

Bladder Cancer - Treatment Options [1]

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ON THIS PAGE: You will learn about the different ways doctors use to treat people with this type of cancer. To see other pages, use the menu on the side of your screen.

This section outlines treatments that are the standard of care (the best proven treatments available) for this specific type of cancer. When making treatment plan decisions, patients are also encouraged to consider clinical trials as an option. A clinical trial is a research study to test a new approach to treatment to evaluate whether it is safe, effective, and possibly better than the standard treatment. Clinical trials may test such approaches as a new drug, a new combination of standard treatments, or new doses of current therapies. Your doctor can help you review all treatment options. For more information, visit the [Clinical Trials](#) [3] and [Latest Research](#) [4] sections.

Treatment overview

In cancer care, different types of doctors often work together to create a patient's overall treatment plan that combines different types of treatments. This is called a [multidisciplinary team](#) [5]. The team will usually be led by a urologist, a doctor who specializes in the genitourinary tract, which includes the kidneys, bladder, genitals, prostate, and testicles, or a urologic oncologist, a doctor who specializes in treating cancers of the urinary tract.

Descriptions of the most common treatment options for bladder cancer are listed below, followed by an outline of general approaches to treatment according to the stage of the cancer. Treatment options and recommendations depend on several factors, including the type, stage, and grade of bladder cancer; possible side effects; and the patient's preferences and overall health. Your care plan may also include treatment for symptoms and side effects, an important part of cancer care.

Take time to learn about all of your treatment options and be sure to ask questions about things that are unclear. Also, talk about the goals of each treatment with your doctor and what you can expect while receiving the treatment. Learn more about [making treatment decisions](#) [6].

Surgery

Surgery is the removal of the tumor and surrounding tissue during an operation. There are different types of surgery for bladder cancer, and the most beneficial option usually depends on

the stage and grade of the disease. Surgical options to treat bladder cancer include:

Transurethral bladder tumor resection (TURBT). This procedure is used for diagnosis [7] and staging [8], as well as treatment. During TURBT, a surgeon inserts a cystoscope (see the Diagnosis [7] section) through the urethra into the bladder and removes the tumor using a tool with a small wire loop or using a laser or fulguration (high-energy electricity). The patient is given medication to block the awareness of pain, known as an anesthetic.

For patients with non-muscle-invasive bladder cancer, TURBT may be able to eliminate the cancer. However, the doctor may recommend additional treatments to prevent cancer recurrence, such as intravesical (into the bladder) chemotherapy or immunotherapy (see below). For patients with muscle-invasive bladder cancer, additional treatments involving surgery to remove the bladder or, less commonly, radiation therapy are necessary.

Cystectomy. A radical cystectomy is the removal of the whole bladder and possibly nearby tissues and organs. For men, the prostate and urethra also may be removed. For women, the uterus, fallopian tubes, ovaries, and part of the vagina also may be removed. In addition, lymph nodes in the pelvis are removed for both men and women. This is called a pelvic lymph node dissection. A thorough pelvic lymph node dissection is the most accurate way to find cancer that has spread to the lymph nodes. Rarely, for some specific cancers, it may be appropriate to remove only part of the bladder, which is called partial cystectomy.

During a laparoscopic or robotic cystectomy, the surgeon makes several small incisions (cuts) instead of the one larger incision used for traditional surgery. The surgeon then uses telescoping equipment with or without robotic assistance to remove the bladder. The surgeon must make an incision to remove the bladder and surrounding tissue. This type of operation requires a surgeon who is very experienced in minimally invasive surgery. Several studies are still in progress to determine whether laparoscopic or robotic cystectomy is as safe as the standard surgery and whether it is able to eliminate bladder cancer as successfully as standard surgery.

Urinary diversion. If the bladder is removed, the doctor will create a new way to pass urine out of the body by using a section of the small intestine or colon to divert urine to a stoma or ostomy (an opening) on the outside of the body. The patient will need to wear a bag attached to the stoma to collect and drain urine.

