

Radiotherapy

Lung Treatment



Health

Illawarra Shoalhaven
Local Health District

Illawarra & Shoalhaven Cancer Care Centres

The Illawarra and Shoalhaven Cancer Care Centres acknowledge the Traditional Owners of country throughout Australia and their connections to land, sea and community.

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General information



This booklet will help you with your journey through radiation treatment. The information is general and may not always apply to you. Please talk with your treating team if you have any questions.

You will need to contact your doctor or clinical nurse consultant if you have:

- Severe pain in the treatment area
- If you are having difficulty breathing
- A temperature of 38 degrees or higher.



IMPORTANT PHONE NUMBERS

Illawarra
Cancer Care
Ph: 4222 5200

Shoalhaven
Cancer Care
Ph: 4428 7400

**Out of hours go to
your nearest emergency
department**

Need an interpreter?

Professional interpreters are available if you need help to communicate in English, or if you are Deaf. Our staff can also ask for an interpreter. The staff will book an interpreter for you. Interpreter Services are free and confidential. You can bring a family member or friend with you to the appointment. If you need help to communicate it should be through a professional interpreter.

You can also call the Translating and Interpreting Service on **1800 24 72 72** if you need to speak to us before an appointment.

Support services



There are a number of services available to help support both you and your family. Please ask staff for more information or a referral.

- ☐ **Counselling support for patients and carers affected by cancer**
 - Access to social worker and/or psychologist.
- ☐ **Local community support for Aboriginal & Torres Strait Islander people**
 - Support services and criteria vary across the local communities. Some services are Grand Pacific Health, Aboriginal Medical Services, and Waminda.
- ☐ **Legal and financial assistance**
 - Cancer Council - 13 11 20 www.cancercouncil.com.au
 - **Can Assist** - www.canassist.org.au
 - Centrelink - apply online for payments such as JobSeeker, Disability Support Pension, Carer Payment or Carer Allowance.
 - Advance Care Directive - www.health.nsw.gov.au/patients/acp/Pages/acd-form-info-book.aspx
- ☐ **Practical help in the home**
 - My Aged Care 1800 200 422
 - Carer Gateway 1800 422 737
- ☐ **Transport / Travel**
 - There is community transport for those that have difficulty, at a small fee.
 - Travel & accommodation subsidy (IPTAAS). If travelling more than 200km per week: www.iptaas.health.nsw.gov.au
- ☐ **Accommodation**
 - For those who have difficulty getting to the cancer centre, we have on-site accommodation available at both centres.
- ☐ **Support for children**
 - Camp Quality - support for children 0-15 years www.campquality.org.au
 - CANTEEN - support for young people 12-24 years www.canteen.org.au

Each cancer centre may have extra information for you.

My radiotherapy care team



Radiation oncologist

Contact: _____

What they do:

A doctor who prescribes radiotherapy and organises your treatment.

Radiation oncology registrar

Contact: _____

What they do:

A doctor who is training to be an oncologist. They are always supervised by your radiation oncologist.

Clinical nurse consultant

Contact: _____

What they do:

A nurse with specialised knowledge of lung cancer who will help coordinate your care, provide information, referrals and support.

Radiation therapist

Contact: _____

What they do:

Specially trained to plan and deliver your treatment. They will also help support you through treatment.

Radiotherapy nurse

Contact: _____

What they do:

Specialise in caring for people having radiation therapy. They manage your side effects, and will help support you through treatment.

Social worker

Contact: _____

What they do:

Provides counselling, support and information for you and your family. They can help with important conversations in planning for your future.

Psychologist

Contact: _____

What they do:

A specialist who provides psychological assessment and interventions for cancer patients, and where required, to families and carers.

Radiation oncology medical physicist

Contact: _____

What they do:

Ensures that your treatment is delivered accurately and safely. You may see them at your planning and treatment appointments.

