

From office chair prototype to a radiotherapy revolution: the UK company pioneering a more human way to treat cancer

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UK-based startup Leo Cancer Care is on a mission to make radiotherapy more comfortable, effective and accessible for patients.

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- Leo Cancer Care's upright radiotherapy technology saves time, space and money, and brings better outcomes and comfort for patients
 - Rotating seated device uses much less space and heavy equipment than conventional flat bed radiotherapy and proton beam radiotherapy facilities
 - Firm part of USD60m deal struck to provide equipment for brand new US cancer centre
- The technology is being explored by the NHS and could help to ease the backlog in cancer treatment

What began as a loose prototype using an office swivel chair has evolved into a literally revolutionary approach to delivering radiotherapy to cancer patients.

British startup Leo Cancer Care has brought together expertise and cutting-edge research from around the world to develop a range of unique machines that aim to deliver radiotherapy in a more convenient and cost-effective way, with better clinical outcomes and greater patient comfort than conventional radiotherapy treatments.

Currently, patients receiving radiotherapy lie down on a flat bed while a heavy moving gantry rotates a radiation source around them to direct radiotherapy onto the affected part of the body. As a result, radiotherapy facilities require a lot of complex machinery and radiation screening, making them very large and costly to build.

The idea behind Leo's innovation is simple: move the patient, not the radiotherapy source.

Named after the Nobel prize-winning physicist Marie Curie, Leo Cancer Care's Marie radiotherapy device sits patients upright and slowly rotates them while they undergo CT scanning followed by beams of radiation delivered from a fixed source. The technology is currently available for proton beam therapy, and is also being developed for standard X-ray therapy.

By sitting up rather than lying down, gravity allows the internal organs to fall more naturally into place and there is less movement and effort when breathing, reducing the chances of damaging healthy tissue.

This is particularly important when treating cancers in and around the lungs, prostate, head, neck and breast, where greater precision helps to minimise side effects and improve clinical outcomes.

As well as being a quarter of the size and much less costly than conventional proton beam radiotherapy facilities, Leo's seated device is far more comfortable for patients and helps them feel more in

control during their treatment.

“If you need to change a lightbulb, you don’t hold the lightbulb and rotate the house. We’re applying that simple concept to modern radiation therapy,” explains Leo Cancer Care CEO Stephen Towe.

“We’ve found this upright position allows for better cardiovascular function as well as more consistent breathing, among other benefits. But, beyond the clinical benefits, we think patients should be empowered to be upright looking eye-to-eye with their care provider, taking on cancer together,” he adds.

The company is currently working with Centre Léon Bérard, one of France’s leading cancer hospitals, to put Marie through its paces. Dozens of patients have already experienced this game-changing upright patient positioning technology as part of an ongoing research agreement.

Leo Cancer Care is part of a USD60m (GBP48m) deal struck to provide the world’s first Leo Cancer Care upright proton beam therapy system to the US integrated healthcare system UW Health, based in the state of Wisconsin. It will be deployed as part of a USD438m investment in the construction of a new state-of-the-art cancer care centre, due to begin treating patients in 2024.

These upright radiotherapy devices could also prove to be a key tool in helping to reduce backlogs in cancer care in the aftermath of the COVID-19 pandemic. Leo Cancer Care is moving forward with regulatory approval, and the technology is currently being explored by the NHS.

There is even the future potential to place Leo’s devices together with an X-ray radiotherapy source in a mobile truck, making this life-saving treatment more accessible to patients in more remote locations and in places where there is still relatively little infrastructure to treat the types of cancers that would benefit from radiotherapy.

Professor Thomas ‘Rock’ Mackie, Chairman and co-founder of Leo Cancer Care, and ASTRO Gold Medal-winning radiation oncology researcher, said, “It is wonderful that UW Health and the University of Wisconsin is pioneering radiation oncology with proton radiotherapy in the upright position enabling access to Wisconsin citizens of this advanced treatment modality. I look forward to seeing our Marie device enable many more people around the world to access upright radiotherapy and the benefits that it can bring.”

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Notes

-Explore Leo Cancer Care’s white papers on the benefits of upright radiotherapy at

<https://www.leocancercare.com/resources/whitepaperlibrary>

-Find out more about Leo Cancer Care and the benefits of upright radiotherapy at [leocancercare.com](https://www.leocancercare.com)

-Watch a video explaining more about Leo Cancer Care’s upright radiotherapy and CT scanning technology:

<https://www.youtube.com/watch?v=oNeJpb5aTDc>

-Photos and video of Leo Cancer Care’s Marie device are available to download here:

<https://www.dropbox.com/sh/yIs2dzijodklzs7/AACo9Tn3NSouMCOgu-gxlc7Wa?dl=0>

-Leo Cancer Care's solutions are currently being used in a research setting, and do not yet have regulatory approval.

-For further information or to arrange an interview with CEO Stephen Towe, please contact Kat Arney, kat@firstcreatethemedia.com +44 (0)757 2379472