Weill Cornell Medicine
Brain & Spine Center

About Stereotactic Radiosurgery at Weill Cornell Medicine

A high-tech option for the treatment of brain tumors and other conditions

Stereotactic radiosurgery (SRS) is a minimally invasive or non-invasive technique for precise delivery of highly focused radiation that can pinpoint a tumor or other target with little or no effect on normal surrounding tissue. It has been used with great success in the treatment of brain tumors and other conditions as an alternative to "open" surgery. You may have heard of the Novalis, Gamma Knife, or CyberKnife—these are some of the machines used in stereotactic radiosurgery.

The term "stereotactic radiosurgery" refers to the combination of advanced radiation tools and complex three-dimensional ("stereotactic") surgical planning techniques. It is not surgery in the conventional sense—it does not involve scalpels or other invasive tools, and does not require any openings in the skull or spine.

Radiosurgery procedures done on the brain and spine are performed by a multi-disciplinary team that includes a neurosurgeon, a radiation oncologist, a medical physicist, a radiation therapist, and nurses, all of whom have undergone special training and certification in stereotactic radiosurgery.

Stereotactic radiosurgery may be used either alone or in combination with other treatments, including traditional surgery, chemotherapy and other medications, "conventional" radiation, and embolization.

Meet "MAX"
The state-of-the art SRS system at Weill Cornell Medicine uses advanced Brainlab software in conjunction with a TruBeam® linear accelerator (LINAC) to deliver precisely targeted beams of radiation to treat brain tumors and other disorders. It can be used for either single-session or multiple-session treatments. We like to call it "MAX" because it delivers MAXimum effectiveness with MAXimum precision, while providing our patients with

Call Dr. Pannullo's office to schedule an appointment: 212-746-2438/Option 1
Or visit weillcornellbrainandspine.org for more information

Dr. Susan Pannullo and Dr. Gabriella Wernicke are Co-directors of Stereotactic Radiosurgery at NewYork-Presbyterian/Weill Cornell Medical Center and perform stereotactic radiosurgery for the Weill Cornell Brain and Spine Center. Dr. Pannullo is board-certified in both Neurology and Neurological Surgery, fellowship trained in Neuro-oncology, and has completed specialty training in Stereotactic Radiosurgery. She is one of the few neurosurgeons in the world with a neurosurgical practice focused only on stereotactic radiosurgery. Dr. Wernicke is a board-certified radiation oncologist who specializes in treating primary and metastatic brain and spine tumors using the newest technology to reduce toxicity and improve treatment outcomes.

HOW IS IT DONE?

Stereotactic radiosurgery is an outpatient procedure usually done under local or no anesthesia. The patient is awake for this painless treatment. In most cases, patients may return to their usual activities that same day or on the day after treatment.

The procedure begins with a radiosurgery treatment plan, which is created using high-resolution MRI and/or CT scans that identify the target and optimal pathways for the radiation beams. In some cases, PET scans or other imaging may be used to further refine targeting. Once the precise pathway is determined, the radiation is delivered.

To ensure accuracy, patients are immobilized during imaging and treatment. Depending on the machine used, a patient may wear a head frame, plastic face mask, custom mouthpiece, or other special devices that help keep the target area perfectly still.

Stereotactic radiosurgery to the brain and spine has traditionally been performed in a single session. Newer techniques, however, permit dividing treatments into multiple lower-dose treatments (generally three to five), sometimes called fractionated stereotactic radiosurgery (FRS) or fractionated stereotactic radiotherapy (FSRT).