

Caring for Newborn Calves: First Impressions Last!

Dr. Charlotte Winder
January 2018

The care calves receive on their first day of life is a major determinant for their future health and productivity. A substantial portion of early life mortality is caused by risk factors present on the day of birth, including colostrum feeding and difficulties associated with calving. Dystocias (difficult calvings) not only increase the risk of stillbirths, but impact calves born alive by reducing their early life performance and increasing risk of illness and death. Calves born to dystocias are less vigorous at birth, meaning they are less likely to stand, less likely to suck well, and may have difficulties maintaining their body temperature and tissue oxygenation. This is especially important in our current cold weather! These calves may have experienced hypoxia (low oxygen) during birth, and may have pain and inflammation from trauma during the difficult calving. It is not uncommon for calves from very difficult calvings to have rib fractures, which may not be easy to identify. Recognizing calves that may benefit from additional care early on can help reduce the chances that these calves will suffer from poor performance, illness, or death.

What is normal for a newborn calf?

A vigorous newborn calf can right its head almost immediately after birth, can sit up within minutes, and is able to stand within the first half-hour. Weak calves have prolonged righting and standing times, are slow to suck, and may have other indicators such as meconium staining, slow heart or respiratory rates, or pale mucous membranes. A full calf vitality scoring chart developed by Drs. Murray-Kerr and Villettaz Robichaud is available at

https://www.progressivedairy.com/downloads/2012/11/1712pd_lee_vigor.pdf

Reviving weak calves

The goal of reviving weak calves is to stimulate them and increase their respiratory and heart rate. First, sit the calf in sternal recumbancy, where the calf is sitting up on its chest – this is the best position for calves to be able to breathe easily. You can ‘frog leg’ the hind legs to help keep the calf from flopping over on one side. Next, vigorously rub the topline of the calf with a dry towel. This stimulates a ‘gasp’ reflex and encourages breathing. Rubbing the eyes, ears, and nose helps as well. Keep rubbing the calf until it is breathing well (> 24 breaths per minute) and can hold its head up. A healthy calf should shake its head and may snort or sneeze if you place a piece of straw up its nose, while a weak calf may not react to this at all. Another way to stimulate breathing in a weak calf is to pour a small amount of icy water into the ear – this also should stimulate a ‘gasp’ response from the calf.

Hanging or holding calves upside down after calving is NOT a good idea! While doing this typically results in a lot of mucous and fluid being expelled from the calf,

the vast majority of this comes from the stomach, NOT the lungs. When calves are upside down, all their internal organs press on the diaphragm, which makes it very difficult for them to breathe. Keeping calves in sternal recumbancy with vigorous rubbing is the best way to stimulate breathing and revive weak calves.

Special needs for calves from dystocias

All calves should be kept warm and dry, but this is especially important for weak calves, as their ability to regulate their body temperature in cold weather may be impaired. Normal calves generate body heat through movement, and weak calves may stay laying down without much physical activity. Ensuring the calf is dry and placed in a deep bed of straw, where the hocks and knees are not visible when the calf lays down, will help the calf retain its body heat. Calf coats also help reduce the amount of energy the calf spends to stay warm. Weak calves often are unable to suck well, and so providing colostrum via an esophageal tube may be necessary. Make sure all persons on your farm feeding calves are trained on how to use this equipment properly, and that it is cleaned after each use and replaced when cracked, scratched, or worn. Colostrum is not only a vital source of immunoglobulins (necessary to fight disease), but is also rich in energy and will assist weak calves with thermoregulation. It is of benefit to feed all calves adequate volumes of good quality colostrum as soon as possible after birth, but again this is especially important for weak calves. Use of a Brix refractometer is an excellent way to check colostrum quality before it is fed to newborn calves (> 22 % on Brix scale).

Treating calves born to a dystocia with an anti-inflammatory drug at birth has been shown to improve vigor score and sucking reflex, and improved weight gain. These calves likely have experienced some amount of trauma during the birth process, and a non-steroidal anti-inflammatory drug (NSAID) will alleviate the pain and inflammation associated with this. Speak with your veterinarian to determine if an NSAID could be included in your protocol for caring for calves born from difficult births.

Reducing pathogen exposure

Exposure to bacteria early in life can lead to very negative consequences, which may occur in the short-term, like enterotoxigenic *E. coli* diarrhea, or longer-term impacts such as Johnes' disease. Dedicated calving pens, cleaned between uses, helps reduce exposure, as does removing calves immediately or segregating them into clean containers within the calving pen. While manure contamination of bedding is readily apparent, contamination of colostrum, feeding equipment, or other equipment calves contact may not be easily visible. Having your veterinarian test bacterial counts on as-fed colostrum is a great way to make sure your colostrum harvesting protocol is working well, and your feeding equipment is clean. Aim for a total count of less than 100,000 cfu/mL, and a coliform count of less than 10,000 cfu/mL. Bacteria-laden colostrum is a primary source of infection and also reduces the calf's ability to absorb colostral immunoglobulins.

Equipment used to move calves, such as carts or trailers, or devices like calf warmers, may not have visible manure contamination but can still harbor bacteria. Calves' skin will pick up bacteria from the calving pen, and transfer this to any surface the calf is in contact with. Over time, this can build up and can be the source of disease outbreaks. Ensure all equipment calves contact, even if no manure is visible, is cleaned in between uses.

Investing in early life care

Investments in optimal care for calves on day one have substantial payouts in terms of calf health and performance. Time and money used to provide excellent early life care reduces the amount of illness, poor performance, culling, and losses later on. Reducing the amount of overall illness from infectious disease helps everyone, as decreasing infection pressure means the next calf born will be subject to less bacterial and viral challenges than ones born in a barn with significant levels of disease. We don't get a second chance to make a good first impression on that next newborn calf! ☺

Pictures

'Calf coats' picture

Calf coats and deep bedded straw that calves can nest into helps reduce the amount of energy needed to stay warm, which can instead be spent on immune function and growth.



'Brix refractometer' picture

A Brix refractometer (optical pictured, but digital is also available) is a quick and easy way to check if colostrum is of high enough quality for a first feeding or to store as frozen. Poorer quality colostrum is still a good source of nutrition and can be fed to older calves. Talk to your veterinarian about using a refractometer on your farm!

