

Gallium

Special Instructions	<p>Consult with the radiologist prior to ordering the radiopharmaceutical to determine the indication for the study, imaging time points required, regions to be imaged, and use of SPECT/SPECT-CT.</p> <p style="color: red;">To be performed at UNMH. To be performed at SRMC on a case by case basis with Attending Radiologist approval.</p>
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Radiopharmaceutical: Gallium-67 Citrate

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

Route of Administration: Intravenous

Patient Preparation: None.

Equipment Setup: Collimator: Medium energy (all)

Computer set up:

- Exclude the 93-keV photopeak if gallium imaging is done within 24 hours after the patient has received a Tc-99m agent (e.g., for bone scintigraphy)
- Note: For pediatric patients (generally ≤ 12 years old), do whole-body spots as above; use ZOOM as needed for small pediatric patients as appropriate (or confirm with Radiologist when possible).

Whole-body spots (Orbiter):

Acquire 4 anterior images:

- Skull, chest, abdomen, pelvis
- Static acquisition
- 600 secs/image

Whole-body sweep (skull through mid-thighs unless otherwise specified):

SPECT-CT/ECAM/Evo/Symbia E:

- 256 x 1024 matrix
- scan 5 cm/min

Additional spots:

- 256 x 256 matrix
- 10 min/image

- Note: For pediatric patients (generally ≤ 12 years old), do whole-body spots as above; use ZOOM for small pediatric patients as appropriate (confirm with Radiologist when possible).

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SPECT images:

Confirm region to SPECT or SPECT-CT with radiologist

SPECT-CT/ECAM/Evo/Symbia E:

- 128 x 128 matrix
- 180 degrees, CW (clockwise)
- 64 steps, 20 secs/step
- Continuous

Patient Positioning:

Supine, feet first for whole-body sweep or whole-body spots

- Additional positioning may be required for additional spot views depending on region of interest.

Procedure:

- Have patient void before whole-body imaging.
- Whole-body and spot images as needed, typically obtained at one or more time points between immediate and 72 hours (or more) post-injection depending on the indication.
- Review images with radiologist to determine if additional views are required prior to releasing patient.

Suggested procedures for various indications (confirm with radiologist):

Fever of Unknown Origin:

- Perform whole-body imaging at 24 and/or 48 hours.

Suspected subacute or chronic osteomyelitis in bone with underlying abnormality:

- Perform combined bone scintigraphy and Ga-67 scintigraphy, generally with spot images in multiple projections for both studies.
- Administer Ga-67 citrate after completion of bone scintigraphy and perform Ga-67 imaging 48 hours later.

Suspected vertebral or disk-space infection:

- Perform combined bone scintigraphy and Ga-67 scintigraphy, generally with spot images in multiple projections and/or SPECT for both studies.
- Administer Ga-67 citrate after completion of bone scintigraphy and perform Ga-67 imaging 48 hours later.

Suspected chronic infection, pneumonitis, granulomatous infection, or

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interstitial nephritis:

- Depending on the specific clinical problem, perform whole-body imaging or spot imaging at 48 hours.
- Earlier imaging at 24 hours, or even 6 hours, may allow for a diagnosis of diffuse pulmonary inflammation in patients with suspected Pneumocystis carinii pneumonia.
- Interstitial nephritis imaging should be carried out over several days (e.g., 24, 48, and 72 hours) to determine if relative activity in the kidneys is increasing or decreasing with respect to normal structures (e.g., the spine).

Tumor:

- Rarely indicated.
- Perform whole-body imaging and SPECT or SPECT-CT, if necessary to maximize sensitivity, at 72 hours.
- Additional delayed imaging at 4-7 days often further improves detection of tumor foci.

Processing:

Planar:

Whole-body sweep:

Dual intensity display

Any spots taken:

Label extremity images and pelvis images (e.g., TOD) with sides (L/R)

SPECT-CT:

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

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
 - Whole-body sweep: dual intensity display
 - Any spots taken
 - SPECT:

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- Reconstructed Tomo to Leonardo and PACS, Lightboxes/savescreens of axial/coronal/sagittal SPECT to PACS. 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