

Physical Exams of Cattle

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Physical Exams

- A physical exam is a routine medical procedure in which the physical symptoms of a patient are measured in order to determine if those symptoms fall within the normal range of that animal.
- Physical exams should always follow a consistent routine – in most cases, every examination should follow the same order of steps.
- Even if you find a suspicious symptom, you should not stop the examination – there may be more symptoms to discover!



Source: itsthelittlethings.info



Steps of a Physical Exam

- The first step of an animal physical exam is to speak with the owner in order to get a history of the patient.
- The following 8 questions should always be asked:
 1. *What is the problem? Why did you call?*
 2. *What symptoms have you observed?*
 3. *When did this problem start?*
 4. *Has this affected her feed consumption?*



Questions (cont.)

5. *Has this affected her milk production or rate of gain?*
 6. *How long ago did she calve?*
 7. *How old is she?*
 8. *Do any other animals have similar symptoms?*
- Follow-up questions should also be asked to get all needed details.



Steps of a Physical Exam

- After you've taken the patient history, you should begin to examine the animal's head and neck.
- You should assess the following:
 - **Ears** – erect or drooping?
Hot or cold?
 - **Eyes** – sunken or normal?
Emotional status?
 - **Nose** – does she have any
mucus discharge?
 - **Mouth** – is she grinding her
teeth? Circulation?
 - **Jaw** – does she have any
swelling?
 - **Neck** – does she have
swollen lymph nodes?
 - **Skin** – is she dehydrated?



Source: cdfa.ca.gov



Ears & Eyes

- **Ears** are a quick indicator of the cow's physical well-being.
 - If her ears are cold, there is a problem. If her ears are warm, there might still be a problem.
- **Eyes** are a quick indicator of both hydration and of her emotional status.
 - Are her eyes normal or are they sunken?
 - If they are sunken, the animal is dehydrated.
 - Do her eyes indicate if the animal is scared or in pain?
 - Emotion can be read most easily from the eyes.



Nose & Teeth

- When examining the nose, look for **mucus** (i.e. a runny nose)
 - Is it clear (good) or solid-colored (typically bad)
 - Is it clean (good) or bloody (bad)



Source vet.uga.edu

- After checking the nose, listen near her **mouth**.
 - Is she chewing her cud (very good)?
 - Do you hear a high-pitched grinding noise (bad)? If so, this is a sign that the cow is in pain.
 - Is she compulsively licking or chewing, or are there any other signs of emotional/nervous problems?



Capillary Refill Time

- When checking the mouth, you should also check the capillary refill time of the animal.
 - **Capillaries** are the smallest blood vessels that link arteries to veins.
 - They line the surface of the skin.
- To perform the **Capillary Refill Time** (CRT) test, gently and carefully lift the lip of the animal (make sure the animal is properly restrained!)
 - Gently push on the animal's gums and release.
 - The color of the gums should go from a whitish color to its normal pink in 1-2 seconds.
 - A slower time indicates shock or dehydration.
 - A time under 1 second indicates heat stroke or shock.



Source: eqmusclerelapse.com

Yes – I know this is a horse...I couldn't find one with a cow ©



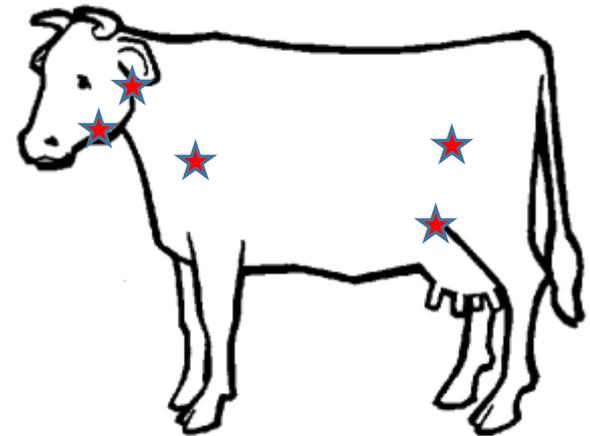
Jaw and Neck

- **Check her jaw** – is there any swelling or fluid build-up (bad)?
 - If so, this could be a sign of poor circulation or low electrolytes.



