

Selected Treatment Protocols

If after any treatment if there is no response in 3 days, or the animal worsens the vet should be called immediately for consultation

DOWN COW

If ears are cold and there is no visible sign of injury, administer 500 cc CMPK IV, allow 15 minutes to pass, try to get the cow up. If she does get up, administer an additional 500 cc of 23% Calcium glutamate SQ or IV in 6 hours.

If the cow remains down and appears injured, get help to roll the cow on the plywood cart or into the Cat Loader bucket and move to the bedded pack with the skidloader or Cat Loader. Make sure water and feed is available. Call vet.

Any down cows should be checked every 2-3 hours and given fresh feed and water. She should be rolled 2x/day.

DIARRHEA IN ADULT CATTLE

Maxi-sorb 2 boluses twice daily for 3 days OR Pink Bismuth according to label dosage
Yeast 1 bolus twice daily for 3 days

ANY EYE LESION (All cattle)

If an eye is tearing and the lid is shut something is irritating the surface of the eye. After properly restraining the animals head, gently examine the surface of the eye for foreign matter or injury (ulcer). If irritation is thought to be due to foreign matter try to carefully remove any debris and gently flush the surface of the eye with sterile saline (20-30cc). Regardless of the cause, if the surface of the eye is injured, call the vet.

PINKEYE (All cattle)

Cattle or calves with pinkeye can be treated with LA-200 (4.5cc per 100 lbs SQ) Two doses 48 hours apart. (28 day meat withhold, 96 hours milk withhold)

ROUTINE HOOF AND FEET CARE (All cattle)

Routinely trim feet at dry off and around 50 DIM. Lamé cows will be done as needed. All lactating animals will walk through a footbath while coming from the milking parlor on the following schedule: Monday PM and Tuesday AM (1st batch) and Tuesday PM and Wed AM (batch 2). Breeding age heifers will go through the footbath on Wednesday AM once per week as needed. The footbath solution consists of 15 lbs of copper sulfate and ¼ gallon of footbath booster.

MANGE (All cattle)

Animals are treated once yearly in the fall. Cydectin is used.

PAIN MANAGEMENT

Pain control is needed for cattle to reduce, minimize, or eliminate any pain that may be experienced due to medical procedure or natural occurrence of injury or disease.

Signs of pain in cattle include:

Behavior changes: avoidance, flight, vocalization, kicking, flicking tail, facial expressions, change in stride, depression, increased lying

Physiological changes: inflammation, tissue damage, increased stress hormone levels, inappetence.

Cattle may need pain control for the following situations: Dehorning & disbudding, lameness, surgery, Difficult calving, Severe mastitis, or pneumonia, castration.

Pain mitigation may only be used when directed by management for injury or lameness unless otherwise noted in specific SOP's.

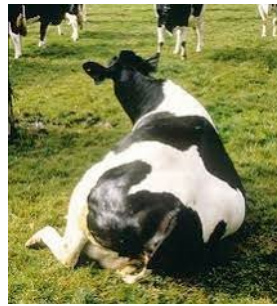
	Flunixin meglumine (Banamine)	Aspirin
Dosage	2.2 mg/kg 2cc/100lb	50-100 mg/kg 3-5 boluses (240 grain) in adult cattle
Frequency	8-12 hours Up to 3 days	4-8 hours Up to 3 days
Route of Administration	Intravenous (IV) only	Oral
Withholding	36 hours milk 4 days meat	No meat or milk withhold

MILK FEVER is a sudden, dangerously low drop in blood calcium levels. It affects high producing fresh cows in their second lactation or greater, and is usually seen within 72 hours of calving, but can occur before calving. Affected cows can show a range of clinical signs. In a mild case, the cow may stand but often wobbles and staggers until she falls; she can have muscle twitches and tremors. In a more typical case, the cow lies on her breastbone with her head tucked in toward her flank, she is depressed, and seems partially paralyzed. In an advanced case, the cow will lie flat out on her side as she approaches unconsciousness, coma, and death.

