



## In-111 WBC Scan

Approval: K. Shamlou, MD

rev:2

7/15/2026

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**Radiopharmaceutical:** In-<sup>111</sup> oxyquinoline

**Dose:** 500 uCi

**T1/2:** 2.8 days (67.2 hours)

**Energy:** 173 keV and 245 keV

**CPT:** 78805 (limited area); 78806 (whole body); 78807 (SPECT)

### Indications:

Approved indications include, but are not limited to:

1. To detect site(s) of inflammation as a cause of abdominal pain.
2. To localize site(s) of infection in patients with granulocytosis and/or positive blood cultures.
3. To detect and determine the extent of inflammatory or ischemic bowel disease. <sup>111</sup>In-leukocytes are preferred for quantitative assessment.
4. To detect and follow up musculoskeletal infection, such as septic arthritis and osteomyelitis.

### Patient Preparation:

- The patient should be made aware that there will be three appointments on the first day of this test, and one appointment on the second day.

### Equipment:

1. GE 830 Discovery

### Procedure:

1. Place a 20 gauge (no smaller than a 22 gauge) intravenous catheter in the patient's arm..
2. Draw 60 mL of patient's whole blood using the heparin (1000 units) provided by the radiopharmacy (Jubilant) as an anticoagulant. Draw blood slowly and smoothly as to not damage blood cells.
3. Fill out the appropriate paperwork and labels included in the kit provided by Jubilant. Be sure to include name and date of birth as a means of identification.
4. Place a label with patient's name and DOB **on the syringe** and place syringe in plastic bag. Place syringe in box with opening facing upward. Place remaining labels and form in the box and zip tie closed.
5. Place armband provided in kit on patient.
6. Explain that the process of tagging the leukocytes can take 3 to 5 hours, and give patient a time to return for re-injection. Be sure to have patient's phone number to call if dose will be early or late.
7. Call the pharmacy to have them pick up the case.
8. When the tagged cells and the patient return, place another 20-gauge (no smaller than a 22 gauge) intravenous catheter in the patient's arm.
9. **Be sure to check all patient identifiers on the blood and the patient's wristband, as well as asking the patient name and DOB prior to reinjecting tagged leukocytes.**
10. Inject the patient with tagged cells.
11. **If Irritable Bowel Disease is the indication, perform a 10 cm/min wholebody scan at 30 min post reinjection.**
12. At 4 hours post injection, obtain appropriate images:



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- a. For FUO or abdominal pain (liver lesion, etc.), obtain a wholebody scan at 8 to 9 cm/min, followed by static images (600 sec) of area of interest.
  - b. For osteomyelitis, or other musculoskeletal infection, obtain static images (600 sec) of area of interest.
13. At 20 hours post injection, repeat appropriate images:
- a. For FUO or abdominal pain (liver lesion, etc.), obtain a wholebody scan at 6 to 7 cm/min, followed by static images (600 to 900 sec) of area of interest.
  - b. For osteomyelitis, or other musculoskeletal infection, obtain static images (600 to 900 sec) of area of interest.
14. For certain indications, SPECT may be performed at **20 hours** post reinjection.

### Acquisition Parameters:

#### Wholebody:

- Matrix: High-Res.
- Zoom: 0.92
- Scan Speed: 10 cm/min for 4 hour; 8 cm/min for 20 hour
- Position: Supine
- Orientation: Feet First
- Body Contour: ON

#### Statics:

- Matrix: 256 x 256
- Zoom: 1.00 x (Full-Field)
- Total Time: 600 sec for 4 hour images; 900 sec for 20 hour images.
- Position: Supine
- Orientation: Feet First

#### SPECT:

- Matrix size: 128 x 128
- Zoom: 1.00 x (Full Field)
- Number of angles: 120 View angle: 3
- Time per angle: 30 seconds
- SPECT mode: Step
- Orbit type: body contour
- Rotation direction: Clockwise
- Supine, feet first, H mode

