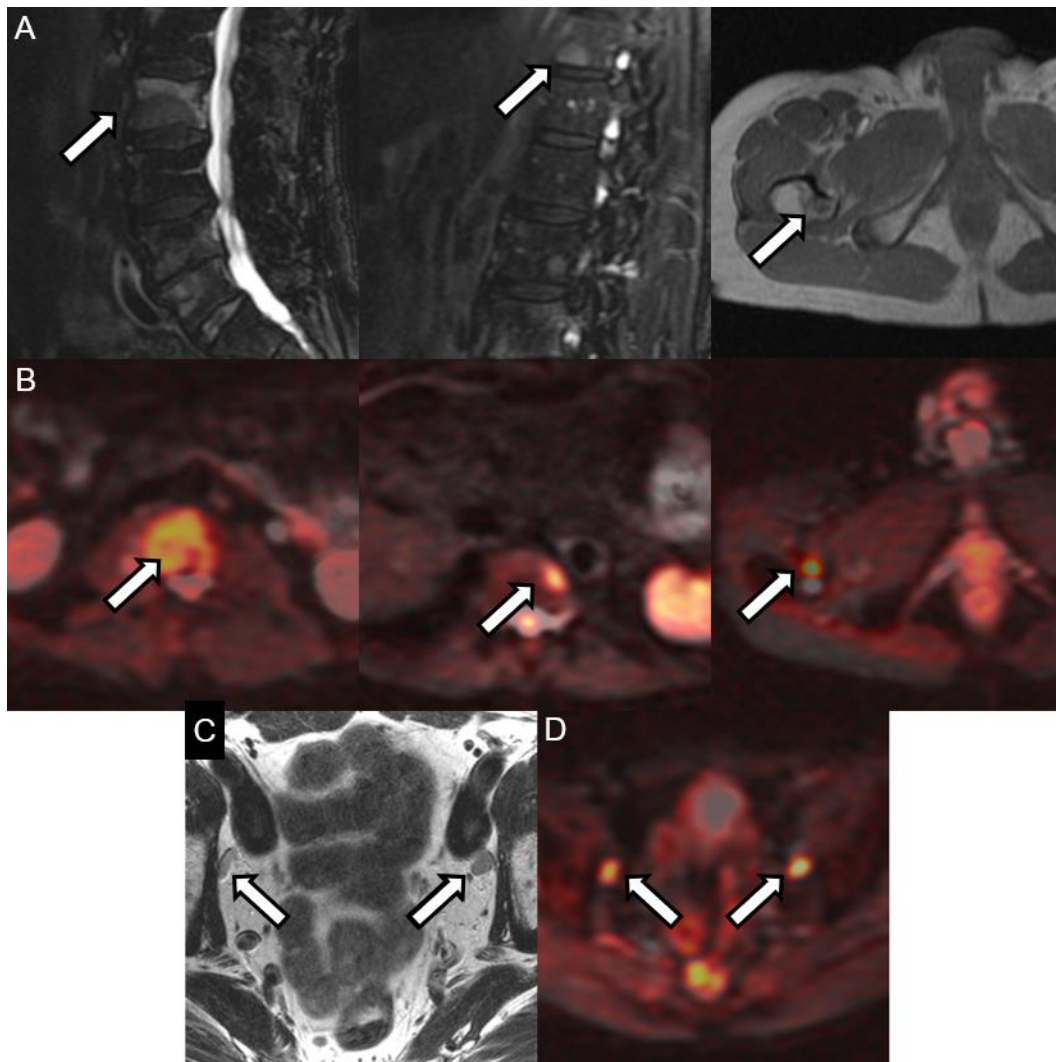
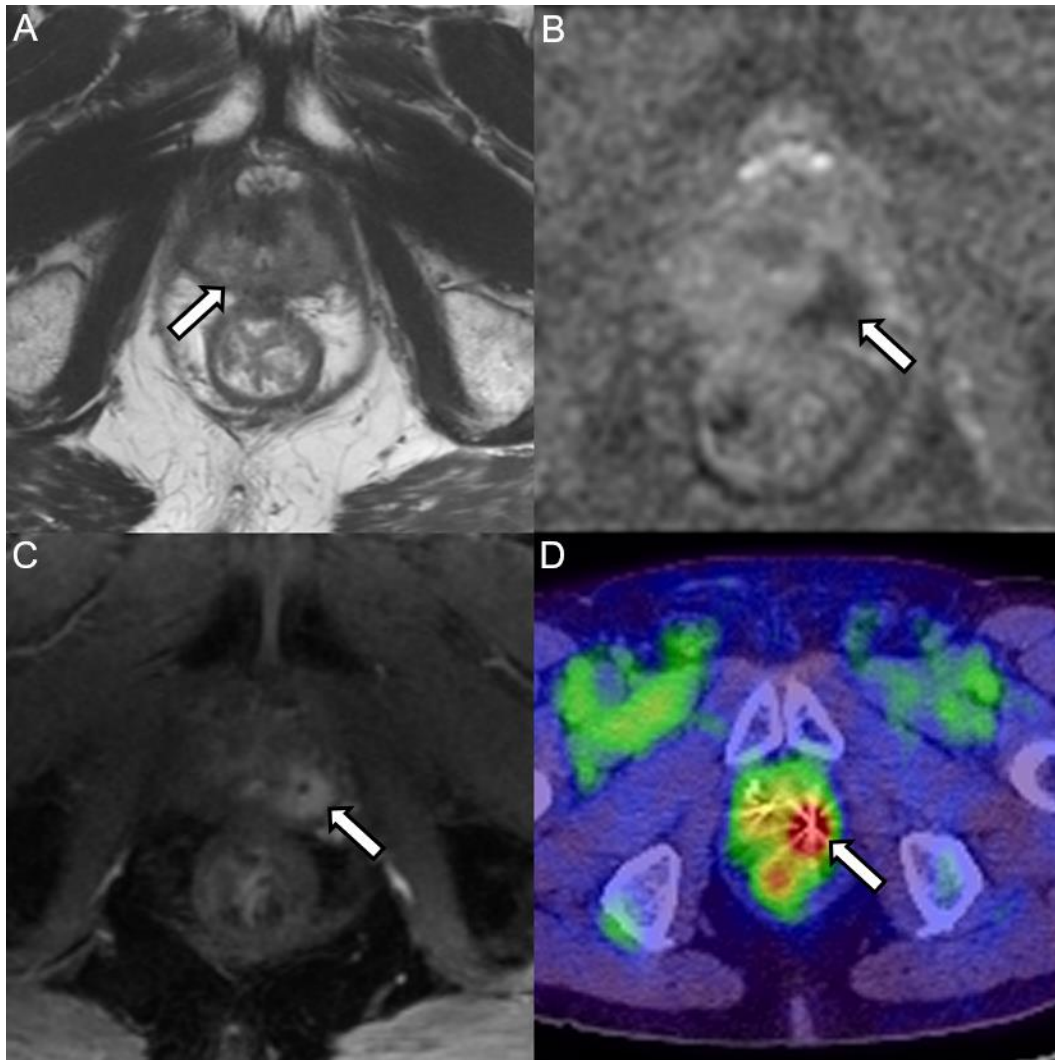




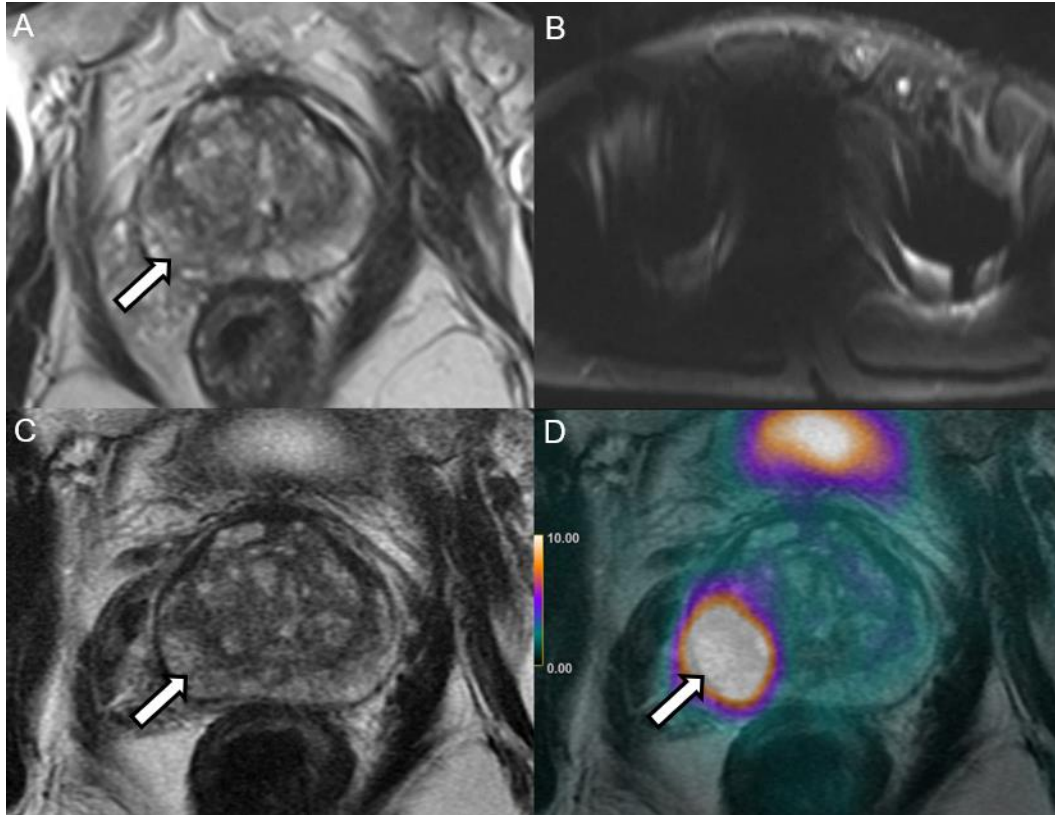
Supplemental Fig. 1 Schematic illustration and corresponding axial T2-weighted MR images of the zonal anatomy of the prostate. Color-coded areas depict the following: pink = peripheral zone, green = central zone, yellow = transition zone, blue = anterior fibromuscular stroma. Seminal vesicles are outlines in interrupted lines.