Goal <3% for cows > 2yrs of age

Signs of Milk Fever

- ❖ Down within 3 days of calving
- ❖ S-shaped curve of her neck
- ❖ Muscle tremors
- ❖ No manure
- ❖ Not chewing cud/no rumen contractions
- ❖ Ears can be cold or warm
- ❖ Bloat



Milk fever cow with characteristic S-shaped curve to her neck

Milk Fever Treatment Protocol

1. Give 1 bottle (500ml) of CMPK IV (jugular vein only) **slowly** over 5 minutes. Use a sterile 16/14G 2.5-3" needle and clean gravity tube. *DOUBLE CHECK that the right source of calcium is being used for IV/SQ. If unsure, check with supervisor. Rinse out gravity tube with warm tap water before every use.
2. Give 1 bottle (500ml) of 23% Calcium Gluconate SQ
3. If not up in 2 hrs give 1 bottle Calcium 23% IV
4. If cow is not up in 2 additional hours, call CHHS. Be sure to also examine her for other conditions that could cause her to go down, such as coliform mastitis, severe metritis, or musculoskeletal injuries.

If the cow is down and you need to give IV fluids, secure her head with a halter and stretch her neck back by tying the rope to her back leg above the hock. This will result in a position similar to the one pictured here. Be sure the needle is IV by using a clear IV tube. Blood should flow in the tube when the bottle is held below the needle.



RETAINED PLACENTA is often easily diagnosed by the presence of cleanings (fetal membranes) seen hanging from the vulva 12-24 hours after calving. Cows with a history of abortion, dystocia, milk fever, or twinning are at an increased risk of having a retained placenta. In most cases, there are no signs of systemic illness, but cows with retained membranes are at an increased risk of developing metritis, ketosis, and mastitis.

Goal <8% of the herd

Signs of Retained Placenta

- ❖ Membranes hanging from the vulva 12-24 hours after calving.
- ❖ Watch for development of metritis (uterus infection)!!

Retained Placenta Protocol

1. If she is second lactation or greater and has not cleaned within 6 hours of calving, administer 1 bottle of 23% Calcium IV or SQ **slowly** over 5 minutes and give 1cc oxytocin IM.
2. Monitor her closely for signs of metritis and treat any developing metritis early, especially if she develops a foul-smelling vaginal discharge.
3. If after 48 hours she still has not cleaned, refer to the metritis page and treat the cow if needed for milk or severe metritis. Do Not Manually Remove the Placenta.



METRITIS is an inflammation of the uterus famous for its characteristic foul-smelling, thin , maroon-colored vaginal discharge. It is often accompanied by a fever, but metritis can be mild to severe. Metritis usually occurs 3-12 days after calving, and although some vaginal discharge can be normal during this time, foul-smelling discharge is always abnormal. Often metritis cows have a history of a difficult calving, retained placenta, or concurrent systemic disease.

Goal: <5% Severe Metritis <15% Mild Metritis

Signs of Metritis

- ❖ 3-12 days fresh
- ❖ Foul-smelling, thin, maroon-colored vaginal discharge
- ❖ Decreased milk yield
- ❖ +/- fever
- ❖ +/- Decreased feed intake

Mild Metritis Treatment Protocol

If cow has a stinky discharge +/- fever but is eating well, has no drop in milk or sunken eyes:

1. Naxcel (1cc per 100lb) IM once daily for 3-5 days

Severe Metritis Treatment Protocol

If a cow has foul-smelling discharge, is slow on feed, had decreased milk & is dehydrated (sunken eyes):

1. Polyflex 24-32cc for 3-5 days (2cc per 100lb) OR Penicillin (3cc per 100lb) for 4-5 days
2. 4 CMPK pills OR 1 tube calcium once daily for 2 days OR 1 bottle 23% calcium SQ
3. Banamine (flunixin) – 12-18cc IV once daily for 2-3 days (1.0cc per 100 lbs.)



Examples of discharge from cows with metritis

PNEUMONIA is an inflammation of the lung tissue caused by various infectious viruses and bacteria. Factors such as environmental conditions, nutritional plane, and an animal's immune status are also important in the development of the disease. Along with the many causes and factors involved, pneumonia can present with varying severities, from mild to rapidly fatal.

