Molecular Imaging Services
Advanced Molecular Imaging Services

PSMA PET/CT Patient Protocol

^{68}Ga-PSMA-11 / ^{18}F-DCFPyL (piflufolastat) / Posluma (flotufolastat) — Prostate Cancer Imaging

1 Patient Prep & Scheduling



- No fasting required (unlike FDG PET)[1]
- Encourage good hydration before and after the scan
- Frequent bladder emptying to reduce urinary tract activity obscuring pelvic disease
- No blood glucose/insulin restrictions needed
- Patient should void immediately before imaging

2 Tracer Injection



- Patients are weighed and IV access is established
- ^{68}Ga-PSMA-11: 111–259 MBq (3–7 mCi)[2] or Pylarify (piflufolastat): 296–370 MBq (8–10 mCi); Posluma (flotufolastat): 296 MBq (8 mCi)[3]
- Injection through IV; The patient rests comfortably for about 60 minutes while the tracer circulates

3 Uptake Period



- ^{68}Ga-PSMA-11: ~50–60 minutes
- F-18 agents: about 60 minutes (Pylarify: start within 90 minutes)
- Patient drinks water and voids just before going into the scanner room to clear bladder activity

4 Positioning & Scan Acquisition



- After the uptake phase, the patient enters the PET/CT suite and is positioned Supine on PET/CT table, arms up if possible
- Low-dose CT first, for attenuation correction and anatomic localization
  - Coverage: mid-thigh to vertex[4]
- PET acquisition follows
  - About 20–40 minutes, depending on the scanner

5 Image Reconstruction & Fusion

- PET reconstructed with iterative algorithms, attenuation and scatter correction (CT-based)
- PET fused with CT for combined anatomic-functional review
- Review planes: axial, coronal, sagittal, plus MIP for whole-body overview

6 Interpretation

- Evaluate prostate bed, pelvic/retroperitoneal lymph nodes, bones, and viscera for PSMA-avid uptake
- Correlate SUV values with CT anatomy
- Report using standardized frameworks (PROMISE[5] or PSMA-RADS[6]) for lesion characterization
- Applications: initial staging, suspected recurrence, and selecting patients for PSMA-targeted therapy

7 Post-Scan

- Patient resumes normal activities immediately
- Patient hydrates for the rest of the day, eat and drink normally.
- No restrictions

Estimated time from patient arrival at practice to departure – 90-120 minutes

References

1 Fendler WP, Eiber M, Maurer T, et al. PSMA PET/CT: joint EANM procedure guideline/SNMMI procedure standard for prostate cancer imaging 2.0. *Eur J Nucl Med Mol Imaging.* 2023;50(5):1466–1486.

2 LOCAMETZ (kit for the preparation of gallium Ga 68 gozetotide injection), full prescribing information. East Hanover, NJ: Novartis Pharmaceuticals Corp. Recommended activity 111–259 MBq (3–7 mCi).

3 PYLARIFY (piflufolastat F 18 injection), full prescribing information. North Billerica, MA: Lantheus Medical Imaging, Inc. Recommended dose 333 MBq (9 mCi); acceptable range 296–370 MBq (8–10 mCi).

4 Fendler WP, Eiber M, Maurer T, et al. PSMA PET/CT: joint EANM procedure guideline/SNMMI procedure standard for prostate cancer imaging 2.0. *Eur J Nucl Med Mol Imaging.* 2023;50(5):1466–1486.

5 Eiber M, Herrmann K, Calais J, et al. Prostate Cancer Molecular Imaging Standardized Evaluation (PROMISE): Proposed miTNM Classification for the Interpretation of PSMA-Ligand PET/CT. *J Nucl Med.* 2018;59(3):469–478.

6 Rowe SP, Pienta KJ, Pomper MG, Gorin MA. PSMA-RADS Version 1.0: A Step Towards Standardizing the Interpretation and Reporting of PSMA-targeted PET Imaging Studies. *Eur Urol Focus.* 2018;4(6):903–908.

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