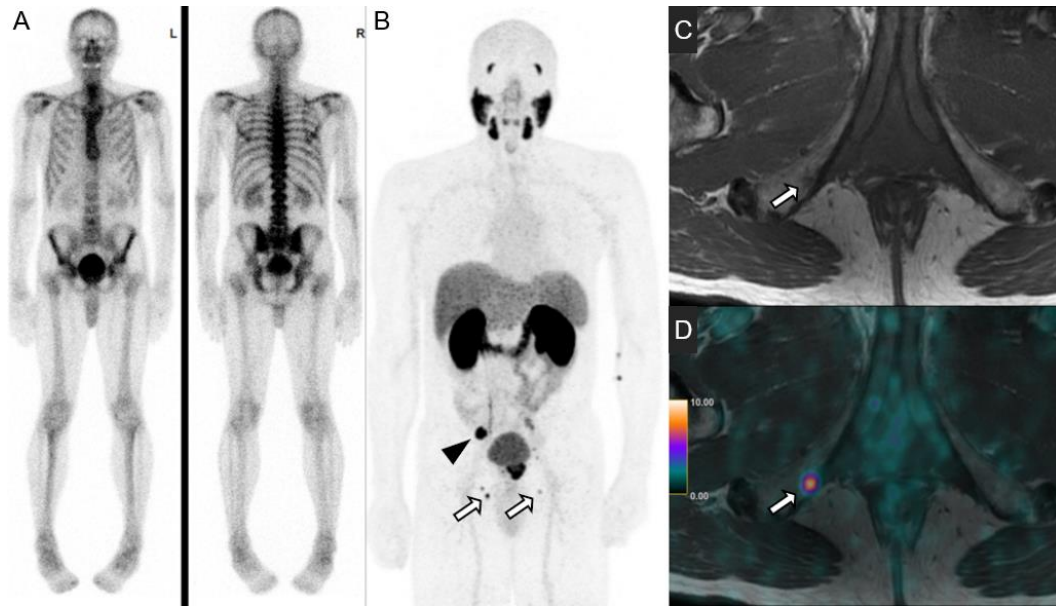
Supplemental Fig. 2 72-year-old with newly diagnosed high-risk prostate cancer suspected to be locally advanced on pelvic mpMRI. Whole-body MRI anatomic (A, C) and fused axial T2-/DWI images (B, D) show several osseous lesions (arrows in A and B) and enlarged bilateral pelvic lymph nodes (arrows in C and D) consistent with metastatic prostate cancer.



