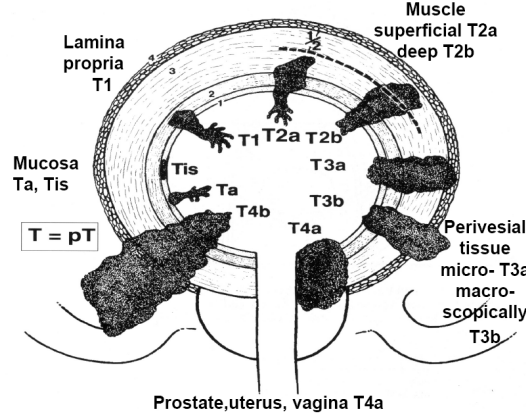


Bladder Cancer

Facts About Bladder Cancer

The bladder is located in the pelvis. It collects and stores urine and has a muscular wall that allows it to contract and expand. The American Cancer Society estimates that 73,510 new cases of bladder cancer will be diagnosed in the United States in 2012.



Cancer limited to the lining of the bladder is called **non-muscle invasive bladder cancer (NMIBC)**. This type of cancer is sometimes called superficial bladder cancer. More than 75 percent of bladder cancer is diagnosed as a NMIBC and it has an excellent survival rate. Muscle invasive bladder cancer penetrates the layers of muscles in the bladder and is more likely to spread to other parts of the body but is often still quite curable. Bladder cancer is four times more common in men than in women. It is two times more common in Caucasians than African-Americans.

Treating Bladder Cancer

Treatment options are based on your type of cancer, age and overall health. Bladder cancer, if caught early, can often be cured. The main treatments are:

Radiation therapy, where a **radiation oncologist** uses high-energy X-rays to destroy the tumor.

Surgery to remove the cancer in the bladder is usually the first step. If a tumor is determined to be invasive, the next step may be removal of part or all of the bladder by a **surgical oncologist** or **urologist**.

Chemotherapy, where a **medical oncologist** uses drugs to eliminate the cancer.

Biologic therapy (also called **immunotherapy**), where doctors use a drug to stimulate your immune system to fight the cancer.

In the past, complete removal of the bladder was the only way to treat bladder cancer. With advances in radiation therapy and chemotherapy, doctors are sometimes able to treat the cancer while preserving the bladder. This organ preserving approach allows many patients to urinate normally rather than requiring surgical reconstruction for urinary function.

Radiation Therapy Options for Bladder Cancer

Radiation therapy, sometimes called **radiotherapy**, is the careful use of radiation to safely and effectively treat cancer. Radiation therapy works within cancer cells by damaging their ability to multiply. When these cells die, the body naturally eliminates them. Healthy cells are also affected by radiation, but they are able to repair themselves in a way cancer cells cannot.



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External beam radiation therapy is the main type of radiation used to treat bladder cancer, often in combination with **chemotherapy**. During this treatment, radiation is directed at the tumor from a machine similar to an X-ray machine.

Internal radiation therapy, or **brachytherapy**, is occasionally used with external beam radiation therapy. Radioactive material is placed very close to the tumor through small tubes called catheters or with radioactive pellets.

EXTERNAL BEAM

RADIATION THERAPY

External beam radiation therapy (also called radiotherapy) involves a series of daily treatments to accurately deliver radiation to the bladder and pelvis. Research trials have shown that radiation and chemotherapy can permit some bladder cancer patients to have organ-preserving treatment that doesn't require complete removal of the bladder.



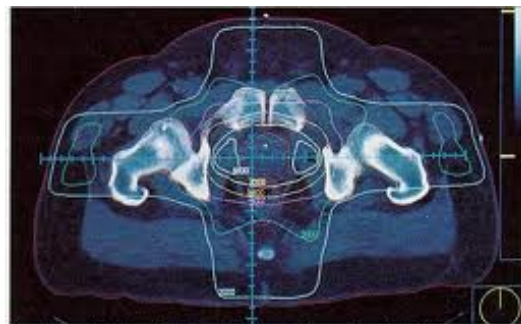
Before treatment begins, your treatment plan will be designed. A **CT scan** is done in the position you will be treated,

often with a supportive device to keep you comfortably in the same position for treatment. Using information from your pathology, imaging and exam, your doctor will design a treatment plan to treat the bladder and pelvis.

With external beam therapy, treatment is delivered in a series of daily sessions, each about 15-30 minutes long, Monday through Friday, for several weeks. Each treatment is painless, noninvasive and similar to a long X-ray: you hear noise but will feel nothing. Each day, you will feel the same when you leave as you did when you came.

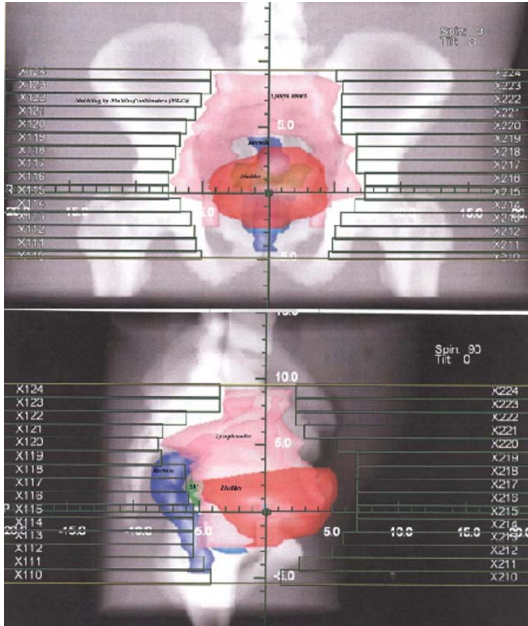
The radiation beam is usually generated by a machine called a **linear accelerator**, or **linac**. Doctors use this machine to generate high-energy X-rays to treat your cancer.

Three-dimensional conformal radiotherapy (3-D CRT) combines multiple radiation treatment fields to deliver precise doses of radiation to the cancer. This improved technique helps keep radiation away from nearby healthy tissue.



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Intensity modulated radiation therapy, or IMRT, is a specialized form of 3-D CRT that allows the radiation beams to be further shaped to focus on the tumor. IMRT is still being studied for bladder cancer.

POTENTIAL

SIDE EFFECTS

The side effects you might feel will depend on the area being treated, the dose of radiation given and whether you also receive other treatments, such as chemotherapy. Before treatment begins, ask your doctor about specific side effects and how you can best manage them. Side effects may include:

- Bladder irritation with increased need to urinate
- Bowel irritation with abdominal cramping, rectal pressure and diarrhea are possible
- Fatigue where you feel tired

much of the time.

- You may experience a mild skin irritation, like a sunburn
- The radiation will not cause you to lose your hair on your head, you may lose some pubic hair near where the radiation was aimed.
- Some patients may also see sexual side effects. Women may experience vaginal dryness. Some men may have difficulty with erection. These are temporary, but tell your doctor or nurse. They may be able to recommend products or medications to help.

Sometimes Symptoms don't appear until treatments are finished. Some people have hardly any symptoms at all. You are unique as will be your reaction to cancer treatments. Talk to your doctor or nurse about any discomfort or side effects you have, however embarrassing. He or she may be able to provide drugs or other treatments to help.



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