Dietitian

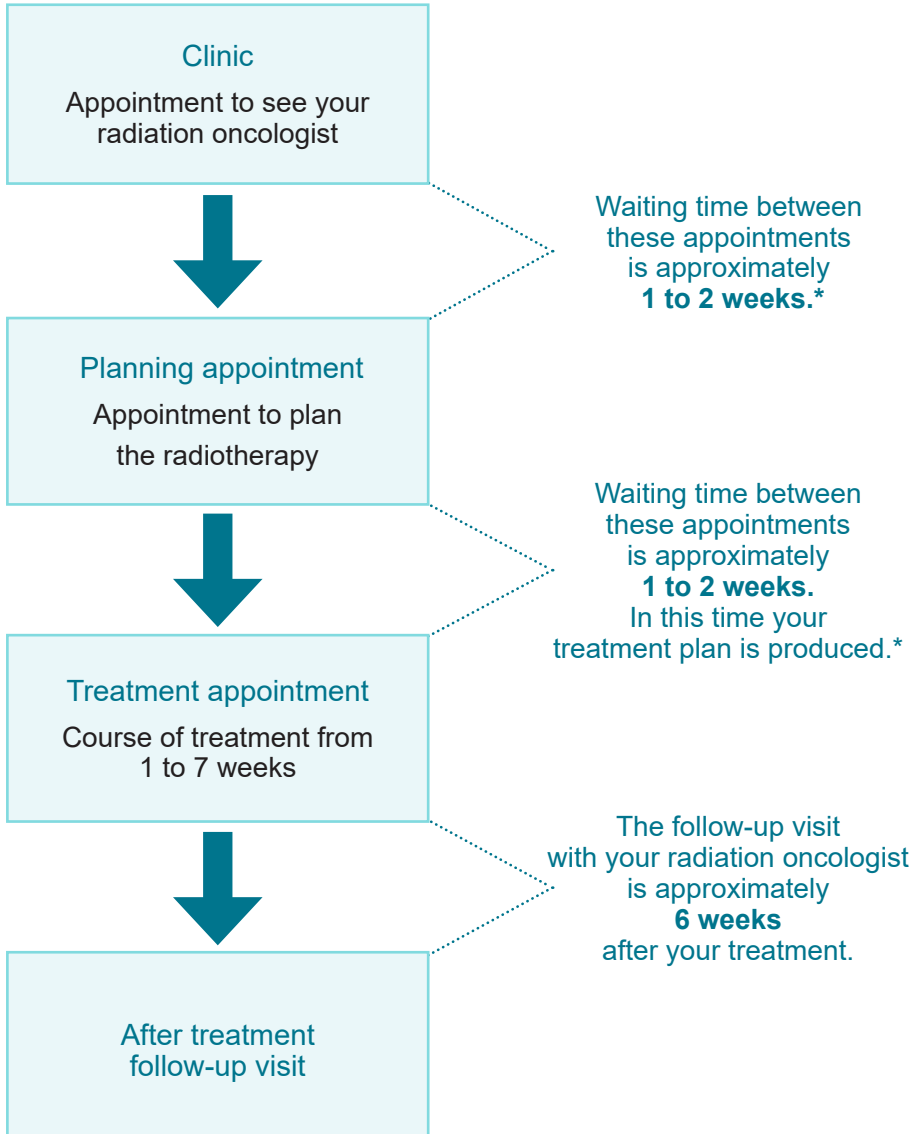
Contact: _____

What they do:

Advise and support you to maintain weight and nourishment.

Your pathway

**The time could vary if you have other treatments to be coordinated.*





Linear accelerator

What is radiotherapy?

A stylized icon representing radiotherapy, featuring a central circle with three radiating lines, enclosed within a larger circle with three concentric arcs on the right side.

Radiotherapy uses x-ray beams to kill cancer cells.

A **linear accelerator** is a machine that delivers radiation to your body. It only gives radiation to the specific area that is being treated.

Your **radiation oncologist** will decide how much radiation you will receive and how many times you will receive it.

When deciding this, they will take into account:

- Your age, the health of your lungs, and your general health including any other medical conditions you may have
- Details about your specific cancer. These include blood results, scans, the stage and the location of the cancer (the site).

Common tests the radiation oncologist will make sure you have before starting your radiation include:

- **CT (computed tomography) scans:** A scan often done after having an injection of contrast to determine the location of the cancer
- **PET scans:** A scan which involves the injection of a special dye to accurately determine the exact location of the cancer. It provides further information on top of that provided by the CT scan
- **Pulmonary Function Tests:** This is a detailed breathing test to determine the general health of your lungs
- **Bronchoscopy:** Sometimes, your radiation oncologist may organise for you to see a respiratory doctor to organise a biopsy of lymph nodes in the middle of your chest. This is not required for all patients and your radiation oncologist will explain if this is needed.

