RUBY™

UPRIGHT PHOTON THERAPY

THE MORE HUMAN WAY TO TREAT WITH RADIATION THERAPY

Please note: Leo Cancer Care's s Ruby solution is not yet commercially available

LEO CANCER CARE WAS FOUNDED WITH ONE GOAL IN MIND, TO BE:

THE MORE HUMAN WAY TO TREAT WITH RADIATION THERAPY

This is a very large goal but for us, this is what it means:

Improve the clinical efficiency of Radiation Therapy through upright positioning.

Improve the access to Radiation Therapy by removing the need for rotating gantries and instead introduce slow patient rotation.

Empower patients and clinicians to face Radiation Therapy together, eye-to-eye.

// I'VE BEEN INTERESTED IN UPRIGHT TREATMENTS FOR QUITE A WHILE NOW AND BECAME CONVINCED THROUGH THAT WORK THAT IT IS NOT JUST AN ALTERNATIVE WAY TO TREAT PATIENTS BUT A BETTER WAY TO TREAT PATIENTS. //

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Leo Cancer Care Scientific Advisory Board Member

MEET RUBY™

Named after Ruby Payne-Scott, a trailblazer in radiophysics, our product Ruby is the complete upright treatment solution: an image-guided photon radiotherapy treatment system.

Ruby is unique because it removes the need for a gantry, instead it utilizes a fixed radiation beam paired with slow patient rotation in a seated or perched position.

FEATURES AND BENEFITS

ALL THE PROS OF RUBY

FASTER SETUP TIMES

Patients tell us how easy it is to move in and out of our upright positioning system and this is backed up by research. The natural position and movement, paired with reduced manual handling by treatment staff means treatment set up time is reduced.

ROBUST & RELIABLE BEAM

Tucked behind a wall is a robust and reliable, stationary linear accelerator. Decoupling radiation delivery from rotation simplifies system design to optimize on both fronts. Improving both performance and reliability in beam delivery.

RAPID, LARGE-SCALE MLC

Utilizing a fixed radiation beam and increasing the size of lead motors, we achieve a faster multi-leaf collimator (MLC). This innovation, combined with the benefits of upright patient positioning, allows us to deliver the intended dose conformity to each tumor, aiming to enhance treatment outcomes.

FOSTERING PATIENT CONNECTION

Being upright means patients can be eye-to-eye with clinicians throughout their treatment set up allowing them to feel like a participant not a passenger. This connection helps to foster greater rapport and trust at a time when many patients feel vulnerable.

PRODUCT SPECIFICATIONS

UPRIGHT PATIENT POSITIONING SYSTEM

Isocenter accuracy: <1mm
Rotation: Continuous 360 Degrees
Rotation speed: Variable up to 1 rpm

