

## Medical Article

# Short-Course Radiation Treatment Proves Equally Effective In Reducing Recurrence Rates for Early Stage Breast Cancer

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Lumpectomy and radiation therapy have been standard alternatives to mastectomy for over 25 years for women with early stage breast cancer. Radiation after a lumpectomy reduces the risk of a recurrence in the affected breast and may also improve survival from breast cancer. The past decade has seen many improvements in radiation technology that have optimized the treatment and reduced acute and long term side effects. Most recently, there has been more attention on reducing cost and improving convenience of care. A typical conventional course of radiation in the United States has been given over 6 – 7 weeks. Short-course radiation (hypofractionation) refers to the use of fewer, larger dose radiation treatments in a period of only 3 - 4 weeks. Short-course radiation has been used for decades outside of the United States. Major clinical trials have been reported from Canada and the United Kingdom that show equally low breast recurrence rates using short-course radiation with long term follow up of 10 years. In addition, these large studies did not show significant differences in cosmetic appearance of the breast or other negative side effects with a shorter course of radiation.

Despite these successful outcomes with short-course radiation, there has not been a widespread adoption of this for women in the United States. A new study from Penn Medicine by lead author Justin E. Bekelman, MD has reported in the Journal of the American Medical Association that two-thirds of women treated for early-stage breast cancer in the U.S. receive longer radiation therapy than may be necessary. Most women as of 2013 were still receiving the longer course of 6 – 7 weeks of radiation therapy. The percentage

of women receiving short-course radiation was only one-third using a strict definition for eligibility, but an even lower one-fifth when using a broader criteria for eligibility that is possible based on expert recommendations. For comparison, in Canada more than 70 percent of women receive short-course radiation therapy and the percentage is even greater in the United Kingdom. Short-course radiation therapy also lowered total health care costs paid by insurers but did not affect patients' out-of-pocket costs.

In summary, clinical trials outside of the United States have established the principle that short-course radiation may be used with acceptable low side effects, equally low breast recurrence rates, and lower cost and greater convenience compared to conventional radiation. In the United States, there has been a greater push in recent years to increase the use of short-course therapy after lumpectomy for breast cancer. The use of short-course radiation has been supported by practice guidelines from the American Society for Radiation Oncology (ASTRO). Short-course radiation for breast cancer was named as one of the Top 5 Choosing Wisely initiatives for radiation oncology in 2013. In 2014, the Radiation Therapy Oncology Group also completed a phase III randomized trial that means to establish a 3-week radiation schedule that could be applied to a broad patient population treated by lumpectomy. If successful, these measures together will help short-course therapy become more widely accepted by patients, and their Radiation Oncologists, for early stage breast cancer in the United States.



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**“Short-course radiation has been used for decades outside the United States...major clinical trials show equally low breast recurrence rates with long-term follow up care.”**  
- Gary Freedman, M.D.