

One-week course of radiotherapy could benefit women with early stage breast cancer, study finds

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A one-week course of radiotherapy in fewer but larger daily doses was found to be as safe and effective as standard three-week therapy for women following surgery for early stage breast cancer. The protocol is

being eagerly sought by hospitals to help reduce demands on the NHS during the COVID-19 pandemic.

Women with early stage [breast](#) cancer can be treated with fewer but larger daily doses of [radiotherapy](#) delivered in a shorter overall duration compared with the current standard, research finds.

A pioneering study involving more than 4,000 patients evaluated the effectiveness of two different radiotherapy doses each delivered over five days in one week compared with standard radiotherapy currently delivered in 15 doses over three weeks.

Shorter course as safe and effective

Researchers found that delivering a shorter course to women who have undergone surgery for [early stage breast cancer](#) was as safe and effective as the current standard of three weeks.

Today, results of the FAST-Forward trial are published in *The Lancet*.

The phase III randomised clinical trial was funded by the National Institute for Health Research (NIHR) – the nation's largest funder of health and social care research—and led by a team at The Institute of Cancer Research, London.

Reducing treatment times and saving resources

The trial, which recruited patients from 97 NHS hospitals in the UK, shows how treatment times can be reduced for patients while saving precious healthcare resources.

Professor Murray Brunt, the study's clinical Chief Investigator from the

University Hospitals of North Midlands and University of Keele, said:

"This landmark trial reveals that a one-week schedule promises to become a new international standard for women with operable breast cancer requiring radiotherapy. This has major benefits in terms of convenience and costs for both patients and healthcare services globally at a time when they face increasing challenges."

Improving the patient experience and making treatment more effective

Professor Judith Bliss, Professor of Clinical Trials at The Institute of Cancer Research, London, and Director of its Clinical Trials and Statistics Unit, and joint senior author of the study, said:

"We're always looking for ways to refine and enhance cancer treatment so we can make it more effective and improve the experience for patients. No one would want to come up to hospital for three weeks of radiotherapy if they can get the same benefit in just one week.

"We expect these findings will be incorporated into breast cancer treatment guidelines around the world and we're already seeing NHS hospitals wanting to move to the 5-dose schedule because of the challenges they're facing during the coronavirus pandemic."

'I feel like one of the lucky ones'

Karen Davis, a hair and beauty salon, and wig studio owner in Staffordshire, volunteered to be part of the FAST-Forward clinical trial in 2013 after being diagnosed with breast cancer at the age of 45. Karen shared her experience of being part of the research:

"When I heard the trial would mean I'd get radiotherapy over the course of a week, rather than three, I thought 'this is brilliant.'" I was sick with nerves before starting the treatment so I think it was easier for me mentally to know that it was only five days. It also meant I could go back to work sooner, which, when you're running your own business, means a lot.

"Aside from regular tamoxifen tablets, the radiotherapy was my last treatment and my check-ups have been good so I feel like one of the lucky ones. It would be excellent if more women with early breast cancer could now get this shorter radiotherapy—it would make it easier to manage to live a normal life during treatment. I'm glad I volunteered for the study—especially if it helps other ladies."

Practice-changing research

Professor Nick Lemoine, Medical Director of the NIHR Clinical Research Network (CRN), said:

"Breast cancer is the most common cancer amongst women and the largest user of radiotherapy facilities in the UK.

"NIHR is committed to funding practice-changing research and this landmark study supports that position. This study shows how innovation can be both clinical and cost-effective and it's an important marker for broader impact of healthcare treatments and tests for those who plan, provide or receive care from NHS and social care services."

Reducing radiotherapy costs to the NHS

Breast cancer is the most common cancer affecting women worldwide, with many of the wealthiest countries using around 30% of their total

radiotherapy services for treating breast cancer.

There are around 55,200 of new cases of breast cancer a year in the UK—around 150 a day. In total 81% of patients diagnosed have surgery to remove the tumour as part of their primary cancer treatment, with 63% undergoing radiotherapy. Reducing standard radiotherapy treatment for breast cancer from three weeks to one week would save the NHS over £40 million per year.

Continually improving treatment through research

Historically women received radiotherapy in 25 daily doses ('fractions') over five weeks. The UK START [clinical trials](#), led by Professor John Yarnold and co-ordinated by The Institute of Cancer Research (ICR) reduced standard treatment to 15 daily doses in three weeks over 10 years ago.

In this latest study, researchers looked to reduce the number of doses and overall time even further.

A total of 4,096 patients who underwent surgery for their breast cancer were recruited from 97 UK centres between 2011 and 2014 and randomly allocated to one of three treatment options.

A third of participants received the standard schedule of 15 daily doses amounting to a total overall dose of 40 Gy (Gray, or Gy = unit of radiation dose) in three weeks. The remaining patients were split into two groups, each receiving five daily treatments in one week, with a total dose of either 26 Gy or 27 Gy.

The study collected detailed information following treatment, including assessments of side effects from patients and health professionals. At five years after radiotherapy, the risk of cancer coming back in the same

breast was very low and similar between all three treatment groups.

Long-term side effects were similar after the 26 Gy one-week schedule compared with the standard three-week schedule.

Proposing a new standard of care for most breast cancer patients

Professor Brunt added: "The benefit to patients is a shorter duration of radiotherapy with effectiveness against cancer and side effects which are comparable to the three week regimen.

"We therefore propose that this regimen, 26 Gy in five fractions in a week, can be considered the new standard of care for a majority of breast [cancer](#) patients."

More information: Adrian Murray Brunt et al. Hypofractionated breast radiotherapy for 1 week versus 3 weeks (FAST-Forward): 5-year efficacy and late normal tissue effects results from a multicentre, non-inferiority, randomised, phase 3 trial, *The Lancet* (2020). [DOI: 10.1016/S0140-6736\(20\)30932-6: www.thelancet.com/journals/lan ... \(20\)30932-6/fulltext](#)

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