



Parathyroid Scan with SPECT

Approval: K. Shamlou, MD

rev:2

7/15/2026

Parathyroid Scan with SPECT

Radiopharmaceutical 1: Tc99m-Sestamibi

Radiopharmaceutical 2: Tc99m-Pertechnetate

Dose 1: 20 mCi

Dose 2: 10 mCi

T1/2: 6 hours

Energy: 140 keV

CPT: 78071

HCPCS: A9500 (Tc99m-Sestamibi); A9512 (Tc99m-Pertechnetate)

Indications:

1. To localize parathyroid adenomas or parathyroid hyperplasia in patients with hyperparathyroidism that is determined on the basis of elevated parathyroid hormone levels in the setting of an elevated serum calcium level.
2. Localization of hyperfunctioning parathyroid tissue in patients with persistent or recurrent disease.
3. Localization of ectopic tissue in patients previously diagnosed with hyperparathyroidism.

Patient instruction:

- Documentation of an elevated parathyroid hormone (PTH) or serum calcium level is necessary prior to performance of this test. Documented elevation of urinary calcium levels is preferred if other lab abnormalities are mild.
- Upon scheduling, if patient has any pertinent prior studies, please instruct either the patient or the physician's office to make those available for comparison.

Equipment:

1. GE 830

Procedure:

1. Set intravenous line for injection of radiotracer.
2. Inject 20 mCi Tc99m-Sestamibi, followed by 20 mL normal saline flush.
3. At 10 minutes post injection, acquire 600k counts in Anterior, **31°** RAO, and **31°** LAO projections of the neck and chest.
4. Immediately following static views, acquire SPECT scan of the neck and chest.
5. At 3 hours post injection, repeat the Anterior, **31°** RAO, and **31°** LAO views of neck and chest for 600k counts.
6. After the 3 views, and with patient still lying in the same position, inject 10 mCi Tc99m-pertechnetate.
7. At 10 minutes post injection, acquire 600k counts in the anterior projection of neck and chest with Co57 marker just above the right shoulder.

Acquisition Parameters:

- Static Views:
 - LEHRS collimator.
 - Matrix: 256 x 256.
 - Zoom: 1.6

 SELECT RADIOLOGY SOLUTIONS A Division of Radiology Imaging Associates	Parathyroid Scan with SPECT		
	Approval: K. Shamlou, MD	rev:2	7/15/2026

Total counts: 600,000

• **SPECT parameters:**

LEHRS collimator.
 Matrix: 128 x 128
 Zoom: 1 x (Full Field)
 Number of angles: 128
 Time/Angle: 20 sec (adjust, if necessary, for larger patients)
 Detector relative angle: 180° H mode
 Starting angle: 0°
 Rotation Direction: Clockwise
 Imaging Arc: 360°
 View angle: 3 – 120 views.
 SPECT Mode: Step – acquire during motion
 Orbit Type: Body contour

