



Canadian
Cancer
Society

Société
canadienne
du cancer

Bladder Cancer

Understanding your diagnosis



Let's Make Cancer History

1 888 939-3333 | cancer.ca

Bladder Cancer

Understanding your diagnosis

When you first hear that you have cancer you may feel alone and afraid. You may be overwhelmed by the large amount of information you will have to take in and the decisions you will need to make.

The introductory information in this brochure can help you and your family take the first step in learning about bladder cancer. A better understanding may give you a sense of control and help you work with your healthcare team to choose the best care for you.

What is cancer?

Cancer is a disease that starts in our cells. Our bodies are made up of millions of cells, grouped together to form tissues and organs such as muscles and bones, the lungs and the liver. Genes inside each cell order it to grow, work, reproduce and die. Normally, our cells obey these orders and we remain healthy.

But sometimes the instructions in some cells get mixed up, causing them to behave abnormally. These cells grow and divide uncontrollably. After a while, groups of abnormal cells form lumps, or tumours.

Tumours can be either *benign* (non-cancerous) or *malignant* (cancerous). Benign tumour cells stay in one place in the body and are not usually life-threatening.

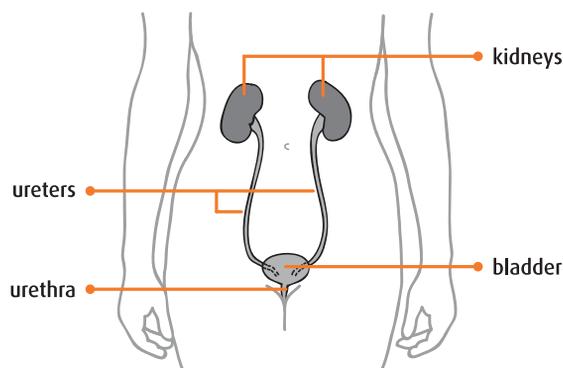
Malignant tumour cells are able to invade nearby tissues and spread to other parts of the body. Cancer cells that spread to other parts of the body are called *metastases*.

The first sign that a malignant tumour has spread (metastasized) is often swelling of nearby lymph nodes, but cancer can spread to almost any part of the body. It is important to find and treat malignant tumours as early as possible.

Cancers are named after the part of the body where they start. For example, cancer that starts in the bladder but spreads to the lungs is called bladder cancer with lung metastases.

What is bladder cancer?

Bladder cancer starts in the cells of the bladder. The bladder is found in the lower part of the abdomen. It is a hollow, balloon-shaped organ with a flexible, muscular wall. The bladder collects and stores urine, which is made by the kidneys. Urine is then passed to the bladder through two tubes called *ureters*. When the bladder is full, the muscles in the bladder wall tighten to make the urine leave the body. The urine is emptied through a tube called the *urethra*.



Nearly all bladder cancers start in the lining of the bladder. Cancer that is only in the lining is called *superficial bladder cancer*. If the cancer spreads into the muscle wall of the bladder, it is called *invasive bladder cancer*.

Causes of bladder cancer

There is no single cause of bladder cancer, but some factors increase the risk of developing it. Smoking is the most common risk factor for bladder cancer in Canada. The tars and chemicals in the smoke pass quickly from the lungs into the bloodstream and then into the urine, which collects in the bladder.

Other factors that appear to increase the risk of developing bladder cancer are:

- age - particularly over 65
- exposure to certain chemicals (such as those used in the dye industry)
- chronic bladder irritation
- exposure to arsenic in drinking water
- treatment with certain medications such as cyclophosphamide (used to treat cancer and some other conditions)
- family history of bladder cancer
- personal history of bladder cancer - a person who has had bladder cancer before has an increased chance of getting the disease again

Some people develop bladder cancer without having any of these risk factors.

Symptoms of bladder cancer

The most common symptom of bladder cancer is blood in the urine (called *hematuria*). The blood can change the colour of the urine to anything from slightly rusty to bright red. Other possible symptoms of bladder cancer include pain while urinating, frequent urination or feeling the need to urinate without being able to.

Often, these symptoms are not caused by cancer. Other health problems, such as infections or bladder stones, may cause bleeding and other symptoms. Testing is needed to make a diagnosis.

Diagnosing bladder cancer

After taking your medical history and completing a physical examination of your stomach area (abdomen and pelvis), your doctor may suspect you have bladder cancer. The physical exam may include an examination of the rectum for men, and the rectum and vagina for women. To confirm the diagnosis, your doctor will arrange special tests. These tests may also be used to “stage” and “grade” the cancer. You may have one or more of the following tests.