Increasingly, surgeons can use part of the small or large intestine to make a urinary reservoir, which is a storage pouch that sits inside the body. With these procedures, the patient does not need a urinary bag and can have a better quality of life. For some patients, the surgeon is able to connect the pouch to the urethra, creating what is called a neobladder, so the patient can pass urine out of the body normally. However, the patient may need to insert a thin tube called a catheter if urine does not empty through the neobladder. Also, patients with a neobladder will no longer have the urge to urinate and will need to learn to urinate on a consistent schedule.

For other patients, the pouch is connected to the skin on the abdomen or umbilicus through a small stoma, which creates a type of continent urinary reservoir. This means urine will stay in the reservoir until the patient drains the pouch and no urinary pad is needed. The pouch is drained by inserting a catheter through the small stoma and then removing the catheter.

Living without the bladder can affect a patient's quality of life. Finding ways to keep all, or part, of the bladder is an important treatment goal, as long as the patient's prognosis isn't affected. For some patients with muscle-invasive bladder cancer, certain treatment plans involving chemotherapy and radiation therapy (see below) may be used as an alternative to removing the bladder.

The side effects of bladder cancer surgery depend on the procedure. Patients should talk with their doctor in detail to understand exactly what side effects may occur, including urinary and sexual side effects, and how they can be managed. In general, side effects may include:

- Delayed healing
- Infection
- Mild bleeding and discomfort after surgery.
- Infections or urine leaks after cystectomy or a urinary diversion. If a neobladder has been created, a patient may sometimes be unable to urinate or completely empty the bladder.
- Men may be unable to have an erection, called impotence [9], after cystectomy. Sometimes, a nerve-sparing cystectomy can be performed. When this is done successfully, men may be able to have a normal erection.
- Damage to the nerves in the pelvis and loss of sexual feeling and orgasm for both men and women. Often, these problems can be fixed.

Patients should talk with their doctor about any side effects they are experiencing. Learn more about cancer surgery [10].

Chemotherapy

Chemotherapy is the use of drugs to destroy cancer cells, usually by stopping the cancer cells' ability to grow and divide. A chemotherapy regimen typically consists of a specific number of cycles given over a set period of time. A patient may receive one drug at a time or combinations of different drugs at the same time.

There are two types of chemotherapy that may be used to treat bladder cancer. The type the doctor recommends and when it is given depends on the stage of the cancer. Patients should talk with their doctor about chemotherapy before surgery.

Intravesical chemotherapy. Intravesical (local) chemotherapy is usually given by a urologist. During this type of therapy, drugs are delivered into the bladder through a catheter that has been inserted through the urethra. Local treatment only destroys superficial tumor cells that come in contact with the solution. It cannot reach tumor cells in the bladder wall or tumor cells that have spread to other organs. Mitomycin (Mitozytrex, Mutamycin) and thiotepa (multiple brand names) are the drugs used most often for intravesical chemotherapy. Other drugs that are used include doxorubicin (Adriamycin), gemcitabine (Gemzar), and valrubicin (Valstar).

Systemic chemotherapy. Systemic (whole body) chemotherapy is usually prescribed by a medical oncologist, a doctor who specializes in treating cancer with medication. Systemic chemotherapy is delivered through the bloodstream to reach cancer cells throughout the body. Common ways to give chemotherapy include an intravenous (IV) tube placed into a vein using a

needle or in a pill or capsule that is swallowed (orally).

A combination of drugs, called MVAC, has been used as the standard treatment for bladder cancer for many years. MVAC uses four drugs: methotrexate (multiple brand names), vinblastine (Velban, Velsar), doxorubicin, and cisplatin (Platinol). When it is given before surgery, MVAC can extend life and cure patients. For patients with bladder cancer that has spread, known as metastatic disease, this combination can shrink the cancer and potentially prolong life. In addition, depending on the disease setting, MVAC can help delay bladder cancer recurrence. However, it has severe side effects.

The combination of gemcitabine plus cisplatin is also used and has comparable anticancer effects to MVAC for patients with metastatic disease but with somewhat fewer side effects.

