



Government of **Western Australia**
North Metropolitan Health Service
Sir Charles Gairdner Osborne Park Health Care Group



CyberKnife® - Robotic Radiosurgery

General information



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What is the CyberKnife® System?

The CyberKnife® Robotic Radiosurgery System is a radiation treatment machine directly mounted on a robotic arm similar to robots used in car manufacturing. The CyberKnife® system can track tumour and patient movement to deliver radiation to tumours anywhere in the body, with a high degree of accuracy.

Although the name implies scalpels and surgery, the CyberKnife® Robotic Radiosurgery System does not cut the skin.

What makes the CyberKnife® different?

Despite the best attempts, it is almost impossible to prevent patients and their internal organs moving during treatment.

The CyberKnife® System is capable of moving with the patient's anatomy, continuously identifying the exact location of the target area allowing a greater degree of accuracy and higher doses of radiation to some areas, while minimising dose to the surrounding healthy tissue. This helps to reduce side effects commonly associated with conventional radiation therapy treatments.

Possible side effects:

There are usually very few acute side effects as the area treated is minimal.

Reactions are very individual and may not occur the same in every patient.

Your doctor will have explained potential side effects at your initial appointment, but if you require further information about the side effects particular to your treatment, please clarify this with them.

Who can get CyberKnife® treatment?

This is the only public CyberKnife® System in Australia and as such the medical team are required to determine whether the CyberKnife® treatment is the most appropriate for you. Radiation Oncologists base their decision on the type, location and size of the tumour, as well as the overall extent of disease. Patients are prioritised according to clinical need and where there is evidence that CyberKnife® treatment will be of greater benefit than standard radiation therapy.

What is the referral process?

The only public CyberKnife® treatment is available in Perth, Western Australia at the Sir Charles Gairdner Hospital.

Western Australian patients will need a referral from your doctor addressed to one of these consultants:

- Dr Colin Tang
- Dr Joshua Dass
- Dr Suki Gill
- Dr Chris Harper
- Dr Mandy Taylor
- Dr Rohen White
- Dr Sean Bydder
- Dr Jeremy Croker

As of 1 July 2024 we will be unable to accept patients from outside WA - patients from other areas, including overseas, should instead discuss similar available treatment options closer to home.

Radiation oncology referrals:

Email scgh.cancercentreferrals@health.wa.gov.au

Fax number (08) 6457 1053

What is the cost for treatment?

The Radiation Oncology Department at SCGH is the only publicly funded CyberKnife® in Australia and offers cutting edge treatment technology with no out of pocket expenses to Medicare card holders.

CyberKnife® contact details:

Radiation Oncology

Cancer Centre
Sir Charles Gairdner Hospital
Gairdner Drive
Nedlands WA 6009

For general CyberKnife® enquiries:

Contact the Chief Radiation Therapist:
Phone: (08) 6383 3404

The CyberKnife® treatment process

Once the referral has been approved the preparation for CyberKnife® treatment will depend on the treatment area:

Depending on the type and location of your tumour, you may require placement of small gold markers to be inserted near or in the tumour. The markers help to identify the exact location of your tumour for imaging and treatment purposes. If you do require marker seeds, you will need to visit a surgeon or a radiologist to have them inserted. This will be arranged by our team.

1. Imaging:

Prior to treatment, an MRI, CT, PET scan or combination of these will be required to determine the size, shape and location of your tumour(s). You may already have had similar procedures but recent, specific scans are often required for the CyberKnife® process.

2. Treatment Planning:

a. Mask Making – Patients who are having CyberKnife® treatment to their head or neck will require a mask to help them keep still. The mask will be made in the Radiation Oncology department prior to the CT planning scan.

b. CT Planning Scan – The scan will be in the Radiation Oncology Department. The information from the scan is sent to the CyberKnife® treatment planning workstation, where your radiation oncologist, medical physicist and radiation therapist will identify the area to be treated and the surrounding healthy tissue to be avoided. A treatment plan that matches the desired radiation dose to the tumour location and limits radiation exposure to the surrounding healthy tissue will be created.

c. Simulation – Only required for those patients having treatment for lung cancer and don't have a marker seed implanted. The 'mock treatment session' will allow your Radiation Oncologist to confirm your suitability for CyberKnife® treatment.

3. Treatment:

A treatment schedule will either be given at the time of the CT Planning Scan or soon after. Treatment will involve you lying on the treatment couch in the same position as the CT Planning scan. Once you are in the correct position, checks will be completed and the treatment will begin. During treatment, images will be taken to confirm the treatment location.

The CyberKnife® will move around you and treat you from many different angles and positions. You will not feel anything, and the CyberKnife® will not touch you.

Treatment takes approximately 30 to 60 minutes and you will be required to lie still and breathe normally during that time. Due to the length of time you must lie flat on the couch, we advise that you refrain from eating a big meal before your treatment. You may bring your favourite music or audio book to listen to during treatment.

The treatment is usually delivered in one to three sessions on alternate days.

It is recommended someone drives you to and from your appointment and stays the night with you after your treatment. Please arrive 15 minutes before your appointment time and allow two hours for each visit.

Further support and health information:

There are also various services provided by a number of organisations for people undergoing cancer treatments:

Look Good Feel Better

Free call: 1800 650 960

Website: www.lgfb.org.au

'Look Good, Feel Better' is a free workshop run by professionals from the cosmetics industry

for women. The practical workshop covers skincare, make-up and headwear demonstrations, and participants receive a complimentary Confidence Kit full of skincare and makeup products.

Experienced volunteers from the beauty industry help show how to manage the changes that may occur to the skin, hair and general appearance as a result of treatment.

Workshops are run frequently in the Radiation Oncology Department. Please speak to the Radiation Therapists or Nursing staff if you are interested in attending.

WA Psycho-Oncology Service

Phone: (08) 6457 1177

Email: wapos@health.wa.gov.au

This service is available to adult Western Australians diagnosed with cancer. Clinical psychologists apply psychological theory and evidenced-based assessment and treatment strategies to help people address their needs and meet their goals. You may self-refer or ask a health professional to refer you.

The Cancer Council

Phone: 13 11 20

Website: www.cancerwa.asn.au/patients

The charity works across every area of every cancer, from research to prevention and support, assisting people from the point of diagnosis though to their treatment and beyond.

Health Direct

Phone: 1800 022 222

Website: www.healthdirect.gov.au

General guidance for patients: symptoms, diagnosis, treatment options and available services. 24-hour health advice.

Solaris Cancer Care

Phone: (08) 6383 3475

Website: <https://solariscancercare.org.au/>

SCGH DD block,
Ground floor Hospital Avenue,
Nedlands WA 6009

Solaris Cancer Care provides up-to-date, practical, evidence-informed information on complementary integrative approaches to cancer management, disease prevention, health and wellbeing activities and support services that are designed to help people feel and cope better with their cancer and treatment.

Cancer Australia

Phone: 1800 624 973

Website: www.canceraustralia.gov.au

Cancer Australia was established by the Australian Government to benefit Australians affected by cancer.



