



CANCER
RESEARCH
UK

RADIOTHERAPY

WORKING TOWARDS ADVANCED CURES

Radiotherapy is a cornerstone treatment for cancer – helping thousands of UK patients every year. Our scientists were among the early pioneers of radiotherapy and they continue to develop kinder treatments with fewer side effects.

WHAT IS RADIOTHERAPY?

Radiotherapy is an extremely effective way of killing cancer cells using radiation. It can be used in combination with other treatments such as chemotherapy and surgery.

HOW IS RADIOTHERAPY GIVEN?

Most patients receive 'external radiotherapy' where a beam of radiation, usually X-rays, is targeted at the tumour. But 'internal radiotherapy' (also known as brachytherapy) is also used – this is when radioactive material is placed inside or close to the tumour, or the patient is given a radioactive drink, tablet or injection.

HOW LONG DOES TREATMENT LAST?

People usually have external radiotherapy daily, from Monday to Friday, over a set number of weeks. In certain circumstances it may be given over a shorter period of time. Individual sessions last from a few seconds to several minutes depending on the type of cancer being treated. The duration of internal radiotherapy varies depending on the treatment a person receives.

WHAT ABOUT SIDE-EFFECTS?

Patients can have short or long term side effects in the area being treated because some healthy cells are also affected by radiation. Short term side effects will get better when treatment is over. New developments are making radiotherapy more precise to minimise side effects.

Have you got questions about cancer?

Visit cruk.org/about-cancer or call our specialist cancer nurses on 0808 800 4040

Radiotherapy
cures more
people than
cancer drugs

DID YOU KNOW?

4 in 10

Four in 10 people who beat cancer have had radiotherapy.



Millions of people worldwide benefit from radiotherapy each year.



Patients can have radiotherapy to treat their cancer at any stage, early or advanced.



In some types of cancer radiotherapy can be a lifeline for people who can't have surgery and can also be used to control symptoms of cancer.



OUR SCIENCE CHANGES LIVES

Our researchers were among the first to recognise radiotherapy's potential to treat cancer, and their trailblazing work helped make it the life-saving treatment it is today.

OLIVER FROM LONDON KNOWS THE IMPORTANCE OF RESEARCH

“ When I was diagnosed with tonsil cancer in 2009, my doctor offered me the chance to take part in the Cancer Research UK-funded PARSPORT trial. They were testing whether a new type of radiotherapy would give fewer side effects, so I jumped at the chance. Having the new treatment meant that I could get back to living life sooner than I thought – I was so lucky. ”

Cancer Research UK t: +44 (0)20 7242 0200  

Registered charity in England and Wales (1089464), Scotland (SC041666) and the Isle of Man (1103).

For information on radiotherapy research, stats, signs & symptoms and treatment, go to cruk.org



PROFESSOR GILLIES MCKENNA IN OXFORD TELLS US HIS STORY

After surgery, radiotherapy is the most powerful tool we have to cure cancer – and it can relieve symptoms and improve quality of life even in patients who are not cured. Continuing advances in how we give radiotherapy and use it in combination with other treatments have made it more effective with fewer side effects. Our world-class work is improving how radiotherapy is used so that it remains a potent weapon in our war on cancer.

We receive no government funding for our research

MAKING A DIFFERENCE

Our groundbreaking research is ensuring that radiotherapy is more precise and effective than ever before – and that it’s available for everyone who needs it.

PIONEERING SCIENCE

Our scientists were among the first to recognise radiotherapy’s potential and we continue to lead the world in this exciting field. Around 130,000 patients benefit from radiotherapy every year in the UK.

KINDER TREATMENTS

Our scientists helped develop an advanced technique called Intensity Modulated Radiotherapy (IMRT). This vital treatment is more targeted, helping to reduce side effects.

ACCESS

Our campaigning led to the introduction of the Radiotherapy Innovation Fund in England, giving thousands more patients access to advanced radiotherapy every year. And we’re working with governments across the UK to make sure all patients can access the treatments they need.

CLINICAL TRIALS

A clinical trial we funded showed that women with early breast cancer could be treated successfully with fewer but larger doses of radiotherapy. This means many women can benefit from shorter treatment and fewer hospital visits.

OUR PROGRESS IS YOUR PROGRESS

Our radiotherapy research is helping to save lives, but there’s still a lot to do. Here’s a glimpse at what our researchers are doing to improve radiotherapy and make it kinder to patients.

Cardiff: Professor Tim Illidge is combining the power of radiotherapy with the precision of the immune system to develop exciting new ways to target radiotherapy to tumours.



Manchester: Professor Corinne Faivre-Finn’s important work is helping doctors find the best way to use radiotherapy to tackle lung cancer.



Oxford: Professor Anne Kiltie is looking for molecular signs that indicate which patients will respond well to radiotherapy for bladder cancer, so that patients are given the right treatment.

London: Professor Kevin Harrington and Professor Chris Nutting are using pioneering technology to improve radiotherapy for patients with cancers of the head and neck.

Oxford: Professor Katherine Vallis is developing new drugs called ‘radiopharmaceuticals’ which work like guided missiles – delivering radiation directly to the tumour without harming surrounding cells.



Cambridge: Professor Neil Burnet is working with Professor Catherine West from **Manchester** to personalise radiotherapy, so that patients receive treatment that is just right for them.



Find out more: download other research leaflets in this series at cruk.org/researchleaflets