

Low Dose Rate Brachytherapy

What is Brachytherapy?

Brachytherapy (bray-kee-THAIR-uh-pee) is a type of radiation that is used to treat cancer. Brachytherapy delivers a highly concentrated dose of radiation near or in the tumor, while sparing the surrounding healthy tissue. Brachytherapy is also called a “radiation implant” or “radioactive source.”

Brachytherapy may be used alone or in combination with external beam radiation and/or surgery. It may cure, control, or relieve symptoms of many different types of cancer.

The radioactive sources used for brachytherapy come in the form of small seeds or wires. The dose of radiation (number of seeds) and length of time prescribed will depend on the tumor size, location, and sensitivity to radiation.

The first step in this procedure is the placement of special applicators. This is done in the operating room. During the procedure, your radiation oncologist will place these hollow applicators (catheters, or soft tubes) in your body near the site of the tumor. Once the catheters are in place, nonradioactive wires are put into the catheters. These wires keep the catheters open and allow the catheters to be seen on an x-ray after surgery. The catheters do not contain any radioactive sources at the time of surgery. The radioactive sources will be placed (or loaded) several hours or days after surgery in your hospital room. When loading is done in this manner, it is called “after loading.”

Preparation and Surgery

After admission to the hospital, you will be asked to sign consent to administer the brachytherapy, if not done previously. If surgery is planned, a separate consent will be needed and will be obtained by your surgeon.

Routine lab work and x-rays may be ordered by your doctor.

You will be in a private room while the radioactive sources are in place. Your surgeon and radiation oncologist will be present during your surgery. Your radiation oncologist will determine the number of catheters that need to be placed to effectively treat the area.

Following your surgery, you will be taken to the Radiation Oncology Department, where the radiation oncologist will use special measurements and x-rays to plan your treatment. This may take 30 minutes to one hour to complete. Medication will be available if you experience discomfort during this planning session.

After the appropriate radiation dosage is determined and the radioactive sources are obtained, the sources will be inserted, or loaded, into the implant catheters. This will take place at your bedside. The placement procedure takes a short time. The radiation sources are painless, but sometimes movement of the catheters causes some discomfort. Medication will be available if you experience discomfort during this loading session. The site may be left open to the air or covered with a dressing after the loading is completed.

Activity with the Implant in Place

Activity restrictions such as bed rest may be ordered to avoid moving the implants.

You may read, do small hobbies, watch television, and use the telephone to pass the time. Bathing will be done at the bedside.

Depending on the location of the implant, a urinary catheter may be inserted into your bladder to collect urine while the radioactive sources are in place. This will help you decrease your movement and avoid moving the implants.

Turning, coughing, deep breathing, and “foot waving” exercises should be done every hour while you’re awake to prevent complications while you are on bed rest. You may have special stockings on your legs to help with circulation.

Diet and Medications

It is important to maintain a well-balanced diet to better tolerate the stress of disease, surgery, and your treatments. Changes in your diet may be required. Any dietary changes will be discussed with you prior to loading your applicators.

Medications that you took before your admission to the hospital will continue, unless otherwise directed by your primary care physician. Medications for pain, relaxation, and sleep will be available as needed for your comfort. Please feel free to discuss your needs with your nurse.

Safety Precautions

Certain safety precautions must be followed by you, your visitors, and hospital staff while the radioactive implants are in place. These precautions are necessary in order to ensure that visitors and staff are exposed to as little radiation as possible.

While the radioactive implant is in place, you will stay in a private room. A physicist will measure the level of radioactivity in the room. A sign will be placed on the door asking all visitors to report to the nurses' station before entering your room.

Due to federal regulations, no one under the age of 18 and no one who might be pregnant will be permitted to visit you. Length of visiting times will be determined on an individual basis. Visitors should stay behind the line that is marked on the floor, which should be at least six feet away from you. Hospital staff will explain safety precautions to all visitors.

Furniture in your room should not be moved. Furniture is placed at a safe distance so it can be used by visitors and hospital staff.

Since health care professionals may be caring for several patients with radioactive sources, they must watch the amount of radiation exposure they receive. You may notice they wear a small badge on their uniform to monitor their exposure.

Portable, thick, lead shield panels will be placed around your bed to limit radiation exposure to anyone who enters your room.

All used bed linens and garbage will be kept in containers in your room until your treatment is complete. This may cause your room to appear cluttered. This precaution is necessary in the rare case that a small radioactive source needs to be located.

You will have access to nurses through the use of your call bell and intercom. Try to communicate your needs so that staff has minimal exposure when in your room. The nursing staff wants to give you the best care safely and efficiently.

If the implant appears dislodged, tell the nurse immediately. Implants should never be touched with bare hands.

Removal of Radiation Sources

The removal of the radiation sources and catheters by your radiation therapy staff takes only a few minutes and is done at your bedside. Pain medication will be made available to you before or after the procedure, if you need it.

Once the radiation sources are removed, safety restrictions are no longer necessary. Personal belongings that were in your room with you are not affected by the radiation.

At Home

Activity

You may experience some fatigue for a few weeks following brachytherapy and/or surgery. You may find it beneficial to plan rest periods throughout your day. If you had surgery, your surgeon will discuss your activity limitations.

Dietary

You may resume your normal diet after discharge, unless directed otherwise by your doctor.

Skin care

If you had surgery and have a dressing, your surgeon will tell you when you can remove it and how to care for your incision.

Skin reddening in the area that was treated is a normal reaction after brachytherapy. If the radioactive sources were close to the skin surface, there may be hair loss in that area.

The skin may also become irritated from the catheters. The following guidelines will help promote comfort and healing of the area involved:

- Wash the area with mild soap and lukewarm water. Pat dry.
- Avoid extreme temperature, such as hot showers, hot water bottles, heating pads, or ice bags, on the affected area. Avoid any friction or rubbing of clothing on the skin. Do not scratch the area. If itching occurs, contact the radiation oncology doctor and/or nurse for medication.
- Wear cotton clothing to allow airflow to the affected skin.
- Avoid the use of commercial lotions or powders, unless recommended by the radiation oncology nurse.

Things to Report to Your Nurse or Doctor

Tell your nurse or doctor if you experience skin peeling that leaves the treatment area sore and moist.

Things to Report Immediately

Call your nurse or doctor immediately if you have any of the following symptoms:

- Temperature of 100.5°F (38°C) or above
- Chills
- Severe discomfort in the treatment area not relieved by your prescription pain medication
- Unusual bleeding
- Sudden chest pain
- Shortness of breath
- New pain in your calf

Follow-up Care

Permanent skin changes include increased sensitivity to hot and cold temperatures. If the area being treated is exposed to the sun, apply sunscreen routinely to the treatment site whenever you are outdoors for more than 10 minutes during summer or winter. A PABA-free sunscreen with a minimum sun protection factor (SPF) of 30 should be used. Since the area being treated will always be more sensitive than the rest of your skin, protect the area from sun exposure after your treatment ends.

It is important to keep your doctor appointments so your progress can be followed and evaluated.

In an Emergency, Call:

Your Treatment Plan