Urine tests: Urine samples are checked for traces of blood, cancer cells and other signs of disease.

Blood tests: Blood is taken and studied to see if the different types of blood cells are normal in number and appearance.

The results show how well your kidneys and other organs are working. Your red blood cell count may also be checked to see if you have anemia (low red blood cell count). Anemia may be caused by blood loss from a bladder tumour.

Imaging studies: Imaging studies allow tissues, organs and bones to be looked at in more detail. Using x-rays, ultrasounds, CT scans, MRIs or bone scans, your healthcare team can get a picture of the size of the tumour and see if it has spread. These tests are usually painless and do not require an anesthetic.

You may have a special x-ray called an IVP (*intravenous pyelogram*). A special dye is injected into a vein (usually in the arm). The dye passes through the bloodstream into the kidneys and through the urinary system. The doctor can watch the passage of the dye on an x-ray screen and look for problems in the kidneys, ureters and bladder.

Cystoscopy: Cystoscopy uses a thin tube with a light at the end (called a *cystoscope*) to look inside the bladder. The cystoscope is passed into the urethra to let the doctor look at the lining of the bladder and urethra. In some cases, the tube has a camera attached to it and photographs can be taken. During a cystoscopy, you will probably be given a mild anesthetic (freezing). If a biopsy is done at the same time, you will need a general anesthetic (you will be unconscious).

Biopsy: A biopsy is usually necessary to make a definite diagnosis of cancer. Cells are removed from the body and checked under a microscope. If the cells are cancerous, they may be studied further to see how fast they are growing. There are many ways to do a biopsy. A biopsy is usually taken during a cystoscopy.

Staging and grading

Once a definite diagnosis of cancer has been made and your healthcare team has the information it needs, the cancer will be given a stage and a grade.

The cancer stage describes the tumour size and tells whether it has spread beyond the place where it started to grow.

For bladder cancer, there are five stages.

Stage	Description
0	Cancer is found only on the surface of the inner lining of the bladder. This may also be called superficial cancer or carcinoma <i>in situ</i> .
1	Cancer is found deep in the inner lining of the bladder, but has not spread to the muscle of the bladder.
2	Cancer has spread to the muscle of the bladder.
3	Cancer has spread through the muscular wall of the bladder to the layer of tissue surrounding the bladder.
4	The cancer extends to the wall of the abdomen or to the wall of the pelvis. The cancer may have spread to the prostate (in men) or to the uterus or vagina (in women). The cancer cells may have spread to lymph nodes and other distant parts of the body, such as the lungs, liver or bones.

To find out the grade of a tumour, the biopsy sample is examined under a microscope. A grade is given based on how the cancer cells look and behave compared with normal cells. This can give your healthcare team an idea of how quickly the cancer may be growing. There are three grades.

Grade	Description
1	Low grade – slow growing, less likely to spread
2	Moderate grade
3/4	High grade – tend to grow quickly, more likely to spread

It is important to know the grade and stage of the cancer. This information helps you and your healthcare team choose the best treatment for you.

Treatments for bladder cancer

Your healthcare team will consider your general health and the type, stage and grade of the cancer to recommend what treatments will be best for you. You will work together with your healthcare team to make the final treatment choices. Talk to them if you have questions or concerns.

Treatments affect everyone in different ways. It's hard to predict which side effects you will have. Your healthcare team will tell you what to expect with each treatment. They will also let you know what side effects you should report right away and which ones you can wait to tell them about at your next appointment. If you notice any side effects or symptoms that you did not expect, talk to a member of your healthcare team as soon as possible.

Patients often worry about the side effects of cancer treatment. However, side effects can often be well managed and even prevented with medicine. Be open with your healthcare team. Tell them your concerns and ask questions. They will help you get the care and information you need.

For bladder cancer, you might receive one or more of the following treatments.

Surgery: A decision to have surgery depends on the size of the tumour and where it is. During the operation, the tumour and some healthy tissue around the tumour are removed. Surgery may be done under a local or general

anesthetic. You may stay in the hospital for several days after the surgery. After surgery you may have some pain or nausea, or may not feel like eating. These side effects are temporary, and can be controlled.

Surgery is one of the main treatments for bladder cancer. There are three types of bladder cancer surgery. What type you have depends on the stage of the cancer.