The exact area that will receive radiation depends on where your disease is. The radiation oncologist will use all the scans mentioned above so that the radiation is focused on these areas.

Your treatment area may include (please tick):

- ☐ The lesion in the lung
- ☐ Lymph nodes in the middle of your chest
- ☐ Lymph nodes above your collar bone.



If relevant to you (female and childbearing age), the radiation oncologist will ask you if you are pregnant when you consent to treatment.

It is important to not get pregnant during treatment. If there is a chance you get pregnant, you will be asked to take a pregnancy test before the planning appointment and your treatment appointments.

What side effects can the treatment cause?

Radiotherapy can cause both short- and long-term side effects. Short-term side effects occur 10 to 14 days into your radiotherapy treatment. Long-term side effects can occur months to years after your treatment has finished. Everybody reacts differently to the treatment and may not experience all side effects.

It is important that you stop smoking during radiotherapy. Smoking can increase the chance of side effects of the treatment as well as reduce the chances of being cured from your cancer.

Common short-term side effects

Oesophagitis

This is an inflammation of the food pipe, called the oesophagus. You may notice a burning sensation or difficulty swallowing due to discomfort in the oesophagus. Not all people experience this and it depends on the amount of radiation the oesophagus receives.

Fatigue/tiredness

The amount of tiredness varies for each person. It usually builds up over the course of your treatment. Most people are able to continue working and carry out daily activities during radiotherapy.

Cough

You may experience a phlegmy cough.

Skin

Your skin may become pink or red, or feel warm and may look similar to a sunburn. It could be dry, itchy, flaky or feel more sensitive to touch than usual.

Intermediate term side effects

Pneumonitis

This is due to inflammation in the lungs caused by the radiotherapy. You may have a cough and shortness of breath from 1 to 6 months after radiotherapy. This may need to be treated with a course of steroids.

Long-term side effects

Lung inflammation and scarring

There is a possibility you may have long term difficulties with your breathing if a large amount of your lung is treated with radiotherapy and if your lung function is poor.

Brachial plexopathy

For cancers near the top of the lung, the nerves controlling the arm may receive radiotherapy. There is a very small risk that this may cause damage to these nerves. This would affect the sensation and movement of the arm. The amount of radiation these nerves are receiving is measured during the planning process to ensure it is safe.

Heart disease

Depending on the location of your cancer, the heart may receive some radiation. This may increase the risk of damage to your heart many years later.

Rare side effects

Rib pain and fracture - Some people may experience rib pain and tenderness after treatment. Suffering a broken rib due to the radiation treatment is extremely rare.

Oesophageal stricture - If your oesophagus is in the radiotherapy field, a rare long term side effect is you may experience a narrowing of the oesophagus making it difficult to get food down.

Second Cancer

The risk of the radiation treatment causing a second cancer is extremely rare.

If it does cause a second cancer, it will be in the treated area.

Radiotherapy planning appointment

On this day we will give you information about the radiotherapy process. It is important to understand what is going to happen.

We will make equipment to keep you still, take a scan and mark the treatment area.

Please allow 1 to 2 hours for this appointment.

This appointment starts the planning process of your treatment.

Please feel free to ask questions.

Before or during this appointment you will be given a Patient Reported Measures survey. It will take 5 to 10 minutes to complete. The survey will ask you questions about your health and wellbeing. (More information on the next page).

An appointment card will be given to you. This will have your start date and treatment appointment times.

Identity check

Before we can start, you will be asked to tell us:

- Your name
- Your date of birth
- What area on your body will be treated with radiotherapy.

This is a NSW Health requirement and helps us to identify you. It confirms we are treating the right person and part of your body. We will ask you this every day when you attend your radiotherapy treatment.

Patient Reported Measures Survey

What are Patient Reported Measures (PRMs)?

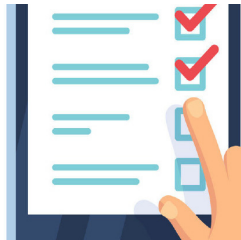
- PRMs are a way for you to tell your healthcare team about your general wellbeing and provide feedback about your care.
- As part of our standard practice, you will be asked to complete a survey with questions to help us identify any issues that may be causing you worry and distress.
- It is important to complete this survey as it will help your health care providers understand more about how you are feeling, and how your health and treatment might be impacting different parts of your life.
- Our aim is to deliver the best health care for you.

Do I have to complete a survey?

