

# Radiotherapy in Prostate cancer



## Treatment Overview

Prostate cancer can be treated with Volumetric Modulated Arc Therapy (VMAT) combined with Image-Guided Radiotherapy (IGRT), achieving precise dose delivery to the tumor while protecting surrounding healthy tissues, minimizing side effects, typically consisting of 30 to 38 sessions. Stereotactic Body Radiation Therapy (SBRT) delivers high dose with fewer fractions ranging from 5 to 20 sessions. Treatment plans are individualized according to tumor characteristics and patient-specific needs.



St. Teresa's Hospital  
Oncology Centre

## 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, reducing risk of side effects, such as urination and bowel discomfort
- Compared with conventional radiotherapy, 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

### Stereotactic Body Radiotherapy (SBRT)

- Our center introduced a real-time automatic marker tracking system, with metallic gold markers implanted in the patient's prostate through a minimally invasive procedure. Combined with a hydrogel implant, risk of side effects such as rectal bleeding is significantly reduced. Stereotactic Body Radiotherapy (SBRT) is available for patients with the marker tracking system, with fewer treatment sessions ranging from 5 to 20. Treatment accuracy is ensured with constant tracking of the markers 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

## 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 30 minutes to less than 10 minutes), increasing treatment effectiveness and accuracy

## Research 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 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) Treatment Preparation

### Bladder Status Control

- To maintain the consistency of bladder volume between simulation and treatment, you will be instructed to drink water before radiotherapy procedures to reach the same sensation of urgency, stabilizing the location of bladder and reducing risk of side effects.

### Bowel Preparation

- Regular bowel movement at home helps stabilize intestinal positioning, minimizing variability and effectively reducing the side effects.
- Consult your oncologist for medication if you experience difficulty in bowel movements.

## 3) 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.

## 4) Treatment Plan Dosimetry

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

## 5) 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. For patients implanted with gold markers, markers will be tracked automatically to localize the tumor in real-time.

## 6) Treatment Position Verification & Adjustment

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

## 7) Treatment Delivery

Radiotherapy will be delivered according to your individualized treatment plan. Each session for prostate radiotherapy typically lasts about 10 minutes.

## 8) 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

## Urinary Discomfort

### (Frequent Urination, Painful and Bleeding)

- Consult your oncologist for medication to relieve symptoms

## Bowel Changes

- Diarrhea: Adopt a low-fibre diet
- Constipation: Consume more vegetables, and use laxatives if necessary
- Consult your oncologist for medication to relieve symptoms

## 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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Opening Hours

**Monday - Friday**

09:00-18:00

**Saturday**

09:00-12:30

**Sunday & Public Holiday**

Closed



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