RADIATION THERAPY FOR CANCERS OF THE COLON, RECTUM AND ANUS

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AMERICAN SOCIETY FOR RADIATION ONCOLOGY

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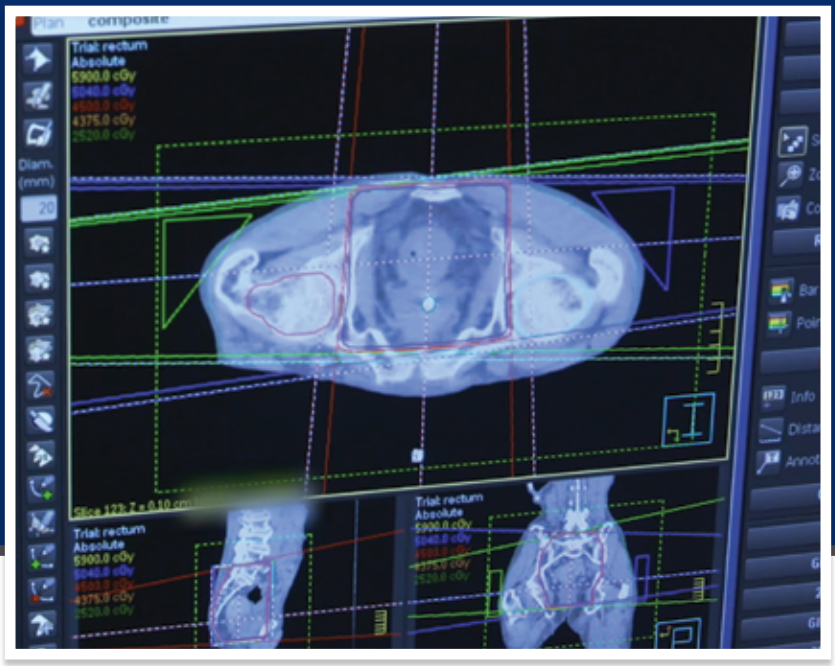


Radiation therapy is a key part of treatment for cancer of the lower gastrointestinal tract, including anal and colorectal cancers. While **anal cancer is uncommon** (with about 10,000 new cases diagnosed annually in the United States), **colorectal cancer is the third most diagnosed cancer** in the United States. Radiation therapy is often used to treat these cancers by killing cancer cells while preserving your normal organs. Treatments may also involve chemotherapy, immunotherapy and/or surgery. Your personalized treatment plan will be based on your cancer's location, type and stage, as well as your overall health.

TREATMENT TYPES

Radiation Therapy

Radiation therapy involves the precise use of high energy X-rays to treat cancer safely and effectively. Radiation oncologists are cancer doctors who use radiation to cure cancer, control cancer growth or relieve symptoms, such as pain or bleeding. In most cases, photon (X-ray based) therapy is used to treat cancer and can deliver high doses of radiation therapy to the cancer while sparing nearby healthy organs.

Radiation works by damaging the DNA of cancer cells so the cancer is unable to grow. When these cells die, the body naturally eliminates them from your body. Healthy cells can also be affected by radiation, but these normal cells can repair themselves in ways that cancer cells cannot.

Radiation therapy equipment and technology have continuously been improving and evolving to make treatments more effective for you, while minimizing possible side effects.

Systemic Therapy

Systemic therapy, including chemotherapy and immunotherapy, is also an important treatment to destroy cancer cells and improve cure rates. Immunotherapy is a cancer treatment that helps your immune system fight cancer and may be useful for some patients. More commonly, medical oncologists will prescribe chemotherapy or other targeted agents that attack specific cancer cells and reduce the risk of cancer spreading in the body. The doses may be given daily, weekly or every few weeks and can be given in pill form or injections that are delivered directly into veins (IV). If you need systemic therapy, your medical oncologist will discuss its use before, during or after the course of radiation therapy.

