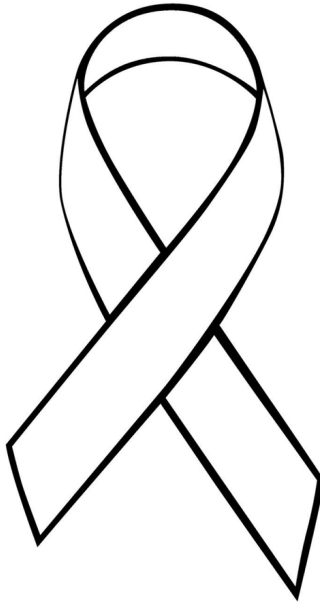




**Information for patients receiving
external beam radiation therapy
to the chest**

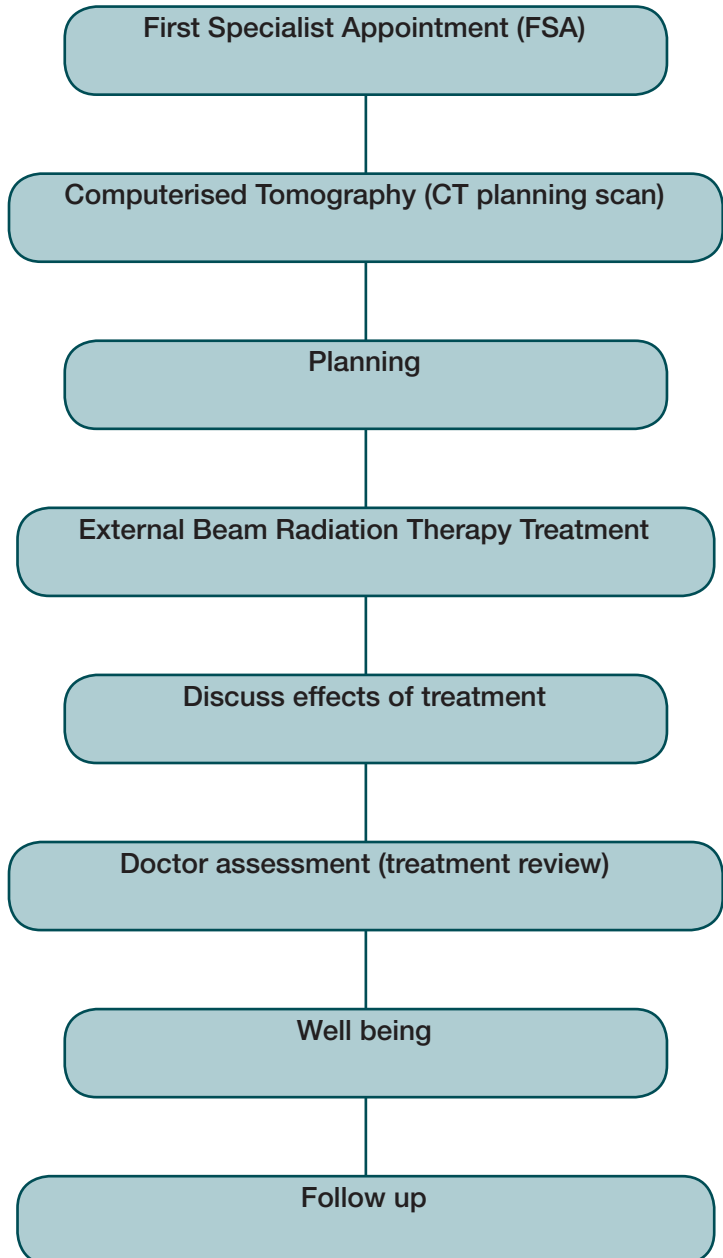


Waikato Regional Cancer Centre



Welcome to Waikato Regional Cancer Centre. The aim of this booklet is to provide information on the radiation therapy treatment procedure and to explain the journey from your first meeting with the radiation oncologist to the completion of your treatment.

Radiation Therapy



What is Radiation Therapy?

Radiation therapy is the use of high energy x-rays to damage the DNA (genetic code) in the cancer cells. Radiation therapy is planned to treat as little of the normal cells in the body as possible. Special care is taken to limit this through the use of advanced planning techniques and treatment delivery methods.

