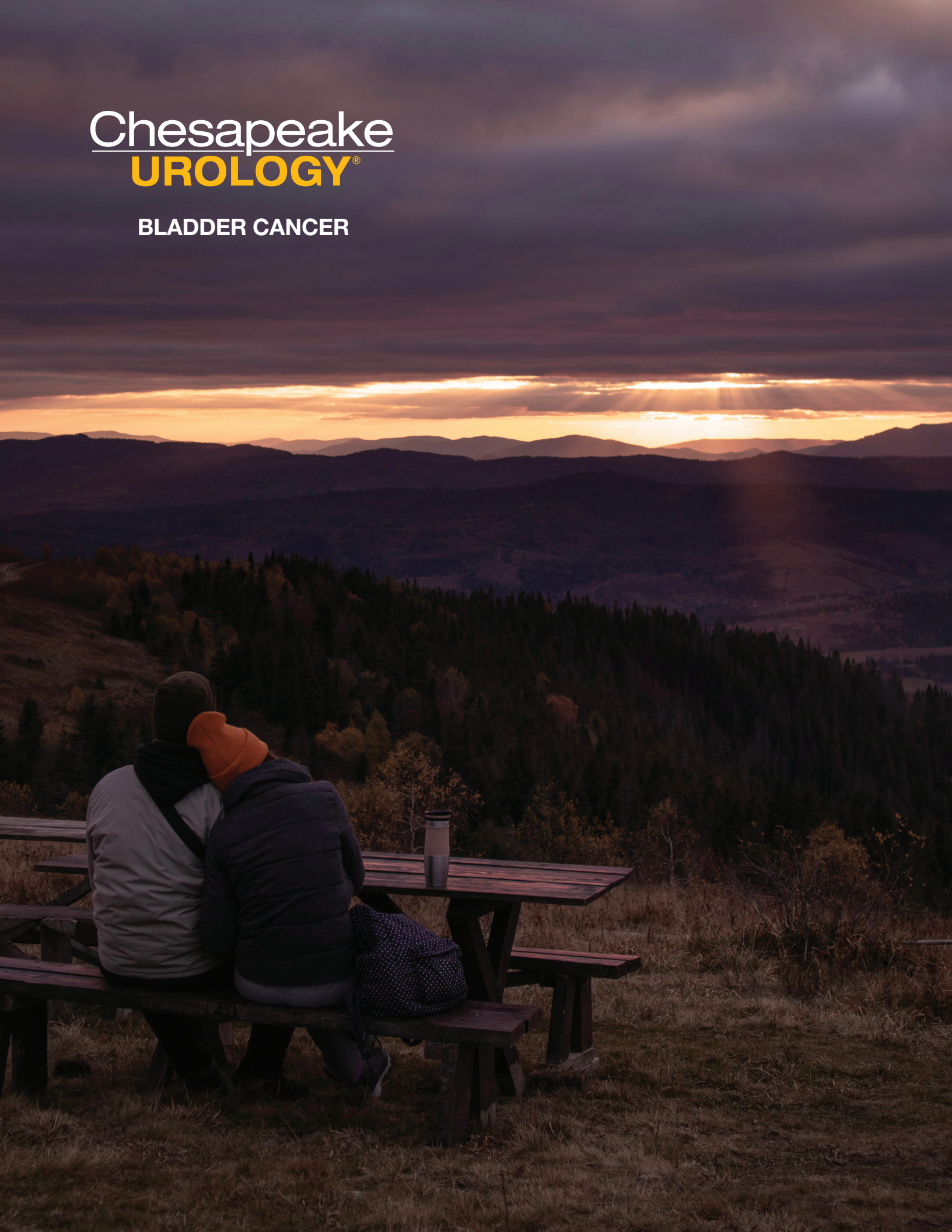


Chesapeake UROLOGY[®]

BLADDER CANCER



WHAT MAKES CHESAPEAKE UROLOGY'S BLADDER CANCER PROGRAM UNIQUE?

