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Radiotherapy

FACT SHEET



Radio-therapy



What is radiotherapy?

Radiation therapy, or radiotherapy, is the use of radiation to treat cancer cells and some non-malignant growths.

A machine, called a linear accelerator, is used to deliver the treatment. The radiation is targeted at the tumour cells and is painless. Treatment is given over a prescribed number of days/weeks so that only small doses (fractions) of radiation are given at a time. The treatment may last between three and six weeks. Your radiation oncologist will prescribe the amount of radiation needed, and will tell you how many treatments you will have and over how many weeks.

How does radiotherapy work?

Radiotherapy uses precisely measured doses of high-energy radiation directed to a localised area of the body, to destroy cancer cells and prevent them from reproducing. Cells are very sensitive to damage when they are about to divide. Since the major function of a tumour cell is to divide (reproduce), then more of these cells are susceptible to damage than the normal cells in the treatment area. Careful treatment planning minimises the dose delivered to the normal cells.

Radiation is measured in units called gray (Gy) or centigray (cGy) which is one hundredth of a gray. Depending on your radiation plan, you may be given just one dose of radiation or many doses over a period of weeks.

Why should I have radiotherapy?

Radiation can be given to treat primary tumours in your brain or tumours that have spread to your brain from another part of your body (metastasised). It is sometimes used to treat non-cancerous (benign) brain tumours. Your doctors will decide whether you will receive partial or whole brain radiation. The type of radiotherapy used for brain tumours is called external beam radiation therapy (EBRT).

In cases where surgery is not a viable option, radiotherapy may be prescribed instead. Radiotherapy is also used to destroy tumour cells that may remain in the area following surgery. Even if the tumour has been surgically removed, radiotherapy can be used to eliminate left over tumour cells and prevent a recurrence of growth.

What happens if I am also having chemotherapy?

You may have radiotherapy on its own or sometimes with chemotherapy (chemoradiation). Chemotherapy uses anti-cancer (cytotoxic) drugs to destroy cancer cells. The chemotherapy drugs can make cancer cells more sensitive to radiotherapy, although it is only helpful for certain types of cancer cells. Giving chemotherapy and radiotherapy together can make the side effects of your treatment worse. Speak to your oncologist or clinical nurse specialist who can give you more information about chemoradiation and the possible side effects.

What is external radiotherapy?

Fractionated radiotherapy delivers the radiation in multiple (or fractionated) doses over time, instead of in one large dose. Normal brain tissue and nerves in the head can tolerate many smaller doses of radiation better than one large dose. Delivering a small fraction of the total radiation dose allows time for normal cells to repair themselves between treatments, thereby reducing side effects. Fractionated external beam radiotherapy (EBRT) is the most common method of radiotherapy used to treat brain tumours. EBRT delivers radiation from outside the body, using a machine called a linear accelerator. The beams are precisely shaped to match the tumour and are aimed from a variety of directions by rotating the machine around you. There are several types of machines, but they all do the same things which are to target the tumour, aim the radiation beams and deliver a specific radiation dose. Because tumour cells may invade your normal tissue around the tumour, the radiation may be aimed at your tumour and nearby brain tissue (called a margin), or at the entire brain. The beam passes through your body and destroys cancer cells in its path. You will not see or feel the radiation.

Radiotherapy to relieve cancer symptoms, such as pain, is called palliative radiotherapy. You often have this in fewer fractions and sometimes it is just one treatment. The radiotherapy dose with each fraction is bigger but you have fewer fractions so the overall radiotherapy dose is lower. Palliative radiotherapy has fewer side effects than radiotherapy that aims to cure the cancer. The focus of palliative care is to manage symptoms so that you can lead a good quality of life. Remember – palliative care is not end of life care. These are two very different stages and you can lead a good quality of life for a long time when receiving palliative care.

Conformal radiotherapy

Conformal radiotherapy shapes the radiation beams to closely fit the area of the cancer. It is also called 3D conformal radiotherapy or 3DCRT. It is a very common type of radiotherapy. Intensity modulated radiotherapy (IMRT) is a type of conformal radiotherapy.

Intensity modulated radiotherapy (IMRT)

Intensity-modulated radiotherapy (IMRT) is a type of conformal radiotherapy. You can have IMRT on a standard radiotherapy machine, called a linear accelerator (LINAC).

