

# VETM 3430 CLINICAL MEDICINE I PROCEDURE FOR “ROUTINE” PHYSICAL EXAMINATION OF CATTLE

In a field situation, it is the routine exam which should be performed on each medical case presented (fresh cow off feed, inappetent calf, bull losing weight, etc.). The comprehensive exam, which includes the techniques described here plus other techniques taught in later courses (eg. withers pinch, rectal examination, etc.) is rarely performed in its entirety in the field. Factors that limit the ability to perform a comprehensive exam on each bovine case include facilities, time (economics), and safety (eg. examination of the head). The patient history and general inspection form a significant part of the routine physical exam, and diagnostic hypotheses generated at this stage may trigger the inclusion of techniques from the comprehensive exam. As well, the routine physical examination may indicate that one or more body systems are abnormal, which is the trigger or prompt to conduct a more detailed examination of the body system(s) affected. This is when **relative parts** of the comprehensive exam would be utilized.

## 1. OBTAIN PATIENT HISTORY:

Key elements should include

- Patient data (signalment, parity, etc)
- Presenting complaint and duration
- Progression of presenting complaint
- Temporal events (eg. calving, peak lactation, feed changes, etc)
- Current daily milk production and any changes noted
- Details of ration
- Appetite, amount fed, preferences for feed types
- Character of feces
- Any previous treatments administered and response seen
- Preventative health care program (vaccination, deworming, etc)

## 2. PERFORM GENERAL INSPECTION:

Performed “over the fence” to limit impact on the animal caused by your presence. Stand back and assess:

- General and specific environment
- Location of animal, housing, bedding, ventilation
- Comparative assessment to other animals in the group
- Available animal restraint
- Amount and nature of feed/water present, evidence of bunk husbandry
- Behavior and attitude towards people and other animals
- General external appearance, including shape and symmetry of abdomen and thorax from lateral and caudal views if possible
- Skin and hair coat
- Posture, movement, symmetry of limbs
- Symmetry of udder
- Amount, color, consistency, and odor of feces, presence of undigested feed in feces, etc.
- Presence and character of any discharges (eg. vaginal, nasal) on animal or in the immediate environment (eg. bedding, water bowl, etc)

**3. EVALUATE RESPIRATORY RATE/EFFORT:**

Still standing back and without entering the pen, obtain a resting respiratory rate prior to disturbing the animal:

- Observe breaths at the flank and count for at least 15 seconds
- **Reference range for adult cattle: 10-30 breaths per minute**
- Note respiratory effort, pattern, and any noises associated with inspiration or expiration

**4. COLLECT URINE SAMPLE:**

Upon entering the pen, quietly approach the cow and collect a urine sample (free-catch, midstream sample) by gently rubbing the escutcheon. This should be done prior to manipulating the cow in any other manner.

- Do not hold the tail or touch her in any manner during collection! – negative stimuli to urination
- Assess posture during and after urination
- Sample should be tested for ketones (mature cows), plus additional testing as indicated

**5. INSPECT VULVAR MUCOUS MEMBRANES:**

Part lips of vulva

- Note colour, moistness, presence of swelling or lesions
- Assess capillary refill time (**reference range: less than 2 seconds**)
- Note presence and character of any vaginal discharge (check on tail also)

**6. EVALUATE RECTAL TEMPERATURE:**

Ensure that the thermometer is inserted sufficiently (up to digital display screen) and held with the tip pressed laterally against the wall of the rectum.

- Reference range for adult cattle: 38.0 – 39.0°C
- Assess tail and anal sphincter tone
- Evaluate tail head and escutcheon for evidence of ectoparasitism

**7. ASSESS UDDER:**

- Visually assess conformation/symmetry/discoloration of all 4 quarters from caudal and lateral views
- Palpate each quarter for heat, swelling, firmness, and tenderness
- Palpate each teat for injuries, obstruction, patency; observe each teat orifice
- Check for supernumerary (extra) teats
- Observe skin between mammary gland and hind limbs
- If milking, perform evaluation of milk (taught in Clinical Medicine III)

**LEFT SIDE****8. PALPATE LEFT PREFEMORAL LYMPH NODE:**

Line up fingers from both hand along the cranial aspect of the hind limb above the stifle. Press your fingers cranially and feel the lymph node pop under your finger tips.

