



bladder and increase the risk of bladder cancer.

Arsenic: Arsenic in drinking water has been linked with an increased risk of bladder cancer.

SYMPTOMS

Blood in the urine

In most cases, blood in the urine is the first warning sign of bladder cancer. Blood in urine can also result from kidney stones and infection which are much more common than cancer.

Change in urination

Bladder cancer can sometimes cause changes in urination, such as:

- Increased frequency
- Pain or burning during urination
- Urgency
- Inability to urinate

These symptoms can also be caused by a benign condition such as infection, overactive bladder or an enlarged prostate.

Back pain

Very large bladder tumors may cause lower back pain.

About 45,000 men and 17,000 women are diagnosed with bladder cancer each year making it the fourth and ninth most common form of cancer.

There are two main types of bladder cancer: **Non-invasive** bladder cancers are still in the inner layer of cells (the transitional epithelium) but have not grown into the deeper layers. **Invasive** cancers grow into the lamina propria or even deeper into the muscle layer. Invasive cancers are more likely to spread and are harder to treat.

RISK FACTORS

If you are an older white male, you are at higher risk of developing bladder cancer. The risk of bladder cancer increases with age and whites are also about twice as likely to develop it as African Americans and men are more likely than women. Other risk factors include:

Smoking: Smoking is the most important risk factor for bladder cancer and contributes

Smokers are at least 3 times as likely to get bladder cancer as nonsmokers.

to about half of the bladder cancers in both men and women.

Workplace exposures: Certain industries that use industrial chemicals have been linked with bladder cancer including the dye industry, manufacturers of rubber, leather, textiles and paint products, printing companies, and truck drivers.

Chemotherapy and radiation therapy: Long-term use of the chemotherapy drug cyclophosphamide (Cytosan) can irritate the



TESTING FOR BLADDER CANCER

Urinalysis: One way to test for bladder cancer is to check for blood in the urine, with a urinalysis.

Cystoscopy: If bladder cancer is suspected, doctors will recommend a cystoscopy that enables the doctor to look at the bladder lining with a scope. If an abnormal area or a growth is seen, it will be biopsied and sent to a lab.

Urine cytology: microscopic analysis of urine sample looking for cancer or pre-cancer cells.

Urine culture: urine sent to lab to determine if infection is the cause of urinary symptoms

Biopsy: lab analysis of bladder tissue.

Various imaging tests – Intravenous pyelogram, CT, MRI, or ultrasound. X-ray or bone scans also used to look for spreading cancer.

Other tumor marker screening tests, like Urovision™, BTA tests, Immunocyt™ and NMP22 BladderChek® provide inconsistent and inconclusive results making them unreliable.

BLADDER CANCER SURVIVAL RATES

Stage	Relative 5-year Survival Rate
0 (cancer in inner lining of bladder only)	98%
I (grown into connective tissue under the bladder lining)	88%
II (grown into muscle layer of bladder wall)	63%
III (grown into the fatty tissue surrounding bladder)	46%
IV (grown through bladder wall and into lymph nodes, and/or other sites)	15%

TREATMENT

The main treatments for bladder cancer are surgery and various forms of therapy. Depending on your options, you can have different types of doctors on your treatment team including urologists, radiation oncologists, and medical oncologists.

1) Surgery

Transurethral surgery – a minimally invasive procedure used to treat non-invasive, early stage bladder cancer.

Partial Cystectomy – for invasive cancer that is in one place, removes the portion of the bladder where the cancer has invaded along with nearby lymph nodes.

Radical Cystectomy – for invasive cancer that has spread, removes the entire bladder, nearby lymph nodes, and other affected tissues and organs

This procedure requires reconstructive surgery to provide a way for the bladder to exit the body in one of three ways, 1) a conduit is constructed to drain the urine through a stoma into a bag called a urostomy, 2) an internal pouch is con-

structed that must be manually drained several times a day, or, in a newer procedure, 3) a neobladder is constructed that reroutes the urine to the urethra restoring somewhat normal urination.

2) Intravesical therapy

Used for non-invasive bladder cancers, intravesical therapy puts the drug directly into the bladder (through a catheter) rather than giving it by mouth or injecting it into a vein.

3) Chemotherapy

Chemotherapy drugs can be administered directly into the bladder (intravesical therapy), orally or by IV.

- Used before surgery to try to shrink a large tumor so that it can be more easily removed.
- Given after surgery (or sometimes after radiation therapy), the goal is to kill any cancer cells that remain after other treatments but are too small to be seen.
- Given with radiation therapy to help the radiation work better.

- Chemotherapy is usually the main treatment for advanced cancers, such as those that have spread to distant parts of the body.

4) Radiation therapy

Radiation therapy uses high-energy radiation to kill cancer cells. The type of radiation most often used to treat bladder cancer, known as external beam radiation therapy, focuses radiation from outside of the body on the cancer.

- As part of the treatment for earlier stage bladder cancer, after limited surgery
- As the main treatment for people with earlier stage cancers who can't have surgery
- As part of the initial treatment for advanced bladder cancers
- To help prevent or treat symptoms caused by advanced bladder cancers

As with the treatment of any serious illness, there are risks and side effects to consider when choosing a bladder treatment.

Physicians who specialize in bladder cancer will provide the most comprehensive and well-informed guidance.

Sources • Cancer.org website, Bladder Cancer, <http://www.cancer.org/cancer/bladdercancer> • National Cancer Institute, Bladder Cancer, <http://www.cancer.gov/cancertopics/types/bladder>



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