What kind of prostate cancers are there?

Not-Aggressive   In-Between   Aggressive

indolent, insignificant, low risk
low grade, non invasive

biologically active, significant, high risk
high grade, invasive

Most Prostate Cancers - Not-Aggressive

> Common, very slow growing, causes no illness or symptoms

> PSA slow progression, PSA density less than 0.10

> Men with Not-Aggressive cancers die from other causes

> Biopsy Gleason grades 6 small volume

> Not visualized on MRI

In-Between

> Rate of cancer growth varies

> PSA rate of progression varies

> PSA density 0.10-0.15

> Biopsy Gleason 7 (3+4) small volumes

> Sometimes visible on MRI, cancer nodule usually less than 0.2 cc

Some Prostate Cancers - Aggressive

> Less frequent, grow faster, can cause serious illness and death

> PSA elevation unusual for age, rapid progression, PSA density > 0.15

> Cancer nodules visualized on MRI

> Biopsy Gleason grades 7 (4+3), 8, 9, 10

Have a Risk Assessment, MRI may not be needed

Do a MRI, Biopsy may not be needed

When biopsy required, TRUS/MRI is very accurate

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Prostate Cancer MRI
Accurate Diagnosis and Treatment

Frequently Asked Questions

To read all the Educational Pamphlets go to **pcamri.com**

PSA to Prostate MRI

for patients and curious doctors

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What I read about prostate cancer scares the heck out of me. It urges me to immediately undergo prostate cancer risk assessment, MRI, biopsy or treatment.

Does early prostate cancer have any symptoms? No

How fast does prostate cancer grow? Slow

What are my chances of dying from prostate cancer? 3 % (chances of dying from heart attack, stroke, diabetes 40 %)

What are my chances of being diagnosed with prostate cancer ? 15 % (treatment may be necessary)

What is Active Surveillance? Monitoring of untreated Not-Aggressive and In-Between prostate cancers

Which men are at risk?

> Good health, less than **70** years old
> - More than 10 year life expectancy
> - Most prostate cancers grow slowly, take years to grow dangerous

> Family – Genetic **History** of prostate cancer
> **Black** gentlemen, obese gentlemen
> **Exposures** – smoking, excess alcohol, environmental
> Prostate nodule felt on digital rectal exam
> PSA progression faster, higher than expected
> Persistent PSA elevation unusual for age
> PSA increases in men on Avodart, Proscar, Testosterone
> PSA more than **10**
> PSA Density more than **0.15**
> **Abnormal** Prostate Cancer Biomarkers/Predictor Tables
> **Previous** MRI, biopsy or diagnosis of prostate cancer
> **MRI** nodule volume ≥ 0.5 cc, MRI Score 4,5

What is PSA? (Prostate Specific Antigen)

> A blood test biomarker with no assigned normal value
> **Predicts** prostate cancer
> - **4** ng/ml upper limit of normal is **incorrect**
> - **less than 4** ng/ml aggressive significant cancers may be present
> - **over 4** ng/ml mostly caused by benign prostatic hypertrophy (BPH)
> - PSA Progression and PSA Density are better cancer predictors
> - **After treatment PSA is a sensitive, reliable monitoring biomarker**

What is PSA Progression?

- A better predictor than PSA alone
- The rate PSA increases over a few years
- Prostates **grow** bigger with age (BPH) PSA usually ↑ with age
- Prostate cancers may cause more rapid PSA Progression

What is PSAD? (PSA Density)

> A cancer predictor **better** than PSA and PSA Progression
> PSAD is the ratio of PSA to prostate volume

$$\frac{PSA}{Prostate\ volume}$$

> Prostate volume obtained from Trans Rectal Ultrasound (TRUS) or MRI
> - **Normal PSAD** - **less than 0.10**
> - **Borderline PSAD** - **0.10 to 0.15**
> - **Abnormal PSAD** - **greater than 0.15**

How is prostate cancer diagnosed?

A Risk Assessment *selects men for MRI*

Age, Life expectancy, major illnesses, Family-Genetic History, Race, chemical-medication exposures, previous UTI, MRI, biopsy, pelvic surgery, radiation, Urology exam, DRE, urinalysis-culture, PSA, PSA progression, TRUS, PSAD, biomarkers, predictor tables, testosterone, kidney function

B MRI *selects men for biopsy, where to biopsy*

Accurately identifies prostate cancer

- New remarkable technology
- Detailed prostate imaging - anatomy, biology, microvasculature
- Defines cancer nodule(s) size, location and degree of malignancy
- Stages local-regional extension of the cancer

C TRUS/MRI Fusion Targeted Biopsy

TRUS - Images prostate external anatomy for needle placement

MRI - Images prostate external and internal anatomy
- Identifies cancer nodule(s) for targeted biopsy