

NETCARE
cancer care

**Radiation
Therapy
and YOU**



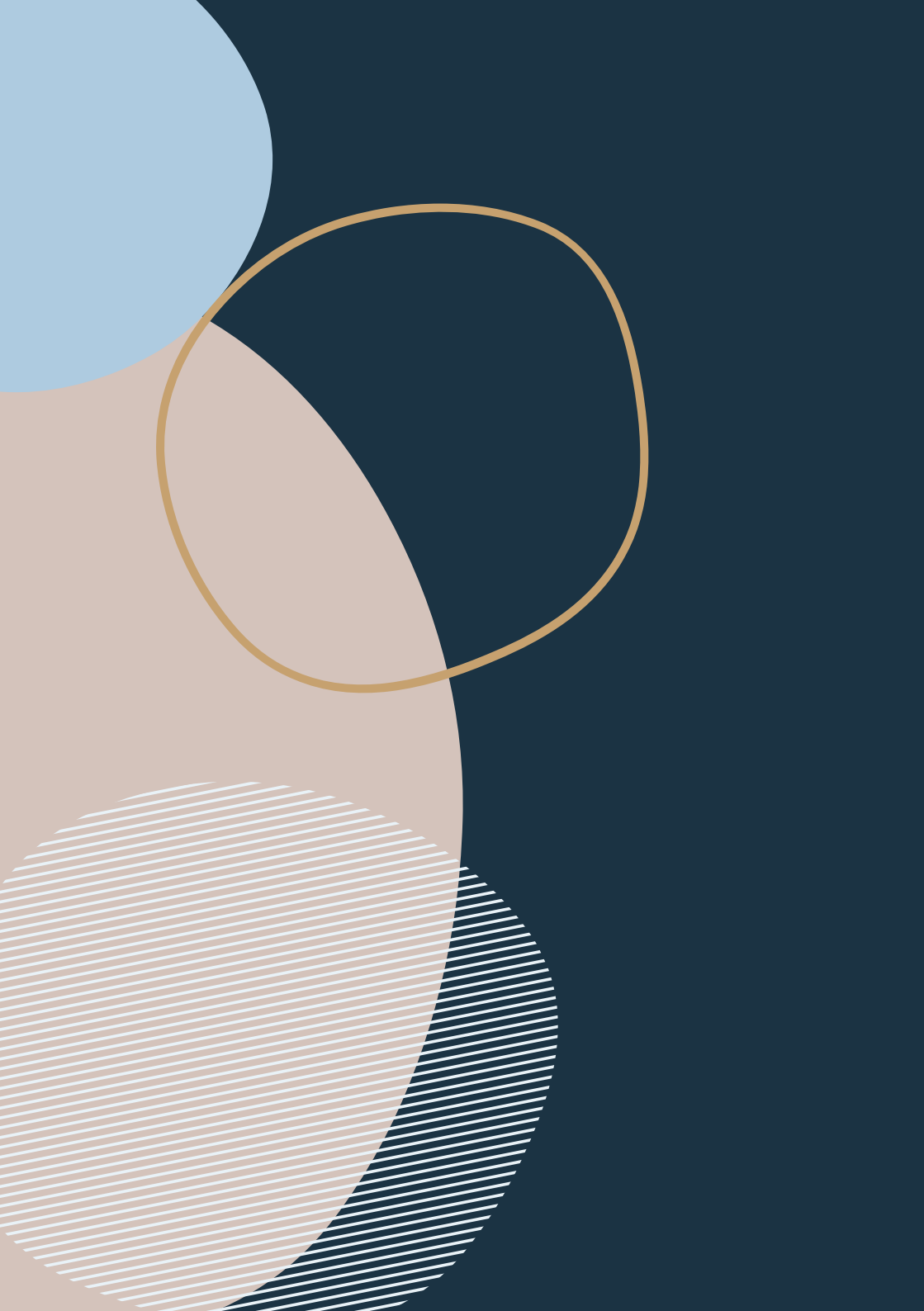


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INTRODUCTION TO RADIATION THERAPY

With this booklet, we hope to provide you and your loved ones with more information about radiation therapy and what to expect.

You may feel overwhelmed taking in so much information at once – rather read the sections you would like information on straight away and return to read the rest.

Speak to your oncologist and radiotherapist if you need any help or have any unanswered questions. Remember that Radiation Therapy affects each person differently.

QUESTIONS AND ANSWERS

What is radiotherapy?

Radiation therapy uses high-energy rays to treat cancer. The rays damage the DNA in cells. This either kills the cancer cells or stops the creation of new cancer cells – radiation can also harm normal cells. Radiation therapy can be given in several small daily doses, which normal body tissue can tolerate. For this type of therapy, a course of daily treatments is given instead of one treatment. In this way, the normal cells, which recover more rapidly than cancer cells, have a better chance of recovery.

Who is part of the treatment team?

