

# RADIATION THERAPY: PLANNING YOUR TREATMENT

This information aims to help you understand the procedure, what is involved and some common complications that may occur. It may help answer some of your questions and help you think of other questions that you may want to ask your cancer care team; it is not intended to replace advice or discussion between you and your [cancer care team](#).

## AN OVERVIEW TO RADIATION THERAPY

- Radiation therapy is the targeted use of **X-rays** to destroy cancer cells.
- Like surgery, it is a localised treatment, which means it generally only affects the part of the body where the radiation therapy is directed.
- Although radiation can also damage normal healthy cells that are near the cancer, modern radiation therapy spares the nearby normal structures as much as possible and can limit the amount of radiation that they receive.
- Radiation therapy is often given as a daily treatment over many weeks; for head and neck cancer, this may be up to **7 weeks** of daily treatments.
- By dividing the total dose of radiation therapy into smaller doses (fractions) given daily, normal cells undergo some repair whereas cancer cells, which cannot repair themselves very well, will die.
- Radiation therapy can be given in two different ways:
  - **From outside the body ( external beam radiation therapy):** Beams from a large machine known as a linear accelerator (linac) are aimed and shaped to the target area of the body where the cancer is located. This is the most common way radiation therapy is given for head and neck cancer.
  - **From inside the body (internal radiation therapy or brachytherapy):** Radioactive sources are placed into or very close to the cancer through small catheters (tubes). These radioactive sources are taken out once the required dose of radiation therapy has been given to the cancer (a few minutes). This way of giving radiation therapy is not very common, but may be used in special cases.

## WHY IS RADIATION THERAPY NEEDED

Radiation therapy is used in head and neck cancer for a number of reasons.

- To cure the cancer by destroying the cancer cells
- To kill cancer cells that may be left behind after surgery
- To shrink the cancer so that it can be removed by surgery
- To relieve symptoms caused by incurable cancer, such as pain and bleeding.

## HOW TO PREPARE FOR EXTERNAL BEAM RADIATION THERAPY

[External beam radiation therapy](#) is a very precise treatment that can be delivered with millimetre accuracy. It needs to be carefully planned to make sure the radiation therapy targets the cancer fully, whilst avoiding the surrounding healthy tissues and organs as much as possible. This involves some key steps:

- **An initial appointment** with the radiation oncologist, a specialist doctor who is an expert in the use of radiation therapy for cancer. At this appointment, you will be examined by the radiation oncologist who may request some additional scans or blood tests. They will discuss the details regarding radiation therapy and book a radiation therapy planning appointment.
- **A radiation therapy planning appointment** with the radiation therapists, trained professionals who work with the radiation oncologist to develop a radiation therapy plan customised to each individual. Your radiation oncologist may also be present for this appointment.
  - An immobilisation mask will be made from a special plastic that moulds to your shape. The mask has air holes (like a mesh) allowing you to see and breathe through it. This mask will be worn each day of the radiation therapy. It helps to keep you in the same position each day of the treatment, which helps ensure the radiation therapy is targeting the correct area every time (and that it is avoiding the normal organs as planned by your radiation oncologist).

Visit the [Targeting Cancer website](#) to watch the video on making of the [immobilisation mask](#).

- Once the mask is made, you will have a [computed tomography](#) (CT) scan with the mask on and it will be used by the radiation therapy team to plan the radiation therapy. If you have other scans such as [magnetic resonance imaging](#) (MRI) and [positron emission tomography](#) (PET) scans, bring these along for your radiation therapy planning appointment so that they can also be used for radiation therapy planning.

There will be a whole team of professionals who will look after you before, during and after your radiation therapy. The radiation oncologist may introduce you to the radiation therapy team which may include the following professionals:

- Radiation oncology nurse
- Dentist and dental team (for [mouth and teeth care](#) before radiation therapy begins). This is important as some of the side effects that may occur with radiation therapy impact the health of the teeth, gums and mouth.
- Supportive care professionals such as dietitians, speech pathologists and psychologists.

