

PSA-Testing

Evidence of increased levels of PSA is now considered the most sensitive marker in the early detection of prostate cancer. The combination of PSA-test, ultrasound examination and palpation of the prostate offers the greatest safety to detect prostate cancer in an early stage. Since the introduction of PSA-screening in 1991 substantially more prostate cancers are diagnosed in a localized stage without metastases than before the PSA-era.

The prostate-specific antigen (PSA) is a protein, produced by prostate cells and excreted by the prostate in the seminal fluid. It helps to liquefy the semen, but also occurs in small quantities in the blood. However, an elevated PSA is not synonymous with the evidence of a prostate cancer. The blood concentration of PSA can also be increased by benign enlargement and inflammatory changes in the prostate, it can rise just after ejaculation and by mechanical pressure (e.g. cycling).

If the value remains suspicious despite the possible exclusion of "interfering factors" (in elderly patients above 4 ng/ml - in younger men even under 4 ng/ml) or increases in a year more than 0.5 ng/ml, there is an urgent need for further investigation to exclude evidence of a prostate cancer.

MRI with endorectal coil

The magnetic resonance imaging (MRI), in particular in combination with a rectal and phased-array coil is superior to sonographical procedures both in tumor detection and localization of prostate tumors. This is particularly true regarding the detection of smaller prostate cancers. The procedure is useful for patients with unclear or negative palpation, where a biopsy is pending. MRI can distinguish to a certain degree between benign and malignant findings.

PET/CT-Scan

The PET/CT-scan is able to identify and quantify metabolic activity, choline tracers detect an enhancement in prostate cancer tissues. This special investigation is useful for (1) patients with suspected prostate cancer, despite previous negative biopsies (suspicious transrectal ultrasound and/or suspicious palpation, continuing PSA-elevation), (2) for the treatment decision and/or for the exclusion of metastases in patients with proven prostate cancer and (3) in patients with increasing PSA after radical prostatectomy or radiation therapy.