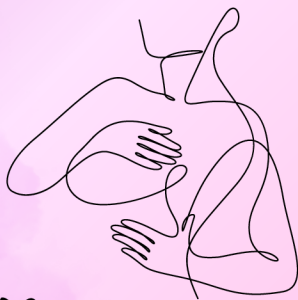


# Radiotherapy in Breast cancer



## Treatment Overview

Breast cancer can be treated using Volumetric Modulated Arc Therapy (VMAT) or 3D Conformal Radiation Therapy (3DCRT), targeting the treatment site precisely. By employing a Real-time Position Management system with Breath-Hold (RPM-BH), lung volume can be increased and further reducing radiation dose to the heart and lung tissues. Treatment plans are individualized according to cancer characteristics and patient-specific needs, typically consisting of 15 to 25 sessions, with optional electron beam boosts to enhance local dose when necessary.



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### 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 the treatment area and sparing surrounding healthy tissues, reducing risk of side effects, such as skin reaction (redness, dryness, itchiness)
- 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

### Real-Time Position Management - Breath-Hold (RPM-BH)

- By combining an infra-red tracking system with trained voluntary breath-holding, we monitor thoracic motion during respiration. Radiation is only delivered when the patient maintains a stable breath-hold position, ensuring precise target irradiation while maximizing the sparing of critical organs such as the heart, lungs and liver

### Three-Dimensional Conformal Radiation Therapy (3DCRT)

- By using computed tomography (CT) to define the treatment area for breast therapy in three-dimensional space, irradiation is administered from both sides of the breast, ensuring a uniform dose distribution within the treatment area

### Image-Guided Radiation Therapy (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 localization of the treatment area and minimizing displacement errors

### Electron Therapy

- Electron beams are used in breast cancer treatment to give additional dose to localized skin area and tumor bed, further reducing risk of recurrence

## RT Techniques

## 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) 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 concentrates dose in treatment area while minimizing damage to surrounding healthy tissues.

### 4) Imaging Verification

Before each VMAT treatment, X-ray On-Board Images (OBI) 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 thoracic or breast cancer treatment with RPM-BH typically lasts about 15 minutes, and normal breathing treatment typically lasts about 10 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

### Skin Reaction over Treatment Area

#### (Redness, Dryness, Itchiness, similar to sunburn)

- Avoid scratching or rubbing the skin at treatment area
- Avoid using lotions, talcum powder, alcohol, cosmetics, perfumes, or deodorants
- Avoid irritating the skin, stop using shampoo and skin products over treatment region, wear loose and breathable clothes, avoid exposure to sunlight
- 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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