

# CyberKnife Treatment

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## The CyberKnife System

The CyberKnife is a radiosurgery system of non-invasive treatment for cancerous tumors and conditions where radiation therapy is indicated. This highly developed method is used to treat conditions throughout the body and can be a good possibility for patients who have surgical complex or inoperable tumors. CyberKnife is a radiation delivery system which features a **linear accelerator** or also known as **linac** which is directly integrated on a robot to deliver the high-energy x-rays or photons used in a radiation therapy. The CyberKinfe treatment minimizes radiation exposure to healthy tissue which surrounds the tumor and delivers precise pulses of high-dose radiation that target certain tumors and other abnormal tissues. This radiosurgery system was designed for enabling **stereotactic surgery SRS** and **stereotactic body radiation therapy SBRT**.



## The procedure

A combination of MRI, CT scans and PET scans are used of the patient to get the exact size, location and shape of the tumor which is required for the plannings of the procedure. The treatment duration is between 30-90 minutes and the number of treatments depends on the tumor size, location and shape generally between one to five daily sessions. This treatment allows the patient lay comfortably on the procedure table while the robotic arm moves around the patient without any touch to treat all parts of the target tumor. The CyberKnife system uses **real-time adaptive delivery technology** to track the tumor in the body while its robotic design keeps on target even while the tumor moves this cause the minimization of radiation delivery to healthy tissue and the reduction of potential side effects of the patient after the treatment.



## Patient after procedure

The CyberKnife treatment occurs painless, and most of the patients can get back to their daily activity immediately after the treatment. After the last procedure new MRI, CT scan and PET scans are taken from the patient to compare the results with the old ones.

