

August2008

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## **Facts about SAVI™ Breast Brachytherapy**

### **What is SAVI?**

The SAVI applicator is a relatively new device for delivering the radiation therapy that normally follows lumpectomy surgery for breast cancer. The technological advances of SAVI enable it to deliver radiation more precisely than other breast brachytherapy methods.

### **What are the advantages of SAVI for patients?**

The SAVI applicator's ability to deliver targeted radiation produces two distinct advantages:

- There is less radiation exposure – and thus less potential for injury – to healthy tissue that does not need to be treated. SAVI is the only device that can contour the radiation dose specific to the patient's anatomy, due to its ability to pull the dose away from the skin surface and chest wall simultaneously.
- More women can receive breast brachytherapy. One-third or more of the women eligible for breast conservation therapy do not qualify for traditional "balloon" brachytherapy. Many of these women are candidates for SAVI.

### **What is a lumpectomy?**

Lumpectomy is a form of breast cancer surgery that removes the tumor and a small amount of normal tissue around the tumor. Lumpectomy-plus-radiation is a widely used alternative to mastectomy, in which the entire breast is removed.

### **What is breast conservation therapy?**

It is recommended that patients who undergo a lumpectomy receive radiation treatment to reduce the risk that the cancer will reoccur. Together, lumpectomy and follow-up radiation are known as breast conservation therapy.

### **What is breast brachytherapy?**

Breast brachytherapy is a type of radiation therapy in which radiation is delivered from inside the breast, via a device placed through a surgical incision. The advantage is that the radiation is delivered only to the tissue immediately surrounding the tumor cavity. Breast brachytherapy is an alternative to what is called whole breast irradiation (WBI), in which the entire breast is treated from the outside via an external device.

### **What are the advantages of SAVI vs. WBI?**

WBI is a lengthy therapy that is normally delivered 5 times a week over a 6-7 week period. The radiation is usually delivered with a machine called a linear accelerator.

Because facilities that are equipped with linear accelerators are located in more highly populated areas, patients often have to travel for the treatment and stay nearby – thus incurring transportation, lodging, and meal expenses. The prolonged treatment schedule for WBI can also force patients to miss work and disrupt their lives in other ways.

As compared to 6-7 weeks with WBI, breast brachytherapy with SAVI can normally be delivered in just 5 days. The greater convenience of SAVI confers several advantages:

- **Less time stress.** By reducing therapy from 6-7 weeks to just 5 days, SAVI means far less disruption to patients' lives and families.
- **Less financial stress.** Women who receive treatment with SAVI usually avoid the out-of-town expenses and prolonged absence from work sometimes required with WBI. Many patients are able to work and maintain other normal activities even during the 5 days they receive SAVI therapy – and if not then, shortly after they complete treatment.
- **Less emotional stress.** With some other forms of breast conservation therapy, women may experience damage to their healthy tissue – including cosmetic damage to the breast skin. SAVI reduces the risk of damage to healthy tissue and the emotional stress that can accompany it.

#### **How does SAVI work?**

The SAVI applicator, which received clearance from the FDA in 2006, has two qualities that allow it to more precisely deliver radiation:

- The unique design allows it to be opened in a way that better conforms to the size and shape of the lumpectomy cavity.
- SAVI is composed of multiple catheters through which the radiation dose can be individually controlled by the radiation oncologist and physicist, who are specialists in planning and overseeing the therapy.

These qualities enable radiation to be more precisely targeted to areas where it is most needed, while minimizing risk to healthy tissue. Compared to "balloon" brachytherapy, SAVI has a better ability to contour the radiation dose to the surgical cavity.

#### **Other notable facts**

- Five-year results in most studies show that breast brachytherapy prevents cancer recurrence at the tumor site about as effectively as conventional WBI. Longer-term studies are under way.
- The advent of SAVI may increase the number of women receiving breast conservation therapy. Research has shown that the potential inconvenience and financial burden of WBI are among the reasons that only 60% of women eligible for BCT elect to receive it. SAVI removes these objections.
- Of women patients with early-stage breast cancer who choose BCT, up to 30% decline to receive radiation. This places them at higher risk for cancer recurrence. Again, because SAVI removes many of the objections women have to completing a full course of radiation treatment, it may eventually increase the number of women receiving post-lumpectomy radiation.

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