- No, surveys are not compulsory.
- If you don't complete a survey, you will still receive the best care available. However, completing a survey gives your healthcare team more information about what is important to you.

When will I be asked to do the survey?

- You will be asked to do the survey before or during your planning appointment and again during treatment.



During the planning appointment

You will need to remove the top half of your clothing and change into a gown at the beginning of the appointment. Once you are on the CT scanner bed, you will be asked to remove the gown so the radiation therapist can see your skin and be able to position you.

Please note that during the scan, your skin will be bare (naked). You may want to keep this in mind when choosing your clothes and also who you bring as a support person. If you have concerns about this, please discuss with staff so we can arrange extra support.

Your radiation oncologist may want to give you an injection, this is called contrast. This will help them see the area to be treated on the CT scan, we will talk to you about this on the day of your planning appointment.

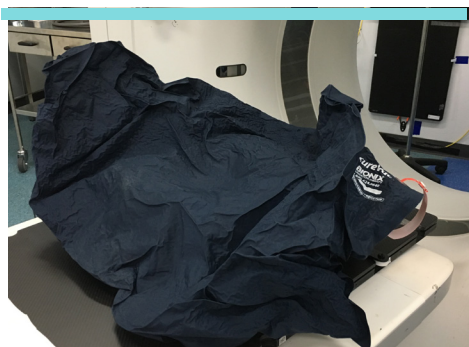
There are 3 steps to the planning appointment

1. Make equipment for your treatment
2. Take a CT scan of the treatment area
3. Create tattoos and photos.

1. Equipment

We will use equipment that helps you to be stable and still for your treatment.

You will lie on the CT scanner bed in a “bean-bag” (called a vacbag). It will shape around your upper back and shoulders.



Vacbag



2. CT (computed tomograph) scan

Texta and sticky markers will be placed on your skin before the CT scan. These help us to map out the treatment area and can be seen on the scan.

A CT scan will be taken of your chest area.

You will need to lie still and breathe normally during this scan.

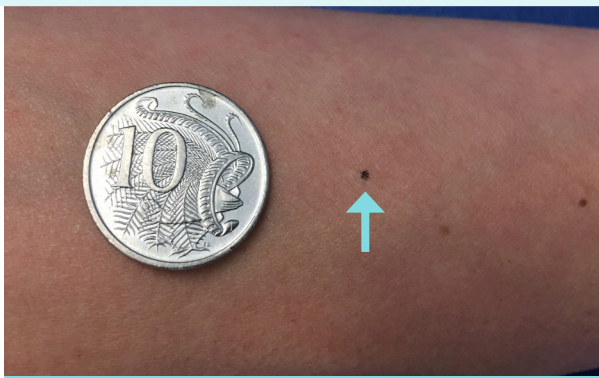
The staff will leave the room while the scan is being performed.

This scan is used to plan your treatment.



The CT scanner with vacbag

The approximate size of the tattoo.



3. Tattoos and photos

You will be given small permanent tattoos at the end of the planning appointment. These make sure we put you in the same position on the treatment bed each day.

We will take photos of how you have been set-up and the equipment that has been made for your treatment. These help treatment staff set you up in the same position each day.

Radiotherapy planning

Your radiation team will create a plan for you between your planning appointment and the start of your treatment.

The CT (computed tomography) scan that was taken at your planning appointment is used to create the plan. It is designed specifically for you. This can take up to 2 weeks depending on how difficult the individual plan is.

Sometimes the start of treatment can be delayed due to the difficulty of the plan.

Many checks are completed to make sure we are going to be delivering the right treatment for you.



Radiotherapy team

Radiotherapy treatment

You will receive radiotherapy daily.

You will be set up in the same position as your planning appointment.

It will take 20 to 30 minutes for your treatment.

Treatment times

Treatment is usually 5 days a week, Monday to Friday.

You will be given a weekly list of appointment times, which you should check as they may change.

Treatment machines may need to be closed for maintenance. If you need treatment on those days, the staff will inform you.

Due to other patients receiving treatment, please inform the radiation therapists as soon as possible if you need to change an appointment or are running late.

Your first treatment appointment

On your first day please come 15 minutes before your appointment time. Please see the nurses at the nurse's desk before you sit down.

A radiation therapist will explain what will happen and answer any questions you may have.

Your first treatment is usually longer than your other appointments. This is because we need to check measurements from your planning appointment.

