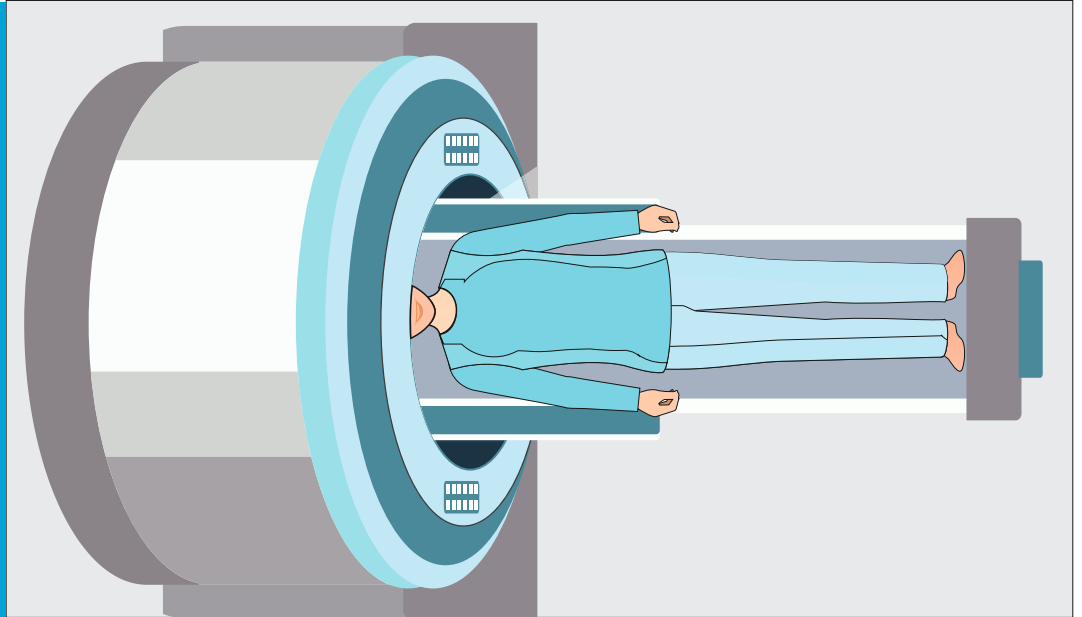




RADIOTHERAPY TREATMENT PLANNING PROCESS

Overview:

Radiation treatment planning is done before beginning radiation treatment. Radiation oncologist and the radiation therapy team carefully plan the treatment in a process called radiation simulation. Treatment planning usually involves positioning your body, making marks on your skin and taking imaging. They plan the appropriate external beam radiotherapy or brachytherapy radiation treatment.



Pre Procedure:

- Radiotherapy treatment would be planned and delivered by a team of doctors, radiation therapist and nurses.
- Treating doctor/radiation oncologist would go through all the clinical details and plan out the treatment.
- Before starting the treatment doctor would explain you and your care taker the benefits and risks of treatment and would take a consent from you for undergoing radiation treatment. Patients should understand the entire process of radiation treatment, benefits and risks and ask questions relevant to their treatment or side effects.
- After thoroughly understanding the radiation treatment benefits/side effects and consenting, you will be taken up for radiation planning.
- Once are ready to go ahead with the planning procedure, the planning CT would be acquired the very same day or a CT simulation appointment would be fixed.
- Depending on the region to be treated, the planning CT would be a plain scan or one with contrast.
- If contrast is being administered for your scan, you will need to be fasting for 3 hours.
- The CT procedure and instructions will be explained by one of the Radiotherapy Technologists.
- Please inform the attending staff in case you are pregnant.

During Procedure:

- Your bladder needs to be full for the scan, you will be instructed to void and then take 2 cups of water (500 ml) 45 min before the CT scan is acquired.
- Once you enter the CT simulation room, you will be asked to change into a hospital gown (depending on the site that is being treated).
- The nursing team will assist in securing an IV line and explain the side-effects.
- As per the site of treatment, the immobilisation instructions will be explained to you accordingly.
- Certain supporting devices (immobilisation devices) may be used to ensure the proper positioning, before acquiring the CT scan. This is essential to make sure the scan is acquired in the right position and also used every day before the treatment. This ensures that the treatment is delivered to the right area every day.
- Some markings will be done on your body, which will either be made permanent (with a small needle and some ink) or a plaster may be taped over these marks and you will be asked to retain them until you complete your treatment.
- Head and neck cancer and patients with brain tumour would undergo thermoplastic cast preparation before. The CT scan is acquired. Thermoplastic cast is a plastic material which melts at warm water temperature and become soft. This thermoplastic cast would be placed on the patients face or head and kept in position for 15 to 20 minutes till it dries up and becomes harder keeping the patient's position still.

- This thermoplastic cast ensures that the patient does not move daily during radiation treatment process.
- After positioning, few pen marks or tatoos would be done on the region to be treated. These marks are required for ensuring the same position every day while treatment is being delivered.
- After positioning, a CT scan would be acquired with or without contrast based on the clinical site and indication.
- While administering the contrast through the IV line, you may feel slightly warm which is normal.
- The entire CT procedure will take around 30-60 min. It is important that you remain very still during the scan.
- After completion of the CT scan, treating doctor would mark out the areas which needs to be treated on the CT scan using computer and calculate the doses. Calculation of the doses and approving the plan for execution of the treatment generally takes one to 2 days or more based on the complexity of the case.
- Appointment date and time will be discussed by the treating staff, following which the whole process is complete.
- On the 1st day of radiation treatment, an appointment card would be handed over to the patient, which the patient is expected to carry every day and deposit at the OP counter daily at the given time.
- For thorax & abdomen region, contrast CT scan followed by 4DCT would be acquired (if needed).
- 4DCT is a procedure that gives tumour/organ motion information. A belt will be fixed around your abdomen which aids in monitoring your respiration throughout the scan. You will be coached on your breathing. The scan information helps your radiation oncologist in measuring the movement of the tumour during your respiration and in making appropriate treatment decisions.
- For breast region a plain CT scan will be done. Some temporary wires may be placed around the breast for the scan procedure. For some left-sided breast cancer cases, a technique called Deep Inspiration Breath Hold (DIBH) may be considered by your radiation oncologist. The radiotherapy team will provide you coaching if you require this technique. You will be asked to take a deep breath and hold this breath for approximately 20 seconds during the CT scan and subsequently do the same multiple times for your daily treatment. DIBH is useful in minimising the radiation dose to the heart.
- For Pelvis region contrast CT scan will be acquired with a water protocol.

Post Procedure:

- You must drink at least 2 to 3 litres of water in the course of the day, which is essential to flush out the remaining radioactive medicine in the body.
- You must stay away from pregnant women and children for 24 hours, to avoid radioactive exposure.
- Lactating mothers must express some milk and dispose it as it will be radioactive, you can feed 24 hours post procedure.
- There are no dietary restrictions post the procedure and you may resume all normal activities too.