At Chesapeake Urology, our bladder cancer team understands that this is a difficult time for you and your loved ones. We are committed to providing you with the medical expertise and support you need throughout your treatment, and beyond. Our bladder cancer specialists will take the time to develop a personalized plan of care to meet your individual health needs. Everyone is different, which is why our team builds the care plan around you.

WHAT YOU CAN EXPECT FROM CHESAPEAKE UROLOGY

Chesapeake Urology is the largest urology practice in the Mid-Atlantic region, providing our patients with a continuum of care and access to a wide range of urologic services, advanced technology, medical expertise and support. When you turn to Chesapeake Urology for bladder cancer care, you can expect:

- **A multidisciplinary team** – Our bladder cancer specialists include urologic oncologists, urologists, medical oncologists that deliver chemotherapy, radiation oncologists, Advanced Practice Providers (physician assistants and nurse practitioners), uropathologists, and support staff who are dedicated to providing the best care for you.
- **Surgical and Medical Expertise** – Our urologic oncologists are fellowship-trained in the most up-to-date diagnostic applications and surgical techniques. We have experience with performing robotic-assisted and minimally invasive procedures for advanced bladder cancer as well as incorporating novel therapeutics to maximize treatment benefit for early-stage disease.
- **Advanced technology** – Our urologists utilize the most advanced technology and innovations in bladder cancer to deliver the best possible outcomes. This includes Narrow Band Imaging (NBI®) and Blue Light Cystoscopy with Cysview® which allow urologists to better visualize bladder tumors, as well as the da Vinci® Robotic Surgical System, a minimally invasive surgery platform used for advanced bladder cancer treatment. Our specialists are on the leading-edge of the latest in advanced chemo and immunotherapies, bringing these novel treatments to our patients.
- **Innovative Diagnostic Tools**
 - Narrow Band Imaging
 - Urine Biomarkers
 - Blue Light Cystoscopy with Cysview®
 - Genetic Testing
- **Access to Clinical Trials** – Chesapeake Urology Research Associates (CURA), a subsidiary of Chesapeake Urology, offers a number of clinical trials for bladder cancer. Well-designed clinical trials offer benefits that include access to the latest treatments before they are widely available and close monitoring of your condition by expert medical professionals.
- **Convenience** – With medical offices and AAAHC-certified ambulatory surgery centers in Baltimore, Harford, Howard, Carroll, Montgomery, Prince George's, Anne Arundel, Wicomico, and Worcester Counties and in Baltimore City, we offer our patients convenient locations close to home and work.
- **High patient satisfaction** – Year after year, our high patient satisfaction scores reflect the excellent care received by our urology care team.

When you choose Chesapeake Urology, you're choosing the very best bladder cancer care.

The bladder is a balloon shaped organ that collects urine from the kidneys and stores it until it is eliminated through a tube called the urethra. The most common type of bladder cancer, urothelial carcinoma (UC), starts in the lining of the bladder. Bladder cancer begins when the cells in the lining of the bladder start to grow out of control. Urothelial cancer can occur anywhere in the urinary tract including the bladder, urethra, kidneys and ureters.

Bladder cancer is very common, yet most people do not know much about this disease.

- Bladder cancer is the fourth most common cancer in men. It is less common in women.
- More than 82,000 new cases of bladder cancer are diagnosed each year.
- Close to 17,000 deaths from bladder cancer occur each year.
- About 9 out of 10 people with this cancer are over the age of 55. The average age of diagnosis is 73.*

If you are diagnosed with bladder cancer, do not lose hope. The specialists at Chesapeake Urology are here to help you through your bladder cancer journey and the years to come.

COMMON SYMPTOMS OF BLADDER CANCER

Early stages of bladder cancer often produce no symptoms. Your first warning sign may be hematuria (blood in your urine that may be visible or only seen under a microscope).