The delivery of radiation therapy requires a treatment team, including a radiation oncologist, medical physicist, and radiotherapist. The radiation oncologist is a physician who evaluates the patient and determines the appropriate therapy or combination of therapies. They determine which area to treat and what dose to deliver. The physicist, radiotherapist and oncologist determine what techniques to use to deliver the prescribed dose of radiation. The physicist and the radiotherapist then make detailed treatment calculations using treatment planning computers. Radiotherapists deliver daily treatments; they are specially trained technologists.

What is treatment planning?

This is the process of planning the specific detail of your treatment. You, as the patient, may be involved in the following aspects of your treatment planning:

- CT scanning and/or other imaging (MRI / PET / SPECT) to pinpoint the treated area.

Why do I need more x-rays?

You may have had x-rays or scans done before. However, the x-rays and/or scans that are needed for planning must be taken in the treatment position. Your previous x-rays have been for diagnostic purposes and are not compatible with the planning system. The position used during scanning depends on where your lesion is. You may have to lie on your back or face down, with your arms up above your head or by your sides. The planning radiotherapist will determine the best position for your treatment.

What happens to me during planning?

The planning radiotherapist will explain the procedure when you are called from the waiting room. You will be placed in the treatment position so that the required scan images can be obtained. There are various devices that may also be used depending on the treatment area. The purpose of using these devices is to immobilise the treatment area. For example, a patient receiving treatment for breast cancer may be positioned on a special breast board or if receiving treatment in the pelvic area may be positioned using a device under the knees. Some reference marks will be made by drawing on your body and a series of body measurements will be taken. Once the correct position is obtained, the reference points might be tattooed. These tattoos are permanent and will not wash off.

Why do I need tattoos?

The reference tattoos are vital for certain treatments as the reference marks drawn on your body during planning will easily wash off. The tattoos ensure that you are set up on the treatment unit in the same position every day – they are small black dots that are not obvious unless you really look for them. They are made using a thin needle and black ink.

My doctor said something about a mask?

Patients undergoing treatment to the head and neck area might need a mask. The mask holds the head in the correct position during treatment. It is made of a thermo-plastic mesh, which becomes flexible when heated. Once the plastic is soft, it is moulded over your face so that it fits exactly – it is comfortable with breathing holes. Patients receiving treatment to the head and/or neck do not need tattoos, as the marks are placed directly onto the mask.

What happens after the CT planning scan?

The planning radiotherapist will load your digital images onto the planning computer while the radiation oncologist determines the volume of the tumours and other areas that need treatment – they will also outline the sensitive structures that should be avoided. A plan is then designed which delivers the best possible dose to the treatment volume while taking care to avoid normal and sensitive structures as far as possible. The procedure might take a few days. Once the radiation oncologist has approved the plan, you will be contacted and given a time and date to return to the department.

What happens on the first day?

You will meet the radiotherapists, who will be responsible for your daily treatment at the treatment unit. In the treatment room you are set up in the same position you were scanned in. A set of verification x-ray images will then be taken. These images are used to compare your planning position at the CT scan to the first day's actual treatment position. These images will be approved by the radiation oncologist. In some cases, you will not be treated on the first day. The radiotherapists will only take the position images and treatment will then start on your second visit .

How appointment times work?

Appointment times are daily, unless specified otherwise by the radiation therapist. Please try to be flexible concerning appointment times, as the one you may want could already be taken but may become available at a later stage. We do try to accommodate working patients and parents responsible for school lifts etc. Patients from out of town might have to arrange accommodation for the duration of their treatment. Please ask the receptionist about the availability of places to stay.

Will treatment be over weekends and public holidays?

The Radiotherapy Department might be closed on public holidays and over weekends. You will be informed if you will receive treatment on these days.

What about service days?

To deliver accurate and safe radiation therapy, our machines are very sensitive and regular interlocks occur to ensure that you receive the correct dose. You will be notified if a service affects your treatment and appointments will be adjusted to accommodate for this.

How long will daily treatment take?

There is a 10 to 15 minute treatment slot per patient – we try to adhere to appointment times. To ensure that each patient receives accurate treatment, the radiotherapists may take longer than 15 minutes. Patients in need of emergency treatment and children will take priority, which might result in a waiting time. In the rare event of a power failure or machine breakdown, we will try to contact you before you leave home. Unfortunately, these circumstances are beyond our control and may lead to delays. If you are running late for any reason, please call us to arrange for an alternative treatment slot.

What happens during daily treatment?

You will be set up in the treatment position on the treatment couch, and your tattoos (reference marks) will be checked. Once the radiotherapists are satisfied that your treatment position is correct, they will leave the room and operate the machine from the control room. A set of x-ray images will be taken regularly to verify the treatment area. They will be able to monitor you on closed-circuit TV screens and speak to you if necessary, using an intercom. Radiotherapy is not painful – you won't feel anything during treatment. While the radiation beam is on, the machine makes a buzzing noise.

