Chesapeake Urology’s prostate cancer specialists are committed to providing men with the most advanced diagnostic tools and treatment options to win the battle over prostate cancer. Ask your doctor about the 3D Ultrasound/MRI Fusion Biopsy for prostate cancer, and if it is right for you.

Learn more about Chesapeake Urology’s comprehensive prostate cancer program – visit www.prostatecancer.chesapeakeurology.com or call 866-598-9858 to schedule an appointment with one of our experienced urologists.

3D ULTRASOUND/MRI FUSION BIOPSY – REVOLUTIONIZING PROSTATE CANCER DETECTION AND DIAGNOSIS

A Patient’s Guide
Continually on the forefront of ground-breaking technology, Chesapeake Urology’s prostate cancer specialists now offer patients even more targeted prostate cancer diagnostics, leading to more precise treatment planning and better outcomes.

The 3D Ultrasound/MRI Fusion Biopsy for prostate cancer “fuses” detailed MRI scans with live, real-time ultrasound images of the prostate, providing urologists with the capabilities to pinpoint exact prostate cancer location within the prostate gland and better identify the extent of disease. Several studies have demonstrated that this new system provides a higher level of accuracy in diagnosis for patients at risk of prostate cancer.

The 3D Ultrasound/MRI Fusion Biopsy system includes:

- The PROMAP-MR – combines 3D ultrasound and MRI to produce accurate 3D mapping of biopsy samples within multimodal images.

- The PROMAP-US – combines full 3D ultrasound and automatic organ tracking to create, visualize and memorize a 3D map of “target” lesions and biopsy samples within the prostate gland.
How does the 3D Ultrasound/MRI Fusion Biopsy for prostate cancer work?

By combining advanced MRI imaging with 3D ultrasound technology, this new biopsy system:

- Creates a 3D map of the prostate.
- Identifies suspicious lesions or targets on MRI.
- Fuses or overlaps the 3D MRI image onto the 3D ultrasound image of the prostate.
- Provides clear visualization of the biopsy needle and the targeted lesion for accurate guidance.
- Stores the exact location of each biopsy sample for future reference.

The 3D Ultrasound/MRI Fusion Biopsy – what you can expect

If your urologist determines that you are a good candidate for the 3D Ultrasound/MRI Fusion biopsy, there are several steps to this diagnostic procedure. Here is what you can expect:

The MRI

- You will be scheduled for an MRI with our radiology partner.
- On the day of your scheduled appointment, you will undergo an MRI of the prostate gland utilizing state-of-the-art computer software. The MRI is then processed.
- Radiologists who are specially trained in this technology review the images, identify suspicious lesions and build a 3D image of the prostate and each lesion, providing your urologist with this powerful image.
- You will then be scheduled for a separate appointment where your 3D ultrasound and biopsy will be performed in one of Chesapeake Urology’s Summit Ambulatory Surgical Centers.

The 3D ultrasound and prostate biopsy

- On the day of your scheduled appointment, one of Chesapeake Urology’s specially-trained urologists will perform the 3D ultrasound to build a live image of your prostate.
- Once the image of the prostate is built, your urologist will overlay or merge your previous MRI onto the live 3D ultrasound image. This creates an enhanced 3D map of the prostate for dramatically improved visualization of the gland, allowing your urologist to determine the exact location of potential tumors.
- You will be given IV sedation anesthesia for your utmost comfort.
- Each biopsy track is memorized by the computer software so that your urologist can retrace his or her steps if a second biopsy is necessary in a particular location. Additional biopsies may also be taken in order to map the entire prostate gland.
- You should receive the results of your biopsy and subsequent treatment plan from your urologist in one week.
3D Ultrasound/MRI Fusion Biopsy vs. 2D Transrectal Ultrasound (TRUS) – guided biopsy

- Currently, the standard diagnostic tool for detecting prostate cancer is the 2D (2 Dimensional) Transrectal Ultrasound (TRUS)-guided biopsy.
- A small probe is inserted into the rectum to obtain images of the prostate.
- A biopsy needle is then inserted into the probe to obtain random tissue samples of the prostate gland in order to determine the presence of prostate cancer cells.

