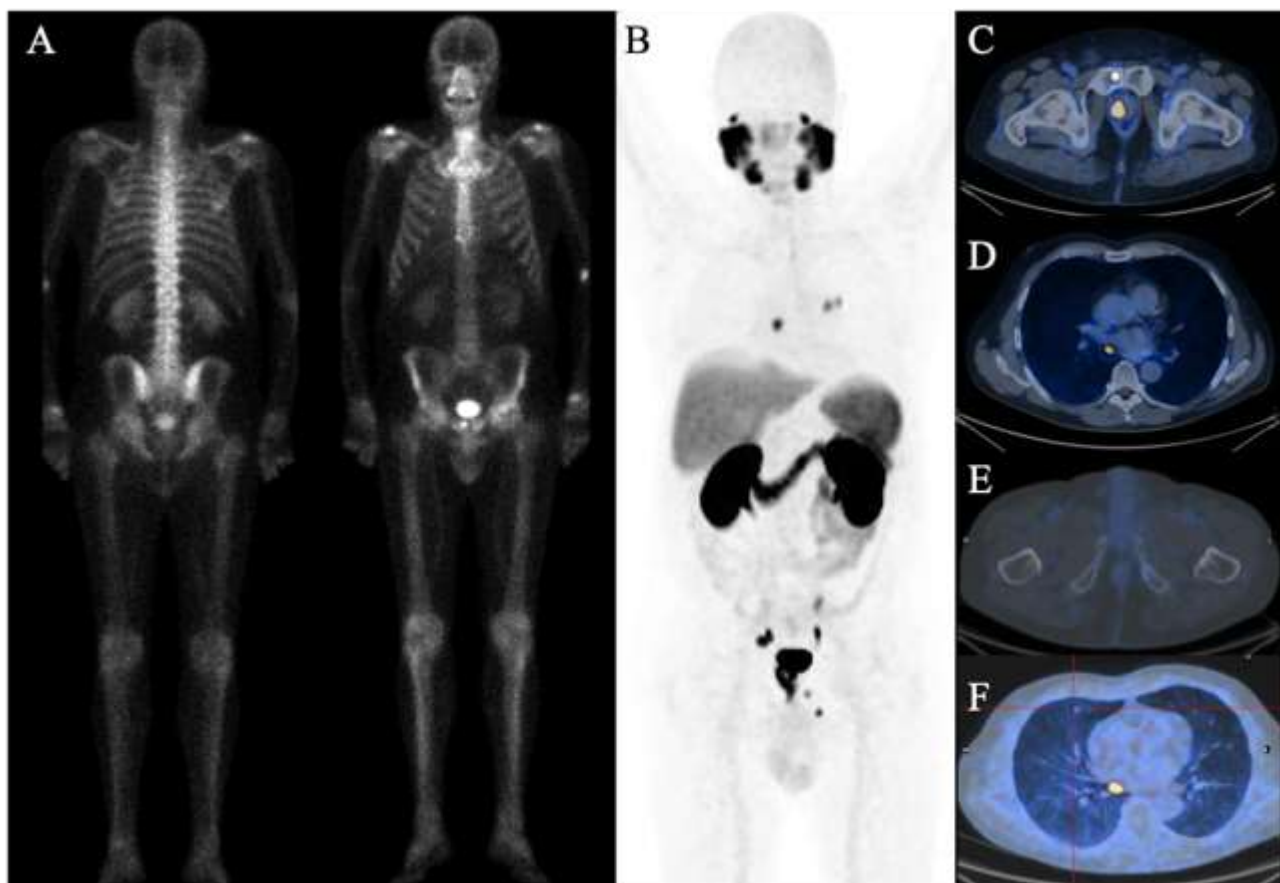


Supplemental Table 1. Summary of the reading and interpretation criteria of PCWG3 (56), RECIST 1.1 (54) and PPP (55) For the definition of progressive disease in mCRPC.

	PCWG3 (56)	RECIST 1.1 (54)	PPP (55)
Reading criteria	Development of new lesions or growth of preexisting lesions	1- Appearance of new lesions 2- $\geq 20\%$ increase in the sum of length diameters of target lesions, 3- Un-equivocal increase of non-target lesions.	1- Appearance of 2 new PSMA positive lesions 2- Appearance of 1 new lesion + clinical and laboratory data. 3- Increased by at least 30% in size or uptake + clinical and laboratory data.
Images	CT or MRI plus Bone Scintigraphy	CT, MRI	PSMA-PET

Supplemental Figure 1. Primary staging before treatment. 64 years old, bioptic ISUP 5; iPSA 10 ng/ml; mpMRI: cT3b N1 M0, PI-RADS 5, referred for primary staging before scheduled RP. According to PSMA-PET findings the patient has been addressed to systemic therapy. PROMISE stage was T1N1M1b for conventional imaging and T1N1M1abc for PSMA-PET. Bone Scan showing small focal uptake in the right pubic bone (A) and PSMA-PET MIP projection (B) and fused images (C, D, E, F) showing multiple lesions involving the prostate and right pubic bone (C), mediastinal lymph nodes (D), one left ischiatic bone (E), and right lung nodule (F).



Supplemental Figure 2. Shift from CI nmCRPC to PSMA mCRPC. 71 years old, ISUP 4, iPSA 12 ng/ml; pelvic MRI PI-RADS 4: pT3aN1M0; RP in 2015; PSA nadir 0,2 ng/ml. Increased PSA values during ADT, up to PSA 2,2 ng/ml with PSA doubling time 8 months at the time of PSMA-PET. CT and Bone Scan negative and condition of nmCRPC. PSMA-PET MIP projection (A), fused images (B) and CT part only (C) showing bone metastases (B) and small distant lymph nodes (C).