Source: nodpa.com

- **Neck** – check the lymph nodes (they can be found along the jaw-line below the ears).
 - **Lymph nodes** are glands full of white blood cells; they move lymphatic fluid (immune system-fluid) throughout the body
 - If the lymph nodes are swollen, this is a clear sign that the animal is fighting an infection or injury.
 - ☆ = Lymph node



Skin & Dehydration

- To check for **dehydration**, you should perform a pinch test on the skin.
 - To perform the pinch test, firmly but gently grab skin between your thumb and forefinger.
 - Pull the skin gently and then immediately release.
- Under normal conditions, the skin should immediately snap back to its original position.
 - The return to its normal state should be instantaneous.
- If the animal is dehydrated, the skin will slowly return to its original state.
 - It will behave sort of like cold bread dough



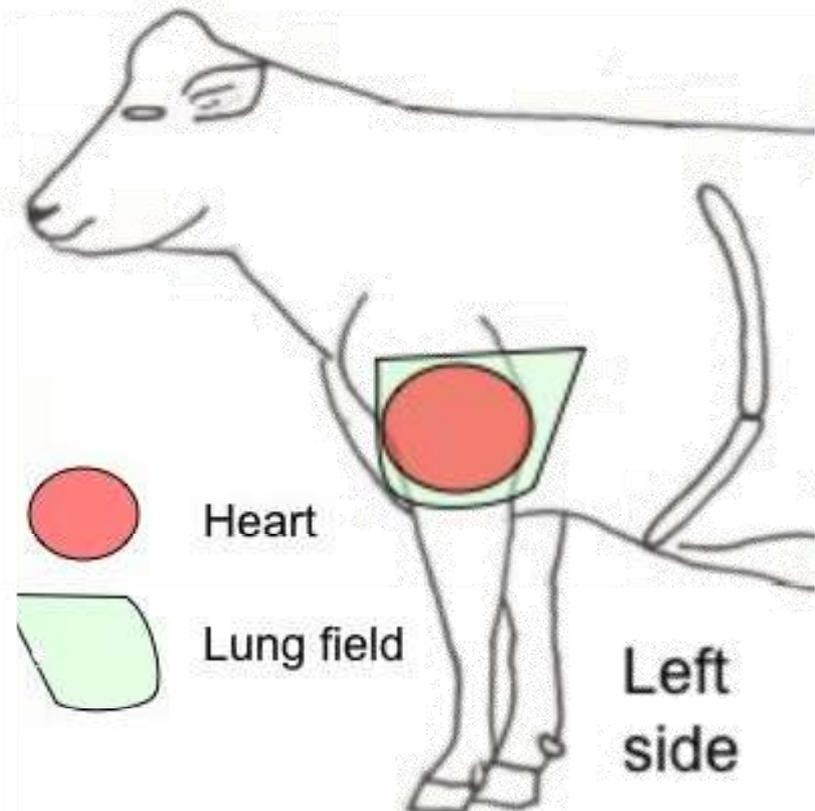
Symptoms & Diseases

- Common symptoms include...
 - **Cold ears** → hypocalcemia (milk fever, or dangerously low levels of calcium in the blood)
 - **Sunken eyes** → dehydration
 - **Swollen jaw** (bottle jaw) → low electrolytes or blood protein levels; possible heart failure
 - **Swollen lymph nodes** → infection, illness, or injury
 - **Nasal discharge** → infection or illness
 - **Chewing her cud** → she is feeling ok



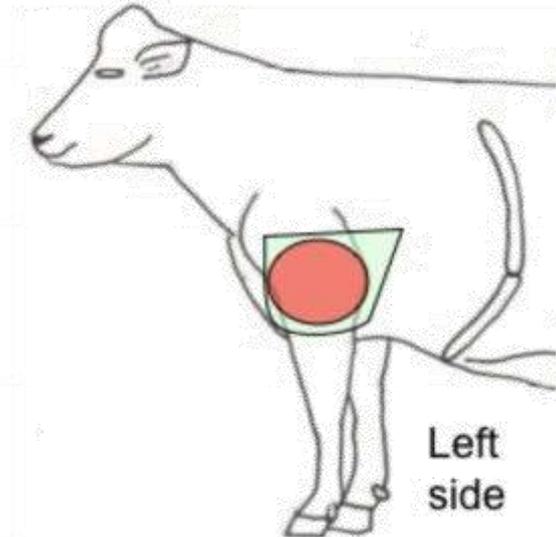
Steps of a Physical Exam

- After examining the head, you move to **the left-hand side** of the animal and examine their **chest**.
- At the chest, you will examine the....
 - **Heart Rate** – should be 60-80 bpm
 - **Respiration Rate** – should be 10-40 bpm