The LINAC safely delivers precise radiation to a tumour while minimizing the dose to surrounding normal tissue. IMRT allows for the radiation dose to conform more precisely to the three-dimensional (3-D) shape of the tumour by controlling the intensity of the radiation beam in multiple small volumes. This means that the tumour receives a very high dose and normal healthy cells nearby receive a much lower dose.

Image guided radiotherapy (IGRT)

Image Guided Radiation Therapy is the verification process used to confirm the accuracy of the set up. In this process CT images are taken just prior to treatment and compared to the planning CT images to identify any variations in the positioning and set up. Adjustments are then made, if necessary. Any adjustments to the position of the treatment table are made remotely from the treatment console, making this a very efficient process. IGRT is important in ensuring a highly accurate treatment delivery.



Stereotactic radiotherapy (SRT)

Stereotactic radiotherapy, or fractionated stereotactic radiotherapy (FSRT), is a modern version of fractionated radiotherapy. You might hear a few different terms for stereotactic treatment, which can be confusing. Usually these refer to the brand names of the radiation equipment, such as CyberKnife or Gamma Knife. SRT targets the radiation more accurately than conventional radiotherapy. It is used to treat very small, well defined cancers, including cancer which has spread to the brain. The side effects may be less than with other types of radiotherapy.

Stereotactic radiosurgery (SRS)

Stereotactic radiosurgery is a non-invasive procedure using radiation therapy. SRS is used to destroy precisely selected areas of tissue using ionizing radiation rather than excision with a blade. It can deliver precisely-targeted radiation in fewer high-dose treatments than traditional therapy, which can help preserve healthy tissue. You usually have a single treatment.

You can speak to your radiation oncologist for further information about stereotactic radiotherapy and stereotactic radiosurgery. Access to these types of radiation will differ according to your location and District Health Board.

Proton beam therapy

Proton beam radiotherapy is a type of particle therapy which uses a beam of protons to irradiate the tumour. Proton beam therapy is only suitable for certain types of cancer, such as highly complex brain cancers. This treatment is appropriate in cases where there is a need for the radiation dose to only penetrate as far as the tumour.

High energy x-rays is still considered the most appropriate and effective treatment for the majority of brain tumours.

Proton beam therapy is not available in New Zealand but may be accessed off-shore through private healthcare providers.

What happens before radiotherapy starts?

After referral, you will be given an appointment to meet your radiation oncologist. Several steps are necessary to plan your radiation therapy, beginning with a review of your clinical history, a physical examination and results of tests.

After you have been assessed, your radiation oncologist will discuss with you the benefits and possible short and long-term effects of treatment. You will be asked to sign a form agreeing to proceed with treatment. After this initial visit you will be given an appointment for a CT scan and/or further tests. No treatment will be given at this appointment.

- If you have a pacemaker, you may need to have a pacemaker check before your radiotherapy treatment.
- If you think you may be pregnant at any time during your course of treatment, please tell your radiation oncologist or radiographer immediately. If necessary, please speak to your GP about contraception methods suitable for use during radiotherapy. It is extremely important that you are not pregnant or become pregnant during radiotherapy. Even a small amount of radiation may damage an unborn foetus.



Your radiotherapy plan is the personalised design of your radiotherapy treatment. It is tailor-made for you and is based on the CT scan that you had with your mask on. A team of doctors, radiographers and physicists will work together to decide where the treatment needs to be directed.

You will have to attend the hospital for at least one planning appointment before you start treatment. A member of your pre-treatment radiotherapy team, usually a radiation oncologist will explain what is going to happen. There will be a time delay between attending for your planning appointment and your first treatment. This is so your personal treatment is calculated to ensure your tumour gets the correct dose and the dose to tissues that do not need treatment get as low a dose as possible. They will discuss with you the best type of radiation treatment for your particular tumour or lesion, explain the treatment process, and describe possible side effects.

It is a good idea to ask your radiographers about your future dates when you attend your planning appointment. If you have had surgery, having a short period of time to recover before you start radiotherapy can be helpful.

Who will be involved with my treatment?

A number of healthcare professionals may be involved in your treatment and care including:

Radiation oncologist - will oversee your radiation therapy treatments. They will work closely with the other team members to develop the treatment plan.

Oncology nurse

The oncology nurse will be a key contact for you while you are receiving radiation therapy. A radiation oncology nurse will be able to:

- Answer your questions about your treatments
- Monitor your health during treatment
- Help you manage potential side effects

Your role on your radiotherapy team

You are a part of that team, and your role includes:

- Arriving on time for all your radiation therapy sessions
- Asking questions and talking about your concerns
- Letting someone on your radiation therapy team know when you have side effects
- Telling your doctor or nurse if you are in pain
- Caring for yourself at home

What do I do if I'm worried?