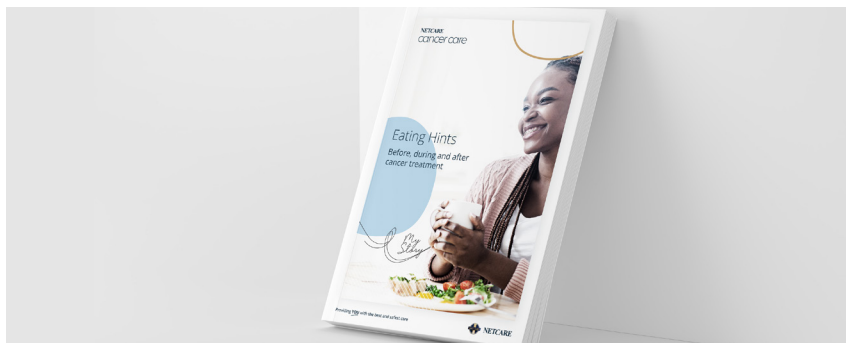
PLEASE NOTE: You must lie perfectly still during the treatment to deliver the radiation accurately; this is crucial.



Should I follow a special diet while I am getting radiation therapy?

Your body uses a lot of energy to heal itself during radiation therapy. You must eat enough calories and protein to maintain your weight. Ask your radiation oncologist if you need a special diet while you are receiving radiation therapy.

To learn more about foods and drinks that are high in calories or protein, you might also read **Netcare's Eating Hints Booklet: Before, During and After Cancer Treatment.**



Can I continue to work during radiation therapy?

Some people work full time during radiation therapy, others part-time or not at all. How much you work depends on how you feel. You are likely to feel well enough to work when you first start your radiation treatments. Do not be surprised if you are more tired, have less energy, or feel weak as time goes on. Once you have finished treatment, it may take a few weeks or months for you to feel better.

Ask your radiation oncologist or radiotherapist what to expect from your treatment. Speak to your employer to find out if you can go on medical leave if you get to a point during your radiation therapy when you feel too sick to work.

How can I cope with my feelings during radiation therapy?

Living with cancer and going through treatment can be very stressful. It is normal to feel anxious, depressed, afraid, angry, frustrated, helpless and/or alone at some point during radiation therapy, but there are ways you can learn to cope with these feelings.

Many people find it helpful to talk to others going through the same thing – try joining a support group (in person or online). You might also try relaxation and/or meditation exercises. Some people find prayer helpful.

Exercise can also boost your mood. Try activities such as walking, biking, yoga, or water aerobics. Check with your radiation oncologist about the types of exercise that you can safely do during treatment.

How do I make the most of my radiation therapy?

You have an important role to play in your radiation therapy:

- Arrive on time for all radiation therapy sessions
- Ask questions and talk about your concerns
- Tell someone on your radiation therapy team when you have side effects and/or changes with eating or bowel habits
- Make sure to consult with your oncologist on a weekly basis
- Tell your oncologist or radiotherapist if you are in pain or experience any other side effects

Follow the advice of your radiation oncologist and radiotherapist about how to care for yourself at home:

- Take care of your skin
- Drink enough liquids
- Eat foods to help with side effects
- Maintain your weight

What happens when radiation is over?

Once you have finished radiation therapy, you will need follow-up care for the rest of your life. Follow-up care refers to regular checkups once treatment is over. During these checkups your radiation oncologist will check how well you reacted to the radiation therapy, check for signs of cancer, talk with you about your treatment and care, and look for late side effects. Late side effects are those that occur six or more months after you have completed radiation therapy.

After I finish radiation therapy what symptoms should I watch out for?

You have gone through a lot with cancer and radiation therapy. You may now be even more aware of your body and how you feel each day. Pay attention to changes in your body.

RADIATION THERAPY SIDE EFFECTS

Tell your radiation oncologist or radiotherapist of:

- A pain that does not go away
- New lumps, bumps, swellings, rashes, bruises or bleeding
- Appetite changes, nausea, vomiting, diarrhoea or constipation
- Weight loss that you cannot explain
- A fever, cough or hoarseness that does not go away
- Any other symptoms that worry you
- If there is a chance that you are pregnant

Radiation therapy side effects

Side effects are problems that can occur resulting from treatment. They may occur because the high doses of radiation used to kill cancer cells can also damage healthy cells in the treatment area. Side effects are different for each person – some people have many, while others have hardly any. Side effects may be more severe if you receive chemotherapy before, during or after your radiation therapy.

Talk with your radiation oncologist about your chances of having side effects. The team will watch you closely and ask if you notice any problems. If you do have side effects, your radiation oncologist or radiotherapist will discuss ways to manage them. See the section on fatigue later in this booklet.

Common side effects

Many people who receive radiation therapy have skin changes, fatigue, and experience other side effects which depend on the part of the body treated. Skin changes may include dryness, itching, peeling or blistering in the treatment area. These changes occur because radiation passes through the skin on its way to the cancer. You will need to take special care of your skin during radiation therapy. Fatigue is often described as feeling weary or exhausted. There are many ways to manage fatigue.