Heart Rate

- To measure the **heart rate**, you would use a stethoscope and place it behind the animal's left elbow.
 - It may take a couple tries to find a good-sounding heart rate – move around until you find a good beat.
- When you check the heart rate, you will check for 2 things:
 - **Rate** – the rate should be 60-80 bpm
 - **Quality** – the heart should be a “lub-dub” sound.
 - ‘Woosh’ or ‘Whistle’ sounds are signs of other problems – these are called **heart-murmurs**.

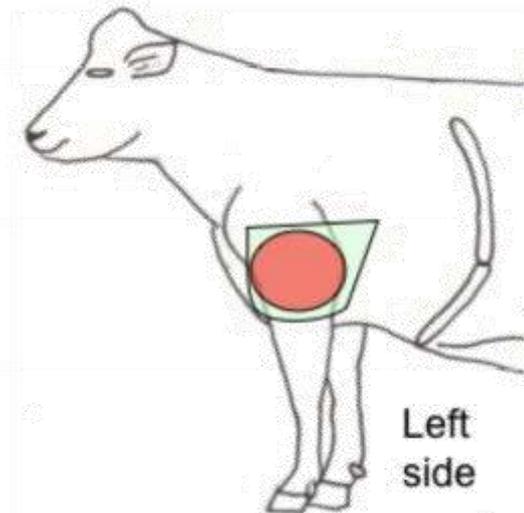


Source: UW-Madison Dept of Dairy Science



Respiration Rate

- To measure the **respiration rate**, you would use a stethoscope and place it above the animal's left elbow.
 - Like the heart rate, it may take a few tries to find a quality-sounding respiration rate.
- When you check the respiration rate, you will check for 2 things:
 - **Rate** – the rate should be 10-40 bpm
 - **Quality** – the breathing should sound clear; it should not sound raspy or obstructed (**dyspnea**)



Source: UW-Madison Dept of Dairy Science



Symptoms and Diseases

- The following are **common symptoms** you may encounter when examining the left side of the chest:
 - **High heart rate** (rate above 80 bpm) – high heart rates can be a sign of a wide-range of problems, including infection, heat stroke, injury, nervousness, etc.
 - The same is true for high breathing-rate (above 40 bpm)
 - **Heart murmurs** – if the heart beat does not have a ‘lub-dub’ sound (i.e. if you hear a woosh or whistle), this is a sign of an injury or infection in the heart.
 - **Raspy breathing** – the lungs should sound clear and open during breathing; raspy or obstructed breathing can be a sign of a respiratory infection.

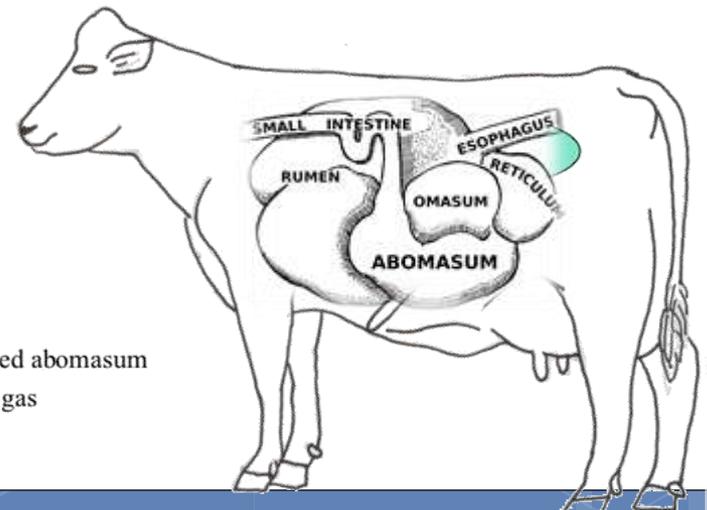


Source: answers.com



Steps of a Physical Exam

- After examining the left chest, you would move to the **left abdomen** (stomach area).
- In the left abdomen, you would examine the following:
 - **Rumen Contractions** – does she have 1-2 contractions per minute.
 - **Abomasum placement** - does she have a displaced (twisted) abomasum?