3D Ultrasound/MRI Fusion Biopsy

- A specially trained urologist overlays 3D MRI and 3D ultrasound images in order to get a precise picture and location of suspicious areas of the prostate (also known as “targets”).
- Targeted biopsies of the suspicious areas are then performed.
- Uniform random biopsies of other areas of the prostate may also be performed, depending upon the clinical circumstances.
- The computer creates a record of the exact location of each biopsy, which are then stored and available for future use, if necessary.

Studies show that computer-assisted 3D ultrasound/MRI Fusion Biopsy provides a more precise way to identify clinically significant prostate cancers. This allows Chesapeake Urology patients access to unique technology that will significantly improve their clinical outcomes.
Benefits of the 3D Ultrasound/MRI Fusion Biopsy system

- Identifies and locates hidden tumors missed by traditional biopsies, especially localized prostate tumors that can be difficult to image.
- Enhances visualization of tumors within the prostate, detailing exact size and location of suspicious tissue and tumors.
- 3D map of the prostate and tumor allows for targeted biopsies and improved sampling for a more accurate diagnosis.
- Fusion of live 3D Ultrasound and MRI images provides more accurate staging and diagnosis, as well as a more targeted, individualized prostate cancer treatment and management plan.
- Memory: The system provides the ability to retrieve a record of previous biopsy sites to allow the urologist to go back to the exact area of a previous biopsy site.

Am I a candidate for the 3D Ultrasound/MRI Fusion Biopsy?

Several groups of patients can take advantage of this diagnostic tool including:

- Men who have a current diagnosis of prostate cancer and have chosen Active Surveillance or watchful waiting (which typically requires periodic biopsies).
- Men who have a persistently rising PSA level despite having a previous 2D (2 Dimensional) Transrectal Ultrasound (TRUS)-guided biopsy and prostate needle biopsy which was negative for cancer.
- Men who are found on traditional 2D TRUS-guided biopsy to have cells that are abnormal but cannot be confirmed as cancer.
- Men with a newly identified elevated PSA.
- Men previously treated for prostate cancer with radiation therapy or cryosurgery who have a rising PSA that suggests a possible recurrence of cancer in the prostate gland.

Chesapeake Urology’s specially-trained urologists understand the need for the most accurate diagnosis to create an individualized treatment plan for men with prostate cancer. Talk to your doctor about the 3D Ultrasound/MRI Fusion Biopsy to see if you are a candidate for this advanced diagnostic procedure.
What To expect – frequently asked questions

Q: Where will I go for the MRI?
A: For your MRI appointment, your urologist will refer to you to one of several RadNet locations convenient to you.

Q: How long after I receive the MRI will I be scheduled for the 3D ultrasound and prostate biopsy?
A: You will be scheduled for the ultrasound and biopsy within two to four weeks.

Q: Where will the biopsy be performed?
A: Because the prostate biopsy is a minimally invasive surgical procedure requiring anesthesia, the biopsy will be performed in one of Chesapeake Urology’s Summit Ambulatory Surgical Centers which provides patients with a state-of-the-art surgical experience from arrival through to recovery.

Q: How will I feel after the biopsy?
A: After your biopsy is completed, you will be brought to a recovery room while the anesthesia wears off. You may feel tired for the next day following the procedure. You may see a small amount of blood when you have a bowel movement, in your urine or in your ejaculate for a few weeks following the procedure. Regular activity can be resumed a day or two after the biopsy. If you experience any fever, chills, difficulty urinating or excessive bleeding, call your doctor right away.

Q: How long will it take to get the results from my biopsy?
A: You will receive the results in one week.

Q: Is there a specific preparation for the MRI?
A: Yes. You will be asked if you have any metal inside of your body. Most stents and other medical devices are allowed, but pacemakers and defibrillators are not.

Q: Are there specific preparations for the biopsy?
A: Yes. You will be given instructions with details regarding appropriate antibiotics, as well as an enema.