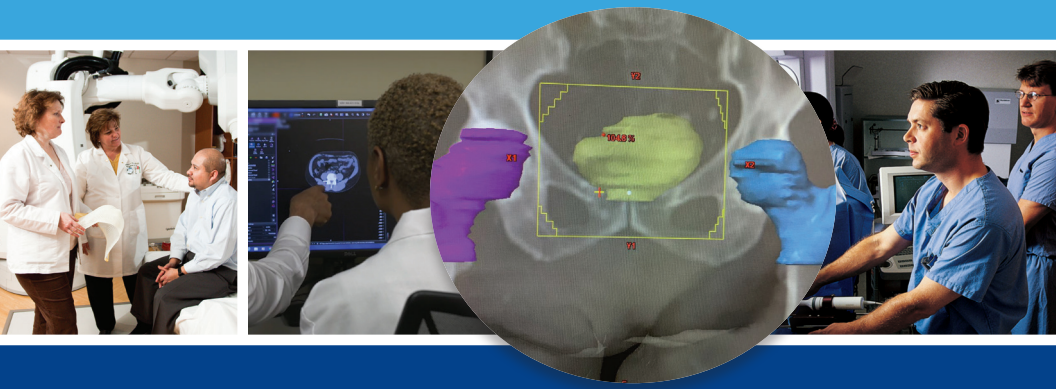
Radiation Therapy for **Bladder Cancers**



The American Cancer Society estimates that approximately 81,000 Americans (62,000 men and 19,000 women) will be diagnosed with bladder cancer this year and nearly 18,000 will die of the disease. Bladder cancer is four times more common in men than in women. It is two times more common in white men than black men.

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TARGETING CANCER CARE

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.

Cancer that is only in 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% of bladder cancer is diagnosed as a NMIBC and it has an excellent survival rate.

Muscle invasive bladder cancer invades 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.

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**, where a **surgeon** removes the cancer in the bladder as 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 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.

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.

EXTERNAL BEAM RADIATION THERAPY

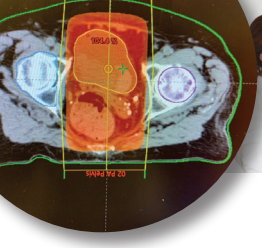
External beam radiation therapy involves a series of daily treatments to accurately deliver radiation to the bladder and pelvis. Research trials have shown that radiation and chemotherapy can permit some bladder cancer patients to have organ-preserving treatment that doesn't require complete removal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

Before treatment begins, your treatment plan will be designed. A **CT scan** is done while you are in the position you will be in when treated. Often a supportive device is used to keep you comfortably in the same position for treatment. Your radiation oncologist may ask you to have a full or empty bladder for this scan. You may receive two scans (one with a full bladder and one with a empty bladder) to see the changes in your bladder volume. 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, 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 technique helps keep radiation away from nearby healthy tissue.

Intensity modulated radiation therapy, or **IMRT**, is a specialized form of 3-D CRT that allows the radiation beams to be shaped to focus on the tumor. IMRT may be necessary depending on the anatomy, what areas need to be treated and the need to protect healthy organs.



CARING FOR YOURSELF DURING TREATMENT

- Get plenty of rest during treatment. Follow your doctor's orders.
- Ask if you have questions about your treatments and side effects.
- Tell your doctor about any medications, including over the counter medications or vitamins you are taking.
- Eat a balanced diet. If food tastes funny or if you're having trouble eating, tell your doctor or dietician. They may be able to help you change the way you eat.
- Treat the skin exposed to radiation with special care. Avoid hot or cold packs, and only use lotions and ointments after checking with your doctor or nurse. Your radiation oncology team may also recommend special creams.
- When cleaning the area being treated, only use water and a mild soap.

