

Nuclear Medicine 68Gallium-DOTATATE PET/CT

application	neuroendocrine tumor Imaging (SSTR-positive neoplasms)
patient preparation	<p>discontinue all short-acting somatostatin analogue (SSA) medications for at least 12 hours before the procedure.</p> <p>inform physician to schedule SSRT PET imaging before treating patients with long-acting SSAs. If long-acting SSAs have been administered, wait 3-4 weeks before imaging.</p> <p>patients should drink water to ensure adequate oral hydration before radiotracer administration. Continue to drink and void frequently during the first 6 hours after administration to reduce radiation exposure to the bladder.</p> <p>unknown whether SSRT PET radiotracers have harmful fetal effects. therefore, <u>SSRT in pregnancy is only to be performed if there is a clear clinical benefit, as determined by direct communication between the radiologist and the ordering physician.</u></p> <p>for breastfeeding patients, instruct the patient to interrupt breastfeeding for 24 hours after radiotracer injection.</p> <p>SSRT PET CT is considered safe in the pediatric patient population.</p>
landmarks	vertex through mid-thigh (arms up). Please document any non-standard position.
radiopharmaceutical	68-Ga DOTATATE IV (record injection time/injection site)
adult dose	0.054 mCi/Kg up to 5.4 mCi (IV bolus)
pediatric dose	0.043 mCi/Kg IV bolus (range: 0.3-3 mCi)
oral contrast	none
IV contrast	none
uptake time	scan patient at least 60 minutes after radiotracer injection (can scan up to 90 minutes post-injection, if necessary). please document the scan time from the injection (i.e., PET imaging performed 61 minutes post-injection).

CT	Axial 3.75 mm thick, low dose setting, non-diagnostic (standard algorithm)
fused PET/CT	point spread function reconstruction, if available. fuse PET data with axial, sagittal, and coronal CT reconstructions (standard algorithm)

image order

axial: cranial → caudal

coronal: anterior → posterior

sagittal: right → left

submit to PACS	axial CT attenuation correction raw data images (standard)
	sagittal & coronal CT MPRs 2.5 x 2.5 mm (standard)
	axial PET NAC
	axial PET AC
	360-degree rotating 3D planar scan
	PET/CT fusion: Axial, Sagittal & Coronal

notes:

68Ga-DOTATATE half-life: 68 minutes (1.13 hrs.)

effective radiation dose for a 4.1 mCi administered dose: 3.2 mSv

normal 68Ga-DOTATATE distribution: kidneys/bladder, spleen/splenules, liver, pancreas (uncinate process), pituitary, adrenal glands, salivary glands, & thyroid.

References:

- Hope, T. A., Allen-Auerbach, M., Bodei, L., Calais, J., Dahlbom, M., Dunnwald, L. K., Graham, M. M., Jacene, H. A., Heath, C. L., Mitra, E. S., Wright, C. L., Fendler, W. P., Herrmann, K., Taïeb, D., & Kjaer, A. (2023). SNMMI Procedure Standard/EANM Practice Guideline for SSTR PET: Imaging Neuroendocrine Tumors. *Journal of Nuclear Medicine*, 64(3), 264-280. DOI: 10.2967/jnumed.122.264860.

- Loft M, Carlsen EA, Johnbeck CB, et al. ^{64}Cu -DOTATATE PET in patients with neuroendocrine neoplasms: prospective, head-to-head comparison of imaging at 1 hour and 3 hours post-injection. *J Nucl Med.* 2021;62:73–80.

approved, body subcommittee 8/26/24