

## [Radiosurgery - for Cancer Treatment](#)

The name "CyberKnife" is actually a bit of a misnomer, there are no knives in sight! Nevertheless, it does enable the ablative therapy of tumours (hence "blade") to be carried out painlessly and efficiently without the demand for an operation by a robot (therefore "cyber") linear accelerator (radiotherapy device).

Standard radiotherapy uses large field sizes as well as just a couple of radiation beam of lights to treat 'regions' in the body, which suggests the dose offered to the tumor is usually restricted by the radiation tolerance of the surrounding normal tissues. The most recent chemotherapy as well as 'wonder drug' drugs have actually been a tiny advance, yet they have negative effects and also have usually not lived up to the buzz.

Tumours are disorderly, and also tend to wrap themselves about, or are close to various other essential tissues. This indicates that the doctor's skills can be extended to the limit, or making use of traditional radiotherapy would damage too much healthy cells. Cancer cells radiation oncologists require a clear photo of the precise place of the tumor (with all its irregularities) to make sure that the delivery of radiation can be precisely identified to these components, and these components alone. This is where CyberKnife<sup>®</sup> can be found in.

What can CyberKnife<sup>®</sup> treat?

The therapy is so precise that it is now possible to treat tumors previously believed to be untreatable. Although the results of treatment do not always reveal immediately, in most cases the treatment will at first stop the development of tumours before slowly decreasing their size.

As there is no open surgery, the problems generally connected with a procedure are eliminated, as is the need for a lengthy recovery time. This makes treatment appropriate for those who are not well enough to manage the side-effects of surgical procedure and most clients leave the clinic the exact same day as their treatment.

Major operations such as lung as well as liver resections, elimination of pancreatic and prostatectomy currently have a sensible alternative option with this method.

The future.

The capacity for this type of instrumentation is extraordinary, and also the following couple of years will certainly see some exciting new advancements in cancer therapy. Trials are currently well in progress consisting of a research of CyberKnife<sup>®</sup> compared to conventional surgical treatment for stage 1 or 2 lung cancer cells. CyberKnife<sup>®</sup> is being evaluated in functional brain problems such as epilepsy and also Parkinsons' Disease, as well as there are strategies to extend the application of the therapy to deal with electric disruptions in the heart (as a choice to catheter ablation). CyberKnife<sup>®</sup> is additionally being trialled in very early breast cancer.