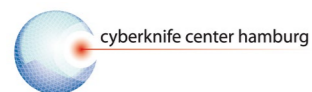




ckhh.info

Facts about the cyberknife center hamburg

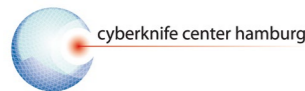
Additional information video



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Our principle:
 “Best technology, highest
 quality and humanity”



Preface

Your consultation, your treatment, your care

Dear patient,

Cancer strikes more than 3 million people in Europe each year. Whether you have cancer or are close to someone who does, understanding what to expect can help you cope. At the Radiation Oncology Clinic Hamburg we provide you with advice, support and treatment for this intimidating disease and its related concerns. The Radiation Oncology Clinic Hamburg offers the latest technology for your radiation treatment. Our patients appreciate the personal care and the relaxed atmosphere, while benefiting from the performance of a high-end technology.

Since 2011, these unique forms of radiosurgery and high precision radiation treatments are available in the CyberKnife Center Hamburg. We offer specialized expertise in radiation oncology, radiotherapy, nuclear medicine and palliative care at our certified ambulatory healthcare center.

The CyberKnife is the only robotic system for radiosurgery and high precision radiation therapy available worldwide. It delivers targeted beams of radiation to the tumor from various different angles and with extreme accuracy, allowing the healthy tissue surrounding the tumor to be preserved.

The CyberKnife treats patients in a few sessions on an outpatient basis – usually in one to five sessions. Generally, you can return to your daily activities immediately, without limitation in your quality of life. In addition, the CyberKnife treatment involves no cutting. In fact it is the world's first and only robotic radiosurgery system designed to treat tumors throughout the body non-invasively. It provides a pain-free, non surgical option for patients who have inoperable or surgically complex tumors or who may be looking for an alternative to surgery.

The physician team of the Radiation Oncology Clinic includes some of the most knowledgeable and dedicated cancer specialists. Our center uses a team approach in which our medical experts work together to develop a customized treatment plan for your specific case. Our staff consists of radiation oncologists, medical oncologists, medical physicists, radiation therapists, nurses, medical assistants, and other experts.

We also cooperate with all disciplines in cancer medicine, including various specialist hospitals: pulmonology, gastrology, neurology and neurosurgery are only some examples. The multidisciplinary team meets regularly during tumor boards, where we discuss the decision, planning and realization of individual cases. Your health is in professional hands in every step of your treatment.

You as a patient are our focus. Our team will care for you and will answer all your questions through every step of your treatment. By involving experts from other medical fields, you will always receive a comprehensive multidisciplinary consultation and various treatment options.

With this brochure we want you to have an insight into the CyberKnife Center Hamburg and your possible treatment. Your comments and suggestions are always welcome. If you have any further questions, please do not hesitate to contact us.

With best regards from the city of health Hamburg,

**Prof. M. Heinrich Seegenschmiedt,
 MD, PD Fabian Fehlauer, MD and the entire team**



A team with experience

A mutual decision for your treatment

As experts for your CyberKnife treatment, specially trained physicians with many years of experience in radiosurgery and high-precision irradiation will care for you.

The team of medical physicists is responsible for treatment planning and quality assurance. Our medical radiology assistants will ensure your comfort during the treatment with the CyberKnife. Depending on the kind of tumor, additional specialists will provide us with support during the treatment process, e.g., for brain, lung or liver tumors.

All treatment decisions will be made having carefully reviewed your medical files, images such as CT or MRI after an in-depth discussion with all concerned specialists and a personal consultation with you.

The CyberKnife offers new possibilities in the treatment options, enabling the physician to tailor treatments specific to your tumor(s) shape in order to ensure the best possible outcome. This hightech robot along with the experience and expertise of the medical team work together to ensure your treatment is a success.