Signs of Pneumonia

- ❖ Rapid breathing
- ❖ Coughing/panting/wheezing/increased respiratory effort
- ❖ Nasal discharge, often a thick mucus
- ❖ Loss of appetite
- ❖ Fever

***Generally at least 3 of the signs listed are present in a cow with pneumonia



Coughing and increased respiratory effort with neck stretched out; this is an attempt to open the airways and breathe better.

Pneumonia Treatment Protocol

For Mild Pneumonia:

1. Systemic Antibiotics: Naxcel or Excenel 24-32cc IM or SQ once daily for 5 days (2.0cc per 100 lbs.)
2. Banamine (Flunixin): 12-16cc IV once daily for 2 days (1cc per 100 lb)
3. Call Centre Herd Health Services if the cow is not better in 3 days or gets worse during treatment.

For Severe Pneumonia:

1. Call Centre Herd Health Services.

KETOSIS is a common metabolic disease of dairy cattle in early lactation characterized by a state of negative energy balance where the cow is essentially mobilizing body fat faster than the liver is able to metabolize it, resulting in the formation of ketone bodies that further suppress the cow's appetite. Type I ketosis can develop from almost anything that causes decreased feed intake in early lactation, such as: metritis, mastitis, lameness, overcrowding, under-feeding, and especially a DA. Once feed intake is low enough that it no longer matches the cow's requirements for milk production, body fat is mobilized quickly and ketosis develops. Type II ketosis commonly occurs less than 3 weeks after calving in cows that are overfed in the dry period, fat at calving or lost weight in the dry period.

Goal: 2% clinical ketosis

Signs of Ketosis

- ❖ Fresh cow 5-50 DIM
- ❖ Decreased feed intake or off-feed
- ❖ Decreased milk production
- ❖ Lethargic
- ❖ Ketones in urine/blood/milk
- ❖ An "empty" looking abdomen/tucked-up at the flank
- ❖ No fever



Cows that are obese at calving with body scores of 3.75 – 4 or more can have more problems with Retained Placenta and Ketosis

Ketosis Treatment Protocol

Mild Ketosis-If the ketone test is positive but the cow is eating, her udder is full, and she appears bright and alert.

1. Give 10 oz propylene glycol (orally) and 20cc B Vitamin Complex (IM) per day for 4 days
2. Monitor her progress and check daily for signs of a DA

Severe Ketosis-If cow is unresponsive to propylene glycol or appears sick, is off-feed, and is positive on ketone test:

1. Check for DA daily and especially if she has a severe drop in appetite
2. Give 1 bottle (500 ml) of Dextrose IV with 20cc B Vitamin Complex added to the bottle daily for 2 days
3. Give 10 oz propylene glycol and 20 cc B Vitamin Complex (IM unless in IV) daily for 6 days.
4. If cow is unresponsive after 4 days call Centre Herd Health Service.

Nervous Ketosis: If a cow is ketotic and showing nervous signs such as abnormal licking and chewing (especially chewing on a pipe), incoordination, gait abnormalities, aggression, and bellowing: * Any cow showing neurologic signs had the potential of having rabies*

1. Treat for severe ketosis as listed above
2. Give 1 bottle of CMPK IV

DISPLACED ABOMASUM (DA), aka “twisted stomach”, is usually seen in early lactation, especially in cows with a history of metritis, mastitis, milk fever, nutritional imbalance, lameness, or a systemic illness that caused them to go off-feed. The abomasum (stomach) normally lies low in the abdomen, but if it’s muscular wall loses tone and fills with gas, the abomasum can slide up the left (LDA) or right (RDA) side of the abdomen. With this displacement, the entrance and exit to the abomasum become slightly kinked. The kinks together with the gas and fluid distension, slow the passage of food and ultimately result in a sick cow.