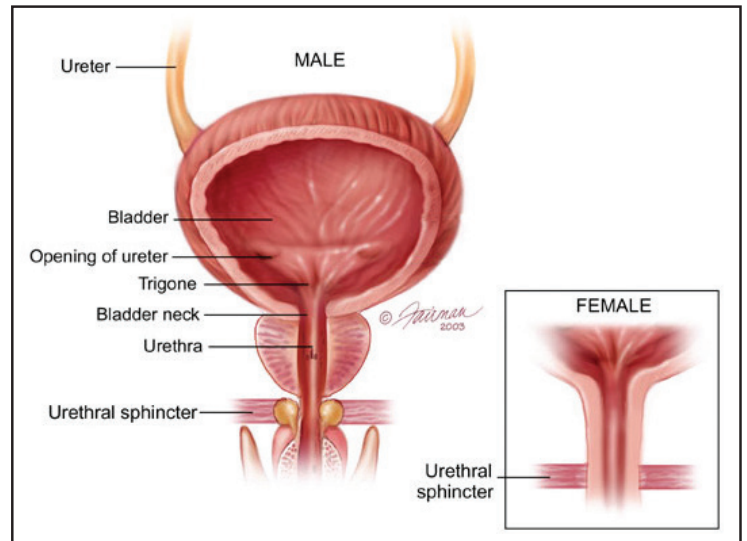
Other less common symptoms include:

- Painful urination
- Frequent urination or feeling an urge to urinate without results
- Slow or intermittent urine stream
- Pelvic pain

These symptoms, however, may indicate other medical problems, such as urinary tract infections, bladder stones, or prostate disorders, which is why a thorough evaluation by a urologist is so important.

FACTS TO KNOW:

- Bladder cancer is the fourth most common cancer in men, but it is less common in women.*
- The average age of diagnosis is early 70s.
- Cigarette smoking is one of the top risk factors for bladder cancer. In fact, smokers are about four times more likely to get bladder cancer than people who have never smoked. The chemicals in tobacco smoke get into the bloodstream and are filtered by the kidneys into the urine where these toxic chemicals seep into the bladder.
- Caucasians are at a higher risk of developing bladder cancer.
- Family or personal history of bladder cancer is a risk factor for developing the disease.
- When bladder cancer is diagnosed early, it often can be treated successfully.



*American Cancer Society; cancer.org

Because bladder cancer is highly treatable in the early stages of the disease, it is important to see your doctor if you are experiencing any unusual symptoms. To make an accurate diagnosis, your doctor will first perform a thorough history and physical exam. Other tests you may receive include:

- **Urine Cytology** – Examining urine cells under the microscope.
- **CT Urography** – Special x-rays that include contrast dye, to view the kidneys, bladder and connecting tubes.
- **Cystoscopy** – Involves inserting a thin scope into the urethra to view it and the bladder; if a mass is seen, a biopsy may be performed at that time or during more formal treatment.
- **Urine Biomarkers** – Along with other diagnostic tests, urine markers can aid in the diagnosis of bladder cancer, guide treatment decisions, and help monitor for cancer recurrence after treatment.

NEW TECHNIQUES FOR ENHANCED VISUALIZATION OF BLADDER TUMORS

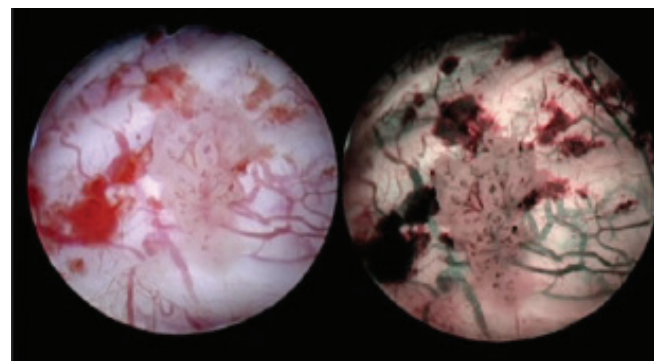
Narrow Band Imaging (NBI®)

New techniques recently have been introduced to improve the physician's ability to detect small, non-muscle-invasive tumors that may not be seen with conventional cystoscopy. In certain situations, Chesapeake Urology physicians may utilize NBI cystoscopy, an image enhancement technology with greater sensitivity for detecting bladder tumors. The technology takes advantage of varying wavelengths of white light absorbed within different tissues without the need for additional dyes or drugs.