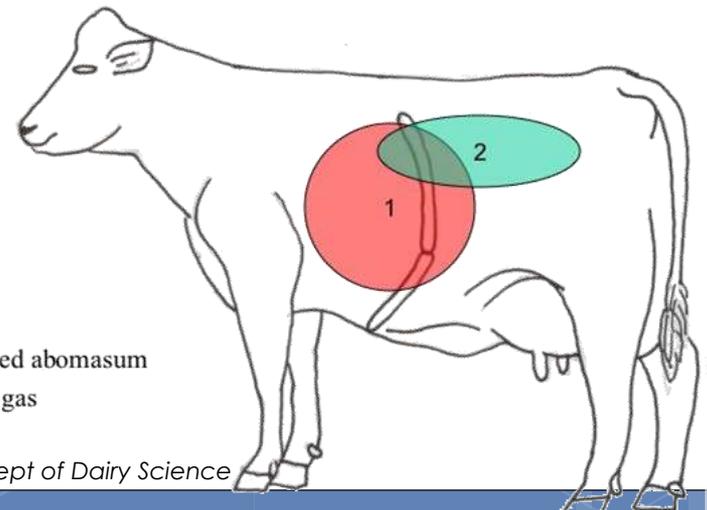
Left Side

1. Displaced abomasum
2. Rumen gas



Rumen Contractions

- The rumen is the first chamber of the four-chambered stomach of a cow.
 - The rumen has to contract at least 1-2 times per minute to sufficiently mix and break down the feed she has consumed.
- To measure rumen contractions, place the stethoscope over the center of her body (where the red circle is below).
 - Listen for what sounds like low rumbles of thunder while watching for a minute to pass.
 - Low rumen contractions is a symptom of digestive problems.

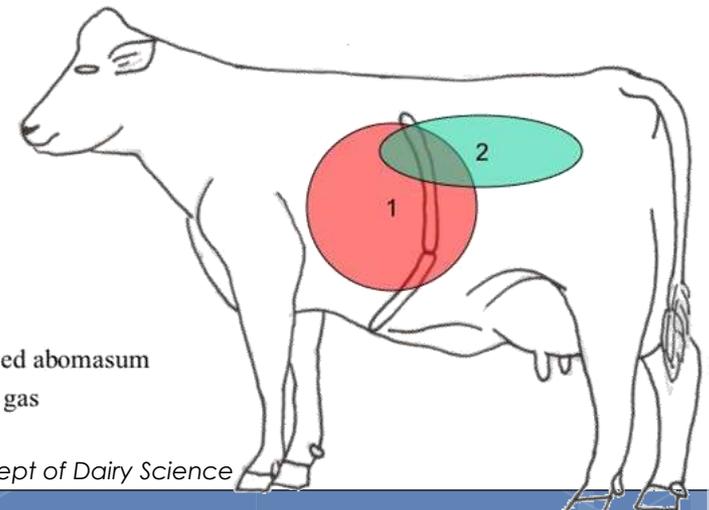
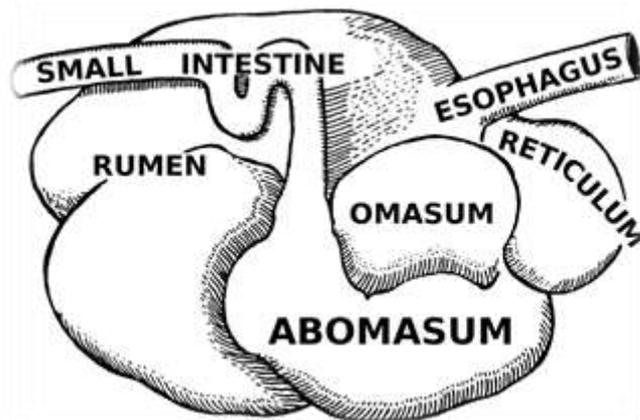


Left Side

1. Displaced abomasum
2. Rumen gas

Abomasum Placement

- The abomasum is the fourth stomach chamber of a cow.
 - It operates in the same way your stomach works.
- If a cow stops eating, or has other problems, the abomasum can fill up with gas and twist over itself.
 - The abomasum will swell with gas like a balloon.