Radiation therapy is delivered in small treatments called fractions. This allows the normal cells to recover between each daily treatment. Treatment fractions vary depending on your individual needs. This can depend on the type of cancer, staging and intent of the treatment. Fractions can be delivered five days a week up to seven weeks.

First Specialist Appointment (FSA)

Your consultant (radiation oncologist or registrar) will explain the radiation therapy procedure to you. Your diagnosis, treatment options and potential side effects of treatment will be discussed. If you consent to having radiation therapy treatment, a signature will be obtained at this stage. For the potential side effects please refer to section 'Effects of Treatment' on page 5 in this brochure.

Computerised Tomography (CT planning scan)



A CT planning scan is performed in order to locate the position of the tumour/site in relation to the surrounding normal tissue in the body. This ensures we deliver the treatment accurately and at the correct dose. You will be set up in a comfortable position that will be reproduced when you come for your treatment. This may include a vac bag been made for you (similar to a bean bag).

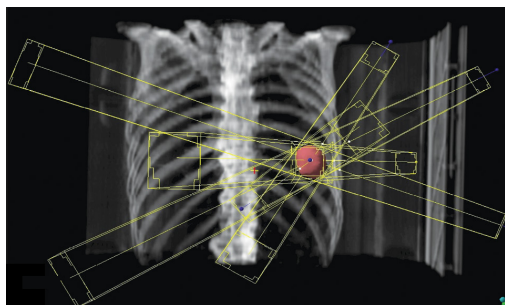
During your planning CT appointment you may have two scans. The first will be a standard planning scan and a second scan (if required) will record your breathing pattern. A small light block will be placed on your chest to help monitor your breathing pattern.

At the CT scan small permanent tattoo marks will be given, photos taken of your position and measurements recorded to assist in the daily set-up for treatment.

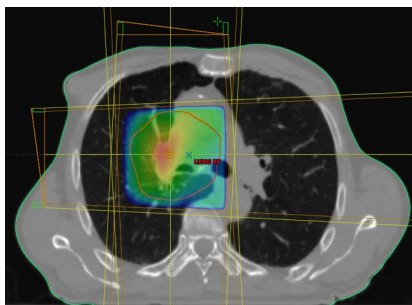
Please inform a member of staff if there is any possibility that you could be pregnant.

Planning

Using the information obtained from the CT scan an individual plan is produced. A 'target volume' is determined on the computer planning system. We calculate the best method and beam arrangement for the dose of radiation to be delivered to the 'target volume', while at the same time avoiding as much normal tissue as possible (see diagrams below). It will take approximately two to four weeks for the planning calculations and checks to be done. Treatment is started as soon as possible following the completion of this process.



Beam arrangement



Dose to 'target volume'

External radiation therapy treatment



At treatment you will be set-up in the same position you were in at your planning CT scan. Your daily treatment requires specific positioning, so it is important to relax and allow the radiation therapists to move you as necessary. Once you are positioned correctly you will be required to keep still until the treatment is completed. If required a small light block will be placed on your chest to help monitor your breathing pattern.

The radiation therapists must leave the room during treatment; however, they will monitor you on cameras from outside the room. There is also an intercom system so they can see and hear you at all times should you require assistance.

On your first day, imaging devices will be used to ensure you are in the correct position before the treatment can be delivered. The direction of the beam is set by moving the machine and the couch, on which you will be resting, to the planned position. At times during your treatment, images will be taken and occasionally adjustments to the bed will be made before continuing with the treatment.

Treatment is usually given once a day. The time you spend in the department can vary for each individual depending on the area being treated. Depending on your beam arrangement you may spend approximately 20 minutes in the treatment room but the actual prescribed daily dose of radiation is only a few minutes. During treatment you will not see or feel anything. You will just hear a buzzing sound and that will let you know that the machine is on.

Waikato Regional Cancer Centre is a teaching hospital and at times we have students in our department. If you do not wish to have students involved with your treatment please advise a member of staff.