The peak light absorption of hemoglobin occurs at the wavelengths used in NBI. As a result, blood vessels appear very dark, allowing for improved visibility and improved identification of surface structures within the bladder walls, including new and recurrent tumors.

How is NBI Performed and What are the Benefits?

- NBI cystoscopy is performed in your urologist's office or one of Chesapeake Urology's ambulatory surgery centers (ASC). The procedure is performed the same way as a diagnostic cystoscopy with the special imaging technology attached to the end of the cystoscope.
- NBI does not require that you take medications or have any type of dye injection to enhance visualization.
- Because this technology does not require preparation by the patient, the physician may decide to utilize the NBI cystoscopy during the course of a traditional cystoscopy.
- NBI can also be utilized for biopsy or transurethral resection of a bladder tumor (tumor removal).



This image shows the view from conventional white light cystoscopy alone compared to cystoscopy enhanced with NBI technology.

Blue Light Cystoscopy

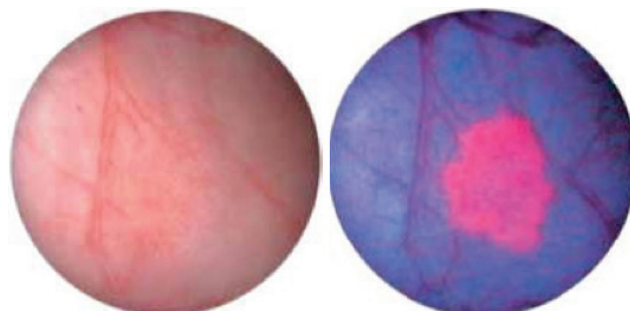
Certain patients may benefit from an innovative new diagnostic technology called Blue Light Cystoscopy with Cysview®. Blue Light Cystoscopy is used to improve detection of bladder cancer and to decrease the chances of recurrence. Your urologist will discuss the benefits and risks associated with the procedure in more detail with you if you are a candidate for the procedure.

What is Blue Light Cystoscopy?

Traditionally, white light cystoscopy has been the “gold standard” for diagnosing bladder cancer. While white light does highlight abnormalities in the bladder, this light can miss the harder to see tumors. Utilizing blue light technology, these limitations in detecting hard to see tumors are overcome.

How Blue Light Cystoscopy is Performed

- Cysview is an imaging solution that is delivered directly into your bladder and is absorbed by cancerous tissue. After the solution has had time to be absorbed by the bladder tissue (typically about one hour before your procedure), your urologist will perform the cystoscopy. The long thin tube (cystoscope) is inserted through the urethra and into the bladder.
- Your doctor looks through the tube with a white light, and then a blue light. The blue light enables the Cysview® solution to highlight tumors and make them more visible. The solution highlights tumors by turning them bright pink or red under the blue light.
- If any suspicious lesions are found, your doctor will proceed with a biopsy or transurethral resection (tumor removal).



This image shows the view from conventional white light cystoscopy alone compared to cystoscopy enhanced with Blue Light.