Many of systemic chemotherapies continue to be tested in clinical trials to help determine which drugs, or which drug combinations, work best to treat bladder cancer. Usually a combination of drugs works better than one drug alone. Researchers are also studying when it is best to use chemotherapy, either before or after surgery.

Side effects of chemotherapy depend on the individual and the dose used, but they can include fatigue, risk of infection, nausea and vomiting, hair loss, loss of appetite, and diarrhea. These side effects usually go away once treatment is finished.

Learn more about [chemotherapy](#) [11] and [preparing for treatment](#) [12]. The medications used to treat cancer are continually being evaluated. Talking with your doctor is often the best way to learn about the medications prescribed for you, their purpose, and their potential side effects or interactions with other medications. Learn more about your prescriptions by using [searchable drug databases](#) [13].

Immunotherapy

Immunotherapy, also called biologic therapy, is designed to boost the body's natural defenses to fight the cancer. It uses materials made either by the body or in a laboratory to improve, target, or restore immune system function. The standard immunotherapy drug for bladder cancer is a weakened bacterium called bacillus Calmette-Guerin (BCG), which is similar to a form of the bacteria that causes tuberculosis. BCG is placed directly into the bladder through a catheter, which is called intravesical therapy. BCG attaches to the inside lining of the bladder and triggers the patient's immune system to destroy the tumor. BCG can cause flu-like symptoms, chills, mild fever, fatigue, a burning sensation in the bladder, and bleeding from the bladder.

Interferon (Roferon-A, Intron A, Alferon) is another immunotherapy drug that can be given as intravesical therapy. It is sometimes combined with BCG if BCG alone does not help treat the cancer.

Learn more about [immunotherapy](#) [14].

Radiation therapy

Radiation therapy is the use of high-energy x-rays or other particles to destroy cancer cells. A

doctor who specializes in giving radiation therapy to treat cancer is called a radiation oncologist. The most common type of radiation treatment is called external-beam radiation therapy, which is radiation therapy given from a machine outside the body. When radiation therapy is given using implants, it is called internal radiation therapy or brachytherapy. A radiation therapy regimen (schedule) usually consists of a specific number of treatments given over a set period of time.

Radiation therapy is usually not used by itself as a primary treatment for bladder cancer, but it may be given in combination with chemotherapy. However, some patients who cannot receive chemotherapy might receive radiation therapy alone. The combination of radiation therapy and chemotherapy may be used to treat cancer that is located only in the bladder for the following reasons:

- To destroy any remaining tumor after TURBT while sparing the bladder
- To relieve symptoms caused by a tumor, such as pain, bleeding, or blockage
- To treat a metastasis located in one area, such as the brain or bone

Side effects from radiation therapy may include fatigue, mild skin reactions, and loose bowel movements. For bladder cancer, side effects most commonly occur in the pelvic or abdominal area and may include bladder irritation with the need to pass urine frequently during the treatment period and bleeding from the bladder or rectum. Most side effects go away soon after treatment is finished.

Learn more about [radiation therapy](#) [15].

Getting care for symptoms and side effects

Cancer and its treatment often cause side effects. In addition to treatment to slow, stop, or eliminate the cancer, an important part of cancer care is relieving a person's symptoms and side effects. This approach is called palliative or supportive care, and it includes supporting the patient with his or her physical, emotional, and social needs.

Palliative care can help a person at any stage of illness. People often receive treatment for the cancer and treatment to ease side effects at the same time. In fact, patients who receive both often have less severe symptoms, better quality of life, and report they are more satisfied with treatment.

Palliative treatments vary widely and often include medication, nutritional changes, relaxation techniques, and other therapies. You may also receive palliative treatments similar to those meant to eliminate the cancer, such as chemotherapy, surgery, and radiation therapy. Talk with your doctor about the goals of each treatment in the treatment plan.

Before treatment begins, talk with your health care team about the possible side effects of your specific treatment plan and supportive care options. And during and after treatment, be sure to tell your doctor or another health care team member if you are experiencing a problem so it is addressed as quickly as possible. Learn more about [palliative care](#) [16].