Depending on the part of your body being treated, you may also have:

- Diarrhoea
- Mouth problems
- Sexual changes
- Trouble swallowing
- Hair loss in the treatment area
- Nausea and vomiting
- Swelling
- Urinary and bladder changes

Most of these side effects go away within two months after you have finished radiation therapy. Late side effects may occur six or more months after radiation therapy is over. They vary depending on the part of your body treated and the dose of radiation you received.

Late side effects may include infertility, joint problems, lymphoedema and mouth problems. Everyone is different, so talk with your radiation oncologist or radiotherapist about what signs to look out for.

Treatment areas and possible side effects

The radiation therapy side effects are dependent on the part of your body that is treated. The part of your body being treated is called the treatment area. To figure out which side effects you might expect, find the part of your body being treated in the following chart. Possible side effects are listed next to each treatment area. Ask your radiation oncologist about your chances of getting each side effect.

Part of the body being treated	Possible side effects
Brain	<ul style="list-style-type: none">• Fatigue• Hair loss• Nausea and vomiting• Skin changes• Headache• Blurry vision
Breast	<ul style="list-style-type: none">• Fatigue• Hair loss• Skin changes• Tenderness• Swelling• Skin reactions similar to sunburn
Chest	<ul style="list-style-type: none">• Fatigue• Hair loss• Skin changes• Throat changes like trouble swallowing• Cough• Shortness of breath



Pelvis	<ul style="list-style-type: none">• Diarrhoea• Fatigue• Hair loss• Nausea and vomiting• Sexual and fertility changes• Skin changes• Urinary and bladder changes
Stomach and Abdomen	<ul style="list-style-type: none">• Diarrhoea• Fatigue• Hair loss• Nausea and vomiting• Skin changes• Urinary and bladder changes

SIDE EFFECTS AND HOW TO MANAGE THEM

DIARRHOEA

What it is

Diarrhoea is frequent bowel movements, which may be soft, formed, loose or watery. Diarrhoea can occur at any time during radiation therapy.



Figure 1: Radiation to the shaded area may cause diarrhoea

Why it occurs

Radiation therapy to the pelvis, stomach and abdomen can cause diarrhoea because radiation harms the healthy cells that line the inside of the intestines. These areas are especially sensitive to the amount of radiation needed to treat cancer.

What to do

- **Drink 8 to 12 cups of clear liquid per day.** Severe diarrhoea can cause dehydration, which can become a serious problem. If you drink liquids high in sugar like fruit juice, ask your radiation oncologist if you should mix them with extra water. See information on food and drinks at the end of the booklet.
- **Eat small meals and snacks.** Many people eat better if they eat five or six small meals and snacks each day, rather than three large meals.
- **Eat foods that are high in salts like sodium and potassium.** Your body loses salt when you have diarrhoea; it is important to replace it. Foods that are high in sodium or potassium include bananas, oranges and boiled or mashed potatoes. See the end of the booklet for foods high in sodium and potassium.
- **Eat low fibre foods.** Foods that are high in fibre can make diarrhoea worse. Rather eat low fibre foods like bananas, white rice, white toast or plain yoghurt. See the end of the booklet for low fibre foods.
- **Take care of your peri-anal area.** Instead of toilet paper, use a baby wipe or squirt water from a spray bottle to clean yourself after bowel movements. Also, ask your radiation oncologist about taking sitz baths; this is a warm-water bath taken in a sitting position that covers only the hips and buttocks. Be sure to tell your radiation oncologist if your rectal area gets sore.
- **Speak to your oncologist.** Tell them if you have diarrhoea, they will suggest ways to manage it.

Food to avoid

- Beer, wine and other types of alcohol
- Milk and dairy foods, such as ice cream, sour cream and cheese
- Spicy foods like hot sauce, salsa, chilli and curry dishes
- Foods or drinks with caffeine like regular coffee, black tea, soda and chocolate
- Fried or greasy food
- Food from fast-food restaurants
- Foods or drinks that cause gas like cooked dried beans, cabbage, broccoli, soy milk and other soy products.
- Foods high in fibre like raw fruits and vegetables, cooked dried beans, whole wheat breads and cereals.

FATIGUE

What it is

Fatigue is described as feeling weak, weary, worn out, heavy or slow. Fatigue from radiation therapy can range from mild to extreme.

Why it occurs

Many problems can cause fatigue:

- Anaemia
- Medicines
- Anxiety
- Infection
- Trouble breathing
- Other medical problems
- Appetite changes
- Pain
- Depression
- Lack of activity
- Trouble sleeping

How long it lasts

Fatigue can last from six weeks to a year after your last radiation therapy session. This can be determined by your age, health, how active you are and how you felt before radiation therapy. For some, the fatigue will never go away, or energy levels will differ from before radiation therapy.