Throughout your investigations and treatment it is not unusual to feel concerned, anxious or upset. Reactions differ from one person to another. If your feelings are too much for you, please talk to the treatment staff. There are many people in the department who may be able to help and support you, for example a psychologist, specialist nurses, social worker, the chaplain, Kai Atawhai (Maori Health Services).

Preparing for Your Treatment

You usually have your radiotherapy as an outpatient. This means that you go to hospital every day, but you don't stay overnight. It can be hard to know how to prepare; it's worth sorting out a few things before you start treatment. You may need to organise care for your family or pets. Planning in advance will help minimise stress once you start radiotherapy.



Can I work while I have radiotherapy?

You will need to speak to your employer to arrange time off to attend hospital and specialist appointments. Fractionated radiotherapy treatment usually takes place each day, Monday to Friday for up to six weeks. You may experience certain side effects from radiotherapy such as fatigue or nausea which may require time off work. Most employers will reduce your hours and change work duties to make things easier for you.

Radiotherapy mask

A radiotherapy mask, also called a shell will be made especially for you to ensure that your head remains still during each treatment session and your treatment is as accurate as possible. You might have the mask or mould made in the mould room of the radiotherapy department or during your CT planning session

You will be asked to lie on a treatment table or table and be positioned so that you are straight. A mould technician or radiographer uses a special kind of plastic heated in warm water so that it becomes soft and pliable. Your technician puts the plastic mesh on to your face so that it moulds to fit your face exactly. It feels a little like having a warm flannel put onto your face. You can still breathe easily, as the plastic has lots of holes in it.

After about 3 to 5 minutes the plastic netting hardens and forms a permanent shape that will accurately support your head. The mask is lifted off your head and re-used each day for treatment. At treatment the mask is gently placed on your head and clipped to the treatment bed to help you maintain the same position for each treatment.

Markings will be made on the mask. After the mask is made, your therapists will take several photographs of you in your simulation position. The photographs and markings will be used as guides to position you correctly for your treatments.

Simulation

Before you begin your treatment, you will have a treatment planning procedure called a simulation. Your radiation oncologist will discuss your case in the multidisciplinary meeting (MDM). You will need to go to some planning sessions so that all the measurements can be taken. These are called simulations, when the mapping is done on a CT scanner.

This is done to make sure that:

- Your treatment site is mapped
- You get the right dose of radiation
- The amount of radiation that gets to your nearby tissues is as small as possible.

Preparing for your simulation

No special preparation is needed before your simulation. You can eat and drink as you normally would on the day of your procedure. Depending on your treatment plan, you may need more detailed imaging, including magnetic resonance imaging (MRI) which will be used to help plan your treatment. During your simulation, you will be lying in one position for a long time. If you think you may get anxious during your procedure, speak with your doctor about whether medication may be helpful. Wear comfortable clothes that are easy to take off because you may need to change into a hospital gown. You will have to remove your jewellery.



The planning Computed Tomography (CT) scan

The CT scan will be used to plan your treatment. The CT scan will be used to determine how best to arrange the radiation beams and how best to protect the healthy tissue. The CT scanner table is the same type of bed that you lie on for your treatment sessions. You need to lie very still. You will be lying on your back during your simulation and during treatment. To help you stay in the correct position, you will wear a mask. You will not need to hold your breath – you will be able to breathe freely with the mask on.

Tell your radiographers if you aren't comfortable. Once you are in position your radiographers move the table up and through the scanner. They then leave the room and the scan starts. The scan takes about 5 minutes. You won't feel anything. Depending on your treatment plan, you may need more detailed imaging, including magnetic resonance imaging (MRI) which will be used to help plan your treatment

Although your therapists will walk in and out of the room during your simulation, there will always be someone who can see and hear you. You will hear your therapists speaking to each other as they work, and they will explain to you what they are doing. Do not move once your simulation begins, because it may change your position. However, if you are uncomfortable or need help, tell your therapists.

Positioning

Your therapists will help you lie down on the table. You will be lying on your back during your simulation and each treatment. To help you stay in the correct position, you will wear a mask or chin strap. Your therapists will make this for you.