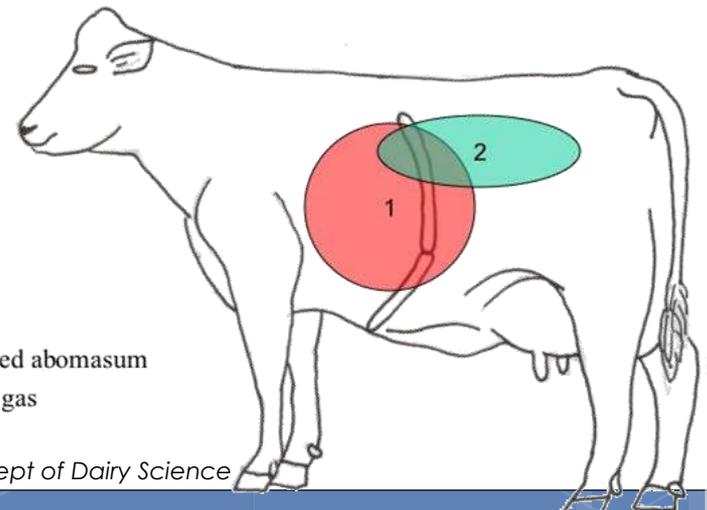


Left Side

1. Displaced abomasum
2. Rumen gas

Abomasum Placement

- If the cow has a displaced abomasum, or twisted stomach, you will be able to detect this by 'pinging' the cow.
- Place your stethoscope over what is the green area on cow below and flick repeatedly with your finger and thumb.
- If the stomach has twisted, it will sound like a banjo through the stethoscope when you flick the area.



Left Side

1. Displaced abomasum
2. Rumen gas



Udder

- After you check for rumen contractions and for a twisted stomach, you will move onto the udder.
- At the udder, you will check for the following:
 - Edema, or swelling
 - Redness, heat or coolness.
 - A hot quarter may indicate an infection (mastitis)
 - A cool quarter may indicate dying tissue or obstructed circulation due to injury or frostbite.
 - This could become gangrenous
 - Examine her milk using a mastitis test such as the California Mastitis Test (CMT) paddle.



Source: teara.govt.nz



Mastitis

- Mastitis is an infection of the udder.
 - It is the most costly disorder in the dairy industry.
- Mastitis can cause any of the following:
 - Reddened or hot udder
 - Swelling in the udder
 - Chunky or flaky milk
 - Watery milk
 - Fever and increased heart/respiration rate
- If there are symptoms that indicate mastitis, a test should be performed to confirm this.
 - CMT and MECS are commonly-used tests



Source: vetscan.co.in



Rear Examination

- After examining the udder, you would move onto examining the rear of the cow.
- Here you will check the following:
 - Rectal Temperature
 - Urine Ketones
 - Rear feet and legs
 - Stool (manure sample)



Source: johnlund.com



Rectal Temperature

- To take an animal's temperature, you will need a clean, lubricated rectal thermometer.
- To take the animal's rectal temperature, have an assistant lift the tail and gently raise it as high as it will safely and humanely go.
 - This will help to partially paralyze the cow's rear, reducing her likelihood of kicking while humanely restraining her
 - If done correctly, it should not cause pain.
- Gently insert the thermometer into the rectum using a twisting motion.
 - Leave in place for at least 1 minute.
 - A cow's temperature should be 101.5° F
 - A higher temp (above 103⁰) indicates an infection or injury.



Urine Ketones

- **Ketones** are by-products of breaking down bodily fat for energy.
 - If a cow is breaking down fat too rapidly, the ketone levels in her blood will rise too rapidly, causing the equivalent of a “metabolic hangover”.
 - Abnormally high levels of ketones result in **ketosis**.
 - This will cause internal discomfort to the animal and reduce her feed intake
 - This can lead to a displaced abomasum (DA).
- To test for **ketosis**, dip a Keto-stick into the urine stream of the animal.
 - Urination can be stimulated by gently but firmly pushing upward on the vulva of the animal.



Source: lavinlavidalocarb.blogspot.com



Rear Feet and Legs

- When examining the front and rear legs of the animal, check for the following:
 - Is she favoring one foot over the other?
 - Does she limp when walking?
 - Are there any noticeable signs of injury, infection, or swelling?
 - Is there any deformity?