What to do

- **Try to sleep at least eight hours each night.** This may be more sleep than you needed before radiation therapy. One way to sleep better at night is to be active during the day. Another way is to relax right before going to bed by doing a calming activity like reading, working on a jigsaw puzzle, listening to music.
- **Plan time to rest.** Take short naps or rest breaks between activities.
- **Try not to do too much.** Being fatigued, you may not have enough energy to do everything you want to do. Try to moderate your daily activities and do things that matter most to you.

- **Exercise.** Research shows that people feel physically and mentally healthier when they exercise. Go for a short walk, ride your bike or do yoga. Speak with your radiation oncologist about the type of exercise you can do while undergoing radiation therapy.
- **Relax.** Meditation, prayer, gentle yoga, guided meditation and visualisation are ways you can learn to relax and decrease stress.
- **Eat and drink well.** It may be easier to eat if you have five or six small meals each day, rather than three large ones. Keep foods that are easy to put together, such as canned soups, frozen meals, yoghurt and cottage cheese. Drink plenty of fluids each day – about eight cups of water or juice.
- **Plan a work schedule that is right for you where possible.** Fatigue may affect the amount of energy you have to do your job. You may feel well enough to work your full schedule or you may need to work less — maybe just a few hours a day or a few days each week. You may want to speak to your employer about ways to work from home so you do not need to commute. If possible, think about going on medical leave while you have radiation therapy.
- **Let others help you.** You can ask family and friends to help when you feel fatigued. Home care staff, family and friends can assist with household chores, running errands or driving you to and from hospital. They might also help by cooking your meals, to eat now or freeze for later.
- **Learn from others who have cancer.** People who have cancer can help each other by sharing ways to manage fatigue. One way to meet other people with cancer is by joining a support group – either in-person or online. Speak to your oncologist or radiotherapist to learn more about support groups.
- **Speak to your oncologist.** They can suggest treatments for problems that may be causing your fatigue like anaemia (a problem in which the number of red blood cells is below normal), depression or trouble sleeping.

HAIR LOSS

What is it

With radiation therapy, you will lose hair on the part of your body being treated. Hair loss is also called alopecia.

Why it occurs

Radiation therapy causes hair loss because it damages cells that grow quickly. This is not the same as hair loss from chemotherapy, which happens all over your body. For instance, you may lose some or all the hair on your head from radiation to your brain. But, with radiation to your hip, you may lose the hair between your legs but not the hair on your head.

How long it lasts

You may start losing hair in your treatment area two to three weeks after your first radiation therapy session. It takes about a week for all the hair in your treatment area to fall out. Your hair may grow back three to six months after your treatment is over.

It is possible that because the dose of radiation is so high, your hair never grows back. If it does grow back, it may not look or feel like it did before. It might be thinner, curly instead of straight or darker or lighter than it was before.

What to do (before hair loss)

- **Decide whether to cut your hair or shave your head.** You may feel more in control of hair loss when you plan ahead. If you do decide to shave your head, use an electric razor to prevent cuts. It is important to discuss this decision with your radiotherapist first as cutting or shaving your hair can affect your treatment when you are receiving treatment over the head and neck area.
- **If you plan to buy a wig, do so while you still have hair.** The best time to select your wig is before radiation therapy begins or soon after it starts. This way, the wig will match the colour and style of your own hair. Some people take their wig to their hairstylist. You will want to have your wig fitted once you have lost your hair. Make sure to choose a wig that feels comfortable and does not hurt your scalp.
- **Check with your medical aid to see whether they will pay for your wig.** Speak to your radiation oncologist or radiotherapist about possible wig providers.

- **Be gentle when you wash your hair.** Use a mild shampoo like baby shampoo. Dry your hair by patting it with a soft towel instead of rubbing it.

- **Do not use items that can hurt your scalp like:**

- Straightening or curling irons
- Brush rollers or curlers
- Electric hair dryers
- Hairbands and clips
- Hairsprays
- Hair dyes
- Products to perm or relax your hair

- **Do not use products that are harsh on your hair.** Examples of products that can be harsh on your hair include hair colours, perms, gels, mousse or oil.

What to do (after hair loss)

- **Protect your scalp.** Your scalp may feel tender after hair loss. Protect it from very cold air and sunburn by covering your head with a hat, turban or scarf when you are outside.

- **Stay warm.** Your hair helps keep you warm, so you may feel colder once it is gone. Stay warmer and more comfortable by wearing a hat, turban, scarf or wig.

MOUTH CHANGES

What is it

Radiation therapy to the head or neck can cause mouth problems:

- Mouth sores that are like little cuts or ulcers in your mouth
- Dry mouth (also called xerostomia) and throat
- Loss of taste
- Tooth decay
- Changes in taste, such as a metallic taste when you eat meat
- Infections of your gums, teeth or tongue
- Jaw stiffness and bone changes
- Thick, rope-like saliva



Figure 2: *Radiation to the shaded area may cause mouth changes*

Why it occurs

Radiation therapy kills cancer cells and can also damage healthy cells like those in the glands that make saliva, and in the soft, moist lining of your mouth.