Your radiotherapy treatment – daily routine

You have the fractions as a series of treatment sessions that make up your radiotherapy course. The treatment may last between three and six weeks, depending on your treatment plan. Treatment is usually given on weekdays (Monday to Friday) with a break at the weekend. The radiographers who plan your radiotherapy will arrange your appointment dates and times with you as soon as they can. They will try to find appointments to suit you.

Set-up procedure

You will be scheduled for a set-up procedure before your first treatment. Your radiotherapist will take you to the room where you will receive your treatment each day. They will position you on the table. You will lie on your back exactly as you did during your simulation. Special x-rays called beam films will be taken to make sure that your position and the area being treated are correct. The beam films will be repeated throughout your treatment. They are not used to see how your tumour responds to the treatment.

Having your radiotherapy treatment

Ask if someone will attend your treatments sessions with you, a family member or friend, who can support and keep you company.

When you arrive for treatment you will need to take your appointment card with you and report to reception each day. The radiotherapist will ask to see your appointment card and will show you into the treatment room and position you on the treatment table. You will be positioned



exactly how you were lying during your set-up procedure. During the positioning, the radiographer will place your mask over your head and attach it to the table to ensure you remain still during your treatment. Once you are positioned correctly, your radiation therapists will leave the room, close the door, and begin your treatment. For the first few seconds of the radiation treatment the radiotherapist may take an X-ray to record where the beam is going to make sure it matches your plan.

During treatment your radiotherapists will be able to see and hear you. Each treatment (fraction) will only last a few minutes. You might hear a slight buzzing noise but you won't feel anything. It is normal to feel a bit anxious about the machines. Just try to relax.

Once the treatment is finished, the medical staff will come back into the room. They'll detach the mask from the radiotherapy table and remove it, so you can sit up and get off the table.

During treatment small amounts of radiation are scattered within the treatment room. While not harmful to you, they can be a risk to staff if they are exposed to that radiation on a daily basis, so they leave the room.

You will have a regular appointment with a radiation or medical oncologist who will check your progress. You will be able to ask any questions you have about your treatment.

What are the side effects of radiotherapy?

Your radiation oncologist will have discussed these effects with you as part of your consent to treatment. Side effects can't be avoided but can be managed by your healthcare team. Side effects of radiotherapy can be short or long term. Side effects that occur during your radiotherapy are called 'early' (or 'acute') side effects. Generally, the more immediate side effects will gradually disappear within around 6-12 weeks after your treatment finishes. Long term effects can continue on for a lot longer and sometimes might be permanent. Most modern radiotherapy techniques, including intensity modulated radiotherapy (IMRT)

and image guided radiotherapy (IGRT) are designed to keep side effects to a minimum.

Possible short-term side effects of radiotherapy

Fatigue

Fatigue is feeling tired physically, mentally, and emotionally. It's very common for people with a brain tumour and is a common side effect of radiotherapy. Radiotherapy affects your healthy cells, and although these can repair themselves, this requires extra energy. Like post side effects of radiotherapy, you might not feel tired straight away. It tends to come on gradually as you progress through your treatment and for a few weeks afterwards. Travelling to and from hospital can make you feel tired. This can be frustrating if you're usually an active person.

Managing tiredness and fatigue

To help manage your fatigue make sure you listen to your body. If you feel tired, rest. You may find relaxation or meditation may help you to feel better. Try to spread activities out through the day. It may help to limit caffeinated drinks, such as cola, coffee and tea. While caffeine may give you a burst of energy, it can make you feel jittery and irritable, and cause insomnia and dehydration. Try to maintain a healthy, well-balanced diet, and don't skip meals if you can. Try to get good, restful sleep at night. Speak to your doctors if you're having trouble with getting a good night sleep.

Ask your friends and family to help with everyday activities. Balance plenty of rest with gentle exercise like short walks or more, if you feel up to it. Your tiredness should wear off a little while after your course of treatment has finished although it may take a few months for your energy levels to return to normal. If you need to take time off work, talk to your employer.

Speak to your healthcare team if:

- Your fatigue doesn't get better, keeps coming back, or gets worse
- You can't get out of bed for more than 24 hours
- You become confused or can't focus your thoughts

Nausea

You may feel queasy for a few hours right after radiation therapy or be sick. If you have this problem, try not eating for a couple of hours before and after your treatment. You may handle the treatment better on an empty stomach. You may also experience nausea and dizziness for a few weeks after your treatment finishes. Your healthcare team will give you advice on how to cope with this and can prescribe anti-sickness medication for a short while.