- **TIP:** lymph node is about one hands-width in front of the stifle
- Note size, consistency, tenderness on palpation

**9. EVALUATE LEFT HINDLIMB:**

- Inspect the limb visually for any evidence of pain, swelling, or redness
- Knowledge of limb anatomy is essential
- Visualize hoof conformation and trimming

**10. PALPATE SUBCUTANEOUS ABDOMINAL (“MILK”) VEIN:**

Palpate this large and tortuous vein to familiarize yourself with what is normal in dairy cows. This vein may become infected or thrombosed if used as a site of intravenous injections by clients.

- Assess for any heat, pain, thrombosis

**11. EVALUATE SKIN OF ABDOMEN AND THORAX:**

Run your hands over the entire thorax and abdomen, including ventrally. This forces you to consciously assess every aspect of the animal. Feel for any abnormal heat, swelling, crepitus, skin lesions, scars from previous surgeries and assess for the presence of ectoparasitism.

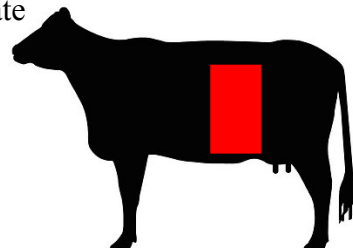
- Palpate the umbilicus; assess for any herniation of the body wall, or heat/pain/swelling/discharge from the umbilicus (particularly in young animals)
- Palpate the brisket area for swelling; if present, apply pressure with a fingertip then re-palpate – if a dimple remains, this indicates the presence of pitting edema

**12. EVALUATE RUMEN:**

- Palpate left paralumbar fossa for rumen fill, note if doughy consistency or gas distension are present
- Auscultate in the left paralumbar fossa: note rate and strength of rumen contractions (absent, weak, moderate or strong)
- **Reference range for adult cattle: 1 – 2 contractions per minute or 3 per 2 minutes.**

**13. EVALUATE ABDOMEN (LEFT SIDE):**

- Simultaneously auscultate and percuss the entire flank (high and low) posterior to the 11<sup>th</sup> intercostal space for a left displaced abomasum (LDA)
  - LDA sounds like a basketball being dribbled or hitting an empty tin can
- **TIP:** Divide paralumbar fossa in half – this is your caudal border. Count forward 2 rib spaces – this is your cranial border. Auscultate in 6-9 places while percussing in a semi-circle around your stethoscope.

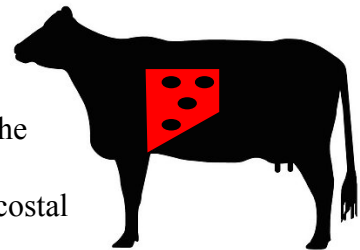


**14. EVALUATE HEART (LEFT SIDE):**

- Palpate chest wall in axilla to detect any thrill
- Auscultate heart in at least 3 locations – pulmonic, aortic and mitral valves
  - We do not locate the exact locations. Listen at point of maximum intensity and a little cranial and caudal to that place.
- Assess rate, rhythm, presence of abnormal sounds (murmurs, extra heart sounds)
- Reference range: 60-80 beats per minute
- **TIP:** If you cannot hear the heart well, place your stethoscope further cranially and dorsally. You need to be under the limb to hear the heart.

**15. EVALUATE RESPIRATORY SYSTEM (LEFT SIDE):**

- Visualize the normal bovine lung field
- **TIP:** Lung field is the triangle bordered with the scapula, vertebral bodies, and line between elbow and hook with the last 2 rib spaces cut off (abdomen under last 2 ribs)
- Auscultate lung sounds – place your stethoscope on intercostal spaces for auscultation (ie. palpate the chest)
- Observe respiration at the flank during auscultation, in order to correlate abnormal sounds with the respiratory system (versus gastrointestinal, etc.)
- Pay particular attention to the hilar region and the anteroventral regions of the lung
- Lung sounds are described as (i) normal breath sounds, (ii) increased normal breath sounds, (iii) wheezes, (iv) crackles or (v) absent.

**16. EVALUATE LEFT FORELIMB:**

- Inspect the limb visually for evidence of pain, swelling, or redness
- Knowledge of limb anatomy is essential
- Visualize hoof conformation and trimming
- Beware of cow kicking with the hind limb as you assess the forelimb

**17. PALPATE LEFT PRESCAPULAR LYMPH NODE:**

Line up your fingers from both hands along the cranial aspect of the scapula just above the shoulder joint. Roll your fingers forward and feel the lymph node pop out from under your finger tips.