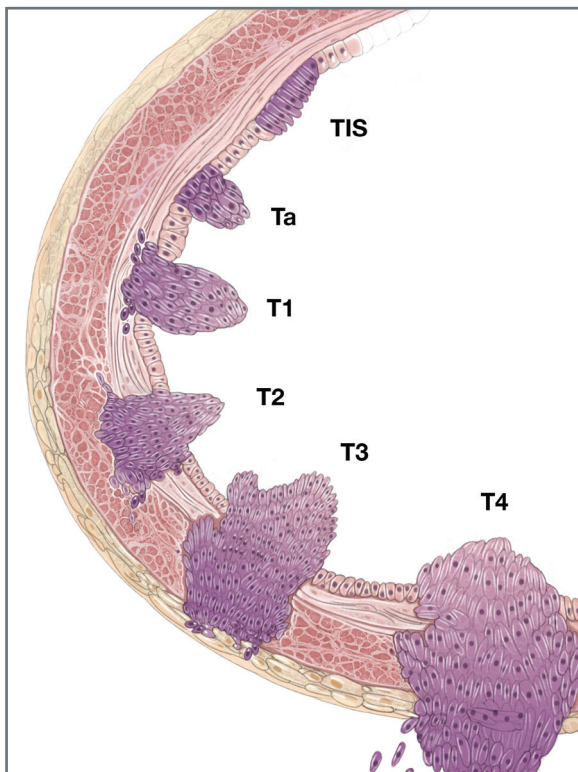
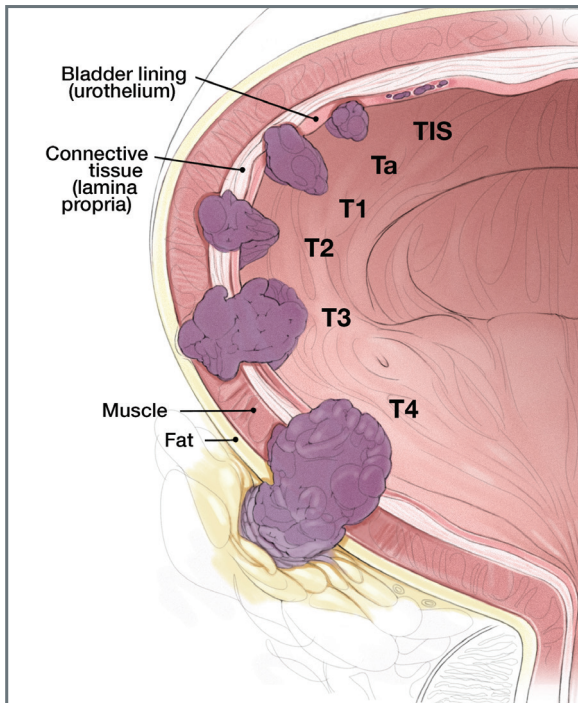
Determining your disease class and stage helps your provider plan for the best treatment protocol for you.

THERE ARE THREE MAIN DISEASE STATES FOR BLADDER CANCER:

- Non-muscle invasive bladder (TIS, Ta, T1) means the cancer is not invasive into the deeper muscle layers.
- Muscle invasive bladder cancer (T2-T4) is cancer that has invaded into the muscular walls of the bladder or tissue surrounding the bladder.
- Metastatic bladder cancer (Lymph node positive or distant disease) is cancer that has spread to other organs.

STAGING:

- Tis:** This is a flat, non-invasive cancer (also known as carcinoma in situ) that grows within the inner lining layer of the bladder only.
- Ta:** The tumor is non-invasive (e.g. has not invaded past the inner lining of the bladder).
- T1:** The tumor has grown from the layer of cells lining the bladder into the connective tissue below. It has not grown into the muscle layer of the bladder.
- T2:** The tumor has grown into the muscle layer.
- T3:** The tumor has grown through the muscle layer of the bladder and into the fatty tissue layer that surrounds it.
- T4:** The tumor has spread beyond the fatty tissue and into nearby organs or structures. It may be growing into any of the following: the stroma (main tissue) of the prostate, the seminal vesicles, uterus, vagina, pelvic wall, or abdominal wall.



YOUR UROLOGIST WILL ALSO CLASSIFY THE TUMOR AS EITHER LOW GRADE OR HIGH GRADE.

