



HEALTH ZONE

Care of Newborn Foals in Bad Weather

BY HEATHER SMITH THOMAS

The first hours of life are critical for the foal's survival and future health. Usually a healthy newborn has no problems, but sometimes severe weather presents challenges. Dr. Peter Sheerin, owner of Nandi Veterinary Associates in New Freedom, Pa. (an equine practice with a strong emphasis on reproduction), says one of the biggest things we worry about in newborns is their ability to regulate body temperature.

Cold Weather

"Ideally foals should be born into a protected environment with plenty of bedding, minimal drafts, and not too cold," Sheerin said. "People wonder about use of heat lamps, foal blankets, etc., but this should be evaluated on an individual basis. If it is really cold, a foal may initially need heat lamps, but then the question is for how long. This would be on a case-by-case

basis. There are pros and cons regarding blankets. If it's extremely cold or if there's a drafty barn, a blanket may be beneficial but then we have to make sure the foal is adapting to the blanket, able to get up and down and ambulate normally," he said. "We don't want the blanket to inhibit the foal's movement or entangle his legs.

"The other question is whether the blanket confuses the mare and interferes with

her recognizing and nurturing the foal. This could be especially problematic for a first-time mother. If you put the blanket on the foal immediately, before she has a chance to bond with her new baby, you may create a problem.

"Another thing we worry about in cold or stormy weather is getting these young foals outside for exercise," he continued. "If they are cooped up in the stall, this can lead to problems, especially if the stalls aren't cleaned regularly and foals are lying around in that environment for extended periods. Air quality may be poor, with higher levels of ammonia. This can put foals at risk for respiratory problems, damaging young lungs and the cilia that line the airways.

"We also wonder what effect confinement and decreased exercise might have on the developing skeletal system, tendons, and muscles," Sheerin said. "If the foal is born with lax tendons and is down in the fetlocks, you want that foal to have a little bit of controlled exercise. If the foal is confined in a stall, it will take longer to get the needed exercise. If there's an indoor arena, the mare and foal could be turned out for short periods; you could juggle the foals in and out of that arena. If you don't have an indoor area for exercise, you have to evaluate the outdoor environment and decide whether you can turn them out safely and, if so, how long you want them to be out there.

"They will go out and run around for a little while and then want to lie down," he said. "You either need to provide a dry spot to lie down (putting out some hay or straw, if the ground is covered with snow) or bring them in before they become tired and lie down. If you do provide bedding out there, the mare and foal will urinate and defecate in it. This makes management of these foals more challenging.

"Right now some of our paddocks are fine for exercise because the snow is only six or eight inches deep, but there are others that have four-foot snow drifts from our big storm in January," Sheerin said. "You also have to consider the footing going from barn to paddock. What we

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ANNE M. EBERHARDT

Foals need to get out and exercise even in cold and snowy weather

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have now is temperatures warming up and snow melting, and then overnight it freezes. Everyone wants to turn the mares and foals out in the morning, but it's a sheet of ice where they have to go across to the pasture. You also have to consider the footing in the pasture; is it covered with ice or is it soft snow?"

If it is extremely cold, there are risks for hypothermia or even frostbitten ears.

"We have to limit the foal's exposure to those conditions. If it is cold enough or windy enough that you worry about frostbite, you could turn them out for a very short period or not at all," he said.

Most people who foal early in the year have some kind of shelter for foaling mares and newborns, though once in a while a mare might surprise you by foaling earlier than anticipated.

"If a mare foals out in the snow and you don't find that foal right away, you may have problems with hypothermia and frostbite," Sheerin said. "A multitude of problems can occur with hypothermia; the foal will be compromised and may not get up quickly enough to nurse before it becomes too chilled. Did it nurse efficiently to get adequate IgG levels? What illnesses or symptoms might develop after spending that time out in the cold?"

The foal may seem OK but then later go downhill. Those foals need to be closely monitored.

Dr. Eric Schroeder, assistant professor-Equine Clinical Track, department of Veterinary Clinical Sciences at Ohio State University, noted body condition of the foal can be a factor.

"Fat stores at birth are minimal," he said. "The newborn foal has less than two hours' worth of glycogen (stored sugar) that can be used in the immediate period between birth and nursing. That's why it's



Hypothermia and even frostbite are concerns if it is extremely cold

imperative for the foal to get up and nurse very quickly."

Environmental conditions may compromise the foal and make it more difficult for him to accomplish this.

"Here in Ohio, and in Central Kentucky, and other Thoroughbred breeding regions, temperatures may get down in the teens at night," Schroeder said. "Daytime temperature may be 30 degrees, but there's usually a wind, and wind chill to factor into this. A newborn can become cold very quickly. A chilled foal can become debilitated—with lack of sugar—if he doesn't have some energy coming from the mother's milk. That foal will just lie around and won't be able to get up. It takes quite a bit of energy to right themselves and scramble to their feet."