Developing a treatment plan

The treatment options that your doctor will recommend depends heavily on the stage of bladder cancer you have been diagnosed with. The first treatment a person is given is called first-line therapy. If that treatment stops working, then a person receives second-line therapy. In some situations, third-line therapy may also be available. Adjuvant therapy is treatment that is given after the first treatment, usually surgery. Neoadjuvant therapy is treatment that is given before the primary treatment, such as chemotherapy before surgery.

The first-line treatment of bladder cancer mainly depends on the cancer's stage. (See the [Stages \[8\]](#) section for detailed descriptions of each stage.) However, the tumor's size and grade may also affect the recommended treatment options. Talk with your doctor about the risks and benefits of all the available treatment options and when treatment should begin.

Non-muscle-invasive bladder cancer

Patients with low-grade, non-muscle-invasive bladder cancer rarely develop aggressive or metastatic bladder cancer. However, they are at risk for developing similar low-grade cancers over their lifetime. This requires lifelong checkups, called surveillance, using cystoscopy. For patients who develop frequent recurrences over their lifetime, their urologist may consider giving intravesical chemotherapy to prevent recurrent tumors.

Patients with high-grade, non-muscle-invasive bladder cancer are at risk for developing recurrent tumors, and sometimes these tumors may come back at a more advanced stage with a defined risk of developing metastatic bladder cancer. To prevent this from occurring, the urologist may recommend removing the whole bladder (radical cystectomy), particularly if patients are younger and/or have large or a number of tumors at the time of diagnosis.

More often, patients receive intravesical immunotherapy using BCG after TURBT to prevent recurrence and progression to muscle-invasive disease. Before BCG treatment, these patients will need to have another TURBT to make sure that the cancer has not spread to the muscle. A first course of BCG is given weekly for six weeks. After that, the doctor will perform a cystoscopy and sometimes a bladder biopsy (see the [Diagnosis \[7\]](#) section) to determine if the BCG has eliminated all of the cancer. Patients with no remaining evidence of cancer undergo maintenance therapy, which may be given once a week for three weeks, every six months. This usually continues for three years. Patients require lifelong endoscopic surveillance. Cystectomy should be considered if BCG fails to prevent the development of recurrent tumors.

Muscle-invasive bladder cancer

Bladder cancer found at this stage has grown into the muscle layer of the bladder wall. As with other stages of cancer, surgery is often used as the initial treatment. However, instead of TURBT, a radical cystectomy is the standard treatment. Lymph nodes near the bladder are usually removed as well. A TURBT may still be done, but it usually is used to help the doctor figure out the extent of the cancer rather than as a treatment option.

Patients with muscle-invasive bladder cancer are optimally treated with systemic chemotherapy for three to four months followed by radical cystectomy and urinary diversion (see above). Research shows that chemotherapy before or after a radical cystectomy reduces the risk of the

cancer spreading to other parts of the body and may increase survival for men with muscle-invasive bladder cancer. An important clinical trial showed that the use of the MVAC chemotherapy combination before radical cystectomy helped patients with muscle-invasive bladder cancer live longer. Based on this research, this approach is considered a standard treatment for patients whose overall health allows it, meaning they have adequate kidney and heart function and functional status. This type of initial chemotherapy, called neoadjuvant chemotherapy, may shrink the tumor in the bladder and may also destroy small areas of cancer that have spread beyond the bladder.

It is important to note that chemotherapy with one drug does not seem to help patients with locally advanced bladder cancer live longer, and some patients may not be healthy enough to receive chemotherapy. Therefore, it is important for anyone who has been diagnosed with muscle-invasive bladder cancer to talk with a urologist and medical oncologist about their treatment options, including the risks and benefits of chemotherapy.

In very specific patients with small muscle-invasive cancers, an approach using chemotherapy with radiation therapy may provide similar rates of cure as bladder removal.

Metastatic bladder cancer

If bladder cancer has spread to another location in the body, it is called metastatic bladder cancer. Patients with this diagnosis are encouraged to talk with doctors, usually medical oncologists, who are experienced in treating this stage of cancer, because there can be different opinions about the best treatment plan. Learn more about seeking a [second opinion](#) [17] before starting treatment, so you are comfortable with the treatment plan chosen. This discussion may include [clinical trials](#) [3] studying new treatments.