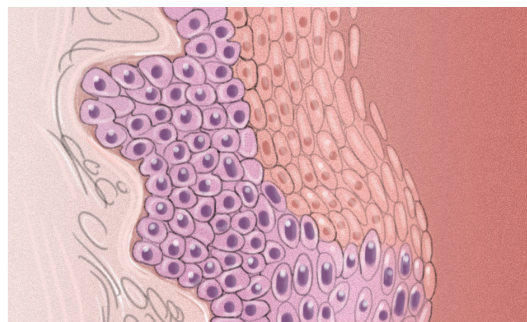
The grade refers to the aggressiveness of the tumor and can help predict cancer recurrence and/or progression. By grading the tumor, your urologist will then be able to better create a plan of treatment.

- **Low grade** is the least problematic type of cancer, but it still has a chance of recurring and progressing. The cancer cells look similar to normal cells, but are slightly disorganized.
- **High grade** is cancer that is most likely to recur and tends to progress and be more aggressive. When examined under a microscope, these cancer cells appear very abnormal and distinct from normal healthy tissue.

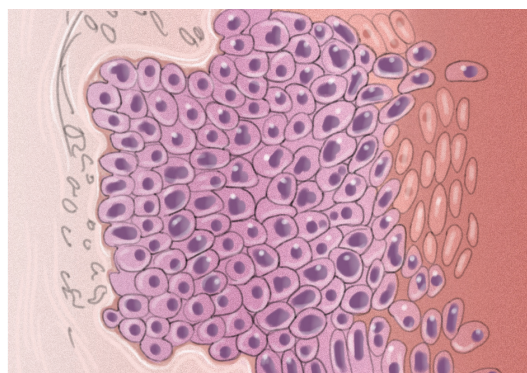
Normal



Low Grade



High Grade



Determining the appropriate treatment depends on several factors, including your health and age, tumor histology, tumor grade, and tumor stage.

TRANSURETHRAL RESECTION OF BLADDER TUMOR

- **TURBT (transurethral resection of bladder tumor)** – This is an endoscopic surgery performed to remove a bladder tumor. A small telescope is passed via the urethra into the bladder and through the scope a loop is passed to remove the tumor. This procedure is not only therapeutic in removing all visible tumor, but it is also diagnostic in that it allows the physician to collect tissue for a pathologist to determine a cancer type, grade, and stage.

Most or all patients will be treated with TURBT. After TURBT, our specialists use the latest treatments and may employ one of the following commonly used therapies:

FOR NON-MUSCLE INVASIVE BLADDER CANCER

- **Intravesical Immunotherapy** – Bacillus Calmette-Guérin (BCG) is a live, but disabled bacteria, instilled into the bladder initially once weekly for six weeks after your TURBT. Maintenance therapy is continued every six months for between one and three years. BCG is used to trigger the body's immune response against the cancer cells. It is used to lower the risk of cancer from recurring.
- **Intravesical Chemotherapy** – Various chemotherapeutic agents can alternatively be instilled into your bladder to prevent future recurrences of your tumor.
- **Intravenous Immunotherapy** – For patients whose cancer is unresponsive to intravesical therapy, there is an option to use intravenous pembrolizumab. This therapy is given every 3 weeks for up to 2 years.

FOR MUSCLE INVASIVE BLADDER CANCER

Surgery

- **Radical Cystectomy** – This technique involves the total removal of the bladder. The procedure usually also involves the removal of lymph nodes and other sexual organs (the prostate and seminal vesicles in men; the uterus, fallopian tubes, and ovaries in women). This treatment is recommended for patients with invasive bladder cancer, in some patients with high-risk, non-muscle-invasive cancer and when other non-surgical therapies have not been successful.