Goal: <5% of the herd

Signs of a LEFT Displaced Abomasum (LDA)

- ❖ Early lactation usually BUT can happen throughout the entire lactation and even during the dry period
- ❖ Localized, high pitched ping on the left side (see picture)
- ❖ Off-feed
- ❖ Drop in milk production
- ❖ Ketotic (may be recurrent ketosis that doesn’t respond to treatment)
- ❖ “Sprung” last rib on left side (more easily seen when viewed from behind)
- ❖ Manure is reduced in quantity and may be more firm or more fluid than normal
- ❖ +/- Sunken eyes

Outline of LDA Ping Area

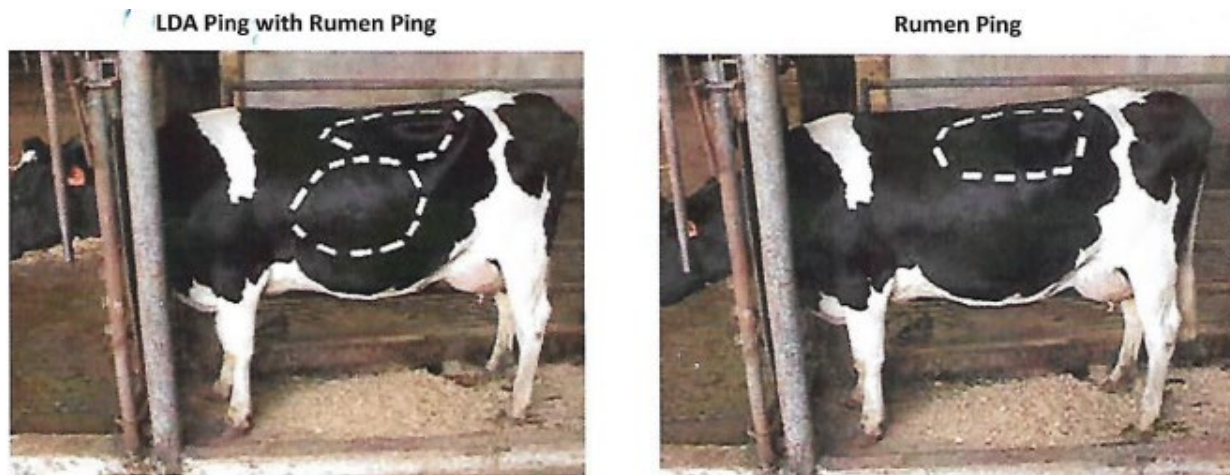


LDA Treatment Protocol

1. Call Centre Herd Health to schedule surgery.

A “ping” is a clear, sharp, high-pitched, metallic sound created by flicking over an internal organ that has a gas/fluid interface. To ping the left side of the cow, listen with a stethoscope while you firmly flick the cow. The **LDA ping** is most commonly located between ribs 9 (5th rib from the back) and 13 (last rib) in the middle to upper third of the abdomen; however, the ping can be further down or back, or both. A DA can also be diagnosed by hearing fluid splashing in the abdomen while blotting into the abdomen.

Not all pings on the left side are indicative of an LDA, so it is important to determine the location of the ping. In the pictures below, notice that the rumen gas cap ping will be heard higher up and further back than a simple LDA ping. However, it is also possible to have both a LDA and rumen gas cap ping.



An RDA is similar to an LDA; however, with an RDA, there is a greater chance that the cow can develop a much more serious condition. It is important to recognize the signs of an RDA early to increase the chances for a successful outcome after surgery.

Signs of a **RIGHT Displaced Abomasum (RDA)**

- ❖ Right-sided ping extending forward past or to the 8th rib (6th rib from the back). The ping should not extend much behind the last rib.
- ❖ Increased heart rate (the higher the heart rate, the more severe the condition of the animal)
- ❖ Depression
- ❖ Cold to the touch
- ❖ +/- Sunken eyes
- ❖ Without therapy, often becomes recumbent within 48-72 hr and death follows

RDA Treatment Protocol

1. Call Centre Herd Health Services.

On the right side of the cow, pings may also be heard due to the presence of gas in other organs, such as the cecum and spiral colon. Once again, the location of the ping is an important factor in determining what exactly is making the ping



Cecum Ping



Spiral Colon Ping