

Pelvis-targeting radiotherapy safe for prostate cancer patients

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Credit: Cancer Research UK

A form of radiotherapy targeting the pelvis is safe for men with advanced localised prostate cancer, according to a new study.

In a trial part-funded by Cancer Research UK, patients who received the smallest dose of intensity modulated [radiotherapy](#) (IMRT) targeting lymph nodes in the pelvis had the lowest levels of bowel or bladder side

effects compared to patients who had the highest doses.

IMRT bends the radiotherapy beam to fit the tumour or target tissue, allowing [cancer](#) cells to receive a higher dose while reducing the dose to surrounding tissue.

The trial's leader, Professor David Dearnaley, an expert in [prostate cancer](#) at the Institute of Cancer Research, London (ICR) and consultant clinical oncologist at The Royal Marsden NHS Foundation Trust, said the trial was one of the first to test the safety of this type of IMRT at different doses for [prostate](#) cancer.

"These long-term results demonstrate that using IMRT to target the pelvic lymph nodes is safe and effective for men with prostate cancer," he said. "This technique has already proven to be a game changer for men with prostate cancer."

The trial, published in the *International Journal of Radiation Oncology Biology Physics*, included 447 men who received one of 3 doses of IMRT targeting the pelvic lymph nodes, alongside IMRT targeting the prostate and standard hormone therapy. They were followed up for more than 7 years on average.

Giving radiotherapy to the area around a [prostate tumour](#) is risky due to the damage that can be done to the bowel.

Patients who received the lowest dose of IMRT to the pelvic lymph nodes had fewest side effects – around 8 in 100 had bowel complications and around 4 in 100 had bladder complications.

But among those who had the lowest dose of IMRT to the pelvis, 38 in 100 patients were alive without a relapse after 5 years, compared to an average of 71 in 100 across the whole study.

"Between treating the first ever patients on this trial, and those we treat today, there has been a complete revolution in using this technique," said Dearnaley.

"When we first started it took 45 minutes to provide treatment; today it only takes two or three minutes. It's been a giant leap forward for radiotherapy treatment."

As a result of the latest findings and previous work using IMRT to target the prostate directly, IMRT is becoming the standard of care at major cancer centres in the UK, although it is not available everywhere.

The researchers said that results from ongoing and planned late stage clinical trials will be needed to see if combining the higher doses of IMRT to the pelvis and prostate yields survival benefits that outweigh the extra side effects.

Professor Paul Workman, chief executive of the ICR, said:

"Radiotherapy is often seen as perhaps old-fashioned and crude compared with other cancer treatments – but nothing could be further from the truth. Radiotherapy today has been enhanced far beyond recognition since its first use over a century ago, and is now a highly precise, incredibly sophisticated treatment.

"It's great to see this long-term evidence of the degree to which precision radiotherapy has transformed outcomes for men with prostate cancer.

More information: Miguel Reis Ferreira et al. Phase 1/2 Dose-Escalation Study of the Use of Intensity Modulated Radiation Therapy to Treat the Prostate and Pelvic Nodes in Patients With Prostate Cancer, *International Journal of Radiation Oncology*Biography*Physics* (2017). [DOI: 10.1016/j.ijrobp.2017.07.041](https://doi.org/10.1016/j.ijrobp.2017.07.041)

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