Weight loss and loss of appetite

Your appetite might be normal during treatment, or you might not feel like eating. Your sense of taste might change. You may lose weight. This is probably the only time when you will be told it is OK to eat foods which are high in fat. Eat a little and often. Your side effects aren't likely to start for a week or so, which means for as long as you feel well try to eat your normal diet. You might see a dietitian during your treatment.

You may find the Cancer Society's booklet, "Eating Well/Kia Pai te Kai" helpful. It has suggestions and recipes. You can download this booklet from the website: <https://cancernz.org.nz/assets/Uploads/Eating-Well-PI106-digital-lowresolution-for-website-ID-13736.pdf>

Skin irritation and sensitivity

External beam radiation therapy may make skin in the treatment area dry and itchy. Your scalp might look red, irritated, swollen, blistered, sunburned, or tanned. After a few weeks, your skin might become dry, flaky, or itchy, or it may peel and feel painful. Moisturising in the treatment area will help your skin to cope better. Try to use a fragrance-free moisturiser for sensitive skin. Try to reduce the number of times you swim in chlorinated water as this can have a drying effect on the skin. Your skin will be more sensitive after radiotherapy so take care to protect any exposed treatment by using a strong sunblock (50SPF) or a head covering.

Hair loss

Radiotherapy to the brain will cause some hair loss. Your hair might grow back but sometimes it doesn't. Your medical or radiation oncologist will discuss this with you before treatment starts. How much hair you may lose varies from person

to person. If you do experience hair loss it will be gradual. Your hair may thin and then become patchy, usually where the beam leaves your head. Apart from affecting appearance, you may notice change in temperatures. It will often grow back; it might have a different texture. Any regrowth will usually start four to five months after you have had radiotherapy.

Hair washing tips

During your treatment, you need to wash your hair carefully so that you don't make the area sore. Use only warm or cool water. Be gentle with your hair and use a non-perfumed shampoo or baby shampoo. It is best not to use a hair dryer but to gently dry your hair with a soft towel. Or you can let your hair dry naturally.

Head coverings

The skin in the treatment area will be more sensitive to the sun during radiotherapy. In the sun, you should protect it with total sun block or cover up. You might like to cover your head with a soft hat or scarf to protect the exposed skin and keep your head warm. Some people prefer to wear a wig until their hair grows back.

You may be able to claim a Ministry of Health subsidy for a wig or hairpiece or headwear. Speak to your healthcare team about this.

Memory or speech problems

Radiotherapy may cause difficulty with thinking, concentrating, or remembering things. These cognitive problems may start during or after your radiotherapy treatment. You may notice very small changes remembering things or have much greater memory or concentration problems.

Managing memory or concentration problems

Get help to remember things. It may help if you or a family or friend you to write down and keep a list handy with any important information or daily tasks. Use a planner or diary. It may help to use an electronic device and set a reminder. Keep a list of important names and phone numbers. Keep it in one place so it's easy to find.

If you, or family and friends, are concerned about memory or concentration problems speak to your healthcare team.

Worsening of symptoms

Radiotherapy can cause brain tissue to swell in which case you may find that your symptoms become slightly worse. Your healthcare team will watch for signs of this problem. They may prescribe medication to reduce the discomfort and manage the symptoms, including steroid medication. Symptoms may include headaches, weakness of the limbs, an increase in seizures, and speech or memory problems.

Call your doctor or healthcare team immediately if you experience any symptoms which are new or different.

Emotional effects

You might feel many different emotions during radiotherapy. Being tired can make any of the emotions that you're feeling even worse. Be sure to get plenty of rest. You might feel anxious, depressed, afraid, angry, frustrated, alone, or helpless. It's normal to have these kinds of feelings. Living with a brain tumour and going through treatment is stressful. Make sure you tell your family and friends how you are feeling. They will be able to support you.

You can also contact Brain Tumour Support NZ or Cancer Society of New Zealand for support.

Possible long-term side effects of radiotherapy

Over a period of time, the treated area might develop a small area of dead cells. This is called radiation necrosis. This is rare. In very rare cases, you may develop another brain tumour many years after you were first treated. This is because, although radiation kills cancer cells, it is also a risk factor for developing them. Radiation can also cause changes in the brain tissue. This can have an effect on your brain function. Please speak to your radiation oncologist if you are worried or concerned.

