# Information for Patients Receiving External Beam Radiation Therapy

AUCKLAND RADIATION ONCOLOGY
A partnership between MercyAscot & Southern Cross Hospitals

This information sheet has been written to provide answers to some questions you may have about External Beam Radiation Therapy.

**The following topics will be discussed:**

- What is Radiation Therapy?
- Auckland Radiation Oncology Team
- Treatment Planning & CT
- Treatment Delivery
- Doctor Clinics
- Potential Side Effects
- Follow-up Arrangements
- Clinical Research

## WHAT IS RADIATION THERAPY?

Radiation therapy can be given from outside the body (external beam radiation) or from within (brachytherapy).

External Beam Radiation Therapy is a treatment in which an x-ray beam, coming out of a machine called a linear accelerator, is aimed specifically at the site of the cancer. The x-rays damage the DNA (genetic code) in the cancer cells, and this damage then results in the death of the cancer cells. Radiation therapy is planned to treat as little of the normal body as possible. You do not feel the radiation as it is being delivered.

Treatments are usually extended over a period of weeks, which allows the normal cells to recover between successive treatments. Treatment prescriptions can vary (depending on the needs of the individual) from 20 treatments over 4 weeks up to 25 treatments over 5 weeks.

## ARO TREATMENT TEAM

Your radiation treatment will be given at Auckland Radiation Oncology (ARO) located on the Mercy Hospital campus, 98 Mountain Road in Epsom. ARO is a partnership between MercyAscot and Southern Cross Hospitals. You will meet various members of the team at ARO during your visits. The following is a brief description of who we are and what we do.

**Radiation Oncologist** - a specialist doctor who is qualified in the treatment of cancer by radiation

**Radiation Therapists** - qualified technical professionals involved in the planning, scheduling and operation of the radiation equipment in your daily treatment.

**Medical Physicist** - a scientific officer who performs regular checks to ensure the safety of radiation equipment and treatment plans. The physicist also makes sure that all radiation safety guidelines are implemented and followed.

**Registered Nurse –** a nurse that has completed their training and has advance knowledge of caring for cancer patients. They will look after you during your visits to ARO. The nurses, along with the radiation therapists, will advise you on how to look after yourself while you are on treatment.

**Receptionist/Scheduler** – these people will help you with scheduling your appointments, and will be able to discuss your account details.

**Engineer** – This is a person that has trained on the operation and maintenance of the equipment.

As this is also a training facility, there may be students involved in your treatment. You have the right to ask that students not be present during your procedures.

The therapists, nurses and students work under the direction of your radiation oncologist.

We aim to give you the best possible care during your treatment, so if there is anything else you need to know, please ask any one of us at ARO.

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## TREATMENT PLANNING & CT

In order to deliver the treatment accurately and at the correct dose, we need to be able to locate the exact area to be irradiated in relation to the surrounding normal tissues. This process is called treatment planning.

The planning process will require you to have a CT scan of the area to be treated. Small permanent tattoo marks will be made on your skin to assist in the daily set-up for treatment. Using the information obtained during the CT we calculate the best method of giving a dose of radiation to the treatment area, whilst avoiding as much normal tissue as possible.

Measurements are recorded and checked routinely throughout the course of treatment to ensure the treatment is accurately delivered. The treatment beam can be delivered from various different directions in relation to the area to be treated.

## TREATMENT DELIVERY

After the planning process, time is required to complete the planning calculations. Treatment is started as soon as possible following the completion of this process.

Treatment is usually given once a day, five days per week, with the exception of public holidays. Depending on the complexity of your treatment, you will spend about 15-30 minutes in the treatment room where the linear accelerator is housed. Plan to spend between 30-60 minutes within the centre each day.

When scheduling appointment times, effort is made to accommodate you in regards to work, travel times and your other commitments, but unfortunately this is not always possible. You will receive a copy of your complete schedule on the first day of treatment. We advise you to check these times against your calendar and let us know where there are areas of conflict. We will do our best to change your scheduled times to meet your needs. The more notice you can give us, the more likely we are to be able to assist you with this.

You will be required to lie in the same position as during the CT process, and we ask that you try to keep as still as possible during the procedures. Your daily treatment requires specific positioning, so it is best if you relax, breathe normally, and allow the therapists to move you as necessary. Once the therapists have positioned you correctly, you will be required to keep still until the treatment is completed. You are able to breathe normally.

The therapists must leave the room during the treatment; however they monitor you on a camera from outside the room. There is also an intercom system, so call out or give an indication, if you need assistance

The direction of the beam is set by moving the machine and the couch, on which you will be resting, to the correct position. Each day an electronic image is captured from the x-ray beam and assessed for accuracy. On occasion, adjustments to the bed position will be made before continuing with the treatment.

You are welcome to bring support people with you when you come for appointments. They may accompany you into the room, but will be asked to return to the waiting room before the therapists begin positioning you for your treatment.