How long it lasts

Some problems, like mouth sores, might go away after treatment ends. Others like taste changes, can last for months or even years. While a side effect like dry mouth, might improve, but never go away.

What to do

- **Visit a dentist.** Your mouth needs to be as healthy as possible before radiation therapy to the head and neck. So, it is important that you see a dentist several weeks before beginning treatment. Be sure to tell your dentist that you have cancer and that you will be having radiation therapy. The dentist will examine your teeth and mouth and do any needed dental work. If you do have dental work, you will need to heal before beginning radiation therapy.
- **Check your mouth every day.** This way, you can see or feel problems as soon as they start. Problems to look out for include mouth sores, white patches or infection.
- **Keep your mouth moist.**
 - Sip water often during the day
 - Suck on ice chips
 - Chew sugar-free gum
 - Suck on sugar-free soft candy
 - Use a saliva substitute. Ask your radiation oncologist if there are medicines that help increase saliva.
- **Clean your mouth, teeth, gums, and tongue.**
 - Brush your teeth, gums and tongue after every meal and at bedtime
 - Use an extra-soft toothbrush. Make the bristles softer by running warm water over them just before you brush
 - Use fluoride toothpaste
 - Use a special fluoride gel (your dentist can prescribe)
 - Do not use mouthwash that contains alcohol
 - Gently floss your teeth every day. If your gums bleed or hurt, avoid those areas, but floss your other teeth
 - Rinse your mouth every couple of hours with a saltwater solution. There are many recipes for a solution like: mix 1/4 teaspoon bicarbonate soda and 1/4 teaspoon salt with 4 cups (1 litre) of warm water
 - If you have dentures, make sure they fit well and limit how long you wear them each day. If you lose weight, your dentist may need to adjust them
 - Keep your dentures clean by soaking or brushing them every day

- **Be careful what you eat when your mouth is sore:**
 - Choose foods that are easy to chew and swallow
 - Take small bites, chew slowly and sip liquids with your meals
 - Eat soft, moist foods, such as cooked cereals, mashed potatoes and scrambled eggs
 - Soften food by mixing it with gravy, sauce, broth, yoghurt or other liquids
 - Eat foods that are warm or at room temperature
- **Avoid things that can hurt, scrape, or burn your mouth:**
 - Sharp, crunchy foods, such as potato or corn chips
 - Hot foods
 - Spicy foods, such as hot sauce, curry dishes, salsa and chilli
 - Fruits and juices that are highly acidic, like tomatoes, oranges and lemons
 - Toothpicks or other sharp objects
 - All tobacco products, including cigarettes, pipes, cigars and chewing tobacco
 - Drinks that contain alcohol
- **Avoid foods and drinks that are high in sugar.** Food and drinks with a lot of sugar, such as regular soda, gum and candy, can cause tooth decay.
- **Exercise your jaw muscles.** Open and close your mouth 20 times as far as you can without causing pain. Do this exercise three times a day, even if your jaw isn't stiff.
- **Call your radiation oncologist when your mouth hurts.** There is medicine and other products like mouth gels that can help control mouth pain.
- **You will need to take good care of your mouth for the rest of your life.** Ask your dentist how often you will need dental check-ups and how best to care for your teeth and mouth after you finish radiation therapy.

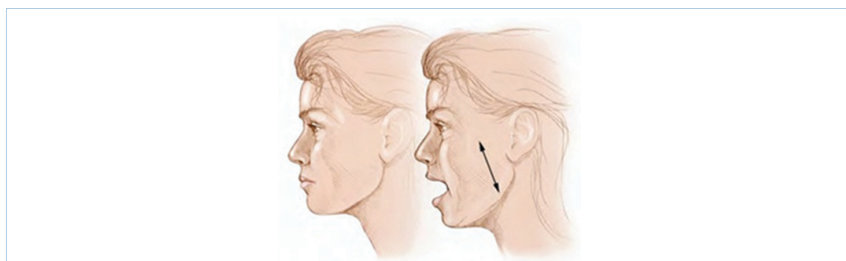


Figure 3: *Exercise your jaw three times a day*

NAUSEA AND VOMITING

What it is

Radiation therapy can cause nausea and/or vomiting. Nausea is feeling like you are going to vomit. Vomiting is the throwing up of food and fluids.



