal pneumonia is always a risk if foals are raised in dusty paddocks or live in dirty stalls where ammonia irritates the lungs.

Vaccinations

Vaccinations should be given at the proper time to stimulate the foal's immune system to develop antibodies against certain diseases. If the mare was vaccinated and her immune levels were high during pregnancy, she passes antibodies to her foal via colostrum to give him a temporary (passive) immunity.

He will be protected against those diseases for several weeks. This protection starts to wane, however, and his own immune system must start to develop. He will need to be vaccinated, but not too soon—or the maternal antibodies will interfere with mounting his own immune defense.

If the dam was vaccinated for tetanus during pregnancy, the foal can be given tetanus toxoid at four months of age. By then his temporary immunity is wearing off. If the mare was not vaccinated, the foal should have tetanus toxoid at birth.

At four months of age he should be started on immunizations for eastern and western encephalomyelitis (EEE and WEE) and West Nile Virus (WNV). He may need other immunizations also, depending on your locale and situation. These may include rhinopneumonitis, rabies, botulism, etc. A vaccination schedule should be discussed with your vet. Most of these vaccines will need boosters, given several weeks apart. The first vaccination for influenza should not be given until a foal is at least six months old.

For vaccination to be most effective, it must be given at the proper time to maximize immune response in the foal. When figuring out vaccination schedules, you must consider the dam's vaccinations as well. If you are trying to give the foal immediate protection from a disease that might threaten him early in life, the best way is to keep the mare on a regular vaccination schedule, with her boosters given four to six weeks before foaling. This will increase the levels of antibodies in her bloodstream and enable them to be concentrated in her colostrum. If the foal nurses an adequate amount, soon enough, he will gain very good temporary protection.

This protection drops about 50 percent per month after birth, however. The greater the concentration of antibodies in the colostrum, the more the foal absorbs and the longer they persist at levels that can protect him. This protection may last from just a few weeks to a few months. The foal will be constantly encountering pathogens, so he starts to develop his own immune system, but if he is adequately protected by maternal antibodies this takes longer; his passive immunity interferes with building his own immunity, and inter-




Photos this page: Mare and foal should be turned out together for plenty of exercise.

feres with effectiveness of vaccination.

You must wait until he no longer has the passive protection. If maternal antibodies are still present in his body, they react to the antigens in the vaccine (just as they would to the real disease agents) and neutralize them. This interference with foalhood vaccination can be a frustrating problem in trying to effectively protect foals, especially in a group situation in which antibody levels in individual foals may vary. If all foals in the group receive their first vaccinations at three months, the ones that no longer have maternal antibodies will start to develop protection, but those with persistent maternal antibodies will not.

Research at University of Kentucky in 1998 showed that foals must have at least three doses of vaccine to start their immunity, rather than the two doses recommended earlier. The study also showed that foals started on vaccinations at three months of age generally fail to produce enough antibodies (with the exception of tetanus toxoid). It is now recommended that foals be started on vaccinations at four months of age, and that no foal be vaccinated for influenza before six months (preferably waiting until eight or nine months), unless his mother was not vaccinated.

With most viral vaccinations (such as equine herpesvirus and equine encephalomyelitis), maternal antibodies in the foal's blood do not seem to negatively impact his immune response to later booster shots, so vaccination against EHV-1, EHV-2, WEE, EEE and WNV can begin at less than six months of age, with three or more doses included in the primary series. By contrast, influenza vaccine is affected by any maternal antibodies that remain in the bloodstream, sometimes as late as six months of age.

Giving a foal an influenza vaccine earlier than this can adversely affect his ability to produce antibodies, not only for the short term, but also for the rest of his life. Thus a horse vaccinated too young may be unable to develop immunity as an adult, even with repeated vaccinations. Therefore it is very important to wait on influenza vaccinations until he is at least six months old, if his mother was given influenza vaccine before foaling. The young horse can be vaccinated for influenza at six to nine months of age, with two or more boosters given at four-week intervals after that. 

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