Please allow an hour on your first day. This will allow us to give you all the information you need and deliver your treatment.

Arriving in radiotherapy

Please check yourself in for your treatment. You can do this by scanning the barcode on your appointment card at the nurse's desk. If it is not your first treatment, once you have checked in you can take a seat in the waiting room.

A radiation therapist will come and get you when they are ready for you to have your treatment.

How long will my treatment take?

The time needed to deliver your treatment can be between 20 to 30 minutes.

The time in the treatment room includes:

- Getting you into the correct position
- Delivering your treatment
- Helping you in and out of the room.

In the treatment room

The radiation therapists will ask your name, date of birth and treatment area every day.

The same as at your planning appointment, you will be given a gown to put on.

The radiation therapists will put you into the same position using the same equipment from the planning appointment.

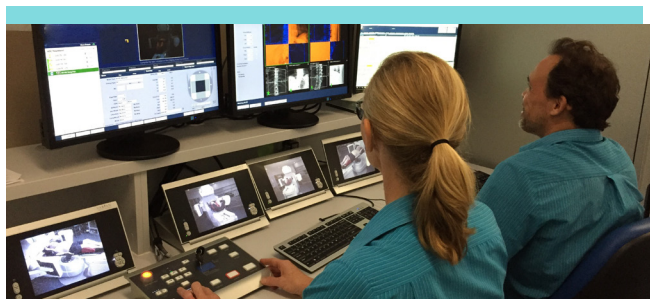
Once you are on the linear accelerator, you will be asked to remove the gown covering your chest area so the radiation therapist can see your skin and position you. Your skin will be bare (naked) for a short period of time.

During your treatment you are able to listen to music. We can make a playlist for you, or you can bring in your own music.

Once you are in the correct position, the radiation therapists will leave the room to start the treatment. We can see and hear you during the treatment (the room has television monitors and an intercom).

When the radiation therapist leaves the treatment room:

- You will be in the room by yourself for 5 to 10 minutes
- It is important to lie still during the treatment and breathe normally
- Parts of the machine will move into position to take x-rays. These x-rays are taken before we give you your treatment to make sure everything lines up and we are treating the correct area
- The treatment machine moves around you to give you your treatment, but it does not touch you
- You can alert us at any time by talking or raising your hand
- You will not be able to see or feel anything during the treatment, however you will hear a noise when the machine turns on.



Staff outside the treatment room checking your position

During your course of radiation treatment

All instructions given to you by the radiation staff need to be followed for every treatment.

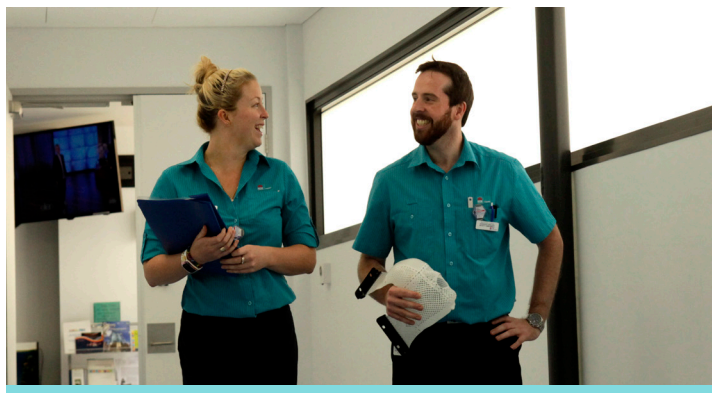
Tell the radiation staff as soon as possible if you are not able to follow these instructions.

You will have x-rays taken throughout your treatment. This is to check the position of the treatment area. The x-rays are not used to check how treatment is working. Other measurements are also taken during your treatment. This is to check for any changes in your body shape.

It is important to try and maintain your weight during treatment. Any major changes in the shape and size of your body may change our calculations, which may require a new CT scan.

Our radiation team will check on your well-being and side effects daily.

If you need more help, radiotherapy staff can arrange for you to see other staff in your radiotherapy care team.



Managing side effects during treatment

Side effects generally start 2 to 3 weeks into your treatment.

In most cases, these symptoms will settle 2 to 4 weeks after completing radiotherapy.

Please let staff know if you notice any changes in the treatment area as they may be able to help you manage these symptoms.

Swallowing difficulties

If your oesophagus is within the treatment area it is likely that you will develop some discomfort when eating.