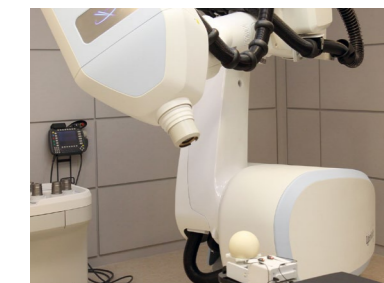
Prof. Dr. Seegenschmied



MD Dr. Fehlauer

“The robot-guided beam is the tool of the radiation oncologists, like the scalpel in the hands of an experienced surgeon.”

**Prof. Seegenschmied,
The Radiation Oncology Clinic Hamburg**



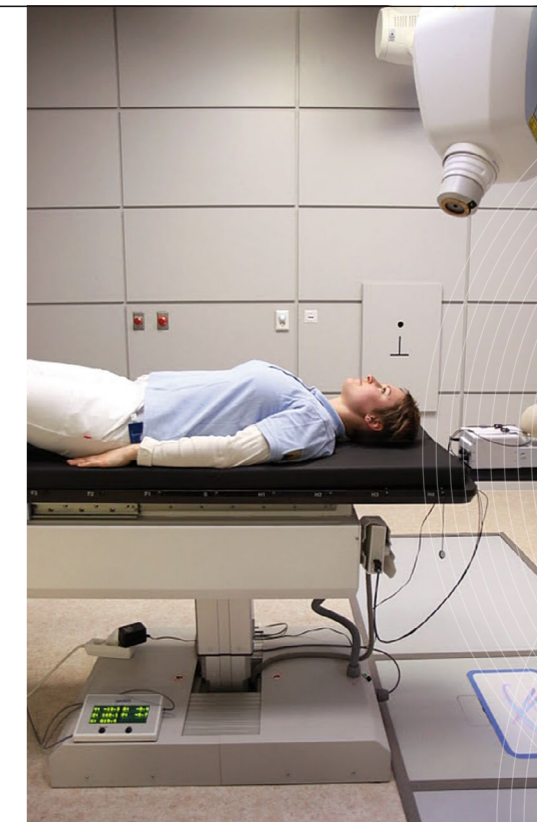


A new type of treatment

Your options through innovative techniques

The complete removal of a tumor is still the safest method to fight cancer. However, surgery is not always favored or possible in every situation; the CyberKnife is like a “virtual scalpel”, without surgical intervention – it destroys the tumor tissue and avoids side effects in the healthy tissue due to the high precision robotic delivery and the stereoscopic imaging control during treatment. This unique form of robotic guided radiosurgery offers new treatment possibilities for cancer patients.

The CyberKnife system allows a precise treatment adjusted to size, location and character of the tumor. The “virtual knife” follows the natural movement of the body and targets the tumor on the spot. Tumors in moving organs like liver and lung can be tracked automatically and radiation is delivered precisely to the tumor. The delivery of the treatment beam is automatically corrected by continuous imaging throughout the session. Medical studies have shown the CyberKnife to be a highly effective and secure treatment option. Until today, more than 300.000 patients have been treated with over 300 installed CyberKnife systems worldwide. The positive results with only minor side effects are clearly demonstrated. We share our positive experiences regularly within the network of the nine German CyberKnife users (such as Munich or Berlin) and other specialized groups worldwide, which will also benefit each individual patient.



“Modern procedures in medicine cannot be used at random - that’s why we work successfully together with numerous experts from multiple disciplines.”

PD Dr. Fehlauer, The Radiation Oncology Clinic Hamburg

CyberKnife: virtual surgery

Effective and gentle cancer treatment

Radiosurgery and techniques such as cobalt Gammaknife or stereotactic treatment with conventional linear accelerators have continued to evolve over many years up to the robotic CyberKnife technology. It operates precisely, painless and is applied without fixation in a comfortable lying position. The CyberKnife treatment can be used to target many benign and malignant tumors, pathological vascular processes in the nervous system, trigeminal neuralgia, as well as various tumors in all body regions:

1. Brain

Brain tumors and metastases, Acoustic neuroma, Meningioma, Angioma and arteriovenous Malformations, Trigeminal neuralgia, Pituitary adenoma

