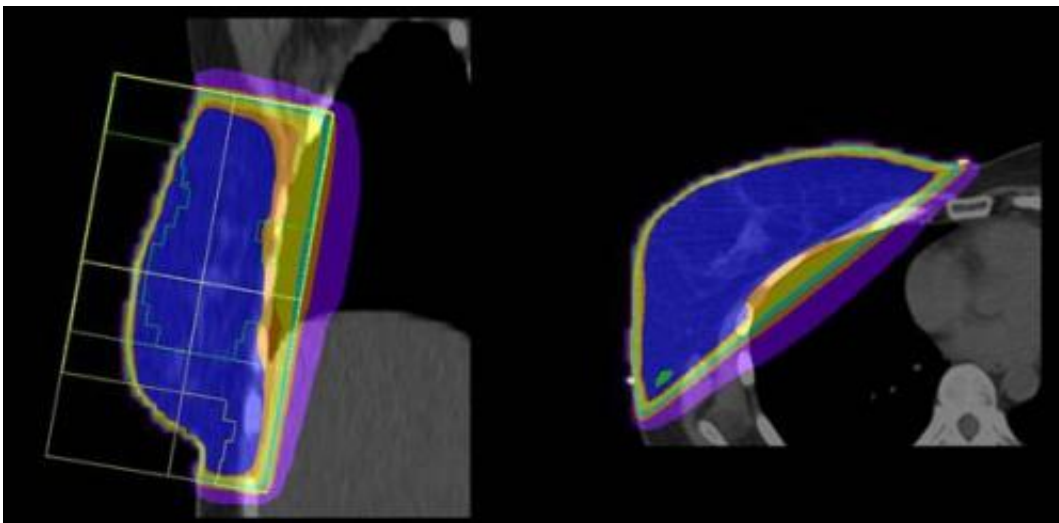


Research to change how breast cancer treated

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Simple IMRT. Credit: Charlotte Coles

(Medical Xpress)—Research from the newly formed Cambridge Cancer Centre, a collaboration between the University of Cambridge, Cambridge University Hospitals NHS Foundation Trust, Cancer Research UK and others, could change how women with breast cancer are treated.

The study, by researchers from Addenbrooke's Hospital and the University of Cambridge led by Dr Charlotte Coles, found that [women](#) who received treatment with Intensity Modulated Radiation Therapy (IMRT) showed better overall cosmetic results compared to those given standard radiotherapy using only 2-dimensional (2D) planning. The

study, which has been funded by the charity Breast Cancer Campaign and the NIHR Cambridge Biomedical Research Centre, was published in the *Journal of Clinical Oncology*.

For the study, the researchers analysed the radiotherapy treatment plans of 1145 patients with early [breast cancer](#) who had previously had breast-conserving surgery. Of these, 815 women (71%) were identified as potentially being able to benefit from IMRT, and were randomised to receive IMRT or standard radiotherapy. After five years from completion of radiotherapy, 654 women were followed up, 228 having received IMRT.

This study was specifically designed to look at possible improvement in the cosmetic result with IMRT. As expected, there was no difference in survival rates or chance of recurrence between the two treatments. Taking all cosmetic aspects into consideration, the overall cosmetic benefit was greater with IMRT, thanks to less damage to the [breast tissue](#): 88% (197) of women had good or moderate cosmetic appearance after five years compared to 78% (179) who received the standard 2D radiotherapy. As well as halving the risk of poor cosmesis compared to standard 2D radiotherapy, IMRT also reduced the risk of developing marked skin telangiectasia, (dilated blood vessels appearing near the surface of the skin): 15% (35) compared to 24% (56) who received standard 2D radiotherapy.

Dr Charlotte Coles, a researcher at Addenbrooke's Hospital and Senior Faculty member of the Cambridge Cancer Centre, said: "We strongly believe that quality of life is important, as well as saving lives, and cosmetic results from radiotherapy have a real impact once treatment is finished. It's not trivial or a question of vanity. Poor cosmetic results can affect psychological wellbeing as well leaving a physical scar. It's a visible reminder to the woman that she has had cancer."

Radiotherapy aims to treat the whole breast with an even dose of radiation - too low a dose can lead to cancer coming back, and too high a dose can cause extensive damage to the skin and tissue, leading to visible side-effects that can also be painful. Unlike 2D breast radiotherapy, IMRT accounts for the shape of the breast in three dimensions so that the dose remains even across the breast.

In addition, IMRT has been shown to significantly reduce short term side effects (less weeping and peeling skin), compared to standard 2D breast radiotherapy.

All UK radiotherapy centres have the equipment to provide 3D radiotherapy and simple breast IMRT where appropriate. However, delivery of IMRT has been inconsistent. According to a recent audit one in five radiotherapy centres in the UK are not routinely using simple IMRT.

Baroness Delyth Morgan, Chief Executive of Breast Cancer Campaign said: "These practice changing results give out a clear message that where appropriate women must be given access to IMRT to get the best possible medical and cosmetic results from treatment. We know the technology is in place to deliver IMRT so let's not give women standard treatment if there is something better; women deserve more."

Professor Neil Burnet, Professor of Radiation Oncology at the University of Cambridge, said: "This is a landmark study, with major significance for women with breast cancer. It demonstrates the value to patients, and indeed society, of using modern [radiotherapy](#) technology."

Provided by University of Cambridge

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