

Cancer treatment system sculpts radiation beam to match shape of a tumor

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Rush University Medical Center will begin offering in late March a new stereotactic radiosurgery treatment program with the latest radiation therapy technology available.

The new imaging and radiosurgery treatment system, called VarianTrueBeam STx, is capable of fast and precise noninvasive image-guided radiation therapy. Radiosurgery operates by directing highly-focused beams of [ionizing radiation](#) with high precision to a tumor.

"Radiosurgery platforms like TrueBeam can give hope to patients with inoperable or surgically complex tumors, as well as those seeking an alternative to conventional [cancer surgery](#) or radiation therapy," said Dr. Aidnag Diaz, medical director of Rush Radiosurgery. This will transform the treatment of many [types of cancer](#) such as head and neck, lung, liver and spine, cancers."

During treatment, the machine rotates around the patient to deliver radiation with a radiation beam that is aimed directly at the tumor site. The radiation beam is sculpted and shaped to match the three-dimensional shape of the tumor, helping protect nearby healthy tissue and critical organs. This is a noninvasive treatment where patients usually return to normal activities immediately following treatment.

The system can be tailored for a particular cancer treatment and has a control system that automatically detects patient position and motion, and manages [radiation beam](#) shaping and dose delivery. When the

system is in use, it performs accuracy checks measured in increments of less than a millimeter every 10 milliseconds throughout the entire treatment.

"It can be challenging for a patient to be completely still during a 45-minute treatment," said Diaz. "This technology will allow us to treat a patient within 5 to 15 minutes, a fraction of the time, helping us to provide faster, more precise [treatment](#) even during movement. Rush Radiosurgery is being developed through a joint venture between Rush University Medical Center and US Radiosurgery of Alliance Oncology. Rush Radiosurgery is a part of the Department of Radiation Oncology at Rush.

"The development of Rush Radiosurgery and the addition of TrueBeam STx technology further illustrates our mission to provide patients state-of-the-art [cancer treatment](#) options and the highest quality of care," said Dr. Diaz.

Provided by Rush University Medical Center

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