## DOCTOR CLINICS

You will see your oncologist in a review clinic while you are on treatment. Clinic days and times are specific to each doctor and every effort will be made for these times to coincide with your treatment times.

Please feel free to speak to the therapists about any questions, concerns or problems you may have; it is not necessary to wait for your visit with the doctor. If the therapists feel you need further, immediate management, they will have you seen by a nurse and/or doctor.

## POTENTIAL SIDE EFFECTS

As stated previously, the x-rays used in radiation therapy can damage the DNA (genetic code) of cells. The radiation also affects the normal tissues of the body, and this can cause side effects. However, we know that normal tissues are better able than cancer cells to heal the radiation damage, and most of the normal tissues will recover.

### Side effects depend on:

- the amount of radiation given
- the area of the body treated
- individual response

With improvements in technology, including modern planning systems and treatment delivery methods, the side effects of External Beam Radiation Therapy have been reduced remarkably. However, some people may be affected to some extent and the severity of the side effects varies from person to person. There can be "acute" (short term) or "chronic" (long term) side effects.

**Acute Side Effects** (Short Term/Early)

These are side effects that occur *during* the treatment course and usually take a few weeks to resolve after completion of treatment. At the beginning of the course you may notice little change, except perhaps, some tiredness. At about half way through and then increasing toward the end, the acute side effects may appear.

### Fatigue

General tiredness may occur during and after the treatment course. Some people may still be able to work and only take time off for the daily appointment, but others may find it too tiring and prefer to stay at home.

Usually an afternoon sleep and an earlier bedtime will solve the problem. Mild exercise e.g. walking has also been shown to be of benefit. In general we suggest you keep to your normal routine until your body tells you otherwise. If the problem persists or becomes severe, please inform a member of the treatment team.

### Skin Reddening and Irritation

The timing of the skin changes depends on the course of treatment prescribed. Your skin, in the treatment area may become red, dry, or itchy throughout the treatment course.

Your treatment team will give you specific instructions on how to care for your skin. You will not notice any changes for the first few weeks of treatment.

**The peak of any reactions/side effects you may experience will occur approximately 7-14 days after the completion of your radiation treatment. This is due to the cumulative nature of the treatment.**

**Chronic Side Effects** (Long Term/Late)

Most people return to 'normal' after completion of their treatment, but a few may experience some long-term side effects. Chronic side effects may arise many months or even years after the completion of radiation therapy. These side effects relate to the 'scarring' effects of the radiation therapy on normal tissues within the area of treatment.

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Below are some general guidelines for taking care of your skin and your general well being during radiation therapy treatment.

## SKIN CARE INSTRUCTIONS

- When washing in the treatment area, use warm water, avoid scrubbing, and pat dry. You may use any mild soap such as Dove or Simple Soap.
- We ask that you do not apply anything to the skin in the treatment area unless instructed to do so by your Oncologist or another member of the treatment team. This particularly applies to: plasters, deodorant, cosmetics, scented talcum powder, and any ointment or creams.
- Do not apply heating or cooling devices in the treatment area. This includes: heating pads, hot water bottles, ice packs, hairdryers, etc.
- It is recommended that you avoid shaving/waxing hair within the treatment area while on treatment, and until any skin reaction has completely settled.
- Avoid hot pools while on treatment and until any skin reaction has completely healed. Discuss swimming in salt or chlorinated water with your Oncologist, as this may be determined on an individual basis.
- Be aware of the clothing you wear over the treatment area. Loose fitting, soft, cotton clothing is recommended.
- Try to keep the treatment area protected from the sun and wind. However, **do not** apply sun block to the treatment area while you are on treatment.
- Even after you have completed your treatments the irradiated skin will always be more sensitive to the sun, and therefore ongoing care is necessary. Apply sun block with a SPF of 15 or higher to any exposed, previously treated skin if you are going to be out in the sun.

## DIET, EXERCISE AND REST

- It is recommended that you keep up your fluid intake while on treatment (i.e. 6-8 glasses of water per day).
- We recommend you maintain a well-balanced diet and that you continue with your usual level of physical activity.
- Mild exercise e.g. walking for 30 minutes three times per week has been shown to be beneficial in dealing with the fatigue associated with radiation therapy. However, it is important that you listen to your body and do not over exert yourself.
- Getting plenty of rest each day facilitates the normal body tissues to recover on a daily basis from the effects of the radiation therapy.

## FOLLOW-UP ARRANGEMENTS

At the completion of treatment, an appointment will be made for you to have a follow-up visit with your oncologist. The interval between finishing treatment and this appointment varies depending on the area you are having treated.

## CLINICAL RESEARCH

Medical professionals at ARO study the nature of disease and try to develop better methods of diagnosis and treatment. This is called clinical research. We are committed to clinical research with the expectation that we will ultimately improve patient care and patient outcomes. In the discussion of your treatment, your doctor may invite you to participate in clinical research.

We are constantly looking for ways to improve our cure rates. Some of the features of your cancer may make you eligible to participate in a clinical study. If you are interested and eligible, these trials will be discussed with you in detail.