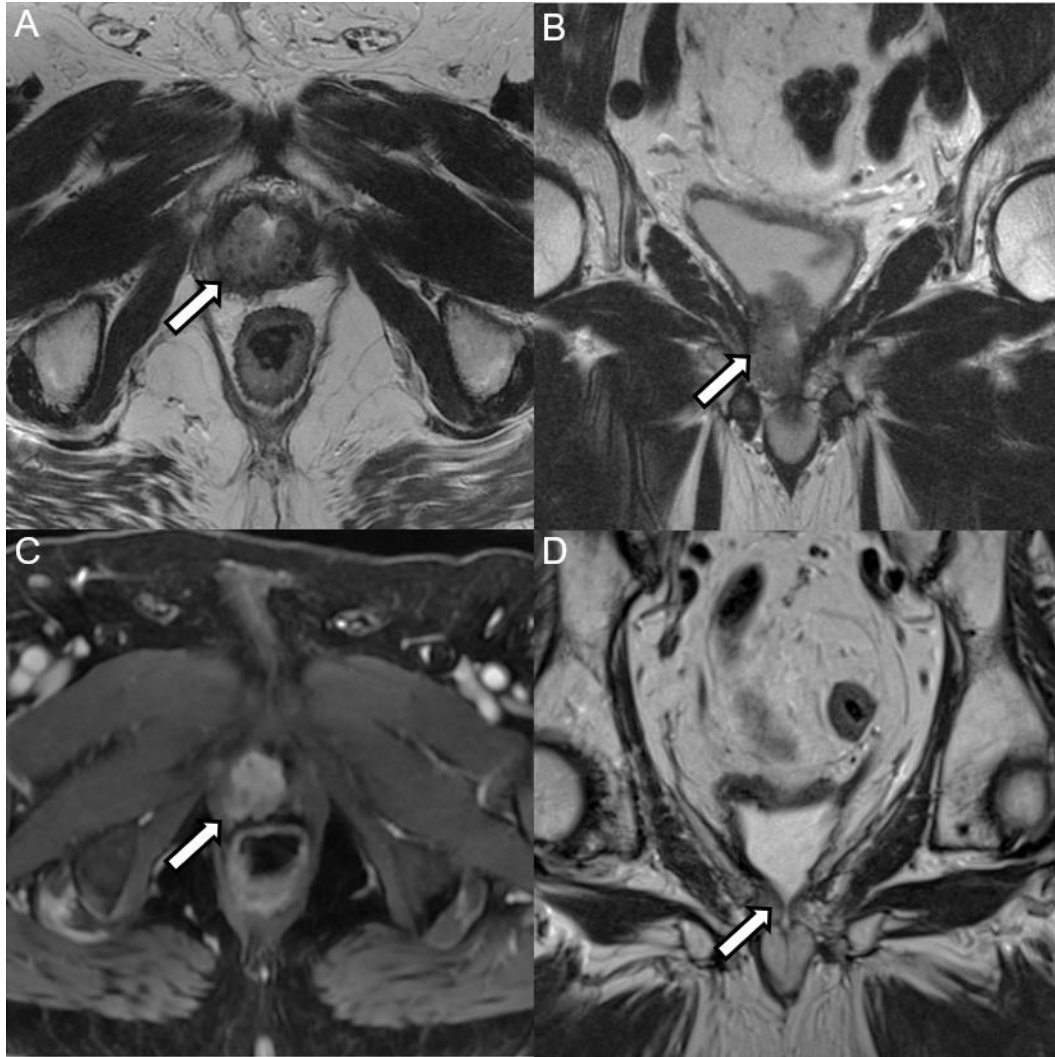
Supplemental Fig. 3 75-year-old with history of Gleason 3+4 prostate cancer treated with stereotactic radiation therapy 2 years prior with newly rising PSA. Axial T2WI shows a small, diffusely low in signal prostate consistent with post-treatment change (arrow in A) without a discrete lesion. Apparent diffusion coefficient (B) map and DCE (C) clearly show a focal area of marked diffusion restriction and early enhancement in the left posterior apex peripheral zone (arrows in B and C). Axial-fused ^{18}F -Fluciclovine PET/CT (D) confirms corresponding focal area of increased uptake (arrow in D) consistent with recurrent tumor



Supplemental Fig. 4 65-year-old with Gleason 4+5 = 9 prostate cancer. Multiparametric MRI shows non-circumscribed low T2 signal abnormalities in the right posterior mid gland peripheral zone without a dominant lesion (arrow in A). Bilateral hip prostheses degrade DWI quality limiting evaluation (B). ^{68}Ga -PSMA PET/MRI depicts dominant lesion with high PSMA expression in the right posterior peripheral and transition zone (arrow in C and D).



Supplemental Fig. 5 54-year-old with newly diagnosed high-risk Gleason 5+4 = 9 prostate cancer and baseline PSA of 65 ng/mL. Bone scintigraphy is negative (A). ^{68}Ga -PSMA PET identifies 3 small pelvic bone metastases (the largest in the right inferior pubic arch, arrows in B-D) and one suspicious pelvic lymph node (arrowhead in B).



Supplemental Fig. 6 70-year-old with history of Gleason 3+4 prostate cancer with biochemical relapse treated with radical prostatectomy 7 years prior (PSA of 3.8 ng/mL). Multiparametric MRI shows a T2 intermediate enhancing mass at the neo-vesicourethral anastomosis (arrow in A-C) extending to the membranous urethra and bladder base and abutting the right levator sling. Compare image B to the normal smooth, low T2 signal appearance of a normal neo-vesicourethral anastomosis in another case (arrow in D).