### Processing / PACS data sets

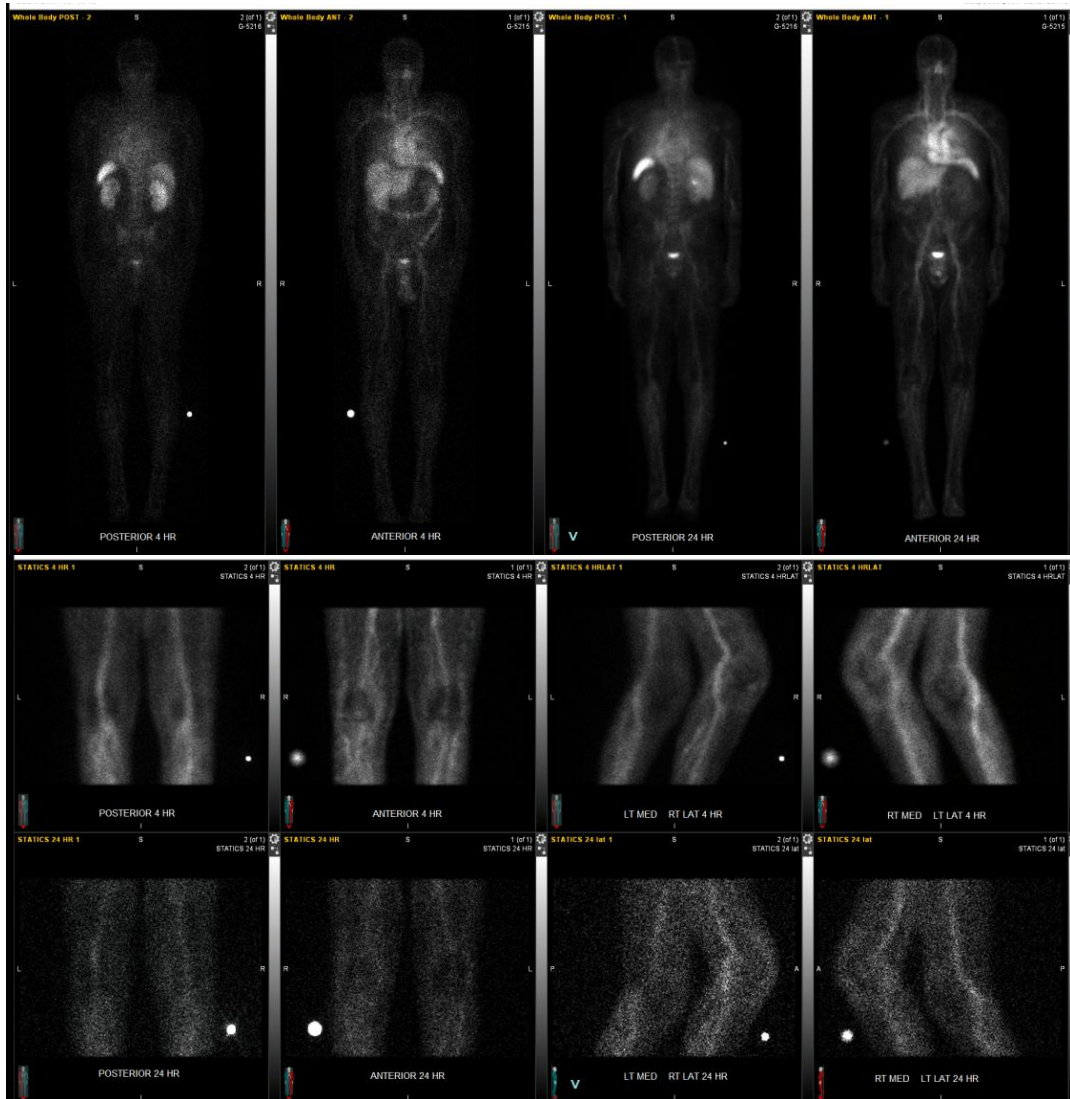
- Whole body: Screenshot of posterior and anterior WB statics
- Limited area: Screenshots of all planar images in a composite
- SPECT: Axial, coronal, and sagittal dynamic SPECT datasets
- Composite screen shot of the dynamic SPECT data reformatted into summed frames (3 frames per image)
- Raw projection dataset & Volume SPECT reconstruction
- Post/Ant statics of chest/abdomen