2. Lung

Lung and bronchial carcinoma, Well defined lung metastases

3. Liver

Liver metastases, Liver carcinoma

4. Pancreas

Localized pancreatic cancer

5. Spine

Spinal tumors and metastases, Meningioma, Recurrences after surgery and radiotherapy

6. Prostate

Primary tumors and recurrences

7. Bone Metastases

Spine, Pelvis, Thorax

8. Kidney

Metastases, Renal cell carcinoma

9. Breast

Recurrences in breast cancer after surgery and radiotherapy

10. Head and Neck

Metastases, Skull base tumors, Selected ENT tumors

11. Special situations

Selected recurrences



1. Brain



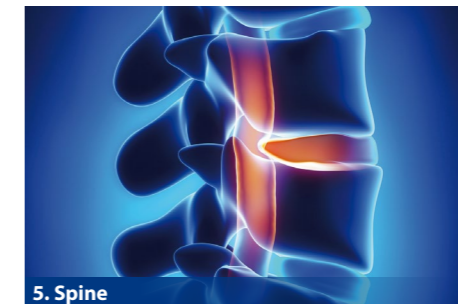
2. Lung



3. Liver



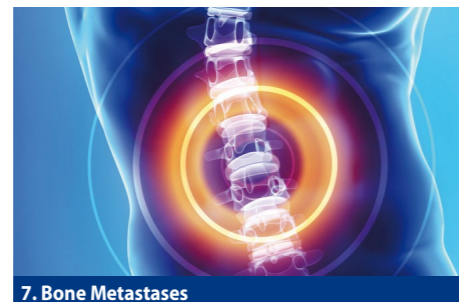
4. Pancreas



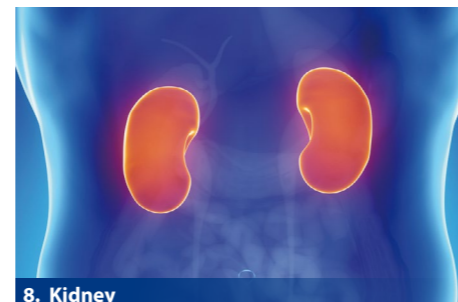
5. Spine



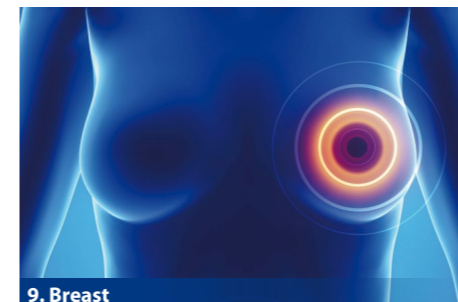
6. Prostate



7. Bone Metastases



8. Kidney



9. Breast



10. Head and Neck

The CyberKnife system offers the following benefits:

- Pain-free
- Non-invasive
- No anesthesia required
- Outpatient procedure without recovery time
- Exceptional accuracy of dose delivery while sparing healthy tissue and organs
- Immediate return to daily activity
- No invasive head or body frame

The treatment process

From diagnosis to therapy



First consultation and patient information

In order to assess whether a treatment is possible and which treatment to provide, we need your medical and surgical reports, laboratory and imaging results (CT, MRI). You can send us the images by mail or email. After having reviewed the data, you will come for a first consultation. Prerequisites for CyberKnife treatment are a clear identification and differentiation of the tumor to normal tissue and adherence to certain conditions such as size, location, controlled tumor disease et cetera.

In the initial consultation, we investigate how the CyberKnife treatment (duration, number of treatment sessions and circumstances) will be performed in detail. We explain the course of treatment to you, the possible risks and side effects and alternatives to treatment. The treatment can also be carried out alongside other therapies. As a rule, the vote of a panel of experts ("Tumor boards") is obtained.

