



HEART & LUNGS

Designed to
better protect the

Invented at the University of Maryland Marlene and Stewart Greenebaum Comprehensive Cancer Center,

GammaPod

provides **gentler** and **faster radiation therapy** for early-stage

BREAST CANCER.



A device recently cleared by the FDA could mean a significantly better radiation therapy experience and improved cosmetic results for patients with early-stage breast cancer. For more information, call Radiation Oncology at the University of Maryland Marlene and Stewart Greenebaum Comprehensive Cancer Center at 410-328-6080.

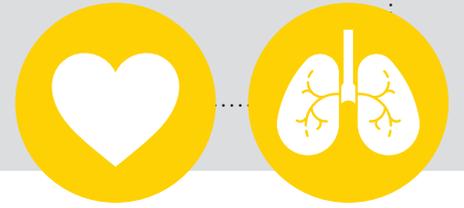
GammaPod: Early-Stage Breast Cancer Radiotherapy That Better Protects Vital Organs



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A radiation treatment modality pioneered for early-stage BREAST CANCER.



Stereotactic body radiation therapy (SBRT) for breast cancer is now a reality with GammaPod™, a novel, FDA-cleared, radiotherapy system dedicated to treating early-stage breast cancer. Designed to deliver ablative doses of radiation to early-stage breast tumors, or as a form of adjuvant treatment, GammaPod could be a better option for many patients. Comparative treatments such as brachytherapy or linear accelerator-based treatments can be more invasive, give additional unnecessary radiation to lung/heart and surrounding normal breast tissue, and can result in poorer cosmesis.

LEARN MORE about GammaPod at the University of Maryland Medical Center Physician Portal at umgccc.org/GammaPodMD



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Delivers Less Radiation to the Heart and Lungs

A particular concern of radiation therapy for breast cancer is the dosage of radiation reaching the heart. Although newer linear accelerators have mitigated this concern somewhat, a study in the New England Journal of Medicine demonstrated a statistically significant increase in adverse cardiac events in patients who received increasing doses of radiation to the heart. Cardiac morbidity risk increased by 7.4% for every 1 Gy increase in dose.¹

GammaPod's engineering and Cobalt-60 radiation sources mean that it produces a highly homogenous radiation dose. A study showed that at distances past 1 cm from the target, there was a sharp dose falloff with GammaPod. At this distance and beyond, the falloff was even greater with GammaPod than with intracavitary breast brachytherapy,² indicating an advantage with GammaPod in further reducing the amount of radiation reaching critical organs/surrounding normal breast tissue. Additionally, GammaPod's unique treatment table allows patients to be comfortably treated in a prone position, so the targeted area falls away from the chest even as the breast is immobilized by a gentle negative pressure-assisted cup.



Provides a More Convenient Treatment Regimen

Standard linear accelerator-based radiation therapy for early-stage breast cancer typically requires 5-7 weeks of daily treatment sessions. Hypofractionated and accelerated partial breast irradiation (APBI) can partly reduce the number of these sessions, but in the case of APBI, patients must still spend five full days, often twice-a-day, getting radiation treatments. GammaPod treatment requires just one to five, 10-30-minute beam-on sessions, making it a timesaving and often less expensive option for patients



Associated with Better Cosmesis

It is estimated that 85 percent of patients undergoing radiation therapy for breast cancer experience moderate to severe skin irritation caused by their treatment. In particular, patients treated with partial breast irradiation may experience poorer cosmesis compared to whole breast options. However, GammaPod delivers considerably less radiation dose to the skin and healthy breast tissue. The GammaPod technology has been compared to other partial breast modalities and the GammaPod has consistently shown a significantly decreased dose of radiation therapy to the skin.³ Additionally, GammaPod radiation treatment may be less physically demanding on patients.



Proton Therapy Also an Option

GammaPod is not right for every patient with early-stage breast cancer. The University of Maryland Medical Center also offers proton therapy, which can often be beneficial for women with locally advanced breast cancers requiring comprehensive lymph node treatment. Proton therapy works differently in the body with an improved ability to 'stop' the beam which can result in decreased radiation doses to the heart and lung.

¹ Darby SC, et al. Risk of Ischemic Heart Disease in Women after Radiotherapy for Breast Cancer. *N Engl J Med.* 2013 Mar; 368(11):987-998.

² Öden J, Toma-Dasu I, Yu CX, Feigenberg SJ, Regine WF, Mutaf YD. Dosimetric comparison between intra-cavity breast brachytherapy techniques for accelerated partial breast irradiation and a novel stereotactic radiotherapy device for breast cancer: GammaPod™. *Phys Med Biol.* 2013 Jun;58(13).

³ Yu CX, Mutaf Y, Regine WF, Feigenberg SJ, Nichols EM, Hoban PW. GammaPod: a dedicated device for external beam breast cancer SBRT in the prone position. *Int J Radiat Oncol Biol Phys.* 2015 Nov;93(S3):E586-E587.



If you have a patient who has breast conservation surgery as part of her treatment, consider referring her to UMGCCC for GammaPod radiation therapy. GammaPod could allow your patient to be treated in less time, with a potentially better cosmetic result, and even less risk to critical organs. We will keep you informed of your patients' progress until they can be transitioned back to your care.

To Refer a Patient to the Department of Radiation Oncology at UMGCCC, call **410-328-6080** or **800-373-4111**.