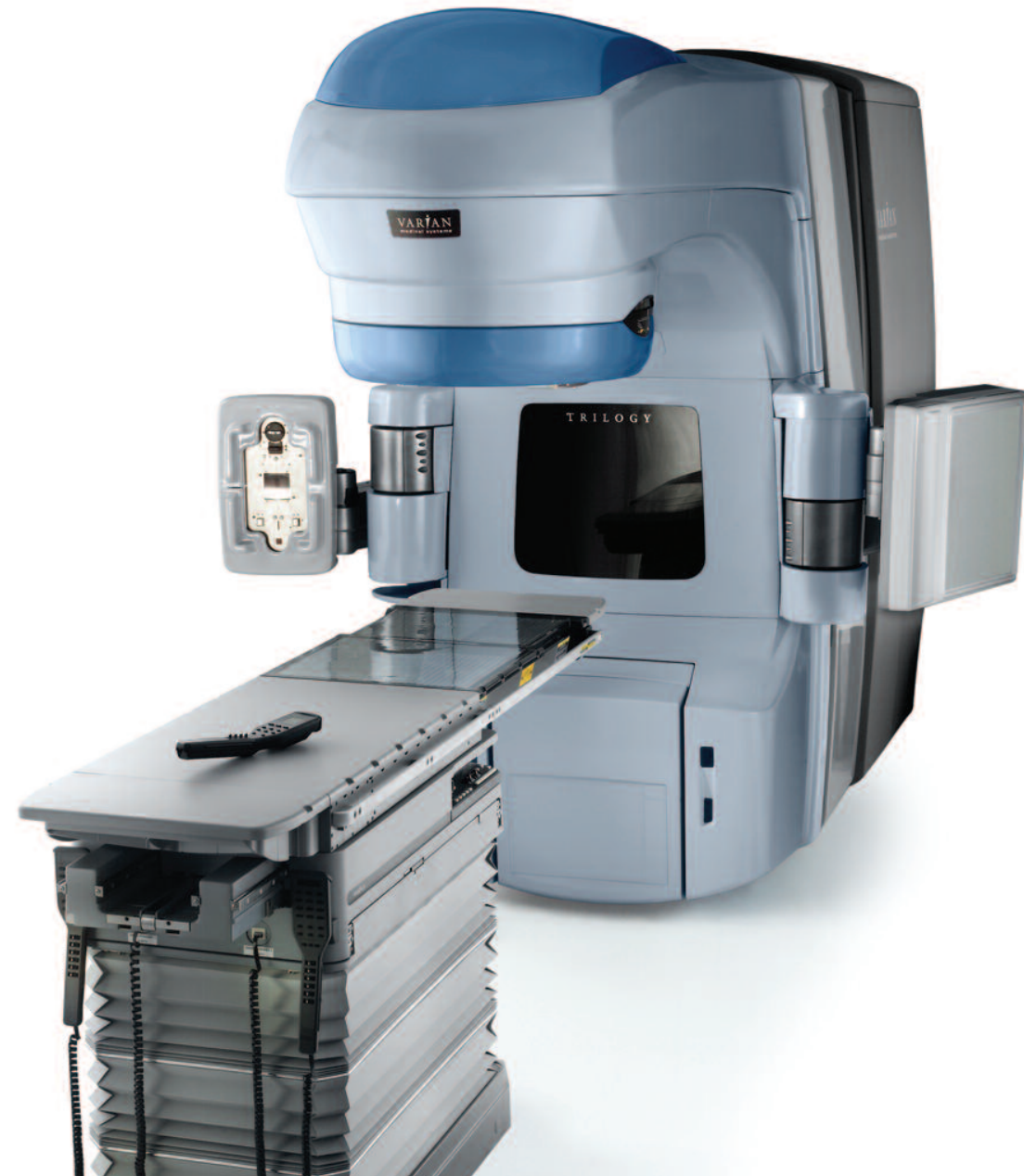


TRILOGY

Stereotactic Radiosurgery Treatment



200 North Park Street Kalamazoo, MI 49007-3731
Phone 269.382.2500 | Fax 269.373.7478 | www.wmcc.org

A Borgess | Bronson Collaboration

West Michigan Cancer Center  Together, we win.

You have this booklet because your doctor believes that you're a good candidate for stereotactic radiosurgery (SRS). This sophisticated treatment is possible through a revolutionary piece of equipment known as the Varian Trilogy. It makes radiation treatment like a scalpel, but without the incision. With this new capability, West Michigan Cancer Center is treating more difficult cancers than ever before, with shorter recovery times, requiring fewer treatments and virtually eliminating damage to surrounding healthy tissues. Our goal is to help you recover and heal faster and resume normal activities shortly after treatment. The procedure is used to treat cancer, vascular abnormalities, and selective pain and movement disorders.

