

Studies confirm shorter radiotherapy course best option for women with breast cancer

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The long-term results of the landmark START trials conclusively confirm that giving radiotherapy as a lower overall dose in fewer, higher doses over a shorter treatment time (hypofractionated) is at least as effective and safe as the current international standard for most women with early breast cancer.

"These 10-year results reassure us that 3 weeks of [radiotherapy](#) is as good as the 5 weeks still used in many countries, with less damage to nearby healthy tissue, as well as being more convenient for women (shorter waiting lists and fewer hospital visits) and cheaper for health services", explains study leader Professor John Yarnold from The Institute of Cancer Research, London, and The Royal Marsden NHS Foundation Trust, Sutton, UK, in *The Lancet Oncology*.

Between 1999 and 2002, the UK Standardisation of Breast Radiotherapy (START) trials recruited 4451 women from 35 radiotherapy centres across the UK. START A compared the international standard, a total dose of 50 Gy delivered in 25 small doses of 2 Gy over 5 weeks, with 41.6 Gy of 3.2 Gy and 39 Gy of 3.0 Gy given in 13 treatments over 5 weeks. START B compared the standard (50 Gy given in 25 doses of 2 Gy over 5 weeks) with 40 Gy delivered in 15 doses of 2.67 Gy over 3 weeks (hypofractionated).

Even after 10 years, tumour control rates in START A were similar between the three schedules, with very few women experiencing a relapse of their cancer—7.4% after 50 Gy, 6.3% after 41.6 Gy, and

8.8% after 39 Gy—and with much the same damage to surrounding normal (healthy) [breast tissue](#).

Likewise, in START B, the number of women whose cancer had returned in the breast remained similar in both schedules at 10 years (5.5% after 50Gy and 4.3% after 40 Gy). Moreover, with the shorter 40 Gy 15-dose schedule there was significantly less harm to healthy tissue, while the unexpected [survival benefit](#) seen at 5 years persisted.

These outcomes were much the same irrespective of age, tumour grade, stage, chemotherapy use, or use of tumour bed boost.

According to Yarnold, "The upshot is that—contrary to conventional thinking—cancer cells are just as sensitive to the size of daily radiotherapy dose as the normal tissues responsible for late onset side effects, meaning that the continued use of traditional lower (2 Gy) doses spares the cancer as much as the healthy tissue, offering no benefit to patients. Our results support the continued use of 40 Gy in 15 fractions, which has already been adopted as the standard of care by most UK centres."

More information: [www.thelancet.com/journals/lan... \(13\)70386-3/abstract](http://www.thelancet.com/journals/lan... (13)70386-3/abstract)

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