

Tier 1 VMC Radiology Training: Secondary Technicians and Technician Assistants

PPE: Gowns, thyroid shield, gloves and lead lined glasses

BLOXR Gowns- not lead based, it's lighter and machine washable! The material is a patented, lightweight bi-layer constructed of barium sulfate and bismuth oxide that has the equivalency of 0.5mm lead-equivalent scatter radiation protection. (for more information, see BLOXR.com)

*Wear your dosimeter badge!

ALARA: As Low As Reasonably Achievable

Step away from table if/when possible to decrease scatter radiation exposure

Use positioning aids when possible for sedated/anesthetized patients.

Positioning aids: V Trough, Sand bags, tape/roll gauze, gauze, wooden spoon

Do not sit on table during radiographs are taken

Look away from table when exposing (not always possible)

Notify the radiation safety officer or a lead tech if you are pregnant, avoid exposure to the fetus

Acquisition Station (radiology computer):

Inputting patients in acquisition computer, see example sheet displayed in radiology

Add additional radiographs to same study, only on same day unless requested by DVM

Finding patients in computer for return visit: easiest to use the patient ID number, and search with the little binocular tab. The "Receive Order Information" must be in "OFF" mode to search. ("Send Exposure Results" must remain ON)

Use Idexx PACS for comparing images from previous studies: Open Idexx PACS App on radiology computer by:

- 1) Hit the "Windows" button on keyboard
- 2) Select All Apps
- 3) Select Idexx PACS Imaging Software
- 4) Search for your patient and use the "compare images" mode to display multiple images and compare from previous studies

Sending rads to DVM insight (see example sheet in radiology)

Markers, adding them in vs. Physical markers (measurements for orthopedics), ensure that the markers are for the correct limb/side

Adjust for the under/over exposed radiograph by using the S/L button on the computer

Positioning:

Why Important? Sending to Board Certified Radiologist or Specialists must reflect professionalism

Know your anatomy and positioning landmarks
No: collars, leashes, harnesses, human body parts!
DO: Collimate, measure thickness of appropriate body part

Refer to this great 2 part article:

<https://todaysveterinarynurse.com/articles/radiographic-positioning-head-shoulders-knees-and-toes-part-1/>

<https://todaysveterinarynurse.com/articles/radiographic-positioning-head-shoulders-knees-and-toes-part-2/>

Skull: nose parallel with table

Cervical: legs must be pulled caudally

Thoracolumbar spine: Straight as possible, “horse heads” appearance in vertebrae. *Be very careful on patients with back and neck injuries!

Thoracic limbs:

Shoulder, lateral limb pulled forward, VD not DV for best image.

Scapula: push affected limb towards the spine.

Elbow 3 views: lateral, cranial caudal, and sometimes need flexed lateral view (OFA)

Carpus/metacarpus: sometimes need flexed views (have DVM give specific instructions)

Digits: splay with gauze or tape so that they are not superimposed upon each other

Pelvic limbs:

Pelvis: OFA or surgical cases need to be as perfectly straight as possible

Femur: VD vs “Teddy Bear” where you hold the patient in an upright position on table when possible

Tibia: TPLO 90 degrees femur to tibia and 90 degrees tibia to tarsus

Stifle: ask DVM if they want TPLO style views for potential CCL tear

Tarsus: instability need flexed views, ask the dvm for specifics on each case

Metatarsus

Digits

Soft Tissue:

Thorax: 3 views for metastasis study, VD sternum superimposed over the spine (use the V trough!), include all ribs- manubrium sterni to first lumbar, Take exposure on Inspiratory!

Abdomen: Diaphragm to level of femoral head, take upon expiratory! Pull front limbs cranially and hind limbs caudally to be out of the exposure

Orientation:

VD with right side of patient in radiograph to the left of the computer screen, as in handshake with the right hand position

Lateral to the left, like the patient is running out the door

Markers placed on lateral aspect of image
Limbs pointed straight downwards, avoid sideways images

After the radiographs are acquired:

Sending to DVM Insight (VetRAD), get relevant history from DVM!
Clean table/room ASAP for next patient (*Especially if orthopedic surgery case and they need radiographs post-op under anesthesia!)

Additional online training:

Idexx Learning Center online webinars (FREE!):

Don't Be Afraid, It's Only a Radiograph! Radiographic Positioning for Dogs and Cats, 60 minute video

Today's Veterinary Nurse, article from Purdue University:

Radiographic Positioning: Head, Shoulders, Knees, and Toes, Part 1

Radiographic Positioning: Head, Shoulders, Knees, and Toes, Part 2

Lowerthedose.org, has good resources