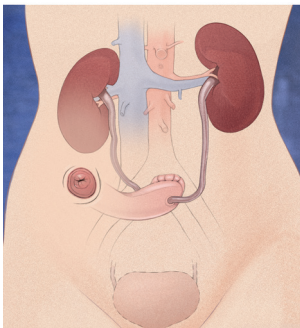
A radical cystectomy can be performed in a traditional open fashion or using the da Vinci Robotic Platform. Based on your health history and type of bladder cancer, your surgeon will determine if you are an appropriate candidate for a robotic cystectomy.

- **Urinary Diversion** – For patients who receive a radical cystectomy, your surgeon will perform a procedure called a urinary diversion, which provides your body with a way to potentially store and remove urine in the absence of your bladder.

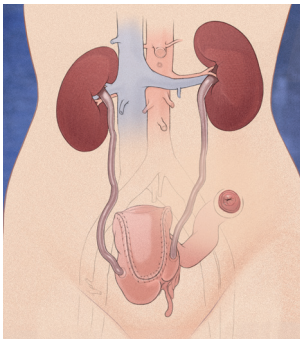
BLADDER CANCER PREVENTION

While there is no tried and true way to prevent a recurrence of bladder cancer, living a healthy lifestyle can help. Eat a diet full of fruits, vegetables, whole grains, and healthy fats.

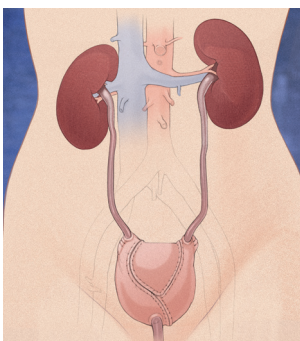
Stop smoking and limit alcohol intake. Get plenty of exercise and sleep. And, remember to see your urologist regularly.



Ileal Conduit



Continent Reservoir



Neobladder

There are several types of urinary diversion:

- **Ileal Conduit (ileal loop)** – This is the most common and simplest type of urinary diversion. A segment of the intestine (ileum) is used to create a pipe or pathway, connecting the ureters to the outside of the body through an opening in the abdominal wall. The opening is called a stoma and is covered with a bag that collects urine as it drains from the ileal conduit. This diversion is the easiest for many patients and has no physical limitations, although some patients find that the bag interferes with self-image.
- **Continent (catheterizable) Reservoir** – In this procedure, an internal pouch is created from a portion of the intestines and the ureters are repositioned to drain into this pouch. A stoma is created using a piece of the intestine and brought out through an opening in the navel. Unlike the ileal conduit, no bag is used. A one-way valve is created to keep the urine inside of the pouch. Then, a catheter must be inserted into the stoma every four to six hours to drain urine from the pouch.
- **Neobladder (new bladder)** – A segment of the intestine is harvested and used to create a new "bladder." Your surgeon will reconfigure a segment of bowel into a spherical pouch and attach the pouch to the urethra. Urine is able to drain from the kidneys to the ureters, to the pouch and through the urethra in a way that is similar to the normal passing of urine. With the neobladder, patients do not have to wear an appliance or bag and do not have a dramatic change in body image, although incontinence, particularly at night, is one of the disadvantages. This surgery is more complex, and patients need to "re-learn" how to urinate. In addition, many patients must catheterize the neobladder via the urethra.

With any surgical procedure, there are advantages as well as risks and complications that may arise. Your urologist will discuss your surgical options in detail with you to help you make the most informed decision.

CHEMOTHERAPY

Intravenous chemotherapy is an important tool in the treatment of muscle-invasive bladder cancer, or bladder cancer that has spread to other areas of the body. Chemotherapy is recommended to be administered before surgery and if radiation is chosen as the main treatment, then chemotherapy is given at the same time.

RADIATION THERAPY

Radiation therapy can sometimes be used in combination with intravenous chemotherapy (trimodality therapy) in patients with invasive cancer to save the bladder. In this case, your urologist will perform a transurethral resection of the bladder tumor (TURBT) and a medical oncologist and radiation oncologist will administer a combination of chemotherapy and radiation therapy respectively.

