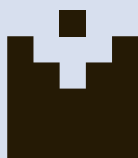


Understanding brachytherapy



Legacy Cancer Institute



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Your health care provider^{has}

requested that you receive a type of radiation treatment called brachytherapy as part of your cancer treatment. This brochure is designed to help answer questions about brachytherapy, the members of your health care team, the procedures and the side effects of treatment. If you have questions about brachytherapy or about the information here, please discuss them with a member of your radiation therapy team.

What is brachytherapy?

Brachytherapy comes from the Greek words "brachy" meaning short (in this case, short distance), and "therapia," meaning treatment.

Brachytherapy involves the placement of radioactive sources directly into or next to the tumor or area of concern.

Brachytherapy is one form of radiation therapy. Another form is called external radiation therapy, where the radiation is delivered to a tumor using high-energy X-rays from a source outside of the body. With both methods, carefully measured amounts of high-energy ionizing radiation are directed at cancerous cells (tumor). The goal of radiation therapy is to destroy cancer cells or cause them to lose their ability to grow and divide. About half of all patients with cancer are treated with radiation therapy at some point in their cancer experience. Sometimes the two forms or methods of radiation therapy are used in combination. Radiation therapy may also be given to treat benign (non-cancerous) conditions.

Brachytherapy may be used alone or in combination with external beam radiation therapy to provide intense treatment to the tumor site. Brachytherapy may also be used together with surgery to reduce the risk of cancer coming back (recurrence). The brachytherapy can be done

Specialized radiation treatment

before or after the surgical removal. Often brachytherapy is used as an alternative to surgery and will eliminate the cancer without the need for surgery.

How is brachytherapy given?

Brachytherapy can be accomplished in several different ways. Most often brachytherapy is given inside an applicator which is placed inside your body and then removed when the treatment is done. This is called temporary brachytherapy. Less often, the radioactive sources may be placed inside your body and left in permanently. The sources give off their radiation over a period of weeks or months and then become inactive. This is referred to as permanent brachytherapy and is most often used in the treatment of prostate cancer.

All brachytherapy procedures can also be termed High Dose Rate (HDR) or Low Dose Rate (LDR).

High Dose Rate (HDR) brachytherapy delivers a prescribed dose of radiation in 5–15 minutes. It is done often as an outpatient procedure and usually requires several treatments. The delivery of the radiation is performed in a brachytherapy suite in the Radiation Oncology Department.

Low Dose Rate (LDR) brachytherapy delivers a prescribed dose of radiation over a period of many hours or several days. It is done in a single session or over several sessions. Each session generally requires a stay in the hospital for the length of time that the radioactive sources are in place.

In addition to dose rate, your radiation oncologist will decide which of the following two methods will work best for you.

The two brachytherapy treatment methods are intracavitary and interstitial.

Intracavitary brachytherapy is the placement of an applicator, for example a cylinder or tube, into an opening (cavity) of the body such as the vagina. The radioactive sources are then placed inside of the applicator, treatment is delivered and the applicator is removed at the end of the treatment or session.

Most intracavitary applications require no medication or sometimes a mild sedation and/or analgesic before treatment.

Interstitial brachytherapy is the placement of radioactive sources directly into the tissue of the tumor or the tumor bed. This is done either as a temporary or permanent implant. Temporary implants use special catheters or applicators that are surgically inserted into the tissue. At the completion of the course of brachytherapy, all catheters or applicators are removed.

Most interstitial applications require a local or general anesthesia for placement. Other pain relievers may be needed for the duration of the interstitial applicator process, but the treatments themselves are painless.

Who are the members of my radiation therapy team?

During your brachytherapy, the following radiation therapy team members will work together to give you the best treatment possible:

Radiation Oncologist — Your first step in radiation therapy will be meeting with your radiation oncologist, a physician specializing in treating cancer with radiation. During the first visit, your radiation oncologist will discuss recommendations for treatment and other alternatives. You and your radiation oncologist will review whether radiation therapy will help you and talk about the type of treatment you will receive. The goals and side effects of treatment and what you can expect during treatment are also discussed.

Nurse Practitioner — Nurse practitioners work with radiation oncologists. They may assist the physician in providing your comprehensive care during initial consultation, treatment and follow-up evaluations.



A patient consults with her doctor prior to receiving High Dose Rate brachytherapy.