- Note size, consistency, tenderness on palpation
- **TIP:** You may need to tuck your finger tips under the cranial edge of the scapula to be able to palpate the lymph node

**18. ASSESS SKIN OF NECK:**

Run your hands over the entire neck. This forces you to consciously assess every aspect of the animal. Feel for any abnormal heat, swelling, crepitus, skin lesions, and assess for the presence of ectoparasitism.

- Test for state of hydration by pinching skin and observing time to snap back

**19. ASSESS LEFT JUGULAR VEIN:**

- Note any movement within jugular vein (jugular pulse)
- Palpate vein for thrombosis

**20. EVALUATE TRACHEA:**

- Auscultate ventral aspect of trachea at 2 sites
- Compress trachea to see if a cough can be elicited

**21. EVALUATE LARYNX:**

- Auscultate larynx; note any respiratory stridor.
- Palpate for any swelling, heat, pain.
- Compress larynx to see if a cough can be elicited.

**HEAD****22. EVALUATE HEAD SYMMETRY:**

- Note carriage of head, ears, eyelids
- Note facial expression, eye movements

**23. EVALUATE NOSTRILS:**

- Note presence of nasal discharge
  - Unilateral/bilateral
  - Character (serous, sanguinous, mucoid, mucopurulent, purulent, epistaxis)

**24. EVALUATE EYES:**

- Position of globe in orbit
- Eye movement
- Color of conjunctiva and sclera
- Presence of ocular discharge

**25. EXAMINE ORAL CAVITY:**

- Look for excessive salivation
- If closer examination is indicated, restraint with a halter is required

**RIGHT SIDE****26. ASSESS SKIN OF NECK:**

Run your hands over the entire neck. This forces you to consciously assess every aspect of the animal. Feel for any abnormal heat, swelling, crepitus, skin lesions, and assess for the presence of ectoparasitism.

**27. ASSESS RIGHT JUGULAR VEIN:**

- Note any movement within jugular vein (jugular pulse)
- Palpate vein for thrombosis.

**28. PALPATE RIGHT PRESCAPULAR LYMPH NODE:**

- Note size, consistency, tenderness on palpation

**29. EVALUATE RIGHT FORELIMB:**

- Inspect the limb visually for evidence of pain, swelling, or redness
- Knowledge of limb anatomy is essential
- Visualize hoof conformation and trimming
- Beware of cow kicking with the hind limb as you assess the forelimb

**30. EVALUATE SKIN OF THORAX AND ABDOMEN:**

Run your hands over the entire thorax and abdomen, including ventrally. This forces you to consciously assess every aspect of the animal. Feel for any abnormal heat, swelling, crepitus, skin lesions, scars from previous surgeries and assess for the presence of ectoparasitism.

**31. EVALUATE HEART (RIGHT SIDE):**

- Palpate chest wall in axilla to detect any thrill
- Auscultate heart in at least over tricuspid valve
- Assess rate, rhythm, presence of abnormal sounds (murmurs, extra heart sounds)

**32. EVALUATE RESPIRATORY SYSTEM (RIGHT SIDE):**

- Visualize normal lung field and auscultate lung sounds in at least 3 locations
- Pay particular attention to the hilar and anteroventral regions of the lung

**33. EVALUATE ABDOMEN (RIGHT SIDE):**

- Palpate right paralumbar fossa for gas distension
- Auscultate in the right paralumbar fossa for intestinal borborygmi
- Simultaneously auscultate and percuss the entire flank (high and low) posterior to the 11<sup>th</sup> intercostal space for right displaced abomasum, abomasal volvulus or cecal volvulus

**34. PALPATE RIGHT PREFEMORAL LYMPH NODE:**

- Note size, consistency, tenderness on palpation

**35. EVALUATE RIGHT HINDLIMB:**

- Inspect the limb both visually for any evidence of pain, swelling, or redness
- Knowledge of limb anatomy is essential
- Visualize hoof conformation and trimming

**36. PALPATE SUBCUTANEOUS ABDOMINAL (“MILK”) VEIN:**

- Assess for any heat, pain, thrombosis

**37. PALPATE UMBILICAL REGION AND VENTRAL ABDOMEN:**

- Note presence of any defects in body wall/herniation, heat, swelling, or edema
- Assess penis and prepuce (males)

**38. EVALUATE SCROTUM:**

- Inspection and palpation, if indicated

**39. PERFORM RECTAL PALPATION:**

- Though a medical rectal is an important part of the physical exam of the bovine, we will not be teaching this at this time.