

Cranio Spinal Irradiation



Treatment Overview

Craniospinal Irradiation (CSI) is utilized for the treatment of brain and spinal cord malignancies, such as medulloblastoma, and can incorporate Volumetric Modulated Arc Therapy (VMAT) to precisely modulate high-energy radiation intensity, completing treatment in a relatively short time despite the extensive treatment area covering the brain and whole spinal cord. This approach enables accurate targeting of microscopic cancer cells across the entire central nervous system while minimizing radiation exposure to critical structures, including the brainstem, spinal cord and cauda equina. Treatment plans are individualized according to tumor characteristics and patient-specific needs, typically consisting of 10 to 35 sessions, reducing risk of recurrence with full coverage of the central nervous system.

Features

Artificial Intelligence (AI)

- By incorporating the latest medical technologies, artificial intelligence is integrated into dosimetry procedures to enhance both efficiency and safety

Tattooless Skinmark

- Delivers precise treatment using the IGRT technique without permanent tattoos
- Eliminates pain and invasive piercing from tattoo marking procedure
- Eliminates cosmetic concerns

Professional & Efficient

- Surface-guided and IGRT techniques reproduce simulation position accurately
- Employs computerized automatic tracking and verification technology, imaging localization can be completed quickly before each treatment
- With the VMAT technique, treatment duration is reduced (substantially from around an hour to less than 20 minutes), increasing treatment effectiveness and accuracy

Technology Development & International Awards

We are dedicated to advancing and refining treatment technologies. Actively participating in international radiation dosimetry competitions, we have been recognized with multiple awards in various cancer contests. For more details, please refer to the “Radiotherapy Planning Awards” brochure.

RT Techniques

Volumetric Modulated Arc Therapy (VMAT)

- Volumetric Modulated Arc Therapy (VMAT), also known as RapidArc, represents an advanced radiotherapy technique
- During VMAT treatment, the machine rotates 360 degrees while simultaneously adjusting the intensity, shape and dose rate. This allows for precise targeting of irregularly shaped tumors and sparing surrounding healthy tissues, minimizing radiation exposure to critical neurological structures, such as the optic nerves
- Compared with other techniques, VMAT offers the distinct advantage of significantly reduced treatment time, often just a few minutes. Patients are spared from prolonged immobilization on the treatment couch, reducing discomfort during treatment and importantly, lowering the risk of displacement errors due to movements during treatment

Image-Guided Radiotherapy (IGRT)

- Image-Guided Radiation Therapy (IGRT) is fully utilized in our centre. Image verification is conducted before each treatment, with a six-dimensional treatment couch to adjust patient positioning, ensuring precise tumor localization and minimizing displacement errors



St. Teresa's Hospital
Oncology Centre

RT Procedures & Notice

1) First Consultation

Our oncologists will listen and understand your situation carefully to tailor the most suitable radiation therapy scheme for you.

2) Simulation & Computed Tomography

A customized immobilization device will be created based on your body contour to ensure stable positioning, followed by a CT scan specifically for radiation dosimetry. This helps the oncologist to define treatment area and prescribe radiation dose accurately.

3) Treatment Plan Dosimetry

Our dosimetry team will compute a personalized treatment plan that precisely targets tumor cells while minimizing damage to surrounding healthy tissues.

4) Imaging Verification

Before each VMAT treatment, X-ray On-Board Images (OBI) or Cone-Beam CT scans (CBCT) will be used to verify target localization and positioning accuracy.

5) Treatment Position Verification & Adjustment

After image verification, we utilize a Six-Degree-of-Freedom (6 DoF) couch to adjust positioning effectively, enhancing treatment precision.

6) Treatment Delivery

Radiotherapy will be delivered according to your individualized treatment plan. Each session for craniospinal irradiation typically lasts about 20 minutes.

7) Post-Treatment Care and Follow-Up

Throughout the treatment course and following completion, we closely monitor both therapeutic effectiveness and potential side effects.

Possible Side Effects & Management

Nausea or Headache

- Consult your oncologist for medication to relieve symptoms

Hair Loss over Treatment Area

- Hair loss caused by radiation therapy is temporary and localized. You may temporarily wear a wig or headscarf

Fatigue

- Get plenty of rest, maintain a balanced diet, and ensure adequate nutritional intake

Service Commitment

Our team has extensive experience in dosimetry and commits to completing your treatment planning and starting treatment within one week.

RT Charges

We commit to providing professional and high-quality medical services to patients from all backgrounds at reasonable fees. For details on charges, please refer to the "Radiation Therapy Charges" or call 2200 3493 for inquiries.



Contact Us

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Centre Address

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Opening Hours

Monday - Friday

09:00–18:00

Saturday

09:00–12:30

Sunday & Public Holiday

Closed



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