Source: nwnyteam.org



Stool (manure)

- Manure is one of the most revealing and helpful symptoms of an animal.
- When examining the manure, look for the following:
 - Amount – does she have diarrhea or is she constipated?
 - Color – is it a normal brown, or does it have red or black streaks in it?
 - Smell – does it smell like normal manure or does it have an especially-foul or –sour smell?
 - Consistency – is it runny, tarry, or extra stiff?



Source: en.wikipedia.org



Symptoms in Manure

- **Brown, frosting-like consistency** - normal
- **Runny** – diarrhea
- **Green & Watery** – Johnnes disease (see photo)
- **Sour-smelling** – Salmonella infection or acidosis
- **Slimy** – excess fiber or protein
- **Too little** – twisted or obstructed colon or other digestive problem
- **Black or red streaks** – internal bleeding (the redder the streaks, the later the injury in the digestive tract)
- **Too stiff** – excess fiber

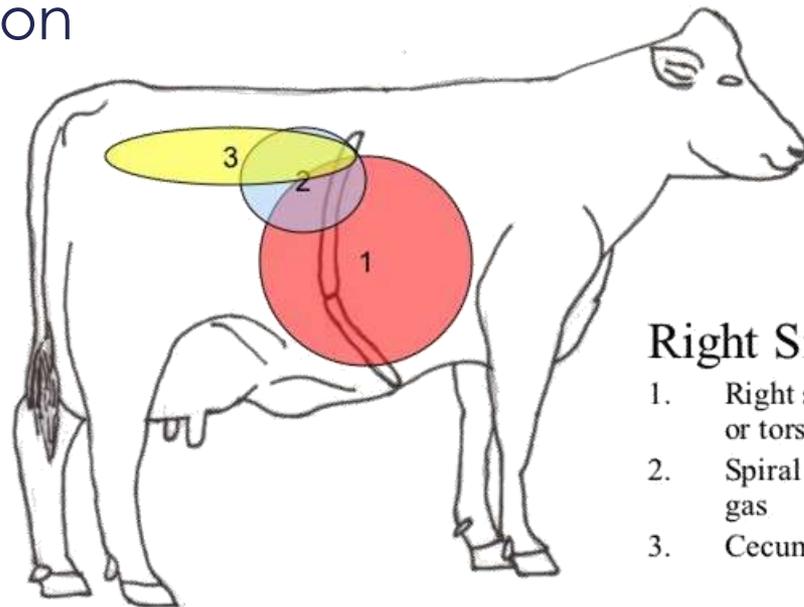


Source: nodpa.com



Right Side

- Most of the symptoms that you will check would be found on the head or left-side of the animal.
- On the right hand side, you will check...
 - Right displaced abomasum
 - Digestive obstruction
 - Withers pinch



