

## Different breast cancer treatment options vary widely in their cost-effectiveness

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Mammograms showing a normal breast (left) and a breast with cancer (right).  
Credit: Public Domain

A new study published today in the *Journal of the National Cancer Institute* indicates that different therapies for early-stage breast cancer have very different relative values. Some therapies may have fewer complications and be much less expensive than others. Women may be making treatment decisions based on factors other than medical value.

Recommended options for early breast cancer include lumpectomy plus whole breast [irradiation](#) therapy, lumpectomy plus brachytherapy, mastectomy alone, mastectomy plus reconstruction, and, in older women, lumpectomy alone. Researchers performed a comparative examination of each treatment's complications and cost to assess their relative values.

Researchers identified 105,211 women with early breast cancer diagnosed between 2000 and 2011 and identified treatment complications within 24 months of diagnosis and compared complications by treatment. Mean total and complication-related cost were calculated from a payer's perspective.

Lumpectomy plus whole breast irradiation treatment was the most commonly used treatment. Mastectomy plus reconstruction was associated with nearly twice the complication risk of lumpectomy plus whole breast irradiation treatment (54.3% vs. 29.6% complication risk among for younger women with private insurance and 66.1% vs. 37.6% complication risk among older women with Medicare) and was also associated with higher adjusted total cost (an average \$22,481 more for younger women; an average \$1,748 greater for [older women](#) with Medicare) and complication-related cost (an average \$9,017 greater for the younger cohort; \$2092 greater for the Medicare cohort). Brachytherapy had modestly higher total cost and complications than whole breast irradiation treatment. Lumpectomy alone entailed lower cost and complications in the Medicare cohort only.

In recent years, there has been an increase in the use of bilateral mastectomy and reconstruction to treat early breast cancer. While some of these procedures are medically necessary, the choice for mastectomy is often driven by nonmedical factors such as patient preferences for more "complete" cancer treatment by removing the entirety of the affected organ, patient fears of in-breast recurrence following a

lumpectomy plus whole breast irradiation, or patient anxiety regarding the need for ongoing mammographic surveillance of the conserved breast.

The finding of that mastectomy plus reconstruction treatment resulted in a very high cost (compared with lumpectomy plus whole breast irradiation treatment) highlights an important conflict in an era focused on "value" in health care. Patients may prefer a more expensive treatment such as mastectomy plus reconstruction treatment for nonmedical reasons when a less expensive treatment such as lumpectomy plus whole breast irradiation treatment may be equally effective from a purely medical perspective.

"We believe that this research is helpful to frame the conversation between a woman and her physicians regarding the trade-offs between [lumpectomy](#) with whole [breast](#) irradiation and mastectomy with reconstruction" said the paper's lead author, Benjamin Smith, associate professor in the department of radiation oncology at the University of Texas MD Anderson Cancer Center. "While [mastectomy](#) with reconstruction is sometimes the best [treatment](#) for an individual patient, it is important for patients to understand the potential for complications, some of which can be quite significant."

**More information:** Benjamin D. Smith et al, Cost and Complications of Local Therapies for Early-Stage Breast Cancer, *Journal of the National Cancer Institute* (2017). [DOI: 10.1093/jnci/djw178](https://doi.org/10.1093/jnci/djw178)

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