The foal has very thin skin and hair coat, compared to a calf, and can't handle much cold.

"There's very little hair coating on the

ears, for instance," he explained. "If the hair freezes down (losing all insulating quality) there is direct cold on the skin surface and the hair follicle.

"We may see loss of hair (in mild cases of frostbite) but also degrees of burn (through the different layers of the skin). We don't typically grade these injuries as burns, but they really are. It's the same kind of tissue damage or tissue death.

"We had a foal born outside last winter during one of those very cold spells, and he froze his ears and feet—and sloughed part of his foot," he said. "This is the extreme; we usually only see frostbite at the tips of the ears."

Loss of the ear or ear tip can occur with any foal (not just newborn) that spends a significant amount of time outside in extreme cold, especially if the ears are wet and then get cold.

Hot Weather

Hot weather at foaling time can present similar challenges, due to the foal's inability to thermoregulate during those first days of life.

"If foals are born when it is really hot outside, they may overheat and dehydrate because they don't feel like nursing," Sheerin said. "We need to keep them in an appropriate environment.

"If it's too hot outside, maybe we need to keep them in the barn, with fans going," he said. "We can turn them out in the evening after it cools off, so they can get the exercise they need. We don't want them out in the direct sun or whenever it's really hot because they will run around and get overheated. Then they will lie down out in the sun and become even more overheated. If they get dehydrated, they may not be strong enough to get up and nurse or to keep up with the mare if she travels around the field."

The young foal has a hard time handling heat. If it's hot and humid, the foal overheats quickly.

"If you are going to turn the mare and foal out, do it only in the early morning or late evening, in an area that has shade, and maybe some fans moving the air across them," Schroeder said.

Also make sure the mare has plenty of water so she is able to make enough milk for the foal to stay hydrated.

"Foals can become dehydrated very quickly when they don't nurse often enough—whether it's cold or hot," Schroeder said. "The typical foal will nurse for



COURTESY PETER C. SHEERIN

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— Dr. Peter Sheerin

very short periods of time (one to three minutes) but will nurse frequently and can consume 20% of body weight per day in milk.”

In hot, arid climates you may also be dealing with dust. This can damage the young foal’s respiratory system. Sheerin points out that in a warm climate there will also be more parasites than in a more moderate climate because there won’t be enough freezing to knock them back.

“A dry, dusty environment is also challenging, and this is where we initially saw foals infected with *Rhodococcus*—in the Southeast, Florida, and Texas,” he said. “Over time this pathogen has spread around the country.”

Optimize the environment as much as you can.

“Some people use air-conditioned barns for foaling mares or critically ill foals,” Schroeder said. “I’ve been in large veterinary hospitals in Texas where the barns are not fancy but are huge open areas with a large roof for shade, about 20 feet in the air. They are blocking the sun much higher, but have room for air flow, and a long lean-to effect on the sides to block the sun from all angles—like a giant umbrella over the foaling pens. Those barns also have two different types of fans. The big ones are high in the ceiling, with 10-foot blades that move slowly but keep the air circulating, pulling air into the barn and pushing it out through ceiling vents. There are also cross-ventilation fans as well; those are high-powered fans blowing the air horizontally across the surface.

“Some barns have a hip roof style that is built up higher—so that one fan runs one way and sucks the air up through the barn and the other fans blow across the animals,” Schroeder continued.

Breeding and foaling sometimes have to be timed more to the environment—breeding early in the year to avoid hot weather, in a hot climate, and perhaps a bit later in a cold climate.

Wet Weather

“Other challenges besides cold or hot weather include wet, or wet, windy weather,” Sheerin said. “If there is a lot of rain and mud, we worry about potential infections in the umbilicus if the foal is outside, lying in the mud. Moisture can also create skin problems and dermatological issues due to being wet all the time.”

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THE OHIO STATE UNIVERSITY



doors in a downpour.

“Any time foals become hypothermic, they probably won’t nurse the mare like they should,” he said. “In all of the different environments, we try to put the foal in the best conditions we can and not expose them to extremes if we can avoid it. By the same token we have to make sure we don’t baby them too much because this puts them at risk for other issues.”

You have to allow each youngster to be a horse while at the same time not exposing it to great extremes of environment. It’s a fine line and an uneasy balance, at times.

“And everyone looks at it differently, in terms of their own comfort level for what they are willing to expose the foal to,” Sheerin said.

Young foals are fragile during the first hours and days of life, so having a healthy environment is crucial.

“The racehorse owners want foals born early to theoretically have a competitive

advantage,” Sheerin said. “Twenty years ago when I went through vet school someone looked at the birth dates of horses that had won the Kentucky Derby (gr. I), and there were a lot more April-May foals than January-February foals.