You may be referred to a dietitian to help you manage this. It is important for you to keep drinking fluids and eating a nutritional diet during your treatment.

You may need to:

- Change your diet to include softer foods
- Use pain relief prior to eating
- Avoid eating hot and spicy food
- Use anti-reflux medications. These may be helpful in some circumstances.

Cough

You may find that you get a cough during your radiotherapy treatment. This is due to your lungs being irritated by the treatment.

Avoid things that irritate your cough:

- Strong perfumes
- Being out in the cold
- Strong cleaning products
- Strenuous exercise
- Smoking.

Inform radiation staff if you:

Develop a cough. There is medication which may help ease this.

Cough up a small amount of blood. Write down how much, if there were streaks, and the size of a 5 cent piece or a 50 cent piece.



Shortness of breath

You may become more short of breath due to your lungs being irritated by the treatment. There are some things you can do to help manage your breathlessness during your treatment.

- Pace yourself. You may not be able to do what you used to do
- Take short rests often during activity
- Sit down for unavoidable strenuous activity (like showering)
- Use an electric fan blowing into your face after activity (it really works!)
- Ask others for help.

Skin

Radiotherapy does not 'burn' the skin. The radiation disrupts the normal skin repair process and it may look similar to sunburn. Changes to the skin usually start about 10 to 14 days after treatment has started. Skin changes may get gradually worse during treatment. They may also get worse a week or two after treatment has finished.

You will be given moisturising cream to apply daily to the treatment area.

It is important that you apply the cream to your back as well. This is generally where you are likely to see skin reactions first.

Apply after every treatment, at bedtime and as often as you like, **but not within two hours of your next treatment**

If you are unsure of where and how much cream to apply, please talk to staff. You will also need to follow the **general skin care advice** section on the following page during your radiation treatment.

Please do not use any other products on your skin in the treatment area without checking with your treating team first. Some products may make your skin reaction worse.

General skin care during your treatment



Use a mild soap such as Dove Sensitive Skin Unscented®, Aveeno Moisturising Bar®, Goat Milk or other unscented soap



You are able to use deodorant during your treatment (unless you have broken skin). Speak to the radiation team if you are unsure



Wear loose clothing during treatment. A top and bottom is easier to get on and off when changing into a gown for treatment



Have a quick shower every day. Use warm, rather than hot water



Gently pat dry the treatment area with a clean towel



Do not apply soap directly to the treatment area, and make sure you rinse well



Do not apply any oils, colognes, lotions or talcum powders to the treatment area.



Fatigue/tiredness

To help manage your tiredness during your treatment.

- Try some light exercise when you are feeling least tired during the day
- Keep a diary to see what time of the day you are most tired
- Listen to music/read books
- Meditate or use relaxation exercises
- Spread out and prioritise what you need to get done over the day
- Ask others for help
- Rest when you need to, but limit daytime naps to 45 minutes.

Exercise

Many studies have shown that exercise during radiation treatment can ease side effects, including fatigue and sleeping problems.

- Exercise can be walking, running, group classes or gym workouts
- If you currently exercise, try maintain your current exercise habits
- If you do not currently exercise and want to start, please discuss with your radiation oncologist, nurse consultant or general practitioner. You may be referred to a local program, for example CanConquer.



After radiotherapy

On your last day of treatment a follow-up appointment will be booked with your radiation oncologist in 4 to 6 weeks.

Any side effects that you have had during your treatment will start to improve around 2 weeks after your treatment has finished.

On completing your last treatment we will:

- Ensure you have moisturiser to apply if required
- Tell you who to contact if you have any skin or other treatment related problems
- Make a follow-up appointment for you with your radiation oncologist in 4 to 6 weeks after your radiotherapy.

Swallowing difficulties

Your swallowing will return to normal within a few weeks. Try to re-introduce more solid foods slowly. Having frequent small meals is helpful.

Skin care

For the next 2 weeks, we need you to look after your skin as you have been during your treatment.

Your skin changes can be worse about 10 to 14 days after treatment is finished. Your skin usually starts to improve after this time.

If the area is only dry, red or itchy, continue to apply moisturiser several times a day until healed.

Any redness of the skin will usually improve 4 to 6 weeks after finishing your radiotherapy.

Fatigue

The tiredness you may have felt during treatment will improve after a few weeks.