Surgery

Surgery can be used to treat cancers in the colon, rectal and anal areas. The need for surgery and type of surgery that are required can be very different depending on the type of cancer, the location of the cancer and the cancer's response to other treatments, including chemotherapy and radiation.

Talk with your doctor about which type of treatment is best for you and your cancer.

TYPE OF CANCERS IN THE LOWER GASTROINTESTINAL TRACT

Anal Cancer

The anal canal connects the anus (the opening at the lowest end of the intestines) with the rectum (the last part of the large intestine). Most cancers of the anal canal can be cured using radiation therapy and chemotherapy alone. This approach is preferred because surgical removal generally requires a permanent colostomy bag, a pouch worn on the outside of the body to collect stool from the colon when part of the colon has been surgically removed. Radiotherapy and chemotherapy are given at the same time, to kill cancer cells more effectively. This means that after treatment you are likely to retain control of your bowel movements through the anus.

Radiation therapy is typically given over a period of five to six weeks. A small dose is given each day to the anal canal and other areas around the pelvis and groin to kill cancer cells that may have traveled to nearby lymph nodes.

Rectal Cancer

Cancers of the rectum are typically treated with a combination of chemotherapy, radiation and/or surgery depending on the location and extent of disease; however, very small tumors can sometimes be treated with surgery or immunotherapy alone. For more advanced tumors, this combination of treatment offers the highest likelihood of destroying cancer cells. Radiation therapy is usually delivered prior to surgery, although occasionally it will follow surgery. Chemotherapy may be used in conjunction with radiation therapy. This combination makes the cancer cells more sensitive to radiation therapy and more likely to respond to the treatment. New studies in rectal cancer treatments are looking at whether certain patients can skip radiation therapy to the pelvis (and still go to surgery), or not require surgery after being given chemotherapy and radiation together.

The benefits of radiation therapy for rectal cancer are:

- It lowers the risk of cancer returning in the pelvic area.
- It makes the tumor smaller and easier to remove completely during surgery or may allow some patients to avoid surgery.
- It may eliminate the need for a permanent colostomy after surgery.

Radiation therapy is typically given over a period of five to six weeks. A small dose is given each day to the rectum and other areas in the pelvis to kill cancer cells that may have spread to nearby lymph nodes. In some instances, the radiation may be given over the course of one week with higher daily doses.

Colon Cancer

Cancers of the colon are typically treated with chemotherapy, targeted therapy (such as bevacizumab), and surgery (that does not involve a permanent colostomy bag, but you may be given a temporary one). Some earlier stage colon cancers can be treated with surgery alone. Radiation therapy is not usually involved in most stage I, II or III colon cancers. For some stage IV cancers (cancers that have spread to other places of the body at diagnosis), a lower dose of radiotherapy is sometimes used to help reduce pain and bowel obstruction caused by the cancer (for comfort and to relieve suffering).

Cancer That Has Spread

Sometimes colorectal and anal cancers can spread, or metastasize to, other areas of the body. In these instances, delivering radiation therapy to these areas can shrink or destroy these tumors to improve outcomes or alleviate symptoms as palliation (for comfort and to relieve suffering).

Cancer That Has Returned

If cancer has returned in the same area that was previously treated, radiation therapy to the pelvis for a second time may be necessary. This repeat course may be necessary to destroy the new tumor, to shrink it so that it can be removed or to stop it from growing further. Talk to your doctors about whether this approach is the best for you since treating an area that has already been treated with radiation therapy can be challenging. In some cases, intraoperative radiotherapy (IORT) can be used as part of the treatments for cancer cases that have returned.

What Happens When You Need Radiation Therapy

Before beginning treatment, you will be scheduled for a planning session, also known as simulation. The simulation involves a CT scan of the pelvis and landmarks placed on your skin (often tiny tattoos or stickers). Radiation therapists use these marks to position you so that the radiation is precisely delivered to where it is planned. Your radiation oncologist and therapy team may ask that you lie in a certain position for your treatments to help decrease potential side effects.