Transurethral resection (TUR) with fulguration is often used to treat superficial cancer that hasn't invaded the muscle wall. A tool with a small wire loop on the end is inserted into the bladder through a cystoscope. The loop is used to remove the tumour. The area is then burned with an electric current (fulguration) or special high-energy laser. This helps to stop the bleeding and to burn away any remaining cancer cells. Your doctor will likely advise you to have regular cystoscopies after you have a TUR. At each cystoscopy, your doctor will look for any new tumours. After a TUR, you may have some pain or difficulty when urinating. You may also notice some blood in your urine. These problems will go away after a few days.

Segmental cystectomy may be used to treat invasive cancer that is low grade and has invaded only one area of the bladder wall. This type of surgery removes only part of the bladder. After a segmental cystectomy, your bladder will be smaller and you may not be able to hold as much urine as you used to. You may need to urinate more often. This

problem is usually temporary, but for some people it may be permanent.

Radical cystectomy is the most common type of surgery for invasive cancer. During a radical cystectomy the entire bladder is removed. Some surrounding tissue, nearby lymph nodes and organs are also removed to get rid of all the possible cancer cells. In men, the nearby organs include the prostate, seminal vesicles and part of the urethra. In women, the uterus, cervix, Fallopian tubes, ovaries, front of the vaginal wall and urethra are also removed.

After a radical cystectomy, you will need a new way to store and pass urine. Your doctor will discuss the choices with you before your surgery, so that you can help make this important decision. Your surgeon may construct an artificial bladder or redirect the flow of urine through an opening in the abdominal wall called a *stoma*. The urine will be collected in a bag outside the body. The operation to make the stoma is called a *urostomy*.

Chemotherapy: Chemotherapy drugs interfere with the ability of cancer cells to grow and spread, but they also damage healthy cells. Although healthy cells can recover over time, you may experience side effects from your treatment like nausea, vomiting, loss of appetite, fatigue, hair loss and an increased risk of infection. Some drugs used to treat bladder cancer can damage the kidneys. Drinking plenty of fluids helps protect the kidneys.

For superficial bladder cancer, *intravesical chemotherapy* is commonly used. For this type of chemotherapy, the drugs are put directly into the bladder through a catheter (tube) passed through the urethra. An anesthetic jelly is usually applied to the catheter to numb the urethra. The drugs must be kept in the bladder for about 2 hours to break down the cancer cells on the bladder wall.

Biological therapy: Biological therapy is a treatment that uses your immune system to fight cancer or to help control side effects of other cancer treatments. Natural body substances or drugs made from natural body substances are used to boost the body's own defences against illness.

Biological therapy is most often used for superficial bladder cancer after TUR. This helps prevent the cancer from coming back. The most commonly used drug is Bacillus Calmette-Guérin (BCG). A bacillus is a type of bacteria. BCG contains live, weak bacteria that stimulate the immune system to kill cancer cells in the bladder. Usually the BCG solution is put directly into the bladder through a catheter passed through the urethra. The solution must be kept in the bladder for about 2 hours. An anesthetic jelly is usually applied to the catheter to numb the urethra.

BCG may irritate the bladder. You may feel an urgent need to urinate or need to urinate frequently. It may also be painful to urinate. You may feel tired. Some people may have

blood in their urine, nausea, a low-grade fever or chills. These side effects usually go away when the treatment is over.

Radiation therapy: In *external beam radiation therapy*, a large machine is used to carefully aim a beam of radiation at the tumour. The radiation damages the cells in the path of the beam – normal cells as well as cancer cells.

Side effects will be different depending on what part of the body receives the radiation. You may feel more tired than usual or notice changes to the skin (it may be red or tender) where the treatment was given. Radiation for bladder cancer may irritate the rectum and cause abdominal cramping or changes to your bowel movements. You may also need to pass urine more often. These side effects are a result of damage to normal cells. The side effects will usually go away when treatment is over and the normal cells repair themselves.

Radiation therapy can affect sexuality. For women, it may cause vaginal dryness or make your vagina narrower. This can make sex difficult or uncomfortable. For men, damage to the nerves and blood vessels in the penis may make it difficult to have an erection. Your healthcare team can suggest ways to treat or control these side effects.

Clinical treatment trials: Clinical treatment trials investigate new approaches to treating cancer, such as new drugs, new types of treatments or combinations of existing treatments. They are closely monitored to make sure that they are safe for the participants. Ask your doctor if there is a clinical trial suitable as a treatment option for you. You may benefit and so may future cancer patients.

Complementary therapies: Complementary therapies are used *together with* conventional treatments. More research is needed to understand if these therapies are effective and how they work.

Alternative therapies are used *instead of* conventional treatments. Alternative therapies haven't been tested for safety or effectiveness. It is still unknown whether they will harm you or be effective in the treatment of cancer.