Your health care team may recommend a combination of treatments to help manage the cancer. There are no methods to permanently cure metastatic bladder cancer for most people. The goals of treatment are to slow the spread of cancer, shrink the tumor (called remission, see below), relieve symptoms, and extend life as long as possible.

As explained above, the MVAC and gemcitabine-cisplatin regimens are the current standard treatments for patients who are healthy enough to receive such therapy. There are other drugs and combinations that can be used for patients who for medical reasons are unable to receive gemcitabine-cisplatin or MVAC. Changes to these regimens or the use of new treatment regimens aimed at helping patients live longer and improve their quality of life are being studied in clinical trials. Since there are relatively few treatment options for metastatic bladder cancer, clinical trials are often the best option for treatment. Supportive care will also be important to help relieve symptoms and side effects.

For most patients, a diagnosis of metastatic cancer is very stressful and, at times, difficult to bear. Patients and their families are encouraged to talk about the way they are feeling with doctors, nurses, social workers, or other members of the health care team. It may also be helpful to talk with other patients, including through a support group.

Remission and the chance of recurrence

A remission is when cancer cannot be detected in the body and there are no symptoms. This may also be called "no evidence of disease" or NED.

A remission can be temporary or permanent. This uncertainty leads to many survivors to feel worried or anxious that the cancer will come back. While many remissions are permanent, it's important to talk with your doctor about the possibility of the cancer returning. Understanding the risk of recurrence and the treatment options may help you feel more prepared if the cancer does return. Learn more about [coping with the fear of recurrence](#) [18].

If the cancer does return after the original treatment, it is called recurrent cancer. It may come back in the same place (called a local recurrence), nearby (regional recurrence), or in another place (distant recurrence, also known as metastasis).

When this occurs, a cycle of testing will begin again to learn as much as possible about the recurrence, including whether the cancer's stage has changed. After testing is done, you and your doctor will talk about your treatment options.

In general, non-muscle-invasive bladder cancers that come back in the same location as the original tumor or somewhere else in the bladder are treated in the same way as the first cancer. However, if the cancer continues to return after treatment, a cystectomy may be recommended. Bladder cancers that recur outside the bladder are more difficult to eliminate with surgery and are often treated with chemotherapy and/or radiation therapy. Your doctor may also suggest clinical trials that are studying new ways to treat this type of recurrent cancer.

People with recurrent cancer often experience emotions such as disbelief or fear. Patients are encouraged to talk with their health care team about these feelings and ask about support services to help them cope. Learn more about [dealing with cancer recurrence](#) [19].

If treatment fails

Recovery from bladder cancer is not always possible. If treatment is not successful, the disease may be called advanced or terminal cancer.

This diagnosis is stressful, and this is difficult to discuss for many people. However, it is important to have open and honest conversations with your doctor and health care team to express your feelings, preferences, and concerns. The health care team is there to help, and many team members have special skills, experience, and knowledge to support patients and their families. Making sure a person is physically comfortable and free from pain is extremely important.

Patients who have advanced cancer and who are expected to live less than six months may want to consider a type of palliative care called hospice care. Hospice care is designed to provide the best possible quality of life for people who are near the end of life. You and your family are encouraged to think about where you would be most comfortable: at home, in the hospital, or in a hospice environment. Nursing care and special equipment can make staying at home a workable alternative for many families. Learn more about [advanced cancer care planning](#) [20].

After the death of a loved one, many people need support to help them cope with the loss. Learn

more about [grief and loss](#) [21].

The next section helps explain clinical trials, which are research studies. Use the menu on the side of your screen to select About Clinical Trials, or you can select another section, to continue reading this guide.

Links:

- [1] <http://www.cancer.net/cancer-types/bladder-cancer/treatment-options>
- [2] <http://www.cancer.net/about-us>
- [3] <http://www.cancer.net/node/18528>
- [4] <http://www.cancer.net/node/18531>
- [5] <http://www.cancer.net/node/25356>
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