Q: Will I need surgery to treat my bladder cancer?

A: Chesapeake Urology surgeons often recommend radical surgery when a patient is diagnosed with invasive bladder cancer, or bladder cancer that has spread beyond the lining of the bladder wall. In these cases, surgery provides the best outcomes. Select patients with high-risk non-invasive cancer are candidates for surgery as are patients who have failed immunotherapy (BCG therapy) for non-invasive cancer. Your provider will discuss all of your treatment options to help you make the most informed decision.

Q: How long will my hospital stay be if I have surgery for bladder cancer?

A: On average, you can expect to be in the hospital for approximately five to seven days after bladder cancer surgery and urinary diversion. Your urologist will monitor your recovery closely.

Q: What is recovery from surgery like?

A: Full recovery from surgery typically takes about eight weeks. You will have some physical limitations as you heal as well as a learning curve for using appliances such as the urine pouch if you have had an ileal conduit. You can expect to be tired and it will take some time before your system regulates and you begin to feel more like yourself. Call your provider if you have any problems right away.

Q: Are there any clinical trials for bladder cancer?

A: Chesapeake Urology Research Associates (CURA) runs clinical trials for a variety of urologic conditions. Please call the research location nearest you to find out about any upcoming bladder cancer trials by visiting our website - <https://www.unitedurology.com/chesapeake-urology/patient-resources/clinical-trials>.

Q: Does Chesapeake Urology accept my insurance?

A: We participate with most major health insurance plans, including Medicare. It is important for patients to call their insurance carrier to confirm coverage and benefits as well as out-of-pocket costs such as copayments, coinsurance, and deductibles. Please visit our financial web pages to learn more about insurance coverage and our financial policies and support programs for patients at chesapeakeurology.com.

Chesapeake Urology provides patients with a wealth of education, information and support to help in the fight against bladder cancer. Following is a list of resources for bladder cancer support, information and education:

- **Chesapeake Urology Website** – Information on bladder cancer, diagnosis, and treatments can be found at chesapeakeurology.com.
- **Bladder Cancer Advocacy Network** – BCAN's mission is to advance research, provide information and support, and raise awareness about bladder cancer. Visit www.bcan.org.
- **Bladder Cancer Advocacy Network Support Community** – BCAN's bladder cancer online support community is available 24 hours a day. Over 4,000 bladder cancer survivors, caregivers, family members, and many others support each other through the different stages in their journey with bladder cancer. Visit www.bcan.org/find-support.
- **American Bladder Cancer Society** – Offers support and information as well advocates for the bladder cancer community. Visit www.bladdercancersupport.org.
- **American Cancer Society** – The American Cancer Society works to eliminate cancer as a major health problem through advocacy, support, education, fundraising events and more. Visit www.cancer.org.

FINANCIAL RESOURCES AND INFORMATION

When our patients need help with financial arrangements, we provide a variety of counseling and other financial resources. Our Patient Accounting Liaisons are available to assist you with billing questions as well as with finding financial resources, should you need to apply for medical assistance. Chesapeake Urology works with all major insurance plans including Medicare and Medical Assistance.

There are several payment options available for eligible patients, including CareCredit, a healthcare credit card that helps you pay for your out-of-pocket healthcare costs; financial assistance programs through state and local agencies; and our PHREESIA program which allows eligible patients to set up a payment plans through their personal credit cards.

During the financial process, we do whatever we can to provide support and alleviate your stress so that you can focus on your treatment and your health.

Learn more about Chesapeake Urology's financial resources available to assist you on our website – chesapeakeurology.com/patient-resources.

YOUR BLADDER CANCER

Patient: _____

Urologist: _____

Medical Oncologist: _____

Radiation Oncologist: _____

YOUR PERSONAL INFORMATION

Stage: Ta T1 T2 T3 T4 Tis

Grade: High Low

Histology: _____

