

WHAT IS RADIOTHERAPY?

Radiotherapy is a form of cancer treatment that uses focused beams of radiation to kill cancer cells. These high energy beams can be in the form of x-rays, protons, or electrons. Radiotherapy works by damaging the genetic material in cells, causing them to die or stop growing. Although normal cells can also be affected during radiation therapy, they are better able to repair themselves compared to cancer cells. We are also able to preferentially increase the dose to tumour cells relative to surrounding normal tissue. Modern radiotherapy techniques aim to treat cancer precisely while minimising radiation to normal tissues.

Radiotherapy can be used to cure cancer (curative), reduce the risk of cancer recurrence (adjuvant), or to reduce symptoms from advanced cancer (palliative). It can also be used alone or with other anti-cancer treatments such as surgery, chemotherapy, immunotherapy and targeted therapy.

THE RADIOTHERAPY TEAM

Radiation Oncologist: The doctor who is in charge of your radiation treatment, and is part of the multi-disciplinary team looking after you.



Radiation Oncology Nurse: The nurse who will provide support and care during the course of your radiation therapy.

Radiation Therapist: Trained professionals who are experts in the delivery of radiotherapy treatment and simulation. They also help to educate, reassure and advise patient undergoing radiotherapy.

Medical Physicist: Professionals who help ensure that radiotherapy is planned and delivered precisely and accurately.



For more Information, Visit

www.ro-se.org
(Radiation Oncology patient Support and Education)
www.advancedmedicine.sg

For Further Information, Contact

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Clinic Locations

Our radiotherapy machines are located at **Proton Therapy SG**
1 Biopolis Drive #01-01 and B1-01,
Amnios, Singapore 138622

Our main clinic is located at
Mount Elizabeth Medical Centre
3 Mount Elizabeth, #12-04,
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RADIOTHERAPY
INFORMATION
FOR PATIENTS

WHAT IS THE PROCESS LIKE?



Consultation

During your first consultation, you will see a Radiation Oncologist (RO)—a specialist in radiotherapy who will oversee your entire radiation treatment. Your doctor will assess your medical condition and review test reports, discussing the role of radiotherapy in your specific case. You will have a detailed conversation about the potential benefits and risks of having (or not having) radiotherapy, along with possible side effects and alternative options. It's crucial to inform your doctor if you have a pacemaker, implantable cardiac device, or cochlear implants, as radiotherapy can impact their functionality. Extra tests and precautions may be necessary before simulation and radiation treatment in such cases.

CT Simulation

Before beginning radiotherapy, you will go through a process known as simulation. In this session, you will meet with Radiation Therapists (RT) — healthcare professionals skilled in operating radiotherapy equipment and technologies. They will assist in positioning you optimally for your radiotherapy treatment and conduct a CT scan of the treatment area. To ensure precision in radiation treatment, they may use different immobilization devices such as a mask or body vacuum cushion mould. Additionally, small permanent dots (tattoos) might be marked on your skin to aid in the daily setup of your treatment. It is important that you are comfortable as you will be required to remain still in the same position during treatment.

Planning

Radiotherapy planning is a complex, multi-stage process. It involves your radiation oncologist and medical physicists/dosimetrists creating a personalized treatment program for your specific condition. This includes identifying the tumor, areas at risk, and organs to spare. Using advanced computer software, the medical physicists and dosimetrists then craft a customized radiotherapy treatment plan for you.

Radiotherapy Treatment Delivery

This treatment may be given over days or weeks and usually takes 15-30 minutes for each treatment. Most of this time is used to set you up in the right position. You will be in the same position that you were scanned in during simulation. The radiation beam is only on for a few minutes. It is not painful and you won't feel or see anything. While you are receiving radiotherapy you will be on your own. However, the radiation therapist can see and hear you via a video camera.

Treatment reviews and post-treatment follow-up

Throughout your radiotherapy, your radiation oncologist will regularly meet with you to assess your symptoms and assist in managing any side effects. After completing the radiation therapy, your radiation oncologist will schedule a post-treatment review, typically around 2-6 weeks later.

Side Effects

The side effects from radiotherapy are different for each person and will depend on the part of your body that is being treated, and the type and dose of radiotherapy you are receiving. Your treatment team will talk to you about the side effects that you may experience. During radiotherapy, side effects usually start gradually and may continue to get worse for up to two weeks after treatment has finished. These side effects are known as early-onset side effects and generally will resolve within 4-6 weeks of finishing treatment.

The most common early-onset side effects may include, but are not limited to:

- **Breast** – swelling, skin redness
- **Abdomen** – nausea, vomiting, diarrhea, abdominal bloating, painful swallowing
- **Chest** – coughing, painful swallowing
- **Head and neck** – taste alterations, dry mouth, mouth ulcers, mucositis with pain, skin redness
- **Brain** – hair loss, headache, nausea, vomiting
- **Pelvis** – diarrhea, cramping, urinary frequency
- **Prostate** – skin redness, urinary frequency/urgency, dysuria, rectal discomfort, abdominal bloating, diarrhoea.
- **Skin** – all external beam radiotherapy treatments have some risk of skin irritation that may range from a mild redness to more serious skin peeling,
- **Fatigue** is often seen when large areas are irradiated

Diet

During radiotherapy, your immune system is not affected most of the time (unless you are on certain types of chemotherapy). There is no need to avoid raw food. For specific treatment, you may need to change your diet, e.g. avoid hard and spicy foods during head and neck radiotherapy, and avoid high-residue diet during prostate irradiation so that the rectum remains empty etc.

Exercise

You can continue light to moderate exercise but take care not to sweat and irritate the skin that is being irradiated.

Follow-up Appointment

We will schedule an appointment with your radiation oncologist that will be a few weeks after completion of your treatment you will see the radiation oncologist. We may also schedule a scan or test before this appointment as appropriate.