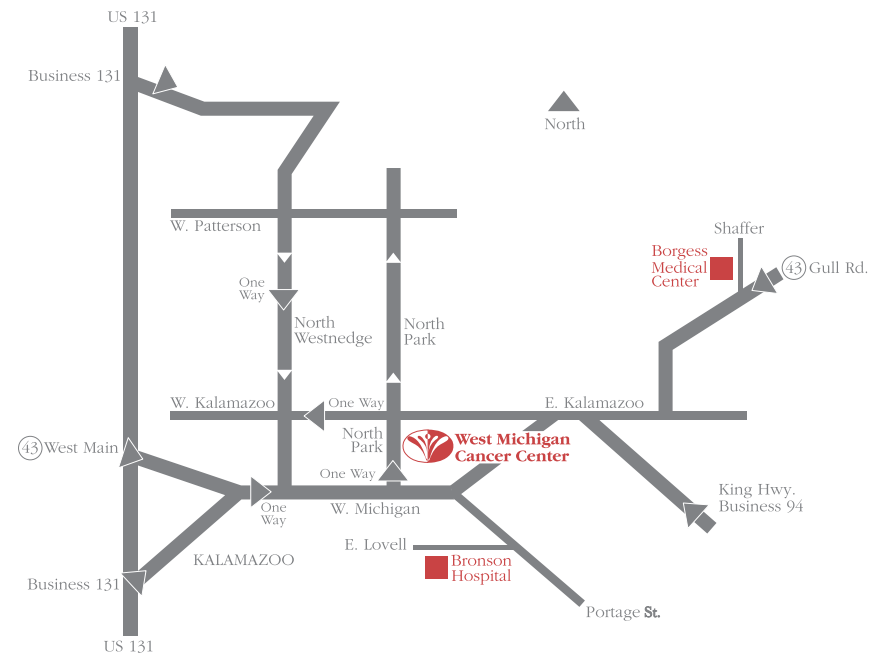
The Trilogy focuses high-energy radiation beams directly at the site of tumorous tissue. The intersecting beams deliver an intense dose of radiation only to the affected site while safely avoiding nearby healthy tissue. SRS treatment beams isolate and painlessly shrink or eliminate tumors and abnormalities. This also makes it an excellent treatment option for hard-to-reach tumors buried deep in healthy brain tissue or adjacent to vital organs, and thus, may help you avoid a difficult surgery. The Trilogy equipment at West Michigan Cancer Center is the first and only of its type in Michigan, and represents new hope for patients with difficult cancers or tumors which have been almost impossible to treat in the past.

SRS and How It Works

In medicine, radiation has been used to treat cancer and other abnormalities with good results for many years. Today it is prescribed in one form or another for more than 60 percent of all cancer patients.

Radiation is energy delivered in beams. It works by damaging the DNA of cancer cells so they can no longer reproduce. The physician prescribes the amount, or dose, much the same way as drugs are prescribed.

Stereotactic radiosurgery, or SRS, is the most precise method of external beam radiation. It has been used for some time by neurosurgeons to treat vascular abnormalities and tumors in the brain, both benign and malignant. Recent advances in imaging, patient positioning, and targeting have all made SRS appropriate for the treatment of cancers in other parts of the body as well. Diagnostic images taken before treatment—including computed tomography (CT), positron emission tomography (PET), and magnetic resonance imaging (MRI)—help determine where to aim the radiation. The beams are shaped to match the contours of the tumor and are delivered from many different angles around the body, all passing safely through healthy tissue and converging precisely at the planned target location to deliver an effective level of radiation.



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From South of Kalamazoo

Take US 131 North to Business 131 (exit 36A-Stadium Drive). Follow Business 131 to Highway 43 (W. Michigan), turning right onto Hwy. 43. Continue on Hwy. 43 to North Park, turning left onto North Park. WMCC is on your right.

From North of Kalamazoo

Take US 131 South to Business 131 (exit 41). Follow Business 131 (N. Westnedge) to Hwy. 43 (W. Michigan), turning left onto Hwy. 43. Continue on Hwy. 43 to North Park, turning left onto North Park. WMCC is on your right.

From West of Kalamazoo

Take Hwy. 43 (turns into W. Michigan) into Kalamazoo. Turn left onto North Park. WMCC is on your right.

From East of Kalamazoo

Take Hwy. 43 into Kalamazoo. Continue on Hwy. 43 until it becomes East Kalamazoo. Turn left onto North Westnedge, then turn left onto West Michigan, and then left onto North Park. WMCC is on your right.

Or take 94 West to Business 94 (King Hwy). Follow Business 94 until it meets Hwy. 43 (E. Kalamazoo). Turn left onto North Westnedge, then turn left onto West Michigan, and then left onto North Park. WMCC is on your right.

Stereotactic radiosurgery is a carefully controlled process that consists of a series of steps: consultation, positioning, imaging, treatment planning, treatment delivery, and follow-up care.