Figure 4: *Radiation to the shaded area may cause nausea and vomiting*

Why it occurs


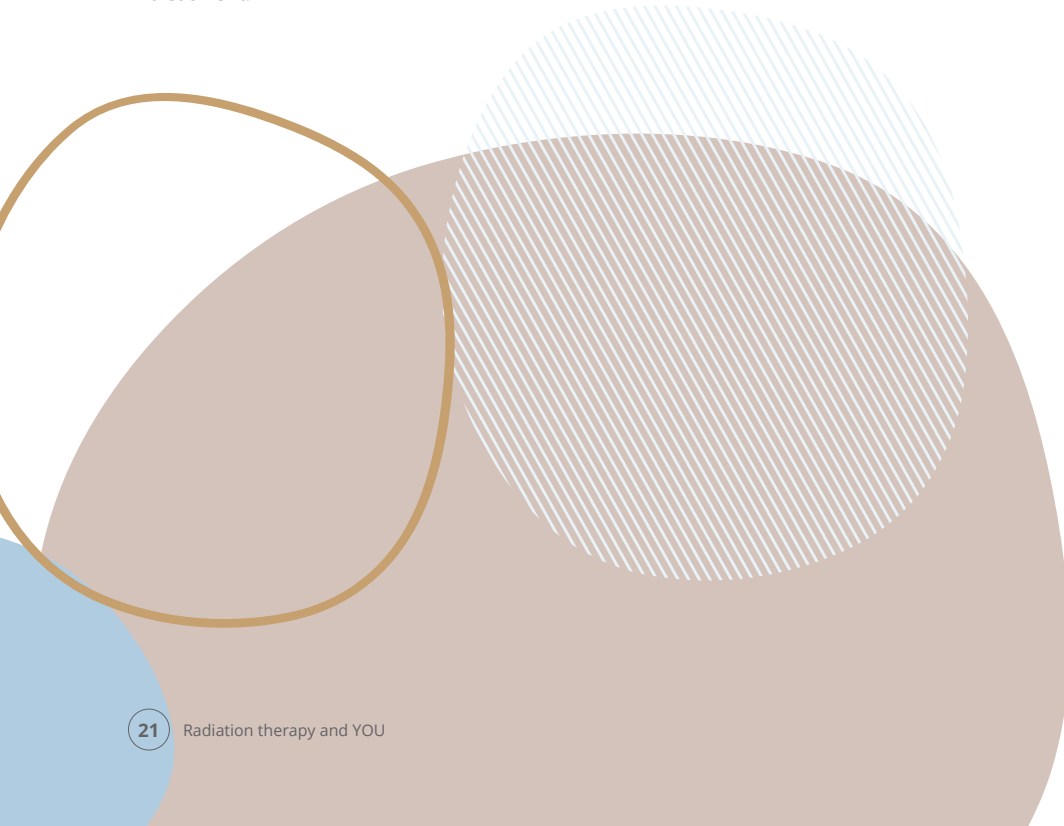
Nausea and vomiting can occur after radiation therapy to the stomach, small intestine, colon or parts of the brain. Your risk for nausea and vomiting depends on how much radiation you are getting, how much of your body is in the treatment area, and whether you are also having chemotherapy.

How long it lasts

Nausea and vomiting may occur 30 minutes to hours after your radiation therapy session. You are likely to feel better on days that you do not have radiation therapy.

What to do

- **Prevent nausea.** The best way to prevent vomiting is to prevent nausea. One way to do this is by eating and drinking bland, easy-to-digest foods and drinks that do not upset your stomach. These include toast and apple juice. To learn more, see the list of foods and drinks that are easy on the stomach at the end of this booklet.

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- **Plan when to eat and drink.** Many people eat better when they eat before getting radiation therapy. Learn the best time for you to eat and drink. Try a light snack, such as crackers and apple juice one to two hours before radiation therapy, or you might feel better if you have treatment on an empty stomach, which means not eating two to three hours before treatment.
 - **Eat small meals and snacks.** Many people find that they eat better if they eat five or six small meals and snacks each day, rather than three large meals. Make sure to eat slowly and do not rush.
 - **Have foods and drinks at room temperature.** Before eating or drinking, give hot food and drinks a chance to cool down – warm cold food and drinks in the microwave for a short time.
 - **Speak to your radiation oncologist.** They might suggest a special diet or prescribe medicine.
 - **Try to relax before treatment.** You may feel less nauseous if you relax before each treatment.
- 

SEXUAL AND FERTILITY CHANGES

What is it

Radiation therapy sometimes causes sexual changes, which can include hormone changes and loss of interest in, or ability to have sex. It can also affect fertility, both while getting treatment and after. Sexual and fertility changes are different for men and women.

Problems for women include:

- Pain or discomfort when having sex
- Vaginal itching, burning, dryness or atrophy (when the muscles in the vagina become weak and the walls of the vagina become thin)
- Vaginal stenosis, when the vagina becomes less elastic, narrows and gets shorter
- Symptoms of menopause for women who are not yet in menopause like hot flashes, vaginal dryness and missing periods
- Loss of fertility (unable to fall pregnant)

Problems for men include:

- Impotence, which means not being able to have or keep an erection. This problem is also called erectile dysfunction or ED
- Loss of fertility, which means never being able to father a child due to having fewer or less effective sperm



Figure 5: Radiation to the shaded area may cause sexual and fertility changes

Why it occurs

Sexual and fertility changes can happen when people have radiation therapy to the pelvic area. For women, this includes radiation to the vagina, uterus, or ovaries, and for men, this includes radiation to the testicles or prostate. Scar tissue from radiation therapy causes many sexual side effects. Other problems, such as fatigue, pain, anxiety, or depression, can affect your interest in having sex.