“Now, however, with fewer people breeding to race and more people breeding to sell, they want a bigger, more mature-looking foal or yearling to go through those sales. So they are trying to have them born as early as possible—which may mean during cold or wet, stormy weather,” Sheerin continued.

“Wet weather is hard on the young foal’s respiratory system,” said Schroeder. “I’m not opposed to turning them out, but they need some type of shelter, so they will stand inside it with mom. Worst case scenario is cold, rain, and wind. This will compromise the foal very quickly. Dry cold or snow doesn’t bother them as much as cold, wet rain, or wet snow.”

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WARMING A COLD FOAL AND DEALING WITH FROSTBITE

“If the foal is chilled and needs to be warmed, I am not a big fan of heat lamps,” said Dr. Eric Schroeder, assistant professor-Equine Clinical Track, department of Veterinary Clinical Sciences at Ohio State University. “They only heat the surface of the skin and not the core body. I’ve also seen too many mishaps—everything from barn fires to a weak foal lying under a heat lamp and developing thermal burn. A safer way to warm a foal is to use straw bedding, fluff it up around the baby, and put a blanket on the baby. If you are going to use a heat lamp, make sure someone can sit right there with the foal. They make safety heat lamps now that turn themselves off if they tip over or have any change in their normal position. This is good, but they could still set the stall on fire.

“If you believe the foal is ill (not just chilled) and needs to come to the hospital, put the foal in the warm cab of your vehicle and the mare in the trailer,” he said. “She won’t be happy, but the baby needs to be in the warm back seat of the truck. A quick way to kill a compromised foal is to put it in a cold metal trailer and drive down the road, with cold air moving through the trailer. It may be a little messy afterward in that back seat, but the foal is worth it! To lose that foal now is a huge loss. If the foal is truly down and out and you’ll be bringing it to the veterinary hospital, use heated water bottles under the blanket with a recumbent foal. The key is warming the environment rather than trying to directly warm the foal.”

If you think the ears may be frostbitten, it’s usually too late to save the ears or ear tips, unless you are there when the mare foals and can deal with it quickly.

“If you can get the mare and foal inside quickly, and dry the foal, this is the best tactic,” he said. “Lots of towels, drying the foal, and getting the mare and foal into a windbreak area out-

side if you can’t get them into a barn, can help.”

Immediate drying is better than trying to thaw frozen ears with hot water; the latter can damage the skin even more.

“Most of the time when I am dealing with frostbite, it is well after the fact; the tissue is already traumatized and some of it will die,” Schroeder said. “Hair loss is the quickest thing that happens, then one area of the skin feels colder, due to loss of blood circulation. The nerve endings are dying and skin becomes leathery and sloughs away. The foal may lose just the tips or even the top third of the ear.”

The feet can also be damaged, especially the soles.

“Foals are born with soft ‘angel feathers’ over the bottom of the feet—material that comes off as the foal gets up and walks around. This material is very soft, and if it gets too cold this can lead to damage on the bottom of the foot,” he said. “The cold foal we dealt with last year frostbit his feet so badly that small pieces of bone inside the foot actually died and we eventually had to remove those dead pieces. We’ve worked with him now for a year and he’s doing fine. If you take radiographs of his feet, the solar margin of the coffin bone (P3) doesn’t look normal, but he is sound. He has stumped-off ears, but he is healthy and spry. He is not going to look pretty because of his ears, but he is sound enough to be an athlete.”

Once frostbite occurs, there’s not a lot you can do.

“The worst thing to do is use really hot water because that acts as a burn upon a burn,” he said. “It’s more detrimental than just trying to warm the tissue.”

If the base of the ear is warm to the touch but the whole tip is cold, the blood circulation has already been compromised and that part will slough off.

By Heather Smith Thomas



CLAIRE NOVAK

Hot weather also offers challenges to young foals

If the foal is dry, with hair coat fluffy, the moisture doesn’t get down to the skin. But once the hair is thoroughly wet, it loses all its insulating quality and the foal chills quickly.

Check Body Temperature

Schroeder advises horse owners and farm managers to have a thermometer and know what a normal foal’s temperature should be.

“A digital thermometer you get at the grocery store works fine,” he said. “Rectal temperature is still the best way to obtain reliable temperature. We’ve tried other styles of digital thermometers, such as the quick-read forehead thermometers, but they don’t work very well for horses.

“This time of year a normal foal should have a temperature right around 100 degrees. In summer it may go as high as 102. But if you have a baby in January, February, or March and weather is cold, and baby has a temperature of 102, that’s a fever. The foal is hot because of a disease, not because it’s hot in the barn.”

A sub-normal temperature is equally concerning.

“Foals that are cold won’t nurse, and won’t stand up,” Schroeder said. “They lie around and chill even more. If they are not nursing, they can’t generate enough body heat to keep warm; they get behind quickly.” **BH**