You may need to wait a few days to weeks before starting treatment. The scan is then used by the radiation oncologist to precisely map out your custom radiation treatments and ensure the treatments are delivered safely and effectively. This is called your radiation plan. It is then sent to the linear accelerator, the machine that delivers the radiation. There are many advanced techniques to achieve a radiation plan and your radiation oncology team will select the best type for your case.

When you start radiation therapy, the sessions are often given daily (Monday through Friday) for the number of treatments your doctor prescribes. It is necessary to give small doses per day over time to add up to a dose to kill the cancer. Small daily radiation doses allow healthy parts of the body to recover and avoid damage.

For each treatment, you will be placed on the treatment table by radiation therapists who are operating the radiation machine, known as a linear accelerator or linac. They will ensure that you are correctly aligned by performing scans while you are on the treatment table. Once you are in the correct position, the beam is switched on.

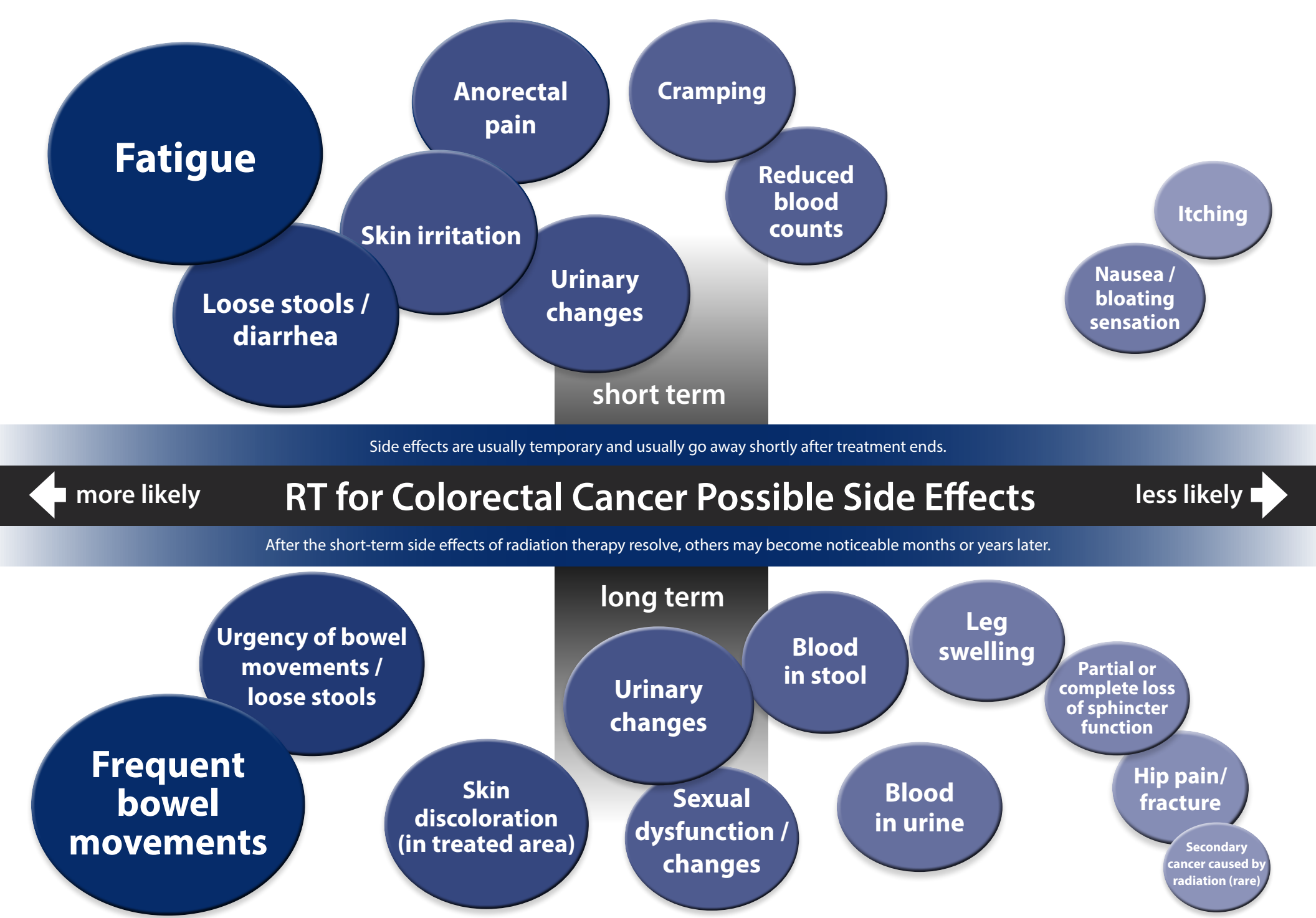
You will not feel anything while radiation is going into the tumor. Radiation is confined to the pelvis. Parts of the linear accelerator will move around you but will not touch you. You will not be radioactive after your treatments, and you may come in contact with friends and family.