BEAM GENERATION

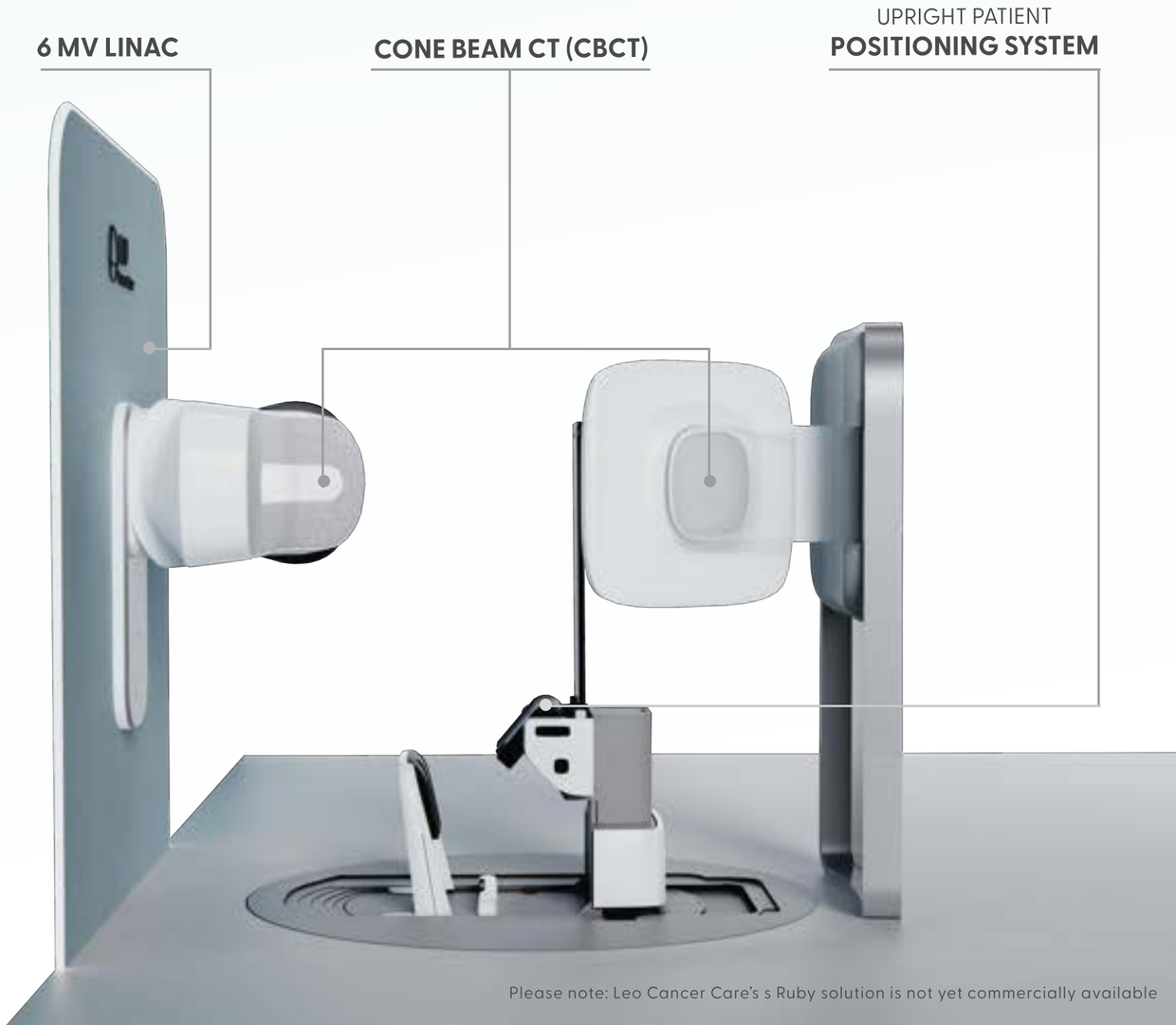
Beam energy: 6MV FFF
Dose rate: 1200 MU/min
Source to isocenter: 100 cm

IMAGING

Energy Range: 40kV – 120 kV

BEAM SHAPING

Number of leaves: 120
Field size: 30cm x 30 cm



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IMPROVING PHOTON THERAPY FOR GOOD

FASTEST EVER CONVENTIONAL MLC

Our ultra-fast Multi-Leaf Collimator (MLC) technology sets a new standard in radiation therapy, delivering rapid and precise radiation shaping that enhances both accuracy and efficiency. This cutting-edge system allows for swift adjustments, reducing session times and increasing patient comfort, all while maintaining optimal targeting for quality therapeutic outcomes. Experience a new level of precision.

REPURPOSING EXISTING INFRASTRUCTURE

The innovative use of a static beam, combined with patient rotation, eliminates the need for a large rotating gantry. This streamlined design facilitates seamless integration into a wide range of clinical settings, reducing both installation and service times while maintaining precise targeting to ensure superior clinical outcomes.

DELIVERING MORE TREATMENTS IN LESS TIME

Upright patient positioning has been proven to significantly reduce setup times, enabling the delivery of more treatments in less time. With a user-friendly interface and automated processes, the system eases the workload on clinical staff, accelerating patient setup and enhancing overall efficiency.

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WHAT **MORE HUMAN** MEANS TO US

GIVING BACK MOMENTS OF CONTROL

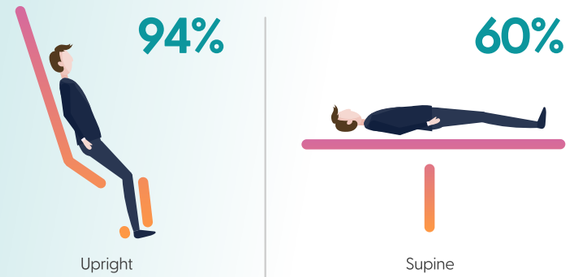
We hear from patients that the treatment journey is an extremely vulnerable time. Even the smallest moments of feeling in control can be empowering. Our aim has always and will always be to be the more human way to treat cancer, beginning with how patients feel during their treatment. With patient's feet firmly on the ground, looking out, eye-to-eye with their clinician, we believe will help them to feel less like a passenger on their treatment journey.