Planning and control of treatment

First, the optimal positioning on the treatment table is determined and positioning devices are adapted to each patient. Then, high-resolution images of the tumor region are produced on the computer tomography (CT) and magnetic resonance imaging (MRI). Afterwards, the physician will determine which tissues will be treated (target volume) and which have to be protected (healthy organs at risk). For tumors in moving organs (e.g., lung, liver, prostate) tiny gold markers have to be implanted in advance under local anesthesia to determine the tumor position during the treatment. This preparation is generally performed without complications or permanent damage.



The Cyberknife treatment

On the day of treatment no special measures have to be taken. You can eat and drink as usual and take any medicine. Prior to the start, you go to the bathroom to avoid an interruption during the treatment. The treatment itself causes no pain. You will lie comfortably on the treatment table and can listen to your favorite music. During the treatment the CyberKnife moves exactly to the previously calculated positions, from where the tumor is being treated for a few seconds. All positions are controlled with digital images, automatically synchronized with the plan and, if necessary, corrected with sub-millimeter accuracy. The qualified staff monitors every step and can communicate with you via video and microphone. Depending on the type and size of the tumor, the treatment comprises one or more sessions of 30 to 60 minutes. You can return home right away and carry on with your daily activities. Rarely additional drugs are necessary.

Follow-up and success of treatment

We will stay in touch one day and one week after the treatment via telephone; of course you may contact us at any time if any special circumstances should occur. After one week there is an additional contact to assess possible short-term changes such as a decrease in pain or a reduction of pain killers. After three to six months, the first imaging control (MRI, CT) and clinical examination will be performed to evaluate the response to treatment. We will communicate the result to your treating doctor in writing.

The CyberKnife team in the Radiation Oncology Clinic Hamburg is always available for questions and information. Call us for more information about the CyberKnife treatment via telephone +49 40 244 245 81 20 / +49 40 244 245 837

Frequently asked questions

Answers for a better understanding



How can I find out if a CyberKnife treatment is suitable for me?

The CyberKnife system has been approved to treat tumors anywhere in the body including the brain, spine, lung, prostate, liver and pancreas. However, it depends on the kind and size of the tumor and other individual factors. Please talk to your treating doctor or contact us directly.

What side effects can I expect after a CyberKnife treatment?

Most patients experience minimal to no short-term side effects and often recover quickly. Depending on the treatment area, some patients may experience different side effects such as mild fatigue or nausea. The CyberKnife physician will disclose all possible side effects prior to treatment.

After a CyberKnife treatment, when will my tumor or lesion disappear?

The effects of radiosurgery vary and may occur gradually and over time. Some tumors may disappear slower than others or may simply stop growing and present no further cell activity. Therefore, you are asked to get periodic images (CT scan or MRI) of your tumor(s) and additional tests may be required in order to monitor the effectiveness of the treatment.

When are the implants of gold markers necessary?

The minimally invasive implantation of one or more gold markers is necessary prior to treatment for tumors in moving organs. The approximately 5 mm gold particles produce a precise X-ray contrast and so can be used as reference points to identify the exact location of the tumor during treatment.

Can prostate cancer also be treated with the CyberKnife?

In principle, early stage prostate cancer can be treated in collaboration with your urologist. However, the treatment is not a

standard yet, as the studies report e.g., of too short follow-up observations. Nevertheless, the dose distribution of the CyberKnife can be compared to other radiation technologies with comparable results, requiring only one week of treatment time and less irritation. Gold markers are used to treat the prostate with the CyberKnife.

How is a CyberKnife „radiosurgery“ treatment different from a traditional radiation therapy treatment?

Traditional radiation therapy typically delivers radiation to a wide field of tissue in the body resulting in the treatment of both the tumor and a large amount of surrounding healthy tissue. This is necessary because traditional radiation therapy systems did not account for tumor motion and were therefore less accurate. These wide radiation fields increased the possibility of damage to normal tissue, increasing the risk of side effects following the radiation treatment. To reduce the number of side effects, clinicians were forced to reevaluate the way traditional radiation therapy was delivered. As a result, the overall radiation dose was reduced and the number of treatments was divided into 30 to 40 sessions, delivered over a period of 6–8 weeks.