CARING FOR YOURSELF DURING TREATMENT

It is important to care for yourself during radiation therapy. Things that you can do to help with healing and prevent some symptoms include:

- Take all medications as prescribed.
- Eat a well-balanced healthy diet. You can speak to a dietitian for any advice about what to eat.
- Drink adequate amounts of liquids to stay well hydrated.
- Stay active and do some physical exercises each day.
- Communicate with your family, friends or support group.
- Ask any questions you may have to your nurse or doctor.

Having a support network in place before and during treatment, it will help make it easier to get through side effects since people you can count on will be around to help you. If you need additional support, let your treatment team know.



**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.*

SUGGESTED QUESTIONS TO ASK YOUR TEAM

What is the stage of the cancer?

What are the treatment options?

Will I need to see any other physicians?

How many total radiation treatments will I receive over what period of time?

What are the risks, benefits and alternatives to the proposed treatment?

How long will it take to get treatment started?

What can I do to prepare for the treatment?

Who can I talk to during the treatment if I am experiencing side effects?

How do we determine if the treatment was effective and what is the likelihood of eliminating my cancer?

What happens after treatment is complete? How will the cancer be monitored?

NOTES

NOTES

If you have any questions about your diagnosis, treatment or side effects, please contact your doctor or other members of your treatment team. To locate a radiation oncologist in your area, or for additional cancer treatment information, visit www.rtanswers.org.

ABOUT THE RADIATION ONCOLOGY TEAM

Radiation Oncologists are doctors who oversee the care of each patient undergoing radiation treatment. Other members of the radiation oncology team include radiation therapists, dosimetrists, social workers and nutritionists. To learn more about the role these professionals have in your treatment, visit www.rtanswers.org/treatmentteam.

RTAnswers
ANSWERS TO YOUR RADIATION THERAPY QUESTIONS

I Have Cancer. Now What?

Cancer diagnosis is chaotic, unpredictable, messy. Your cancer treatment shouldn't be. **RTAnswers.org** provides detailed information and resources for cancer patients and their caregivers, including:

- Treatment information by disease site.
- Videos walking you through the radiation therapy treatment process.
- Stories from patients and caregivers sharing their experiences from diagnosis and treatment to survivorship.
- A "Find a Radiation Oncologist" portal where you can search by city, state and disease site specialty for a radiation oncologist near you.

RTAnswers
ANSWERS TO YOUR RADIATION THERAPY QUESTIONS

THE AMERICAN SOCIETY FOR RADIATION ONCOLOGY

(ASTRO) is the largest radiation oncology society in the world, with more than 10,000 members who specialize in treating patients with radiation therapies. As the leading organization in radiation oncology, biology and physics, ASTRO's mission is to advance the specialty of radiation oncology through promotion of equitable, high-quality care for people with cancer, cultivating and educating a diverse workforce, fostering research and innovation, and leading policy development and advocacy. Visit www.astro.org for more information.

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