

Radiotherapy risks are much higher for smokers

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Smokers treated for breast cancer have much higher risks than non-smokers of developing lung cancer or heart attack as a result of radiotherapy - according to a new study funded by Cancer Research UK and published today in the *Journal of Clinical Oncology*.

The study shows that for non-smokers the long-term risk of death from [lung cancer](#) or [heart attack](#) - caused by radiation - is only 0.5 percent. But for smokers, this increases to around 5 percent.

These findings are based on a worldwide study by the Early Breast Cancer Trialists' Collaborative Group of the lung and heart radiation doses and risks among 40,781 women with [breast cancer](#) in 75 randomised trials of radiotherapy.

Because modern breast [cancer](#) radiotherapy techniques have improved and are now better at sparing the lungs and heart than those used in the trials, the researchers also reviewed recent literature so they could take into account how radiotherapy is better targeted today.

Dr Carolyn Taylor, radiation oncologist and lead author from the University of Oxford, said: "For non-smokers, the absolute risk of death from the side effects of modern radiotherapy is only about 0.5 percent, which is much less than the benefit. But for smokers, the risk is about 5 percent, which is comparable with the benefit.

"Stopping smoking at the time of radiotherapy will avoid most of the

lung cancer and heart disease risk from radiotherapy, and has many other benefits."

Radiotherapy remains an important treatment for breast cancer and reduces the likelihood of dying from the disease. For most non-smokers or ex-smokers the benefits of radiotherapy will far outweigh any risks. But for some long-term continuing smokers, the risks may be greater than the benefits.

Dr Julie Sharp, Cancer Research UK's head of health information, said: "This research highlights that [breast cancer patients](#) who smoke need to be offered help and support in order to try and quit to minimise any risks from their treatment. It's important to remember that modern day [radiotherapy](#) techniques have been refined and improved to make sure it is targeted and effective while reducing the risk of side-effects."

More information: Taylor, C., et al Estimating the Risks of Breast Cancer Radiotherapy: Evidence From Modern Radiation Doses to the Lungs and Heart and From Previous Randomized Trials *Journal of Clinical Oncology* (2017) [DOI: 10.1200/JCO.2016.72.0722](https://doi.org/10.1200/JCO.2016.72.0722)

Provided by Cancer Research UK

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