If you are thinking about using a complementary or alternative therapy, find out as much as you can about the therapy and talk to your healthcare team. It's possible that the therapy might interfere with test results or regular treatments.

Possible long-term side effects of bladder surgery

A radical cystectomy will also affect your ability to have children and will affect your sex life.

For women who have had part of the vagina removed, sex may be difficult. If your uterus and ovaries have been removed, you will go into menopause right away (if you haven't gone through menopause already). Menopause means you will no longer menstruate (have your period) and you will no longer be able to become pregnant. The symptoms of menopause caused by surgery are likely to be more severe than if you had gone into menopause naturally. These may include hot flashes, night sweats, vaginal dryness and loss of desire for sex. Your healthcare team can suggest ways to cope with these side effects.

For men, a radical cystectomy can sometimes damage the nerves that control your ability to have or keep an erection (*impotence*). Improved surgical methods may help avoid this problem. Men who have had their prostate and seminal vesicles removed no longer produce semen, so they have dry orgasms. You will also no longer be able to father a child. Before you undergo any treatment, you may wish to talk to your doctor about sperm banking. Freezing and banking sperm before treatment allows you and your partner to decide later whether or not you want to have children. Your healthcare team can help you plan ahead.

For both men and women, having a cystectomy may change how you feel about your body and your sexuality. Perhaps you are worried about being intimate with your partner or that your partner may reject you. It may help to talk about feelings with your partner, a close family member or a friend. You can ask your doctor to refer you to a specialist or counsellor who can help you and your partner with the emotional side effects of bladder cancer surgery.

After treatment

Follow-up care helps you and your healthcare team monitor your progress and your recovery from treatment. At first, your follow-up care may be managed by one of the specialists from your healthcare team. Later on it may be managed by your family doctor.

The schedule of follow-up visits is different for each person. You might see your doctor more often in the first year after treatment, and less often after that. Follow-up appointments are important. Bladder cancer can return in the bladder or in another part of the body. If your bladder was not removed, you will likely have a cystoscopy every 3 months for the first 3 years.

The end of cancer treatment may bring mixed emotions. You may be glad the treatments are over and look forward to returning to your normal activities. But you could feel anxious as well. If you are worried about your

treatment ending, talk to your healthcare team. They are there to help you through this transition period.

Adjusting to life after cancer treatment is an important part of your care, especially if your bladder was removed. If you had a urostomy done, you might need to make changes to your diet and lifestyle. Before your surgery, your healthcare team will discuss with you what you can expect. They will also teach you how to care for the stoma after surgery. Learning to look after a stoma takes time and patience. Your healthcare team can answer any questions you may have about lifestyle changes or help you manage your emotional, physical and sexual concerns. Most people who have a urostomy get back to a normal life, returning to their jobs and favourite pastimes.

Living with cancer

There are many sources of help available for people with cancer and for their caregivers.

Your healthcare team: If you need practical help or emotional support, members of your healthcare team may be able to suggest services in your community or refer you to cancer centre staff or mental health professionals.

Family and friends: Those closest to you can be very supportive. Accept offers of help. When someone says “Let me know how I can help,” tell them what they can do. Maybe they can run errands, cook a meal or give you a ride to your doctor’s office.

People who have had a similar experience: Consider visiting a support group or talking with a cancer survivor in person, over the telephone or online. Talking with and learning from others who have had similar experiences can be helpful. Try more than one option to see which one suits you best.

Yourself: Try to stay positive. Staying positive is about figuring out how to deal with cancer in the best way that you can – and everyone will do this their own way. It doesn’t mean that you must seem happy or cheerful all the time or avoid talking or thinking about the difficulties of having cancer. But it can mean looking after yourself by finding relaxing, enjoyable activities that refresh you mentally, spiritually or physically.

What we do

The Canadian Cancer Society fights cancer by:

- doing everything we can to prevent cancer
- funding research to outsmart cancer
- empowering, informing and supporting Canadians living with cancer
- advocating for public policies to improve the health of Canadians
- rallying Canadians to get involved in the fight against cancer

Contact us for up-to-date information about cancer, our services or to make a donation.



Canadian Cancer Society
Société canadienne du cancer

Let's Make Cancer History

1 888 939-3333 | cancer.ca

TTY 1 866 786-3934

This is general information developed by the Canadian Cancer Society. It is not intended to replace the advice of a qualified healthcare provider.

The material in this publication may be copied or reproduced without permission; however, the following citation must be used: *Bladder Cancer: Understanding your diagnosis*. Canadian Cancer Society 2007.