WE'VE GOT YOUR BACK

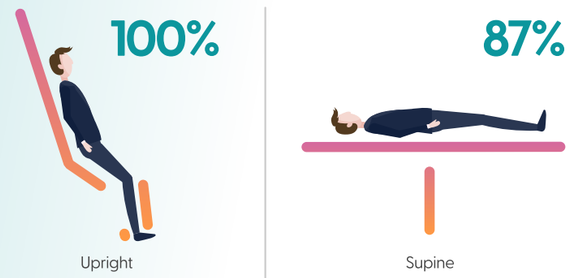
Approximately 80% of radiation therapists face musculoskeletal disorders, mainly in the neck, wrists, and lower back, due to repetitive movements during patient positioning. [1] An upright treatment position allows patients to self-position, minimizing manual handling by radiographers.

RESEARCH INTO PATIENT COMFORT

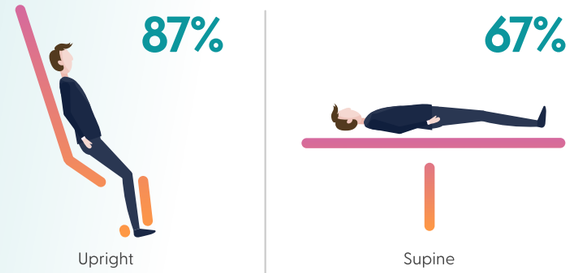
Patients felt it easy to get out of the system



Patients found it comfortable to breathe



Patients felt stable



References

1. Hannia, A., et al. (2020) Prevalance of Musculoskeletal Work-related Injuries Among Radiation Therapists.
2. Boisbouvier S, Boucaud A, Tanguy R, Grégoire V. Upright patient positioning for pelvic radiotherapy treatments.

HIGHEST POTENTIAL INDICATIONS FOR UPRIGHT

BREAST

Increased lung volumes upright suggest that improved cardiac and lung sparing could be achievable for breast radiotherapy. A recent study concluded that, upright body positioning for breast radiotherapy appears to be comfortable and feasible. [1]

LIVER

A research paper by the Paul Scherrer Institute identified that when a patient lies down the liver can drift and deform in position up to 20mm over 35 minutes, [2] This could affect tumour location and accuracy during treatment when patients are in the supine position.

HEAD AND NECK

A study by Alghadir et al found that difficulty swallowing was 6 times greater when a patient is lying down with their neck extended compared to upright. [3] Suggesting that being treated in an upright position will help patients better manage thick oral secretions and reduce the risk of aspiration and patient anxiety.

PROSTATE

Recent data indicated that when upright, the prostate has been shown to move less. Its position is unaffected by changes in bladder fill, the seminal vesicles are pushed down by the bladder allowing them to be included in treatment volumes without compromising on healthy tissue, the space between sacrum and anterior bladder wall is also significantly smaller. [4]

LUNGS

A study by a team at MD Anderson suggested that in the upright orientation, lung volume was on average 25% larger but in some cases up to 50% larger. [5] This increased lung volume suggested a reduction in breathing motion, allowing clinicians to challenge current treatment margins for thoracic tumours.

References

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2. Siebenthal, M., et al. (2007) Systematic errors in respiratory gating due to intrafraction deformations of the liver
3. Alghadir, A., Zafar, H., Al-Eisa, E., Iqbal, Z. (2017) Effects of posture on swallowing.
4. Schreuder, N., et al (2023) Anatomical changes in the male pelvis between the supine and upright position
5. Yang J, Chu D, Dong L, Court LE. Advantages of simulating thoracic cancer patients in an upright position.

LEO
CANCER CARE

UPRIGHT RADIOTHERAPY

AN OLD IDEA WITH A NEW SPIN

Scan the QR code to visit our website:

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