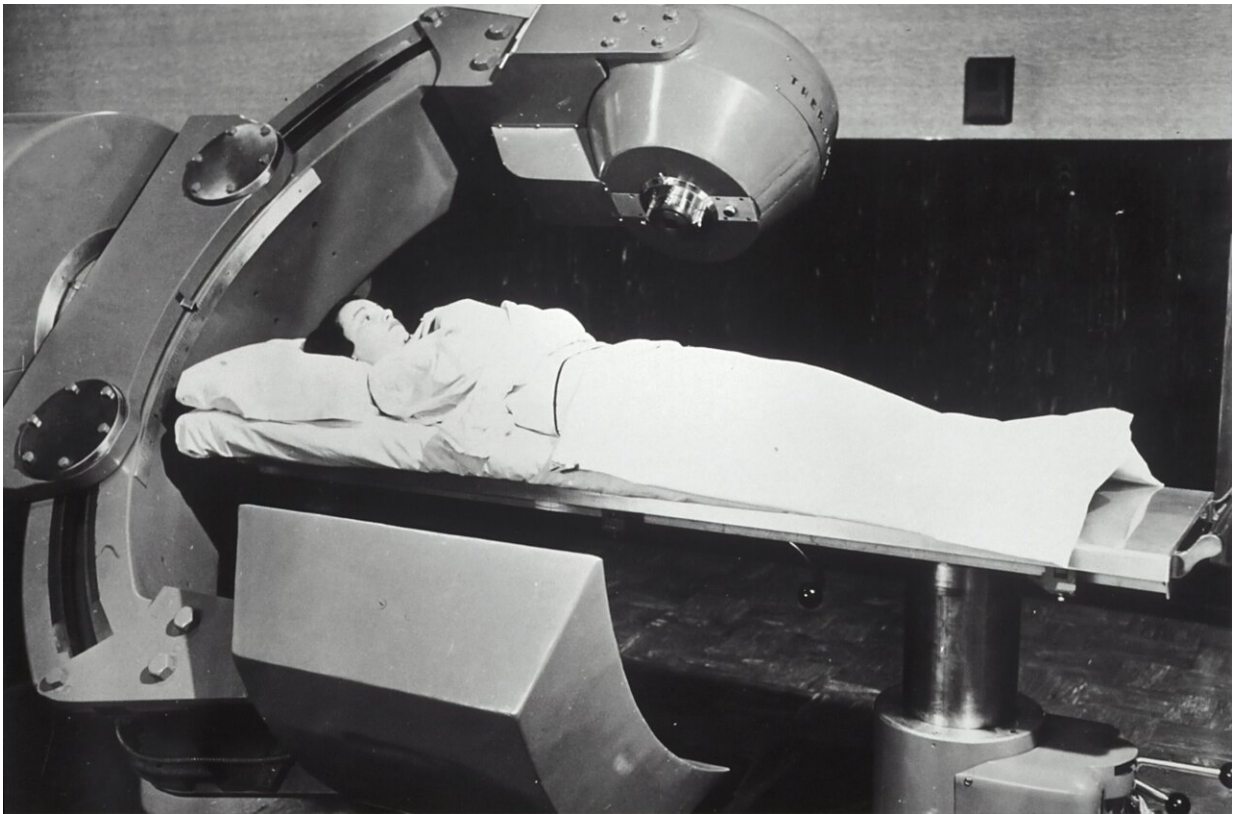


# One-off treatment shown to prevent long term side effects of cancer radiotherapies

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A new study has found that a simple, one-off treatment was able to prevent long term side effects of cancer radiotherapies.

There are about 2 million [cancer survivors](#) in the UK, and many of them face premature memory loss and faster occurrence of various diseases resembling premature aging, to which sadly, there is no cure. This is thought to be caused by side effects of toxic cancer chemotherapies and radiotherapies, which aim to treat [cancer cells](#) but can also damage normal cells.

The researchers wanted to know whether they could prevent such devastating consequences of cancer therapies by a short treatment with senolytics, a class of drugs that specifically eliminate damaged cells due to cancer therapies and tested the idea in mice.

They found that the animals treated with senolytic drugs soon after radiotherapy did not develop premature aging, and the animals treated after they started suffering from premature aging also show improved health conditions subsequently.

Dr. Satomi Miwa, Lecturer, Translational Biology of Aging, Newcastle University who lead the research which is published in *eLife*, says that "increasing numbers of people are now successfully treated from cancer, and the [survival rates](#) from many cancer types are high. The people who had beaten cancers can start looking forward to their new lives again—but only if the quality of life is not going to be affected. Sadly, this is the case for the moment. However, our new research shows that there is a way to prevent any long-term side effects occurring, and to reduce risks of cancer relapse."

## **Senolytics**

Senolytics are an exciting development in the biology of aging as the drugs kill senescent cells by targeting their survival mechanisms which are absent in normal cells. They have been shown to postpone or in some cases, heal age-associated disease or disability in mice.

Currently, a dozen of clinical trials using different senolytic drugs in humans are underway, or being registered in the US, against such conditions as [pulmonary fibrosis](#) (lung fibrosis), diabetic kidney disease and osteoarthritis.

The group intend to continue the research as Dr. Miwa explains: "We want to test our approach in cancer types specifically, and move to [clinical setting](#) as fast as we can. We are particularly interested in childhood brain tumor survivors, as they are the worst affected group of people suffering from long term side effects from cancer therapies."

The study provides new hope for people who receive [cancer](#) therapies to ensure a better quality of life for the rest of their lives.

**More information:** Edward Fielder et al, Short senolytic or senostatic interventions rescue progression of radiation-induced frailty and premature ageing in mice, *eLife* (2022). [DOI: 10.7554/eLife.75492](https://doi.org/10.7554/eLife.75492)

Provided by Newcastle University

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