Radiation pneumonitis

This is inflammation of the lung that has been treated with radiotherapy. It happens in 5 to 15% of patients. It usually occurs within 6 weeks to 6 months of finishing radiotherapy.

Symptoms include fever, cough, chest congestion, shortness of breath, chest pain or fatigue.

It is treatable, usually with steroids and antibiotics.

Follow-up care appointments

About 6 weeks after you have finished your treatment, your skin should be healed. You should also have more energy.

Your first follow-up appointment with your radiation oncologist will be during this time. This appointment will have been booked on your last day of treatment. We will let you know if you need any blood tests or scans prior to this appointment.

When you attend your first follow-up appointment your radiation oncologist will:

- See how you are going with any side effects you may have had during your radiotherapy treatment
- Make sure everything is going well
- Answer any questions or concerns you may have.

Long term follow-up care

After treatment, follow-up care is important for your long-term health.

Your follow-up care will depend on the type, stage of cancer and the treatment you had.

Follow-up care should be agreed between your radiation oncologist, general practitioner, any other health professionals involved in your care and takes into consideration your preference.

In some cases, people will need ongoing, hospital care for several years. In other cases, an arrangement with your general practitioner may be suitable.

Frequently asked questions



Will radiation therapy be painful?

While treatment is being delivered, you will not see or feel anything. The delivery of radiation is like having an X-ray or CT scan. You will hear the machine making a buzzing sound.

Will I be 'radioactive'?

No, receiving radiotherapy will not leave you radioactive at any time. It is safe to be with family, children, friends and pregnant women.

Should I take medications and/or vitamins while receiving treatment?

It is important to tell your radiation oncologist all the medicines, supplements and vitamins you are currently taking. Continue to take your prescribed medicines as normal. Some vitamins or supplements could impact on the treatment.

Will I lose my hair?

Radiotherapy only effects the area being treated. You may have hair loss around the chest area.

Can I have a Covid-19, flu or tetanus vaccination?

Yes, it is safe to receive these while you are having your treatment.

Where can I park during treatment?

Free parking is available **while you are having your treatment** (not for appointments with doctors).

Illawarra Cancer Care Centre: You can park in front of the centre, access by New Dapto Road. You will be provided with a unique code to open the boom-gate.

Shoalhaven Cancer Care Centre: You can park at the rear of the centre. Go to the boom gate, take a ticket and have it validated at the reception desk.



How long will treatment take?

The length (or course) of radiation is based on the specific plan designed for you by your doctor. Generally, you will be in and out of the centre within 30 minutes. Delays may occur on some days.

How much does my treatment cost?

Medicare covers all costs (for those eligible for Medicare).

Is it a problem if I miss a scheduled treatment?

Radiation treatment is designed to be delivered as small daily treatments to get the best outcome. Once treatment has started it is important that the rest are not delayed or missed. Sometimes medical reasons can cause a treatment to be delayed or missed. Your radiation oncologist will discuss this with you.

What should I wear to treatment?

Wear loose fitting cotton clothes. Don't wear clothes that are tight or that may rub the area. Once you arrive, you will be asked to change into a gown in the change room in preparation for treatment

Can I get the treatment area wet or go swimming during treatment?

Showering / swimming in salt water is fine. Swimming in chlorinated pools is not recommended. Pat the skin dry, do not rub it.

What happens if I lose/gain weight while I'm having my radiotherapy?

The radiation therapists will monitor any changes in your body shape during your treatment. They will take measurements each day. If your body changes too much a new plan may be needed.

Resources



Online resources for additional information

Cancer Council – www.cancer.org.au/about-cancer/treatment/radiotherapy.html

eviQ Cancer Treatments Online -
www.eviq.org.au/eviQNavigationPatientsandCarers.aspx

QUITLINE 137848 www.quitnow.au

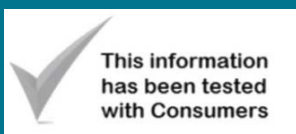
Targeting Cancer – www.targetingcancer.com.au

Ask your clinical nurse consultant for more recommended information and resources

Cancer Council information

Cancer Council information centres are located on Level 2 at the Illawarra Cancer Care Centre and the main foyer at the Shoalhaven Cancer Care Centre

There is a range of information and volunteers available to assist at both centres.



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If you would like to provide feedback on this booklet, please email ISLHD-ISCAHN@health.nsw.gov.au