Radiosurgery devices, such as the the CyberKnife Robotic Radiosurgery System, were designed to deliver radiation with extreme accuracy, targeting the tumor with minimal damage to the surrounding healthy tissue. The accuracy of the CyberKnife system allows clinicians to deliver very high doses of radiation safely because the size of the radiation field is smaller and only includes the tumor and a small amount of surrounding tissue. This allows for less damage to surrounding healthy tissue and for clinicians to complete treatment in 1 to 5 days vs. several weeks it takes traditional radiation therapy.



My experience with CyberKnife

Testimonials

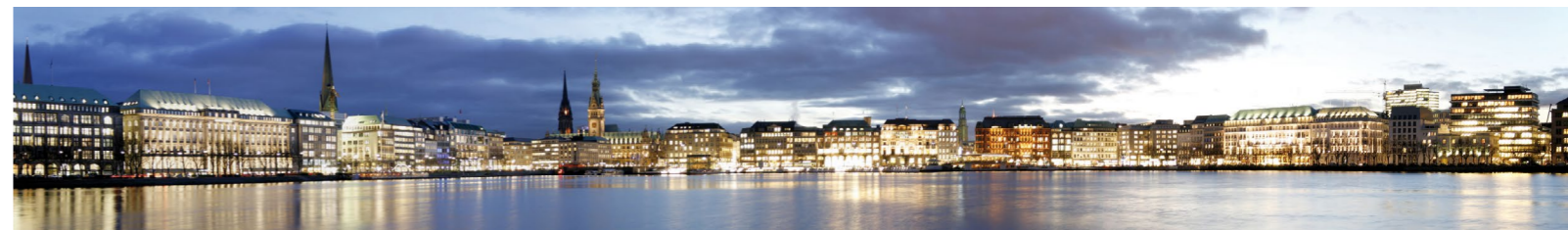
Michael N.: "I was able to travel back to Portugal right away"

In 2007 Michael, a pensioner at the age of 67 years living in Portugal, underwent surgery on his coronary artery. Two Years later, lung cancer was diagnosed in a computed tomography. Concerning to the tumors nearly inaccessible position his doctor recommended a chemotherapy. Based on a workmates personal experience with a similar diagnose, Michael decided not to undergo surgery. To extend his life expectancy and to preserve his health-related quality of life he decided together with his team of doctors to attempt the CyberKnife-treatment, a new technological solution. During his stay in hospital where it came to the decision, three tiny gold markers were positioned close to the tumor. Subsequently Michael had three CyberKnife-treatments without any negative side effects, each of them in a relaxed, comfortable position on the treatment table. „I came to the cyberknife center hamburg, didn't wait long, laid down for the treatment, looked at the sky above me in the treatment room and just fell asleep," told Michael! "nothing changed obviously negative in my condition, nothing hurt and i was able to breath normally." Now, three years later Michael is happy that the cancer was detected at the earliest time and that it was treated successfully with the CyberKnife! "The air is good, everything is good. If there wouldn't have been the CyberKnife, i possibly wouldn't live anymore today! Now i am looking forward to winter in Portugal!"

Hanna G.: "I wanted the best treatment for myself"

In spring 2007, 43 years old Hanna was confronted with the diagnosis brain tumor. As secretary and mother of to children at the age of eight and ten she was terrified: "My children needed me, how should life go on? I already looked at everything like from beyond because i thought of the possibility that something could go wrong." When Hanna was told that the tumor was not malign and that she would take a high risk of lasting harm as paralysis of her arms if she underwent surgery, she informed herself detailed about other possibilities. After she read about the CyberKnife-treatment on the internet, her doctor recommended to contact the cyberknife center hamburg. Because of the high efficiency and the only small side effects she decided fast to try out the CyberKnife: "I wanted the best treatment and the highest safety. I had to look after my children and keep on raising them."