Questions you could ask your doctor or clinical nurse specialist

- What kind of radiation therapy will I get?
- What is the waiting list for my radiotherapy and if I have to wait, will it affect my outcome?
- How many treatments will I get?
- What side effects should I expect during radiation therapy?
- Will these side effects go away after radiation therapy is finished?
- What kind of late side effects should I expect after radiation treatment?
- Who should I contact during my treatment if I have any further questions?
- Will radiation treatment cure me or manage my brain tumour?
- If I can have the treatment privately, how much will it cost?

If there are answers you do not understand, it is okay to say for example:

- Would you explain that again please
- I am not sure what you mean by...
- Would you draw a diagram, or write it down please





After radiotherapy treatment

Radiotherapy is given as an outpatient so you can go home after each treatment session. If you feel unwell, you may have to stay in hospital overnight. If you are receiving chemotherapy, this may continue for a while after your radiotherapy treatment is finished.

You will have regular check-ups to monitor the effectiveness of treatment and to deal with any problems you may have. You may be asked to return to the hospital for one or more visits to see your radiation oncologist or you may be discharged to the care of the specialist or department who referred you. The doctor who referred you and your GP will receive a complete report on your treatment and follow-up care.



Resources

Look Good Feel Better

lgfb.co.nz

If side-effects change your appearance and self-esteem, consider registering for a free workshop. Free Feel Better Classes are for anyone undergoing any treatment for any type of cancer at any stage. More information can be found on their website.

Cancer Society NZ

cancernz.org.nz

Support Friend

Brain Tumour Support NZ can organise a Support Friend to contact you so you can talk about any concerns you may have.

Sources

Cancer Society New Zealand

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Guy's and St Thomas Hospital

Radiotherapy for brain tumours (2018)

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McMillan Cancer Support

Understanding primary brain tumours (2016)

www.be.macmillan.org.uk/Downloads/CancerInformation/CancerTypes/MAC11647-brain-tumoursE10lowresPDF20161123.pdf

Brainstrust UK

My radiotherapy book (2016)

www.brainstrust.org.uk/downloads/My-radiotherapy-book.pdf

National cancer Control Program

Radiotherapy to the brain

A guide for patients (2012)

[www.stlukesnetwork.ie/assets/media/img/pdf/adiotherapy+Treatment+to+Brain+Dec+2012\[1\].pdf](http://www.stlukesnetwork.ie/assets/media/img/pdf/adiotherapy+Treatment+to+Brain+Dec+2012[1].pdf)

Oxford University Hospitals

Radiotherapy to the brain – short course Information for patients

www.ouh.nhs.uk/patient-guide/leaflets/files/4481Pbrainshortcourse.pdf

Cancer Research UK

Brain tumours – treatment - radiotherapy

www.cancerresearchuk.org/about-cancer/brain-tumours/treatment/radiotherapy

Memorial Sloan Kettering Cancer Centre Radiation Therapy to the Brain

www.mskcc.org/pdf/cancer-care/patient-education/radiation-therapy-brain

Auckland District Health Board

Simulation appointment

www.healthpoint.co.nz/public/radiation-oncology/auckland-dhb-radiation-therapy/radiation-therapy-simulation-appointment/

Radiation therapy – treatment

www.healthpoint.co.nz/public/radiation-oncology/auckland-dhb-radiation-therapy/radiation-therapy-treatment/

Side effects of radiation therapy

www.healthpoint.co.nz/public/radiation-oncology/auckland-dhb-radiation-therapy/side-effects-of-radiation-therapy/

MidCentral District Health Board

Cancer and radiation therapy

www.midcentralthb.govt.nz/HealthServices/RCTS/DocumentsRadiatonTherapyInfoBkltCancerandRadiationTherapy.pdf

Radiation treatment

www.midcentralthb.govt.nz/HealthServices/RCTS/Documents/RadiatonTherapyInfoBkltTreatment.pdf

www.midcentralthb.govt.nz/HealthServices/RCTS/radiationoncology/Pages/Treatment.aspx



Disclaimer

This guide reflects current recommendations from international clinical guidelines for the management of primary adult brain tumours. It is not intended to take the place of medical advice. A patient's GP or specialist may provide them with new or different information which is more appropriate to their needs.

New Zealand does not have its own set of clinical practice guidelines for the management of brain tumours. New Zealand doctors will typically refer to international guidelines, from organisations such as: the UK's National Institute for Health and Care Excellence (NICE); the European Society of Medical Oncology (ESMO); Cancer Council Australia; and the USA's National Comprehensive Care Network (NCCN). Links to these international guidelines can be found in our Online Resources directory.

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Get in touch for more information



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