

# Treating DCIS with surgery and radiotherapy lowers cancer risk but benefits drop over time

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A major study of women with ductal carcinoma in situ (DCIS) - a breast condition that can become invasive cancer—has shown that surgery to remove the tissue followed by radiotherapy offers better protection compared to surgery alone.

The study, presented at the 12th European Breast Cancer Conference, followed patients for up to 27 years. Although it shows that the benefit of [radiotherapy](#) and surgery over surgery alone persists, it also suggests that this benefit reduces over time.

Researchers say these new findings clarify the long-term risks for [women](#) with DCIS and may help women and their doctors to decide which treatment is right for them.

DCIS is a condition where cells lining the milk ducts have started to turn into [cancer cells](#) but have not spread into other parts of the breast. DCIS is often picked up by [breast screening](#) and affects tens of thousands of women in Europe each year. Only a proportion of DCIS cases will progress into invasive [cancer](#) and little is known about which cases will progress, so the treatments available to patients are very similar to treatments for invasive breast cancer.

The research was presented by Dr. Maartje van Seijen from the Netherlands Cancer Institute (Amsterdam, The Netherlands). She said:

"Most women who are diagnosed with DCIS are offered surgery to remove the abnormal breast tissue and they are often also offered radiotherapy, even though the majority would not go on to develop invasive breast cancer. We wanted to look at how this group of women get on in the long term, according to which treatment they received."

The study included 10,045 women diagnosed with DCIS in The Netherlands between 1989 and 2004. Researchers gathered data on whether the women were treated with breast-sparing surgery to remove the DCIS, or breast-sparing surgery followed by radiotherapy, or mastectomy (removing the whole breast).

They collected information on whether the women were subsequently diagnosed with DCIS in the same breast again or with an invasive breast cancer in the same breast.

In the first ten years after diagnosis, women who had breast-sparing surgery but not radiotherapy had a risk of 13.0% (130 out of 1000 women) of being diagnosed with DCIS again and their risk of invasive breast cancer was 13.9% (139 out of 1000). Women treated with breast-sparing surgery and radiotherapy had a risk of 4.6% (46 out of 1000 women) of DCIS in the first ten years and 5.2% (52 out of 1000 women) of invasive breast cancer.

But although women who had radiotherapy had lower risks in the first ten years, in the following years (ten or more years after diagnosis), their risks were closer to those for women who had surgery alone. After ten years post diagnosis, women who had breast-sparing surgery but not radiotherapy had a risk of 1.2% (12 out of 1000 women) of being diagnosed with DCIS again and their risk of invasive breast cancer was 11.8% (118 out of 1000). In women treated with breast-sparing surgery and radiotherapy these figures were 2.8% (28 out of 1000 women) for DCIS and 13.2% (132 out of 1000 women) for invasive breast cancer.

Dr. van Seijen said: "The risk of DCIS or invasive cancer recurring in these women will diminish over time, whether they had just the breast-sparing surgery or breast-sparing surgery with radiotherapy. This study shows that, overall, the addition of radiotherapy gives women the best chances.

"However, there remains a chance of a new DCIS or invasive cancer developing that is not related to the initial diagnosis and we would expect this risk to be similar between the two types of treatment. In a very small number of women, radiotherapy itself might cause a new breast cancer, often many years after the radiotherapy was given."

The study also showed that women who had mastectomy to treat their DCIS had the lowest risks of invasive cancer. Dr. van Seijen added: "Although patients who have a mastectomy have the lowest risk of recurrence, it's important to remember that, according to previous research, overall survival in patients who have a mastectomy is the same as in patients who have less aggressive treatments. For the majority of women with DCIS, whose condition will never become invasive, mastectomy would be considered over-treatment."

Professor Emiel Rutgers is President of the European Breast Cancer Council, a member of the of 12th European Breast Cancer Conference scientific committee and was not involved in the research. He said: "DCIS is a condition that affects thousands of women and a proportion of them go on to develop [invasive breast cancer](#). Most of these women will have decades of life ahead of them so it's vital that we understand the long-term impact of the treatments we offer.

"We still need to know much more about DCIS and, in particular, which women will go on to develop [invasive cancer](#) and which will not. In the meantime, studies like this one provide patients and their doctors with more information about the benefits and costs of the different treatments

available to them.

"Previous research shows that the risk of dying of cancer is only 1-2% in the 20 years following a DCIS diagnosis. So, it's important to remember that whether treated with breast conserving surgery alone or [surgery](#) with radiotherapy, the risk of dying from [breast](#) cancer in women who had DCIS remains very low."

Provided by European Organisation for Research and Treatment of Cancer

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