Visit the [Beyond Five website](#) for further information on health professionals who may be part of your cancer care team.

## WHAT TO EXPECT DURING RADIATION THERAPY

- At the treatment appointment, you will:
  - be taken to the treatment room and lie on the treatment bed
  - be positioned by the radiation therapists and wear your mask.
  - see some red or green lights (lasers) in the treatment room and lights coming from the **linac machine (see picture below)** to help the radiation therapist ensure that you are in the correct position.



- Usually, some check X-rays or scans may be done before the actual treatment is given to double check that you are in the correct position.
- Once you are in the correct position, your radiation therapist will leave the room; you will be alone in the room but will be watched closely by your radiation therapists via a camera. Your radiation therapists can also talk to you as there are microphones in the room. They are able to hear you the whole time.
- During the actual radiation therapy, the linac machine points the radiation beams to the part of your body that is planned to be treated and will rotate around the bed as it delivers the radiation beams.
- The linac machine will not touch you and you will not see or feel the radiation beams.

## WHAT TO EXPECT AFTER RADIATION THERAPY

- After radiation therapy, there will be appointments with the radiation oncologist and other members of the radiation therapy team (e.g. nurses and supportive care specialists) at frequent intervals (usually once a week) during treatment. Speak with them at any time if you need anything.
- The radiation therapy team will talk about possible side effects, including how to look after yourself and manage the side effects.

## SIDE EFFECTS AND THEIR MANAGEMENT

As with all therapies, radiation therapy may lead to a number of side effects. You may not experience all of the side effects and they are different for each person.

They can vary according to the tissue being treated, how long you have treatment for, and the type of radiation therapy used.

- Side effects may include **tiredness, dry mouth (known xerostomia), loss of taste and appetite, weight loss, inflammation in the mouth or throat (known as mucositis), skin problems/changes, issues with speech, voice and swallowing.**
- Side effects are often worst around the final 2 weeks of treatment and start to get better 2–3 weeks after treatment ends, but some side effects may last longer or be ongoing.
- Speak with your doctor if you:
  - have any questions or concerns about treatment side effects; or
  - if you experience any side effects, as soon as you notice or start having them.
  - The radiation therapy team will assist with managing side effects and help maintain quality of life.
  - Late side effects are those that may occur months or years after treatment. Your radiation oncologist will discuss with you what your chances are of developing any of these and how to manage them.

## **OTHER TREATMENTS**

- Radiation therapy is often used after surgery for many head and neck cancers.
- Sometimes chemotherapy is given during radiation therapy to make the cancer more sensitive to the radiation therapy.
- Your [cancer care team](#) will discuss these with you if these treatments may be appropriate for you.

## **FOLLOW-UP CARE**

- Once the planned treatment is over, the treatment team will inform you when and how often you should come back for follow-up visits.
- At first, you are likely to have regular close follow-up visits with your radiation oncologist, other specialists and allied health staff nurse so that they can check that you are recovering well from your treatment and that the cancer has responded to the treatment.
- You may be recommended scans and other tests as part of this follow-up.
- After the first 2–3 years, your treatment team will see you less frequently if all is well.
- The treatment team will also involve your usual doctor to share your care and help look after you in the long-term. Make sure that you keep your treatment team updated on any changes to your usual doctor's details.

## QUESTIONS TO ASK YOUR DOCTOR

- Why do I need radiation therapy? Is it to cure the cancer or control it and manage symptoms?
- What exactly will be done during the radiation therapy?
- What will happen if I don't have radiation therapy?
- How many treatments will I have and for how long will I have radiation therapy?
- Is there anything that I can do before or after my radiation therapy sessions that might make them more effective, e.g. food, work, exercise?
- How much does radiation therapy cost? Will my health insurance cover it?
- Will I need extra treatment after radiation therapy?
- Are there any possible side effects I need to know about and who do I contact if they happen?
- Are there long-term side effects from the radiation therapy?
- What follow-up tests will I need after the operation?
- If I wanted to get a second opinion, can you provide all my medical details?

You may want to write additional questions here for your radiation oncologist or cancer care team

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