Molecular Imaging Services
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Why Urologists Order PSMA PET/CT Scans

Overview — prostate cancer imaging

What PSMA PET/CT Is

- PSMA (prostate-specific membrane antigen) PET/CT is a specialized imaging scan used in prostate cancer care.
- PSMA is a protein highly overexpressed on the surface of prostate cancer cells.
- The scan uses a radioactive tracer that binds to PSMA, highlighting cancer tissue with much greater sensitivity and specificity than conventional CT or bone scans.



Main Reasons Urologists Order It

INITIAL STAGING OF HIGH-RISK DISEASE:

for newly diagnosed prostate cancer with high-risk features (elevated PSA, high Gleason score, or concerning exam/MRI findings), to check for spread to lymph nodes or bone before treatment decisions are finalized.

BIOCHEMICAL RECURRENCE (MOST COMMON REASON):

when PSA rises after surgery or radiation but conventional imaging shows nothing, PSMA PET can detect small recurrent or metastatic lesions even at low PSA levels.

RESTAGING AND TREATMENT PLANNING:

to determine whether disease is localized (potentially treatable with salvage radiation or surgery) versus metastatic (better suited to systemic therapy), which meaningfully changes the treatment plan.

EVALUATING CANDIDACY FOR TARGETED THERAPY:

confirming that tumors express PSMA to determine eligibility for PSMA-targeted radioligand therapy, such as lutetium-177 PSMA-617 (Pluvicto).

When a Urologist Should Order a PSMA PET/CT

1. Newly diagnosed, unfavorable intermediate- or high-risk prostate cancer (high risk: PSA > 20, Grade Group 4–5 [Gleason 8–10], or stage T3 or higher; unfavorable intermediate risk: Grade Group 3, 50% or more positive biopsy cores, or two or more intermediate risk factors) — to check for nodal or distant spread before choosing initial treatment.
2. Suspected recurrence after surgery: PSA rises to 0.2 ng/mL or higher and confirmed on a repeat test (biochemical recurrence).
3. Suspected recurrence after radiation: PSA rises 2 ng/mL or more above the post-treatment nadir (Phoenix criteria).
4. Equivocal or indeterminate findings on conventional imaging (CT, MRI, or bone scan) that need clarification before proceeding with treatment.
5. Before starting salvage therapy (salvage radiation, surgery, or systemic treatment), to confirm the disease is still localized or to detect otherwise-occult metastases that would change the plan.
6. Before considering PSMA-targeted radioligand therapy (e.g., lutetium-177 PSMA-617), to confirm tumors are PSMA-avid and to assess overall disease burden.
7. Generally not needed for low-risk, newly diagnosed disease, where the likelihood of metastasis is low and conventional workup is usually sufficient.

Why It Is Preferred Over Conventional Imaging

Conventional CT scans and bone scans often miss small-volume or early recurrent disease. »

PSMA is highly expressed on most prostate cancer cells, giving PSMA PET/CT substantially higher sensitivity and specificity for detecting cancer in lymph nodes and bone. »

Allows earlier and more accurate detection of recurrence or spread than conventional imaging.

Important Note

This document provides general medical information and is not a substitute for a conversation with a urologist or radiologist.

For decisions about a specific diagnosis or treatment plan, patients should discuss their individual case and scan results with their care team.

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