

Radiotherapy after surgery halves breast cancer recurrence

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Radiotherapy after breast-conserving surgery halves the chances of the cancer coming back in the 10 years following diagnosis

(Medical Xpress) -- Radiotherapy following surgery for breast cancer halves the chances of the cancer coming back over the next 10 years, a study led by Oxford University researchers has found.

Radiotherapy also reduces the risk of dying from breast cancer over the next 15 years by one sixth.

The findings, published in the *Lancet* medical journal, come from the largest study by far of the effects of [radiotherapy](#) for [women](#) who've had 'breast-conserving' surgery to remove the part of the breast with the cancer. The study analyzed data from clinical trials involving well over 10,000 women.

Professor Sarah Darby of the Clinical Trial Service Unit at Oxford University, who led the study, says: "Some people have been wondering whether radiotherapy is really necessary for all women after breast conserving surgery. Our results identify several groups of women for whom radiotherapy is a major life saver. For some other groups of women absolute benefits from radiotherapy are more moderate."

Radiotherapy is used to kill any microscopic pieces of tumour left after surgery to reduce the chances of the cancer coming back or spreading elsewhere in the body.

Professor Darby explains: "Whenever possible women with breast cancer are treated with surgery. The surgery can be mastectomy (removal of the entire breast) or breast-conserving surgery (removal of only a part of the breast).

"At the moment, the guidelines are that all women who have breast-conserving surgery should have radiotherapy. For women who have a mastectomy, radiotherapy is necessary if their disease has spread to the lymph nodes in their arm-pits but not otherwise."

The study by the Early Breast Cancer Trialists' Collaborative Group (EBCTCG) brings together the histories of all the women who participated in 17 trials of radiotherapy after breast-conserving surgery. The outcomes for each woman were followed for a decade on average.

The reduction in [cancer recurrence](#) is clearly seen within the first year after radiotherapy and lasts throughout the first decade. By 10 years after breast cancer diagnosis, 35% of the women who did not have radiotherapy had a recurrence, compared with only 19% of the women who had radiotherapy.

The effect of radiotherapy on deaths from breast cancer takes longer to

appear. But by 15 years after breast cancer diagnosis, 25% of the women who did not have radiotherapy had died from breast cancer compared with only 21% of the women who had radiotherapy.

Importantly, the researchers show that radiotherapy has no substantial adverse effect on deaths from all causes over the 15-year period.

While the researchers note that many aspects of breast cancer treatment have changed in the time since these trials began, knowing the long-term benefits of radiotherapy for women with breast cancer will still help guide future treatment.

The study looked at which women would benefit the most. Although the proportional reductions in risk of cancer recurrence and deaths varied little among different groups of women, those who were at low risk already would see less benefit from radiotherapy.

Professor Darby gives an example: "A women aged over 70 with a small, low-grade, ER positive tumor who is taking tamoxifen will have only a small absolute benefit from radiotherapy. In contrast, a woman aged under 40 with a larger, high-grade, ER positive tumour who is taking tamoxifen will have a much bigger absolute benefit from radiotherapy. For both these women the proportional benefit is the same."

Commenting on the study, Dr. Thomas Buchholz of the University of Texas MD Anderson Cancer Center in Houston writes in the Lancet: "The data from many thousands of clinical trial patients reviewed by the EBCTCG investigators continue to provide us with crucially important insights. The data reinforce the important role that radiotherapy has in management of breast cancer, and the fact that the benefits of radiation are complementary to the advances in both [surgery](#) and systemic treatment is particularly rewarding. The incremental benefits of each component of treatment contribute to the ongoing success in reduction

of [breast cancer](#) mortality rates."

Provided by Oxford University

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