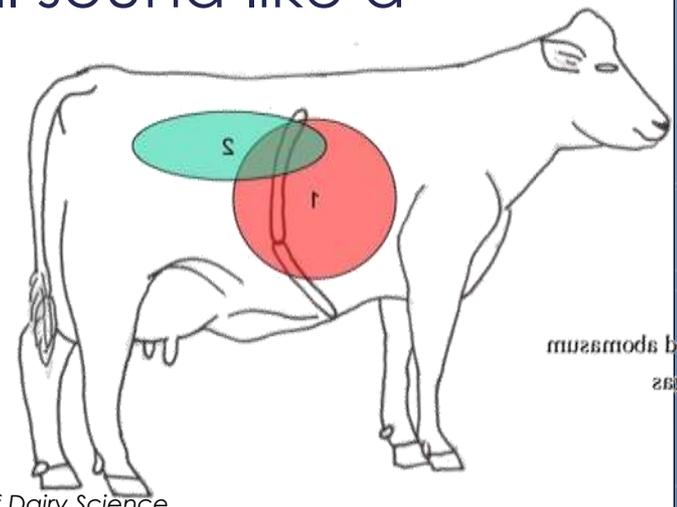
Right Side

1. Right side displacement or torsion of abomasum
2. Spiral colon or intestinal gas
3. Cecum or rectal gas



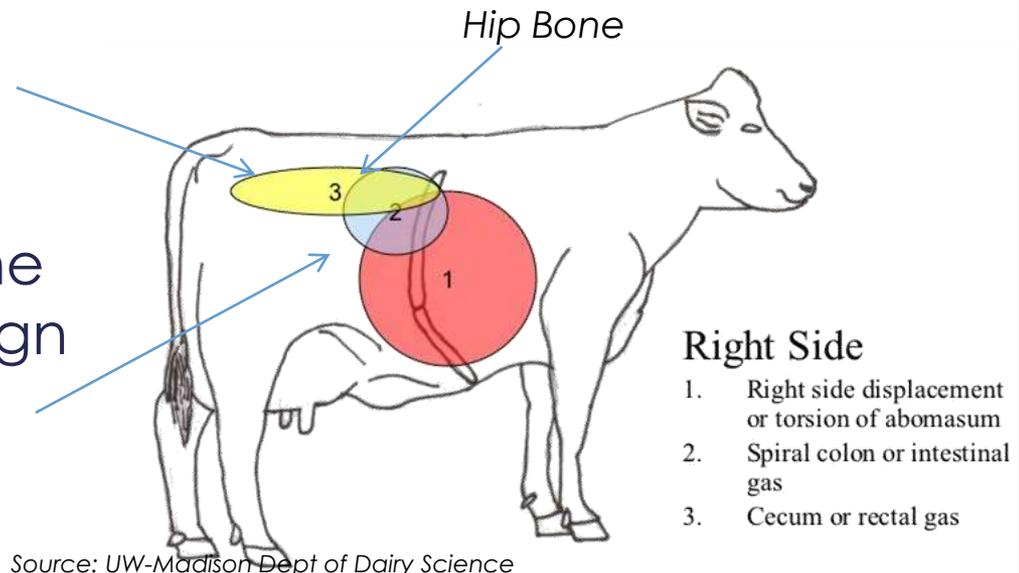
Right Displaced Abomasum

- Checking for a displaced abomasum (DA, or twisted stomach) on the right hand side is the same as checking it on the left-hand side.
- Place your stethoscope over what is the green area on cow (but on the right-hand side) and flick repeatedly with your finger and thumb.
- If the stomach has twisted, it will sound like a banjo through the stethoscope when you flick the area.
- A Right DA is much more serious and requires immediate attention.



Digestive Obstruction

- To check for a digestive obstruction (such as a blocked or twisted colon), locate the hip of the cow (this is the bony part that juts out at the rear of the cow).
- Check for 'pings' just like you would check for a DA.
 - If you hear a ping right around the hip, it is a sign of rectal gas (#3).
 - If you hear a ping to the right of the hip, it is a sign of a twisted intestine or intestinal gas (#2).



Source: UW-Madison Dept of Dairy Science

Withers Pinch

- The withers is area consistency of the spine of the animal above the front feet.
- If you gently pinch along the spine, the animal should have a reflex that resembles a “shrug” – the animals spine should dip and their head should arch slightly.
 - This is called a “dorsiflex”.
- If the cow does not respond to repeated withers pinches, it may have a internal pain or hardware disease.
 - Hardware disease occurs when the animal accidentally consumes a piece of metal or other indigestible substance.
 - The hardware will remain in the cow’s reticulum (2nd stomach chamber).



Summary of Steps

- Questions: ask 8 questions to determine what the owner already knows.
- Head and neck: examine the...
 - Ears – are they warm or cold?
 - Eyes – are they normal or sunk?
 - Nose – is there mucus discharge?
 - Mouth – is she grinding her teeth?
 - CRT – how is her circulation?
 - Jaw – is her jaw swollen (bottle jaw)? Does she have swollen lymph nodes.
 - Skin – is she dehydrated (pinch test)?



Summary

- Left Chest
 - How is her heart rate? Is it 60-80 bpm?
 - Does she have a heart murmur?
 - How is her respiration rate? Is it 10-40 bpm?
 - Does she have dyspnea?
- Left Abdomen?
 - Does she have 1-2 rumen contractions per minute?
 - Does she have a displaced abomasum?
- Udder
 - Is it red/hot/swollen/cold/chunky/watery?



Summary

- Rear
 - Is the cow's temperature 101.5°?
 - Does she have Ketosis (High Urine Ketones)
 - Are her rear feet and legs healthy?
 - Does her manure have the right color/consistency/odor?
- Right Side
 - Does she have a right displaced abomasum
 - Dose she have a digestive obstruction
 - Does she dorsiflex during a withers pinch