Consultation

Your initial visit will be with the physician leading your treatment team. This may be a radiation oncologist or a neurosurgeon. The physician will review your medical history and reports, make a recommendation about any further tests that may be required, discuss the options available to you, and work with you to choose an optimal course of treatment. If it is SRS, the entire treatment process will be completed in one day; if it is SRT, you will be scheduled for a series of appointments.

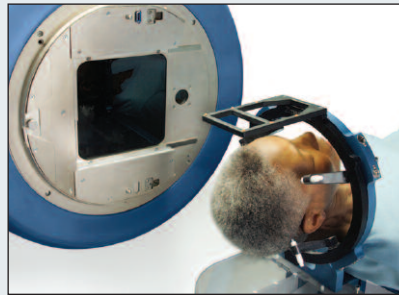
Positioning

In order to achieve the precision of a stereotactic treatment, it's important to be accurately positioned and carefully immobilized during treatment. The doctor will fit you with a positioning device to ensure that you remain in the same position—as comfortably as possible—without moving during the procedure.

There are different methods for positioning and immobilization, depending on the area to be treated. Some single-session treatments to the head require a headframe that is temporarily secured to a patient's head and treatment couch.

In other instances, a frameless system may be used, especially for SRT treatments delivered over several days. Frameless systems range from a lightweight mesh mask, uniquely formed to fit to your face and head during treatment, to an individualized bite block. Both systems ensure that you remain in proper position to receive the full benefits of treatment.

For stereotactic treatments to regions of the body other than the head, various types of body frames or cushioning systems are available for patient positioning. Your physician will discuss with you the various options to determine which will work best, given your specific circumstances.



A minimally invasive headframe

Imaging

You will be positioned on the CT couch so that a 3-D scan can be performed, generating precise images of the area to be treated. This scan—along with any other CT, PET, MRI, and X-ray images you may have had—provides information required not only to create a treatment plan but to ensure that you are positioned correctly at the time of treatment.

Treatment Planning

With the information gathered during the positioning and imaging steps, a dedicated medical team will design the best treatment plan for your situation. They will use a sophisticated software program to generate a customized plan for your treatment. This WMCC planning team may include experts from different disciplines, such as radiation oncology, neurosurgery, and medical physics.

Treatment Delivery

SRS treatments usually take about an hour. In some cases, the treatment time can be longer. Most of the time is used to ensure that you are accurately positioned for your treatment.

Usually, two or more images are taken from different angles, or a complete rotation of the treatment machine may be used to generate a three-dimensional image.

The therapist will use these images to guide adjustment of the treatment couch. You may also notice various cameras in the room; they are part of the Trilogy's sophisticated guidance system that monitors and compensates for any movement during the treatment, even your breathing. You will be alone in the room during the treatment, but the therapist can see and hear you at all times through intercom and closed-circuit television systems.

The Trilogy machine will move slowly around you. The treatment couch may also move gently to deliver beams from different angles, according to your treatment plan. This is all normal and part of the treatment process. Most patients find the movement an interesting distraction. Similar to an X-ray, while you are receiving treatment, the radiation is invisible and undetectable; you will not feel it. Just get as comfortable as possible and relax.



The accelerator will move around you to deliver beams from different angles.



After you complete your treatment, your doctor will monitor your progress with a series of follow-up visits. Blood tests, diagnostic X-rays, and even additional CT and MRI scans may be requested at these appointments.

These appointments are your opportunities to discuss any problems and review how to stay healthy after treatment. Ask about nutrition, exercise, and other basics for maintaining a healthy lifestyle. You can also find out about support groups for survivors of cancer or neurological conditions.

SRS's ultrahigh precision destroys tumors with high doses of radiation, while sparing the surrounding healthy tissue. In this way, SRS provides a noninvasive alternative to surgery, allowing treatment of some otherwise inoperable tumors.

With older methods of radiation, it may take weeks of treatment sessions to deliver the full prescribed dose. With SRS, however, a single treatment is often sufficient. (Another similar treatment method, stereotactic radiotherapy, or SRT, involves just a few treatment sessions.) SRS is an outpatient procedure.

SRS Treatment

With SRS, the full radiation dose is delivered in one session. Most patients can be treated as outpatients and can return home immediately after the procedure. SRS is most often used to treat tumors or abnormalities in the brain and spine, although with new technologies for more precise targeting and for compensating for any tumor motion that occurs as a patient breathes during treatment, SRS is starting to be used more widely for treatments in other regions of the body.

SRT Treatment

With SRT, the full radiation dose is delivered over a short course of multiple treatment sessions. SRT is also known as fractionated radiosurgery, because a fraction of the total radiation dose is delivered at each session. SRT is used to treat tumors or abnormalities in the brain, head, neck, and spine. It may also be used to treat tumors or abnormalities in other parts of the body—the lungs, liver, kidneys, and pancreas, for example.



Varian Trilogy
Stereotactic Radiosurgery (SRS)