

# Stereotactic radiosurgery as effective in eliminating Parkinson's disease tremors as other treatments but less invasive

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Stereotactic radiosurgery (SRS) offers a less invasive way to eliminate tremors caused by Parkinson's disease and essential tremor than deep brain stimulation (DBS) and radiofrequency (RF) treatments, and is as effective, according to a long-term study presented November 2, 2009, at the 51st Annual Meeting of the American Society for Radiation Oncology (ASTRO).

"The study shows that radiosurgery is an effective and safe method of getting rid of tremors caused by Parkinson's disease and essential tremor, with outcomes that favorably compare to both DBS and RF in tremor relief and risk of complications at seven years after treatment," Rufus Mark, M.D., an author of the study and a radiation oncologist at the Joe Arrington Cancer Center and Texas Tech University, both in Lubbock, Texas said. "In view of these long-term results, this non-invasive procedure should be considered a primary treatment option for tremors that are hard to treat."

Parkinson's disease is a slowly progressive neurologic disease that causes tremors, in addition to other symptoms. Essential tremor is the most common of all movement disorders and causes uncontrollable shaking of the hands, head, and sometimes other parts of the body.

Stereotactic radiation is a specialized type of external beam [radiation therapy](#) that pinpoints high doses of radiation directly on a confined area in a shorter amount of time than traditional radiation treatments. Stereotactic radiosurgery, or SRS, refers to a single or several stereotactic radiation treatments of the brain or spine. SRS is delivered by a team involving a radiation oncologist and a neurosurgeon. This [radiation treatment](#) is often called by the brand names of the manufacturers, including Axesse, CyberKnife, Gamma Knife, Novalis, Primatom,

Synergy, X-Knife, TomoTherapy and Trilogy.

Between 1991 and 2007, 183 patients underwent stereotactic radiosurgery thalamotomy, for hard-to-treat tremors caused by Parkinson's disease and essential tremors. A thalamotomy is a procedure that destroys tissue at a particular spot—the Ventralis Inter-Medius nucleus—on the thalamus of the brain which influences movement.

With a median follow-up of seven years, 84 percent of patients had significant or complete resolution of tremors. In patients with Parkinson's disease, 83 percent had near or complete tremor resolution, while those with essential tremor had 87 percent of this degree of tremor resolution.

Source: American Society for Radiation Oncology

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