



First Patient Enrolled in Landmark Clinical Study to Assess 3D Printed Models for Orthopedic Tumor Removal

Stratasys and Ricoh co-sponsor clinical study comparing the efficacy of 3D printed models to traditional CT or MRI scanning for bone tumor excision planning

EDEN PRAIRIE, Minn. & REHOVOT, Israel & EXTON, Pa.--(BUSINESS WIRE)-- [Stratasys Ltd.](#) (NASDAQ: SSYS) and [Ricoh USA, Inc.](#) today announced the enrollment of the first patient in a groundbreaking clinical study aimed to evaluate the use of 3D printed models for orthopedic oncology. The study will assess the efficacy of patient-specific 3D printed anatomical models for preoperative planning and tumor excision in comparison to the current standard of care, which relies solely on CT or MRI imaging.

The joint research aims to demonstrate potential improvements in surgical outcomes, including reduced blood loss, shorter operating time including time under anesthesia, and decreased risk of procedural complications. To do this, clinical outcomes will be compared between an experimental group in which tumors are excised using 3D printed models alongside imaging for planning, and an active comparator group in which tumor excision will be prepped solely with imaging.

Benefits for medical staff and patients

The benefits of 3D printed models in preoperative planning are severalfold and positively impact both medical practitioners and patients alike. Doctors and surgeons benefit from improved and more informed presurgical planning and practicing prior to operations, making complex procedures more efficient, economical and faster. Unlike the limitations of computer images, this enables doctors to represent vital aspects of patient anatomy with life-size physical replicas, granting them the means to simulate procedures and aid in their precision of excision, ultimately reducing the chances of a positive margin. In turn, the availability of accurate 3D printed models to better communicate planned procedures, together with a greatly improved surgical process, helps to improve patient outcome and recovery.

The prospective, multi-center randomized controlled study is expected to run for 12 months and involve up to 150 subjects across three sites. The two sites which have agreed at this time to participate are [The Ohio State University Wexner Medical Center](#) and [Corewell Health™](#), based in Michigan.

“Our never-ending mission is to improve patient outcomes, and that starts with preoperative planning,” said Kyle K. VanKoeveering, MD Associate Professor, Otolaryngology - Head and Neck Surgery, Ohio State Wexner Medical Center. “We look forward to participating in this study to examine how 3D printed models may help the medical staff better prepare for

surgery as well as improve patient education.”

“Being one of the sites to participate in this study puts us on the forefront of demonstrating new technologies that can advance patient care and improve health outcomes,” said Aws Hammad, M.D., clinical faculty of orthopaedic surgery at Corewell Health William Beaumont University Hospital. “Addressing the challenges that come along with bone sarcomas and utilizing the power of patient-specific 3D modeling is a significant step in not only patient education but as an aid to surgeons for more precise surgical procedures.”

According to Erez Ben Zvi, VP Medical at Stratasys, “The collaboration brings together unparalleled experience and innovation in medical imaging and 3D printing and, if successful, may establish anatomical models as a new standard for patient treatment in tumor removal from bones.”

Gary Turner, Managing Director, Additive Manufacturing, Ricoh USA, Inc., comments, “We are thrilled to co-sponsor this important clinical trial alongside our longstanding partners at Stratasys to further demonstrate the potential impact of 3D patient-specific modeling as well as accelerate adoption of this technology to better serve a broader population.”

About Ricoh

Ricoh is a leading provider of integrated digital services and print and imaging solutions designed to support digital transformation of workplaces, workspaces and optimize business performance.

Headquartered in Tokyo, Ricoh's global operation reaches customers in approximately 200 countries and regions, supported by cultivated knowledge, technologies, and organizational capabilities nurtured over its 85-year history. In the financial year ended March 2024, Ricoh Group had worldwide sales of 2,348 billion yen (approx. 15.0 billion USD).

It is Ricoh's mission and vision to empower individuals to find Fulfillment through Work by understanding and transforming how people work so we can unleash their potential and creativity to realize a sustainable future.

For further information, please visit www.ricoh.com.

About Stratasys

Stratasys is leading the global shift to additive manufacturing with innovative 3D printing solutions for industries such as aerospace, automotive, consumer products and healthcare. Through smart and connected 3D printers, polymer materials, a software ecosystem, and parts on demand, Stratasys solutions deliver competitive advantages at every stage in the product value chain. The world's leading organizations turn to Stratasys to transform product design, bring agility to manufacturing and supply chains, and improve patient care.

To learn more about Stratasys, visit www.stratasys.com, the Stratasys [blog](#), [X/Twitter](#), [LinkedIn](#), or [Facebook](#). Stratasys reserves the right to utilize any of the foregoing social media platforms, including Stratasys' websites, to share material, non-public information pursuant to the SEC's Regulation FD. To the extent necessary and mandated by applicable law, Stratasys will also include such information in its public disclosure filings.

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