UNM HOSPITALS

Bone Scan (MDP)

Special Instructions	**Consult with radiologist prior to all three-phase bone scans to confirm views for angiogram and immediate static images. Acquire all angiograms with both detectors on two-headed cameras.** **For SPECT-CT examinations, confirm with the radiologist whether the CT is required.** **For extremities, mark the RIGHT side with a point source on all three phases. For lateral views of the lower extremities, always place the RIGHT foot forward and mark accordingly (consult with the radiologist for any deviations from this).** **Label ALL images, particularly extremity and pelvis images (e.g., TOD) with sides (L/R)** **To be performed at UNMH and SRMC. Note: any bone scans requiring SPECT/SPECT-CT to be done at SRMC on a case by case basis with Attending Radiologist approval.**

Radiopharmaceutical: Tc-99m MDP

Dose (Adult/Pediatric): Refer to Nuclear Medicine Dose Chart

Route of Administration: Intravenous. If there is suspected pathology in an upper extremity, preferred injection site is in the contralateral upper extremity

Patient Preparation: Please ensure the following:

- Patients should be well hydrated before and during the examination and void frequently after injection.
- **Patients should be encouraged to drink at least two 8-oz glasses of water between injection and delayed imaging, and to drink lots of fluids for the next 24 hours** (Image Wisely campaign, "Clinical Aspects of General Nuclear Medicine").
- Patients should void immediately before imaging if the pelvis is being imaged. Patients should remove metal items in the field of view (e.g., jewelry, coins, belt buckles, and watches) before imaging.

Equipment Setup: Collimator: High resolution

Computer setup:

Angiogram:

- 128 x 128 matrix
- ZOOM 1.0 (more for pediatric patients)
- 2 sec/image
- 60 sec acquisition

Bone Scan (continued)

Immediates:

- 256 x 256 matrix
- ZOOM 1.0 (more for pediatric patients)
- acquisition time depends on region
- 300K (e.g., hands) - 800K (e.g., spine) counts
- If opposite sides are done in separate images, image first side for counts, then image opposite side for same time

Delays:

Limited:

- 256 x 256 matrix
- ZOOM 1.0 (more for pediatric patients)
- acquisition time depends on region
- 300K (e.g., hands) - 800K (e.g., spine) counts
- Have the patient void if images of the pelvis are to be obtained; may need 800K counts or more for the pelvis if significant urinary retention.
- If opposite sides are done in separate images, image first side for counts, then image opposite side for same time

Whole-body spots preferred for small pediatric patients, generally ≤**12** years old (check w/ Radiologist prior to imaging to confirm):

- 256 x 256 matrix
- Zoom 1.0 (more for pediatric patients)
- Start in the pelvis (spine if significant urinary retention)
- 800K-1000K counts
- Rest of images for same time as this initial image

Whole-body sweep:

- 256 x 1024 matrix
- Zoom 1.0 (more for pediatric patients)
- scan 12 cm/min

SPECT images:

- High resolution collimator
- 128 x 128 matrix
- Zoom 1.0 (more for pediatric patients)
- 180 degrees, CW (clockwise)

- 64 steps, 15 sec/step
- Continuous

Patient Positioning: Consult with radiologist if questions.

Typically include at least the following:

Whole-body sweep:	Supine with arms at sides
Whole-body spots:	Supine, anterior/posterior spots of trunk and anterior spots of extremities
Limited Feet:	Plantar/anterior (delays)
Limited Hands:	Palmar/dorsal (delays)
Limited Knees:	Anterior/posterior/bilateral laterals (delays)

Depending on region of interest, additional positioning may be required.

Procedure:

- Acquire angiographic and immediate images (if indicated) immediately after injection. Acquire delayed and SPECT or SPECT-CT images approximately 3 hours after injection.
- Review planar images with radiologist to determine if additional views are required prior to releasing patient.

Processing: All cameras: Follow automatic processing workflow

If SPECT-CT:

- Process CT in soft tissue (B30) and bone (B60) algorithm; should have attenuation corrected and non attenuation corrected SPECT tomo files

If SPECT only:

- Should have reconstructed tomographic file and axial/coronal/sagittal lightboxes/savescreens

Label ALL images with sides (L/R) and view (e.g., anterior, posterior, left lateral). This is particularly critical for extremity images and pelvis images (e.g., TOD).

Items Required For Complete Study:

- Processing and transfer of all images to PACS and/or Leonardo as appropriate
  - Raw data of all planar images to PACS
  - Planar:
    - Lightbox/savescreen of all images to PACS as appropriate, including
      - Angiogram: display 2 secs/image
      - Whole-body sweep: dual intensity display
  - SPECT:
    - Reconstructed Tomo to Leonardo and PACS,
    - Lightboxes/savescreens of axial/coronal/sagittal SPECT to PACS

Bone Scan (continued)

- Rename SPECT to include region imaged (e.g., Reconstructed Tomo PELVIS).
- SPECT-CT:
  - Attenuation Corrected and Non Attenuation Corrected Tomo Reconstructions, CT (B30 and B60) to Leonardo and PACS
  - Rename SPECT and CT files to include region imaged (e.g., Reconstructed Tomo-AC - PELVIS).

- Complete the examination in RIS