Hanna was surprised how little her daily routine was affected by the three treatment steps: she was not more tired than on a usual workday and she was able to go back home in order to look after her children right after the treatment. Hanna remembers: "I asked myself if there had really been happened something because the treatment was completely painless." The treatment was successful, three years later the tumors decrease in size was approved by a medical imaging. In the cyberknife center hamburg she was pleased about her medicating doctor and his polite associates who approved the result too. "Now I have got a second chance!"



Hamburg: The metropolis of health in Northern Germany

CyberKnife Center Hamburg network

Hamburg is not only worth the trip to visit our clinic because of your well-being, Hamburg is the gateway to the world, the beauty in the North. The green city at the waterside is known as one of the most beautiful cities of Germany. Everybody gets inspired by its metropolitan flair and maritime charm. Whether the river Elbe, the river Alster, the Hafencity, the Speicherstadt, the Fish Market or the Reeperbahn – every day there are new things to discover and to experience. Hamburg is the second biggest city in Germany with nearly 2 Million inhabitants and has a lot to offer. For instance, it's the finest art and culture, musical world successes, ambitious and entertaining theatre, a diversity of hotels, excellent restaurants, a choice of shopping possibilities and numerous historic sights which have shaped the 1200 year old history of the city. And still, Hamburg is young, modern, friendly and cosmopolitan – an interesting city of exciting contrasts.

Hamburg is an excellent city for health in Germany and Europe – the ideal location for ambulatory, independent and innovative medicine with the CyberKnife in the fight against cancer.

Our service:

- Unique therapy: "Surgery with a virtual scalpel", the CyberKnife can destroy tumors with a pinpoint accuracy while sparing the surrounding healthy tissue and critical organs from damage.
- Unique treatment: one to five treatment sessions only, without anesthesia and pain.
- Unique collaboration: Highly qualified specialist will review the indication, monitor the treatment process, guide the technique and the advanced robot will react on every movement of the patient.
- Unique network with high expertise: The close collaboration with specialists, institutions and clinics ensures advanced knowledge for your treatment.
- Unique location: a modern metropolis, easy accessible, short-term appointments, efficient treatment process, patient focused service.

Our partner

Regions, physicians and hospitals in our network

Referring positions and cooperating partners:

Regions:

Federal states Hamburg, Schleswig-Holstein,
Lower Saxony, Mecklenburg Western-Pomerania

Area of expertise:

Practitioners and specialists in the departments of neurosurgery, neurology, neuroradiology, facial oral and maxillofacial surgery, orthopedics and traumatology, spinal surgery, urology and gynecology and medical oncology

Network cooperation between Hamburg physicians

Participation in tumor boards or professional exchange with specialists from various fields of the followings clinics in Hamburg (alphabetic order):

- Amalie Sieveking Hospital
- Asklepios Clinics (Altona, Barmbek, Harburg, Heidberg, St. Georg and Wandsbek)
- Albertinen Hospital Hamburg
- Israelite Hospital Hamburg
- Research Institute Borstel
- Military Hospital Hamburg
- Marienhospital Hamburg
- Paracelsus Clinic Henstedt-Ulzburg
- University Hospital Eppendorf

Additional information

Important links and contacts

CyberKnife Society www.cksociety.org

The CyberKnife Society is a group of physicians and affiliated health-care professionals specializing in CyberKnife radiosurgery.

Accuray Incorporated www accuray.com

Accuray develops and markets the CyberKnife System, the worlds first and only robotic radiosurgery system designed to treat tumors anywhere in the body with pinpoint accuracy. Accuray provides precise, innovative tumor treatment solutions that set the standard of care with the aim of helping patients live longer, better lives.

CyberKnife Patient Education Website www.cyberknife.com

The CyberKnife Patient Education Website is dedicated to educating patients on the CyberKnife System's ability to treat tumors anywhere in the body.

Contact:

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Medical Chamber Hamburg,
Humboldtstr. 56, 22083 Hamburg, Germany

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Professional Regulation of the Responsible Chamber:
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berufsrecht/index_berufsrecht.htm](http://www.aerztekammer-hamburg.de/berufsrecht/index_berufsrecht.htm)
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