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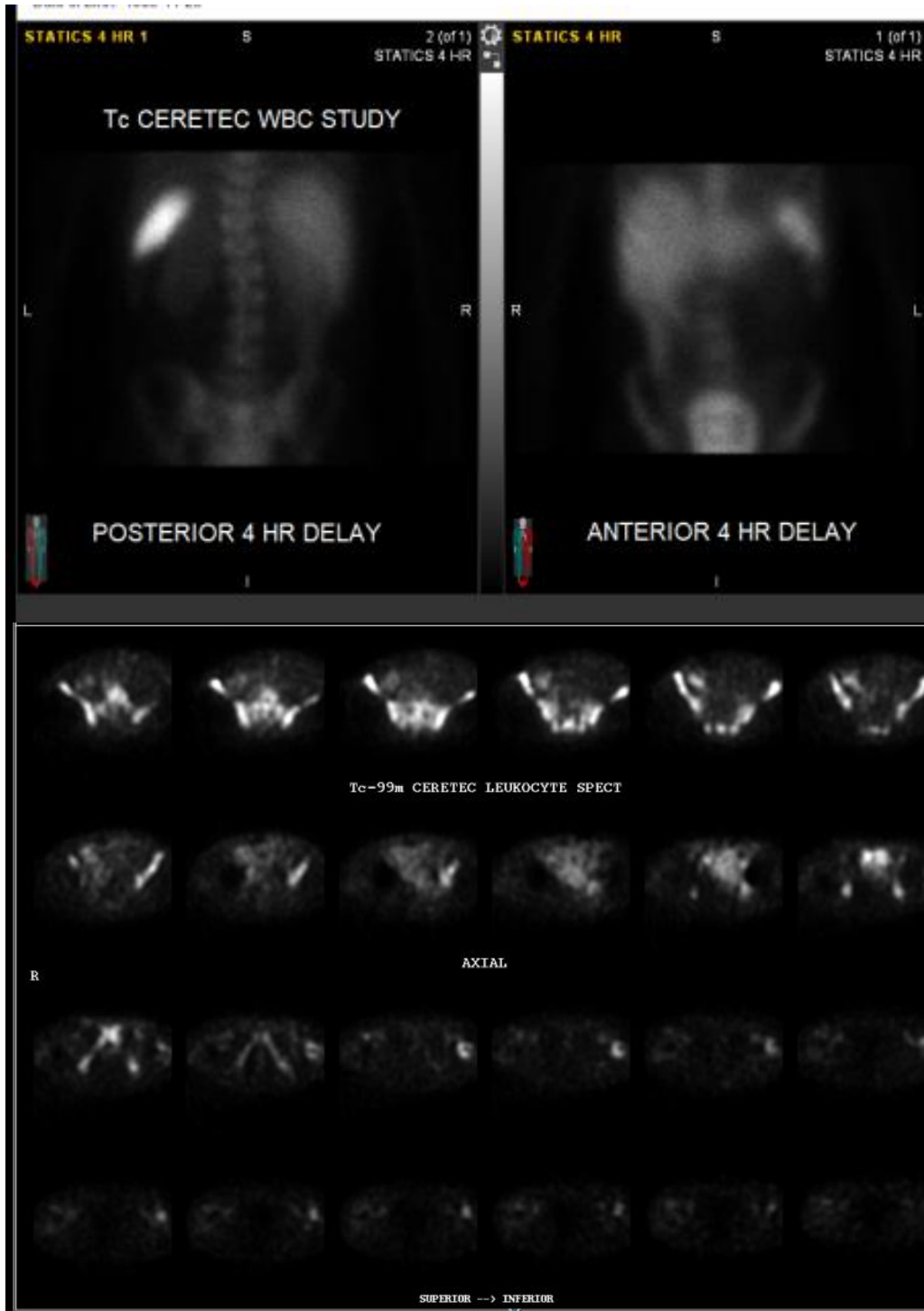