Processing/Data sets for PACS

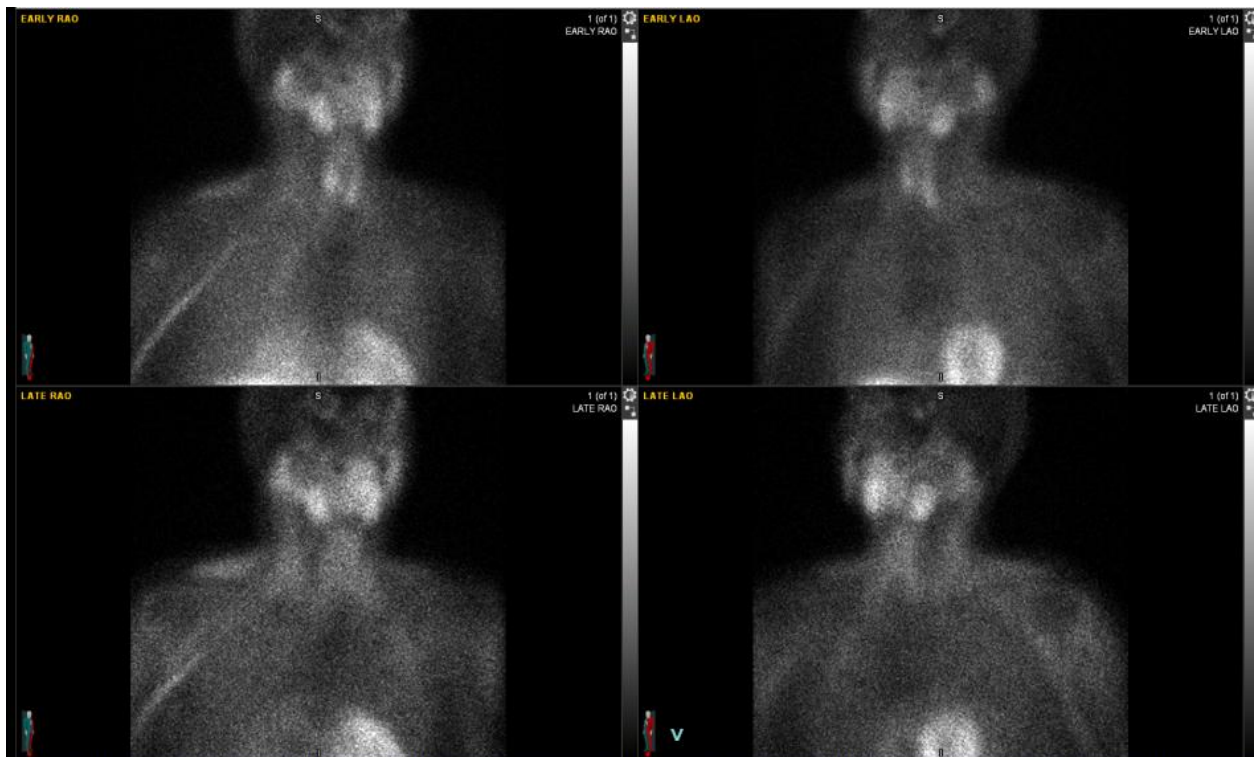
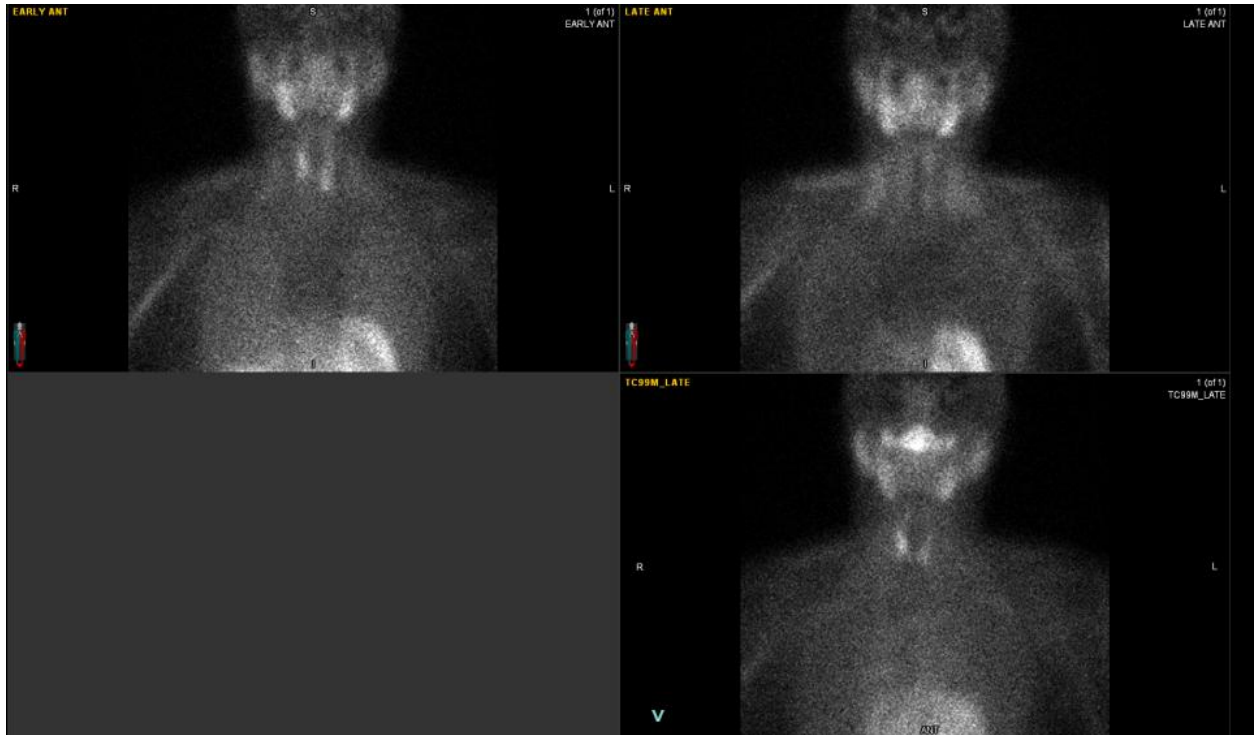
- Screenshot of anterior early, late, and Tc04-
- Screenshot of early and late oblique statics
- Axial, coronal, and sagittal dynamic SPECT datasets
- Composite screen shot of the dynamic SPECT data reformatted into summed frames (3 frames per image)
- Raw projection dataset & Volume SPECT reconstruction

Parathyroid Scan with SPECT

Approval: K. Shamlou, MD

rev:2

7/15/2026



Parathyroid Scan with SPECT

Approval: K. Shamlou, MD

rev:2

7/15/2026

