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**Brachytherapy  
Frequently Asked Questions**

***What is brachytherapy?***

Brachytherapy is an internal radiation therapy that is applied either in a permanent manner, (sometimes called seed implantation), or in a temporary manner, often through the use of catheters into which the radioactive sources are placed. The radioactive materials (seeds or in catheters) are placed inside the body, and positioned in a manner that will most effectively treat the disease. When permanent brachytherapy is being employed, the radioactive “seeds” are left inside of the body. The half-life of the radioactive isotope used, gauges how long they will be radioactive within the body since the radioactivity of the seeds diminishes over time. Temporary brachytherapy usually involves either an in-patient procedure (low dose rate brachytherapy, or LDR), whereby the patient lies in bed for several days while the radioactive sources treat the disease, or in an out-patient setting (high dose rate brachytherapy, or HDR, whereby the patient usually undergoes several treatments of radiation in a short period of time.

***What is it used for?***

Brachytherapy is used in the treatment of various kinds of cancer, including prostate, breast, cervical, and ocular. Brachytherapy is also used to treat coronary artery disease to prevent restenosis after angioplasty.

**What is prostate brachytherapy?**

Prostate brachytherapy usually involves an out-patient procedure for either permanent seed implantation or HDR brachytherapy to the prostate gland. It has been shown to have comparable 10-year survival rates to radical prostatectomy, and has fewer side effects including a lower incidence of impotence and incontinence.

**What is breast brachytherapy?**

Treatment of breast cancer with brachytherapy usually involves a five-day treatment course with either LDR (in-patient) or HDR (out-patient) brachytherapy, rather than six weeks as with traditional radiation treatment following a lumpectomy. This offers excellent cure rates without the need for a mastectomy.

**What is cervical brachytherapy?**

Historically, cervical cancer has been treated with a hysterectomy (the surgical removal of the uterus), which carries many side effects for the patient. Brachytherapy is usually used in combination with external beam radiation therapy in the treatment of cervical cancer and has been found to be at least as effective as a hysterectomy.

***Is it effective?***

Brachytherapy has been proven to be comparably effective in the treatment of many kinds of cancer (including prostate and cervical cancer), and patients often suffer fewer side effects compared to when the employment of external radiation therapy or surgery is used.

***How long does the radiation last?***

The radioactive sources used in temporary brachytherapy are totally removed once the procedure has been completed. For permanent implants, the sources remain active in the body for many weeks, even years in some cases, but the radioactive materials are specially selected such that the energy of the radiations emitted are so low that there is a negligible risk to others, although it is usually recommended that the patient avoids close contact with children and pregnant women for up to two months. Iodine-125 seeds decay, or lose their energy, at a rate of 50% every 60 days. After 10 months, their radioactivity is nearly exhausted. Palladium-103 seeds decay much quicker, losing half their energy every 17 days. They are nearly inert after only 3 months.

***How long is the recovery time after the procedure?***

As with all medical procedures, recovery time varies by the patient, though the use of brachytherapy as a treatment option reduces recovery time. Patients could resume walking within a few hours of the procedure and other normal activity within a few days, partly due to the minimally invasive nature of the procedure.

***What are the benefits of brachytherapy?***

The benefits of brachytherapy vary depending on the patient, their priorities, and preferences, though as a minimally invasive treatment method, the benefits of avoiding surgery are universal. These include a quicker recovery time, less time spent in the hospital, and a reduced risk of postoperative infections. The benefits of using brachytherapy in the treatment of early stage prostate cancer are quite pronounced. There is a much lower incidence of impotence and incontinence than occurs with a radical prostatectomy, and most men resume walking within a few hours of the procedure and other normal activity within a few days. In the case of breast cancer, the course of traditional radiation treatment following a lumpectomy lasts six weeks, with daily installments given at a hospital or clinic, whereas brachytherapy treatment lasts for five days. Due to heightened convenience of brachytherapy, more women are likely to participate in adjuvant therapy, reducing the risk of the recurrence and the possible need for a mastectomy, therefore increasing breast conservation.

**About The American Brachytherapy Society:**

The American Brachytherapy Society was founded in 1978 to provide insight, rationale, and research into the use of brachytherapy in the treatment of both malignant and benign conditions. The organization consists of physicians, physicists, and others interested in brachytherapy. The next meeting of the ABS is May 22-24, 2002 at the Hilton in Walt Disney World Resort, Orlando, Florida. For more information go to [www.americanbrachytherapy.org](http://www.americanbrachytherapy.org)