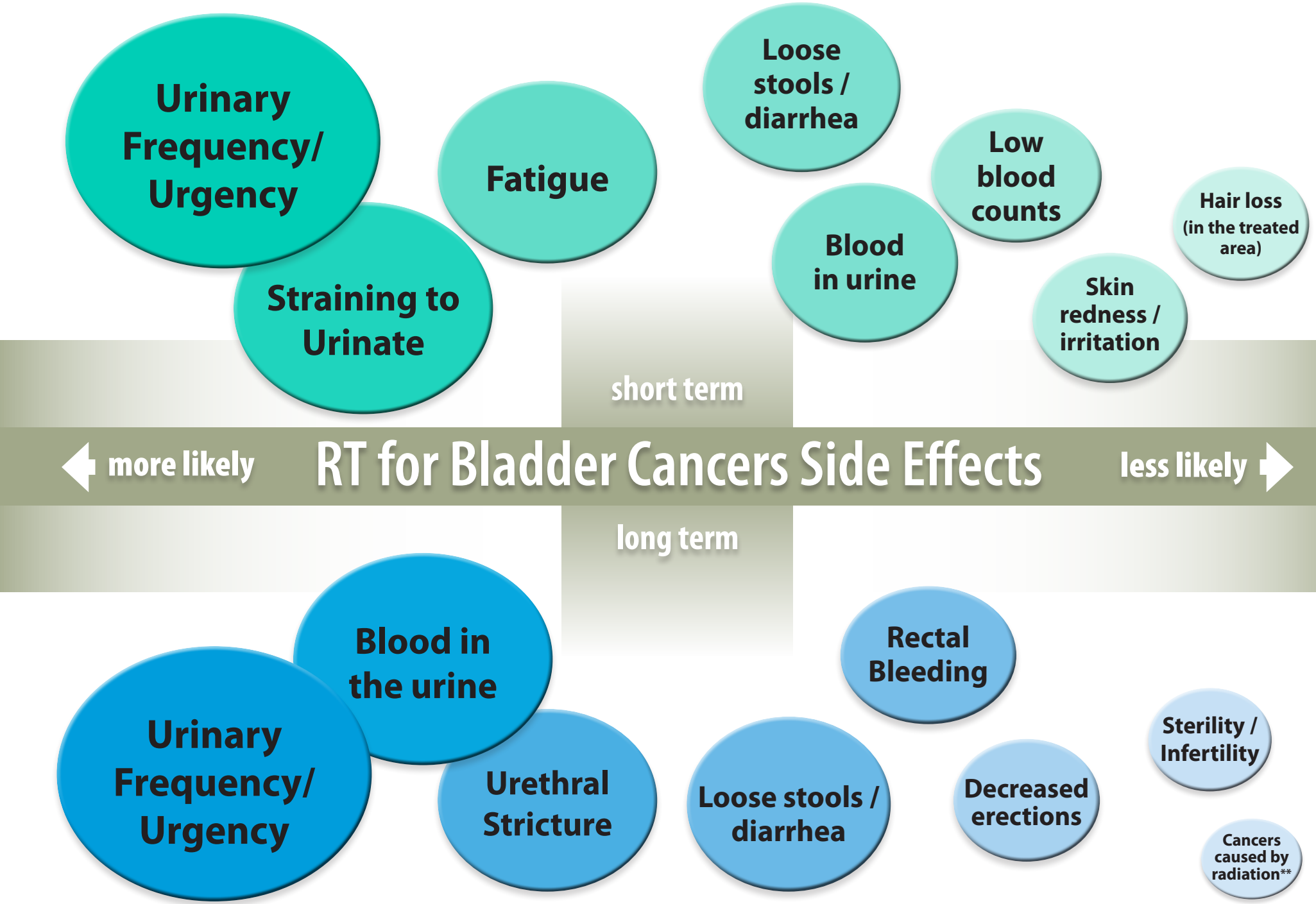
Coping with cancer can be trying. Be sure to ask friends, family, support groups and your radiation oncology team for help. Ask your doctor about what support resources are available to you.

HELPFUL WEBSITES ON BLADDER CANCER

Bladder Cancer Advocacy Network
www.bcan.org

Bladder Cancer WebCafé
www.blcwebcafe.org

National Cancer Institute
www.cancer.gov



*Larger bubbles show higher likelihood of occurrence. This list doesn't represent all of the possible side effects. Please talk to your doctors about your specific diagnosis.

**Very unlikely.

ABOUT THE RADIATION ONCOLOGY TEAM

Radiation oncologists are doctors who specialize in the use of radiation therapy as a treatment for cancer. Other members of the treatment team include radiation therapists, radiation oncology nurses, medical physicists, dosimetrists, social workers and nutritionists. For information on what each does or to find a radiation oncologist near you, visit **www.rtanswers.org**.

ABOUT ASTRO

The American Society for Radiation Oncology is the largest radiation oncology society in the world with more than 10,000 members who specialize in treating patients with radiation therapies. ASTRO is dedicated to improving patient care through education, clinical practice, advancement of science and advocacy. Visit **www.astro.org** for more information.

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