

Some observations

- > **5 alpha reductase inhibitors** downplays aggressive cancers
 - Lowers PSA, decreases MRI imaged nodule(s) volume and score
 - May hide cancers in BPH patients
 - A false sense of PSA security in men on Active Surveillance
- > MRI interpretation is more difficult after biopsy created artefact
- > A PZ **T2w nodule** is not cancer if there is **no** restriction of water diffusion on DWI/ADC
- > Scoring the 3 MRI parameters (T2w, DW/ADC, DCE) of an imaged nodule
 - **Likert Scale** – the 3 parameters summed together
 - **PI-RADS** – the 3 parameters each scored separately then totaled
 1. Highly likely **no** cancer
 2. Likely **no** cancer
 3. Unsure
 4. Likely cancer
 5. Highly likely cancer
- > Repeat MRIs at 2-4 year intervals are valuable monitoring tools
- > Prostate MRI increases **lead-time bias**

Prostate cancer doubling time is 4 years.

Missing a Gleason 3+3 or low volume 3+4 causes no harm.

Programmed monitoring with PSA, biomarkers and MRI diagnosis them.

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an educational pamphlet

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Prostate Cancer MRI

Accurate Diagnosis and Treatment

Teaching Multiparametric Prostate MRI



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PSA to Prostate MRI

for patients and curious doctors

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Multi Parametric Prostate MRI

Image Based Prostate Cancer Diagnosis And Treatment

Renewed Partnerships – Radiology, Urology, Pathology

Transformative – the new remarkable ability to detail image the prostate

- Further understanding prostate cancer natural history
- A new avenue of investigation in cancer, prostatitis and BPH
- Challenges previous assumptions, conclusions and research

Learning curve – understanding the technology

Experience curve – wise clinical implementation

Key for:

- Monitoring men at risk of prostate cancer
- Selecting patients for biopsy
- TRUS/MRI fusion targeted biopsy
- Discriminates clinical stage T₂ from T₃
- Active surveillance
- Local staging
- Treatment selection and planning
- Post-treatment monitoring for residual or recurrent cancer
- Focal Therapy

The Significance of a Nodule Imaged On MRI depends on:

- > A thorough Prostate Cancer **Risk Assessment**
- > **Patient data** on MRI requisition (guides radiologist interpretation)
- > Precise image acquisition and clinically useable reports
- > **Nodule(s)** volume, location and score
- > Biopsy Gleason grade

Risk Assessment selects men for MRI

MRI triages men for biopsy

Risk Assessment + MRI + Biopsy Pathology

Decides Treatment

Sequential learning

- Step 1:** Prostate Cancer Risk Assessment
- Step 2:** Knowledge of MRI parameters T2w, DWI/ADC, DCE
First learn T2w - Prostate morphology
(**false positives** – biopsy artefact, inflammation, infection, granulomatous prostatitis, infarcts, atrophy, hyperplasia,)
(**false negatives** – missed PI-RADS Score 4,5 nodule(s) at extreme base, lateral apex, TZ, and anterior gland)
- Later learn DWI/ADC, DCE (pamphlet #6)
- Step 3:** Interpret the **MRI report** in light of the specific patient, quality of the MRI, experience of the Radiologist and clinical usefulness of the report.
- A nodule(s) importance – **volume, location, score**
 - MRI staging below the bifurcation of the aorta (capsule, adjacent, nodes and bones)
- Step 4:** Develop TRUS hand-eye coordination with endfire probe
- Step 5:** Cognitive (visual) TRUS/MRI targeted biopsy
- Step 6:** Software Co-Registration TRUS/MRI targeted biopsy
- Step 7:** Review MRI before all biopsies and surgeries
- Step 8:** Verify concordance of MR images with surgical pathology

Gleason grade 6 (3+3)

- Small volume is not harmful
- Large volume can become clinical cancer
- Not image on MRI
- Many are MRI Score **3**

When to consider biopsying MRI Score **3**

- Patient with life expectancy > 10 years
- Positive Family-Genetic History, Black Gentlemen
- PSA rapid progression, PSA Density ≥ 0.10
- DRE asymmetry or a nodule
- “Dirty” PZ on T2w
- Patient on Active Surveillance
- After Focal Therapy