Dosimetrist — Working under the direction of the radiation oncologist, the dosimetrist helps plan the radiation treatments. The dosimetrist helps plan the best way to deliver radiation to the tumors while minimizing radiation to nearby healthy tissues.

Radiation Physicist — The radiation physicist provides data used to plan your treatment. Frequently, the radiation oncologist, physicist and dosimetrist will work together to plan your treatment. The physicist may make special measurements related to your treatment. The physicist also checks the equipment for safety, accuracy and consistency.

Registered Nurse (R.N.) — Registered nurses will assist a physician in your initial consultation. They are responsible for scheduling treatments, providing any necessary pre-medications and assisting you, as well as the physician, during the applicator placement and treatment. They are available for questions, as are other members of the radiation therapy team.

Radiation Therapy Technologist — A radiation therapy technologist will perform any radiographic imaging (digital X-rays, fluoroscopy or CT scans) to verify applicator placement that occurs in conjunction with treatments.

Radiation Safety Officer — A radiation safety officer assists with quality control of radioactive substances.

What radiation safety measures are used for brachytherapy?

Brachytherapy uses radioactive sources to deliver the prescribed dose of radiation to the tumor. HDR brachytherapy is done entirely while you are in the treatment area so there is no radiation exposure to others. You will be alone in the room when the actual radiation is given. You are, however, being continuously observed on a closed circuit monitor by the physician, nurse and physicist in the brachytherapy suite control room. An intercom provides continuous two-way communication.

LDR brachytherapy, which may require hospitalization, does cause some radiation exposure to those visiting or caring for the patient. Therefore, steps are taken to limit the amount of radiation exposure to others. Visitors will be given instructions regarding time and distance guidelines to limit their exposure while your implant is in place. After the implant is removed, there is no further radiation exposure to you, the caregivers or visitors.

Permanent implants, such as prostate seed implants, result in minimal radiation exposure outside of the prostate to other people. However, a few precautions are advised for the first two months after the prostate-seed implants are placed. Details can be found in the Legacy Prostate Brachytherapy booklet.

What are the side effects of brachytherapy?

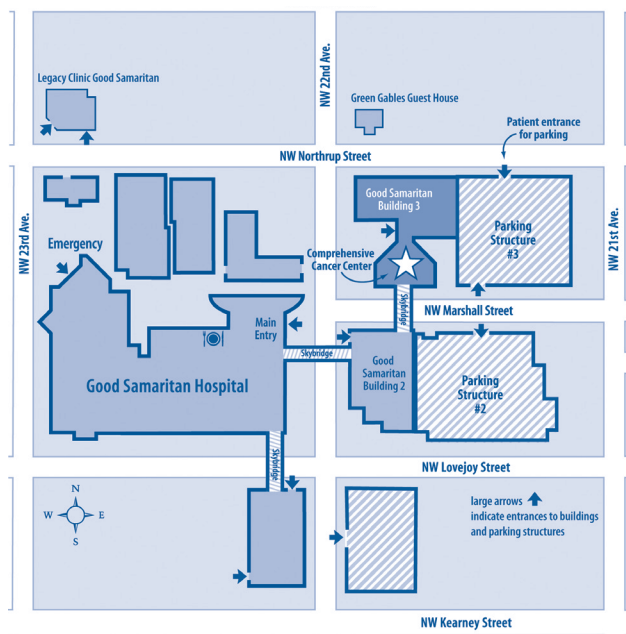
The side effects of brachytherapy are very specific to the location of the tumor, the dose and the type of brachytherapy prescribed. Ask your radiation oncologist the details of the potential side effects. If you have questions, talk to your radiation oncologist or a member of your radiation therapy team.

What follow-up care will I need?

Follow-up care is often an essential part of your treatment. It may involve additional tests, treatments, rehabilitation and counseling. Together, you and your radiation oncologist will watch for benefits and side effects of treatment. This careful monitoring assists your radiation oncologist with identifying any side effects. Tell your radiation oncologist if you notice any symptoms that concern you.

Your efforts also are important in your recovery. Getting plenty of rest, eating a balanced diet, drinking plenty of water, maintaining emotional health and following your radiation oncologist's advice can help.

Contact your radiation oncologist or another member of your radiation therapy team about any changes in your condition.



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