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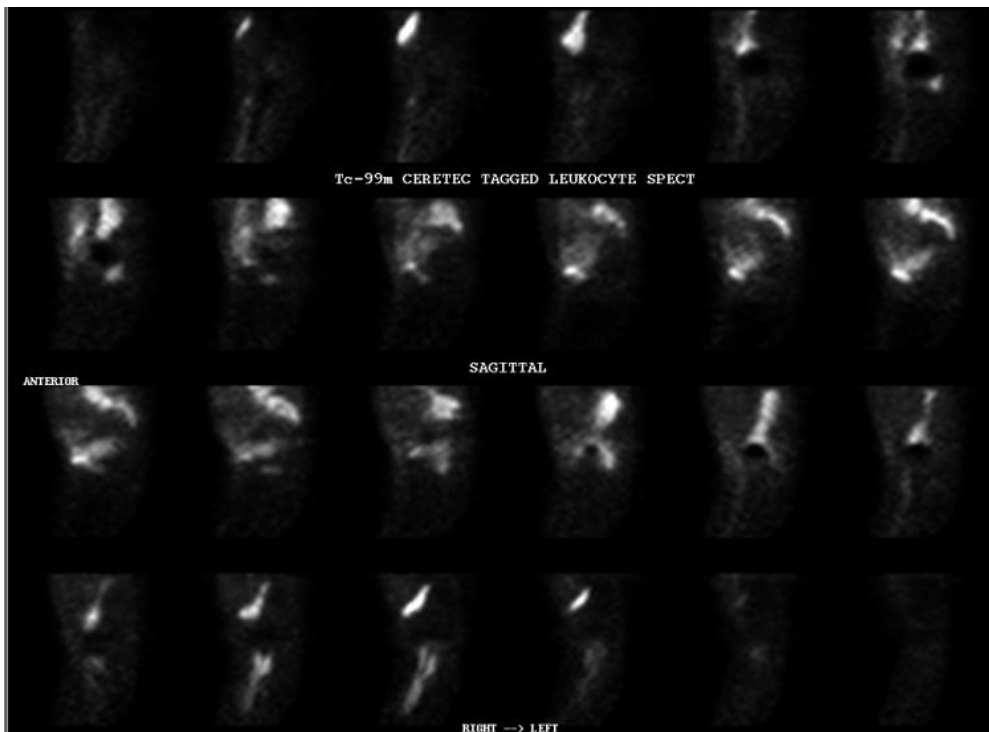
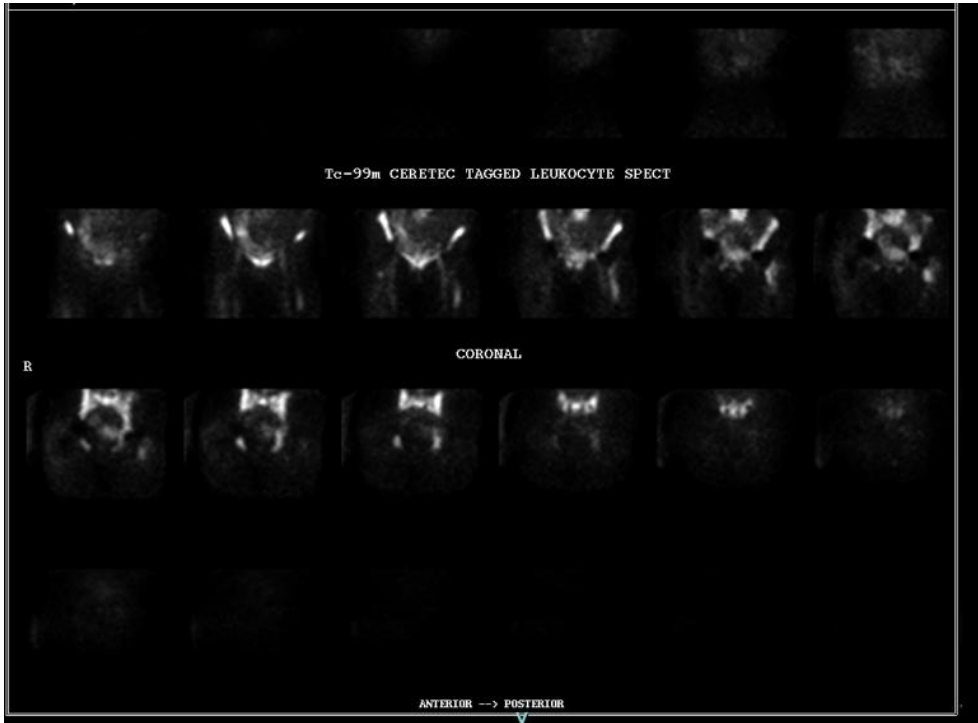


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