

Research suggests that lipofilling may be safe during conservation treatment for breast cancer

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A new study has gone some way to answering the question about whether or not a technique called lipofilling is safe for women who are having their breasts reconstructed after surgery for breast cancer.

Lipofilling involves taking some fat from another area of a woman's body, such as her [abdomen](#), and using it to fill in small defects or asymmetry that may occur during breast reconstruction. However, until now, there has been a lack of evidence as to whether or not the technique could trigger a [recurrence](#) of the original breast cancer, and so plastic surgeons have not been able to advise patients fully on the pros and cons of lipofilling, despite the fact that it has been used for over 30 years.

Now, a study published in the cancer journal *Annals of [Oncology](#)* today suggests that lipofilling seems to be a safe procedure for [breast cancer patients](#), although the authors say that longer follow-up and more research is required in order to confirm their findings.

The researchers analysed data on 321 women who had been operated on for primary breast cancer at the European Institute of Oncology (IEO) in Milan, Italy, between 1997 and 2008, and who had then had lipofilling as part of their [breast reconstruction](#). These women were matched with double the number (642) of women who had also had surgery for primary breast cancer, but who did not undergo lipofilling.

The researchers followed up the women for an average of 56 months from the time of the primary surgery and 26 months from the lipofilling. They found that eight women in the lipofilling group and 19 women in the [control group](#) had a local recurrence of their cancer – a difference that was not statistically significant. When they analysed the data to look specifically at recurrences in women with non-invasive cancer (in situ cancer) they found there were three cases of recurrence in the lipofilling group and none in the control group; this was statistically significant, but may have been affected by the very small numbers involved, the short follow-up and the fact that there were no recurrences in the control group despite previous research suggesting there should be an average recurrence rate of over two percent during this period of time. "This indicates there might have been some bias in the selection of the women with non-invasive breast cancer in the control group," explained one of the authors, Professor Jean Yves Petit.

Prof Petit, from the Division of Plastic Surgery at the IEO in Milan, said: "To date, only a few studies have focused on cancer recurrences after lipofilling, and this is the first case-control study to investigate the question and the first publication to show the safety of the procedure. Our overall results do not find any difference in recurrences between the women in the lipofilling and control groups. However, it is still too early in the follow-up to be able to draw any definitive conclusions. We urge other teams working in the same field to gather their own results concerning local recurrences after lipofilling in breast conservation treatment."

This study is important because other, experimental work in the laboratory has shown that fatty tissue is capable of producing growth factors that can trigger cancer cells to multiply. This raised the question of whether this might happen in humans.

"Work by other researchers has shown that secretions from transplanted

fat tissues can stimulate angiogenesis [the formation of new blood vessels] and cell growth," said Prof Petit. "In the laboratory the interaction between the tumour and stromal cells – the connective tissue cells found in any organ – has the potential to induce the reappearance of cancer by fuelling dormant breast cancer cells in the tumour bed, for example through angiogenesis and growth factor induction. However, until now, there has been a lack of translational research to prove whether or not this might happen in the clinic when lipofilling is used for [breast cancer](#) patients. Our study suggests that the procedure is safe for these [women](#)."

More information: "Locoregional recurrence risk after lipofilling in breast cancer patients". *Annals of Oncology*.
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