



Navel Care for Beef x Dairy Calves

The umbilical cord is the lifeline between the cow and her fetal calf. Fetal oxygen, nutrients and wastes are exchanged through the umbilical cord. The umbilical cord is connected to the cow's placenta and passes through the calf's abdomen at the navel.

The cord includes a pair of umbilical arteries and a single umbilical vein. At birth, the cord is torn away from the placenta, but remains attached internally to the calf's liver and circulatory system. The umbilical arteries and vein serve no purpose once the calf is born and they soon atrophy. Before the cord is completely dried out, it may allow disease-causing pathogens from the environment to enter the abdomen of the calf. These pathogens can cause a localized navel or liver infection and may be disseminated in the calf resulting in joint, respiratory, or systemic infection and death.

To protect a calf from a navel infection, or 'navel ill', provide a clean, dry maternity area and properly disinfect the umbilical cord and navel shortly after birth. Keep the calf in a clean, dry environment until the umbilical cord dries and atrophies.

Start with clean maternity pens and calf housing

Start with a clean maternity pen area and minimize the calf's time in the maternity area after birth to prevent neonatal infections. Wet, dirty calving areas foster the growth of bacteria that can invade the newborn calf's navel or mouth and create a pathogen load that overwhelms the calf's naïve immune system (1).

One application of navel disinfectant may be enough when calves are born in clean, dry environments. If the calf is exposed to dirt or manure, then the navel should be disinfected daily for the first three to four days of life to help prevent infection. It is critical to provide a clean, dry environment during the calf's first week of life while the umbilical cord atrophies.

Disinfect the cord and navel as soon as possible after birth

The umbilical cord and navel of the calf should be disinfected as soon as possible after birth by submerging the entire cord and the navel with an effective disinfectant. Disinfecting a lot of belly skin around the navel is not necessary, as doing so adds to the expense. Also, disinfectant products contain alcohol or other caustic ingredients that cause skin irritation. Wear gloves and eye protection when applying navel disinfectants.

The sooner the navel is disinfected after birth, the better. Navel disinfectant that has been placed into a squeeze bottle may be applied to non-standing newborns. Place the cord on a paper towel and apply disinfectant to soak the cord and paper towel. Use a gloved hand to wrap the entire cord and navel with the soaked paper towel. Calves that are standing may have the solution applied by using a dip-cup. Watch our video that demonstrates navel dipping.

It is important to note that teat disinfectants used for milking are not effective for navel disinfection. There are several products on the market that can be used. The active ingredient 'gold standard' for navel disinfection is a 7% iodine tincture as it provides both disinfection and drying of the cord. The cord's wicking ability decreases as the cord dries and shrivels. Other active ingredients used for navel disinfection include chlorohexidine, sodium hydroxide, and alcohol. Seek advice from your

veterinarian to select a research-based product that provides the correct concentration of the active disinfectant.

Monitor the navel care program used on the farm

Check every calf daily during its first week of life to determine the success of the navel care program. Calf health scoring charts (Figure 1) and an app that includes evaluation of the navel are available from the University of Wisconsin School of Veterinary Medicine (2).



Calf Health Scoring Chart

Farm Name: _____ Date: _____

Treat for Respiratory Disease when 2 of 4 categories score greater than 1.										
Treat for Otitis when Ear score greater than 1.										
Treat for Scours when Fecal score greater than 1.										
If Navel or Joint scores greater than 1, discuss treatment options with your veterinarian										
Animal ID	Age	Nose	Eye	Ear	Cough	Temperature	# Resp. Cat. ≥ 2	Fecal	Navel	Joint

Figure 1: Calf health scoring sheet available from University of Wisconsin School of Veterinary Medicine

The goal is to have less than 1% of the calves on your farm develop navel infections. Work with your

veterinarian to develop a treatment protocol for the first signs of navel infection. Monitor records to quickly identify when a product or the navel disinfection procedure being used is not meeting goals. Worker training and monitoring is also required for successful navel care.

A non-infected umbilical cord is

- shriveled and dry
- smaller in diameter than that of a pencil

A non-infected navel

- is not swollen
- does not have heat coming from it
- is not painful when touched
- does not have pus, discharge, or odor

Navel condition at transport

Calves should not be transported off the farm with 'wet' navels. Doing so indicates that the calf is less than one week of age and therefore extremely vulnerable to disease risks that occur during transportation and relocation. Wait to transport until after the umbilical cord has fallen off and there is no evidence of navel infection.

Authors: University of WI - Division of Extension Agriculture Educators: Jackie McCarville, Heather Schlessler, Ph.D., and Ashley Olson

©2020 Board of Regents of the University of Wisconsin System

Reviewed by

Sandy Stuttgen, DVM, Agriculture Educator, University of WI Division of Extension
 Larry Baumann, DVM, Ph.D., Extension Specialist, University of Wisconsin River Falls

References

1. National Dairy FARM (Farmers Assuring Responsible Management) Animal Care Reference Manual. Retrieved July 2020. <https://nationaldairyfarm.com/wp-content/uploads/2018/10/Version-3-Manual-1.pdf>
2. Calf Health Scoring Chart. Food Animal Production Medicine University of Wisconsin School of Veterinary Medicine. Retrieved July 2020 <https://www.vetmed.wisc.edu/fapm/wp-content/uploads/2020/01/CalfHealthScoringChart-2018-EN-std.pdf>