

## BONE SCAN

### Indications

- Detection of bone metastasis
- Osteomyelitis
- Musculoskeletal trauma
- Primary benign and malignant bone tumors
- Reflex Sympathetic Dystrophy
- Evaluation of response to Padgett's Disease Treatment

### Exam Time

Procedure Imaging Time 30-60 minutes

### Conflicting Examinations and medications

- Renal uptake can be increased by amphotericin B, aluminum antacids, iron preparations, Alerscript
- $A1^3$ -ions in preparation, radiation therapy, recent radiographic contrast sodium diatrizoate, dextrose, gentamycin, and chemotherapy agents, particularly, vincristine, doxorubicin, and cyclophosphamide.
- Breast uptake can be increased by gynecomastia-producing drugs digitalis, estrogens, cimetidine spironolactone, and diethylstilbestrol.
- Stomach uptake can be caused by isotretinoin.
- Liver uptake can be caused by aluminum antacids, iron preparations,  $A1^3$ -ions in preparation, recent radiographic contrast, sodium diatrizoate and alkaline pH.
- Spleen uptake can be increased by phenytoin and aluminum preparations.
- Excessive blood pool activity can be the result of aluminum preparations, iron dextran, or too few  $Sn^{2+}$  ions in preparation.
- Focal soft tissue or muscle uptake can result from ion dextran injections, calcium gluconate injections, heparin injections, or meperidine injections.
- None OR if not contraindicated, the patient should be hydrated, IV and PO (two or more 8-oz glasses of water prior to and after inject).

### Patient Preparation

**Patient Positioning** Supine, Prone or Sitting.

**Radiopharmaceutical**  $^{99m}Tc$  with methylene diphosphonate (**MDP**) /IV injection

### and Dose

Normal administered activity, Adults 20 to 20 mCi (740 MBq to 1.11 Gbq)

Markedly obese adults, 300 to 350 UCi/kg (11 to 13 MBq/kg), Children, 250 to 300 U Ci/kg 99 to 11 MBq/kg), with a minimum of 0.5 to 1.0 m Ci 920 to 40 MBq)

# NUCLEAR MEDICINE PROTOCOLS

## BONE SCAN

- Acquisition Protocol:** Routine Views - Anterior and posterior skeleton, lateral skull  
Image the Entire Body (Arms can be excluded except for metastatic dz)  
Use camera/table motion of 1015 cm/min.  
Anterior and Posterior Images from head to foot
- Static Acquisition Protocol:** Acquire static spot images as indicated  
Acquire ANT image of the chest for approx. 500-700 counts, note time required for acquisition.  
Use the same acquisition time used for the ANT cxr image and acquire ANT and POST images of the rest of the head and torso and ANT images of the extremities.
- SPECT:** Tomographic images are routine for low back pain and are used in other selected situations.
- Image Acquisition Parameters:** 360<sup>0</sup>Rotation  
64 Images  
20sec/image  
Data Processing:  
Reconstruct Sagittal, Coronal, and Transverse