

# Medical Coverage Policies

[Printer-Friendly Page](#)

## Brachytherapy

<b>EFFECTIVE DATE</b>	05/20/2008	<b>LAST UPDATED</b>	05/20/2008
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**This policy is considered final and will no longer undergo annual literature review. Future changes may occur based upon available scientific evidence and/or procedure coding changes.**

NOTE: This policy addresses brachytherapy only for the treatment of the prostate, breast, and endobronchial tumors.

### Description:

Brachytherapy is one type of radiation therapy used to treat malignancies or benign conditions. Unlike external beam therapy (EBT), which utilizes high-energy, machine-generated, x-ray beams directed at a tumor from outside of the body, brachytherapy involves placing a radioactive material directly inside the body. Brachytherapy, also called radiation brachytherapy, internal radiation therapy, and implant radiation therapy, allows a physician to use a higher total dose of radiation to treat a smaller area, and in a shorter time than is possible with external radiation treatment. The radioactive material is typically delivered through needles, seeds, wires, or in catheters and can be either temporary or permanent. Various forms of the therapy are used to treat cancers throughout the body, including brain, breast, endobronchial tumors, gallbladder, prostate, cervical, endometrial, and uterine cancers.

Brachytherapy is normally delivered in one of two ways; interstitial, intracavitary or intraluminal:

1. Interstitial radiation therapy, which is inserted into tissue at or near the tumor site. It is traditionally used to treat tumors of the head and neck, prostate, cervix, ovary, breast, and perianal and pelvic regions.
2. Intracavitary, or intraluminal radiation therapy which is inserted into the body with an applicator and most commonly used in the treatment of uterine cancer.

There are two types of brachytherapy; temporary and permanent:

1. Temporary brachytherapy, the radioactive material is placed inside or near a tumor for a specific amount of time and withdrawn. It can be administered at a low-dose rate (LDR) or high-dose rate (HDR).
2. Permanent brachytherapy, also called seed implantation, involves placing radioactive seeds or pellets in or near the tumor and leaving them there permanently. After several weeks or months, the radioactive level of the implants eventually diminishes to nothing.

### ***Brachytherapy and Breast Conserving Surgery:***

Breast conservation therapy is a multi-modality alternative to mastectomy to treat early (stage I or II) breast cancer. It includes breast-conserving surgical excision of the tumor (lumpectomy, segmentectomy, or quadrantectomy) and whole-breast radiotherapy (WBRT) delivered 5 days to one week over 5—7 weeks using external beam radiation (EBR). For those at higher risk of recurrence, "boost" radiotherapy, narrowly directed to the tumor bed, is included in whole-breast radiotherapy. The radiation is hypothesized to eliminate residual cancer near the surgical site and treat any undetected multicentric disease. Radiation alone (i.e., without resection) is not recommended in the current clinical guidelines to manage early breast cancer.

This policy addresses use of breast interstitial or balloon brachytherapy as alternatives to external beam radiation therapy in two settings:

1. To replace external beam for boost radiation therapy, combined with whole-breast external-beam and breast conserving surgery.

2. Alone, for accelerated partial breast radiation therapy after breast-conserving surgery.

Both low and high-dose rate interstitial techniques are used. In the low-dose rate technique, radioactive seeds are temporarily implanted. They deliver radiation continuously over 4 days and then are removed. In the high-dose rate technique, a computer-controlled device loads highly radioactive isotope sources into catheters that have been placed into the tumor bed. The patient is exposed to the radiation therapy for a brief period (e.g., 15 minutes) and then the radioactive sources are withdrawn. High-dose rate brachytherapy is typically administered to outpatients as 8 fractions given twice daily over 4 days.

A balloon catheter system (the Mammosite™ device; Cytac Corp; Alpharetta, GA) is another alternative form of brachytherapy. The device is implanted in the lumpectomy cavity during or shortly after breast-conserving surgery. The balloon is inflated with sterile solution of contrast media in saline solution, and its position is confirmed radiographically using computed tomography. A high-dose rate source of iridium-192 is then positioned within the applicator by a remote afterloader. This system is used to deliver 34 Gy in 10 fractions over 5 days. Thus, balloon brachytherapy uses a single radioactive source that delivers radiation to a spherical or elliptical target volume.

### ***Brachytherapy Using Implanted Seeds for Localized Prostate Cancer:***

Low-dose radioisotope "seeds" are permanently implanted to treat localized prostate cancer. Because radiation from a radioactive source penetrates only short distances, this procedure is believed to deliver tumoricidal radioactivity directly to the tumor and improve local control, while sparing surrounding normal tissue. The dose rate is generally low energy which enhances normal tissue repair compared to EBRT.

High-dose radioisotope seeds are temporarily implanted delivering radiation at higher dose rates which is believed to be more effective in destroying rapidly dividing cancer cells. In this procedure needle catheters are placed into the prostate gland using transrectal ultrasound. The radioactive source is inserted into each needle and left for a predetermined time and usually delivered once or twice daily over the course of several days. The treatment is typically delivered with external beam radiation therapy to the prostate and periprostatic tissues, while the high-dose rate brachytherapy is used as the method of dose increases to the prostate gland.

### ***Endobronchial Brachytherapy:***

Endobronchial brachytherapy represents one approach to the local treatment of endobronchial lesions.

Candidates for this therapy are individuals with non-small cell lung cancer, especially those with early-stage endobronchial tumors, who would not otherwise be considered for surgical resection or external beam radiation due to co-morbidities or tumor locations. It is also used as a palliative therapy in patients with obstructing endobronchial primary or metastatic tumors.

This treatment describes the delivery of radiation therapy directly to endobronchial lesions, using either permanent interstitial implantation of radioactive seeds or temporary implants. Both low-dose rate and high-dose rate radiotherapy over the course of several days can be used. The technique permits targeted radiation while minimizing exposure to surrounding radiosensitive structures, such as normal lung, heart, and spinal cord.

### **Medical Criteria:**

Brachytherapy is a covered benefit for all product lines.

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Brachytherapy is a covered benefit for all product lines.

### **Coverage:**

Benefits may vary between groups and contracts. Please refer to the appropriate member certificate, subscriber agreement, or RItE Care contract for applicable radiation therapy coverage.

**Codes:**

19296, 19297, 19298, 55875, 55876, 55920, 57155, 58346, 77326, 77327, 77328, 77761, 77762, 77763, 77781, 77782, 77783, 77784

The following CPT Category III code is non-covered for interstitial radioelement application:

0182T

**Also known as:**

N/A

**Related Topics:**

N/A

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 [Back to Previous Page](#)