For more information please refer to:

<http://www.waikatodhb.health.nz/directory-of-our-services/waikato-hospital/radiation-oncology/>

Effects of treatment

After your first treatment a radiation therapist will discuss your treatment plan, including potential side effects, skin care and how long you will be in the department for each day. This is a chance for you to ask any questions. It may be a good idea to write these down in the back of this book.

Radiation therapy is a localised treatment, so most side effects vary depending on the body site being treated. Everyone is affected differently by radiation therapy and the severity of side effects varies from person to person. If you experience any of the following side effects please notify a member of staff. Potential side effects include but are not limited to:

Early side effects (can occur days to weeks after starting radiation therapy treatment)	Late side effects (may occur months or years after radiation therapy treatment)
<ul style="list-style-type: none"> ● Fatigue (tiredness) ● Skin changes (redness) ● Hair loss in treatment area ● Nausea/vomiting ● Difficulty swallowing/sore throat ● Chest pain/ soreness ● Decrease in appetite/weight loss 	<ul style="list-style-type: none"> ● Skin changes (telangiectasia) ● Pneumonitis (increase cough/ fever) ● Rib fractures ● Shortness of breath ● Heart complications ● Radiation fibrosis (scarring of the lung) ● Chest pain/soreness ● Oesophageal/tracheal/bronchial strictures ● Nerve/spinal cord damage

There is an extremely small risk of developing a second cancer many years after radiation therapy treatment.

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

Oesophagitis (inflammation of the lining of the oesophagus)

This may cause increased sensitivity as food passes through the inflamed part of your oesophagus. It usually starts after two to three weeks of treatment and will peak by week five or six. It can be very severe, preventing any food or liquids from being taken and could require morphine for the pain. A dietitian is available within the department should you require nutritional advice.

Some patients may need supplemental feeding through a tube placed directly through the skin into the stomach. This is called a PEG tube. Your doctor will explain this in greater detail should you require one.

For most people the oesophagitis will settle between two and six weeks after the completion of treatment and one's diet should return to normal. Significant oesophagitis affects one in four patients who have high dose radiation to the chest.

Doctor assessment (treatment review)

You will see your oncologist or registrar in a regular review clinic while you are on treatment. Clinic days and times are specific for each oncologist. We try our best to coordinate these times with your treatment time but it is not always possible. If you have any concerns before these appointment times please speak to the radiation therapists and where necessary they can organise for a nurse or oncologist to see you.

Wellbeing

Mental wellness

The diagnosis of cancer and undergoing treatment can add additional stress to your life. Anxiety and depression are common among patients during and following cancer treatment. It is perfectly normal to feel emotional about the journey you are going through and everyone deals with the situation differently. You may find it helpful to talk to family and friends about how you are feeling. If you would like outside professional and psychosocial support please talk to your radiation therapist.

Diet and weight

It is recommended that you have a well-balanced diet. It is important that you remain the same body size while receiving radiation therapy treatment. Significant weight loss or gain can influence treatment accuracy and may result in your treatment needing re-planning as you may be a different size from the planning scan.

It is very important that you keep up your fluid intake while having treatment.

Follow-up

At the completion of your treatment an appointment will be made for you to see your radiation oncologist. This interval will depend on the area that you are having treated and what side effects you may have experienced during treatment. Your radiation oncologist will continue to see you at regular intervals for several years. You may be requested to have further tests or scans done at the request of your radiation oncologist.

If you have any questions or concerns between the end of your radiotherapy treatment and this follow up appointment, you can contact your GP or one of the numbers on the following page.

Useful numbers

- Waikato Hospital Switchboard 07 839 8899
- Blue Machine ext: 98073
- Green Machine ext: 98249
- Pink Machine ext: 98221
- Yellow Machine ext: 96191
- Lung Cancer Nurse Specialist ext: 23253
or 23687
- Oncology Outpatient Reception 07 839 8604
- The Cancer Society's Lions Lodge 07 834 2351
- Cancer Society - Hamilton 07 838 2027
- Cancer Society Information Helpline Staff 0800 226 237
- Wilson Parking 07 839 8901

For more information on Radiation Therapy please visit:

<http://www.waikatodhb.health.nz/directory-of-our-services/waikato-hospital/radiation-oncology/>

<https://www.healthnavigator.org.nz/>

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