How long it lasts

After radiation therapy is over, most people want to have sex as they did before treatment. Many sexual side effects go away after treatment ends. But you may have problems with hormone changes and fertility for the rest of your life. If you conceive a child after radiation therapy, the fact that you had this treatment should not affect the baby's health.

What to do

Both men and women need to be open and honest with their spouse or partner about their feelings and concerns and how they would prefer to be intimate while having radiation therapy.

For women - issues to discuss with your radiation oncologist:

- **Fertility.** Before radiation therapy starts, let your radiation oncologist know if you think you might want to get pregnant after your treatment ends. You can discuss ways to preserve your fertility.
- **Sexual problems.** You may or may not have sexual problems. Your radiation oncologist can tell you about the side effects you can expect and suggest ways to cope with them.
- **Birth control.** Radiation therapy can hurt the fetus at all stages of pregnancy. It is very important not to fall pregnant while having radiation therapy. If you have not yet gone through menopause, speak to your radiation oncologist about birth control and ways to prevent pregnancy.
- **Pregnancy.** Make sure your radiation oncologist or radiotherapist knows if you are already pregnant.
- **Lubrication.** Use a special lotion to keep your vagina moist. When you have sex, use a water or mineral oil-based lubricant, such as K-Y Jelly®
- **Sex.** Ask your radiation oncologist if it is okay for you to have sex over the course of your radiation treatment. Most women can have sex, but it is a good idea to ask and be sure.

For men, issues to discuss with your radiation oncologist include:

- **Fertility.** Before you start radiation therapy, tell your radiation oncologist if you think you might want to father children in the future. You can discuss your options, like banking your sperm. Your sperm will need to be collected before you begin radiation therapy.
- **Impotence.** Your radiation oncologist can tell you whether you are likely to become impotent and how long it might last. Your radiation oncologist can prescribe medicine or other treatments that may help.
- **Sex.** Ask your radiation oncologist if it is okay for you to have sex over the course of your radiation treatment. Most men can have sex, but it is a good idea to ask and be sure.

SKIN CHANGES

What is it

Radiation therapy may cause skin changes in your treatment area. Here are some common skin changes:

- **Redness.** Your skin in the treatment area may look like you have a mild to severe sunburn or tan.
- **Severe itching.** The skin in your treatment area may itch very badly. It is important to avoid scratching, which can cause skin breakdown and infection. Skin breakdown is a problem that occurs when the skin in the treatment area peels off faster than it can grow back.
- **Dry and peeling skin.** The skin in your treatment area may get very dry. It may get so dry that it starts to peel as if you have had a bad sunburn. If it peels off faster than it can grow back, you may develop sores or ulcers.
- **Moist reaction.** The skin in your treatment area can become wet, sore and infected. This problem is more common where you have skin folds by your buttocks, behind your ears and under your breasts. It may also occur where your skin is very thin, such as your neck.

SKIN CHANGES

Why it occurs


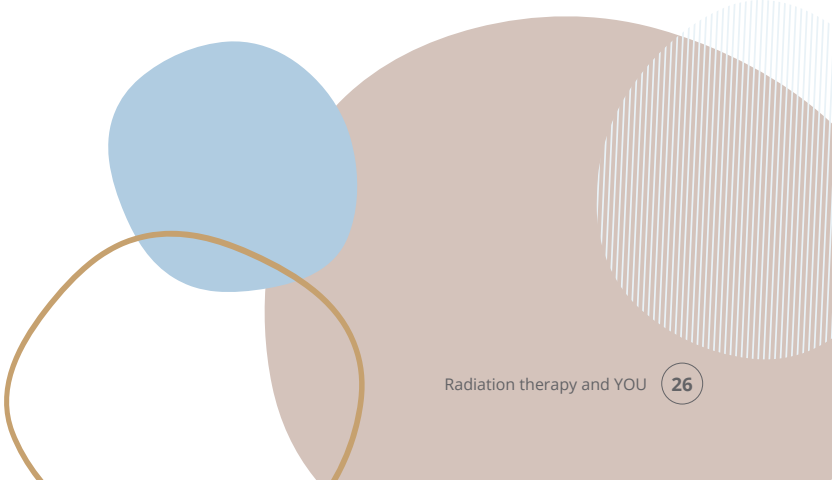
Radiation kills healthy skin cells in the treatment area. When people get radiation therapy almost every day, their skin cells do not have enough time to grow back between treatments. Skin can change anywhere on the body where radiation is being applied.

How long it lasts

Skin changes may start a few weeks after you begin radiation therapy. Many of these changes go away a few weeks after treatment is over but even after radiation therapy ends, some skin changes may remain. Skin in the treatment area may always look darker and blotchy. It may feel very dry or thicker than before and you will always burn quickly and be sensitive to the sun.

What to do

- **Skin care.** Take extra good care of your skin during radiation therapy. Be gentle and do not rub, scrub or scratch in the treatment area. Use creams that your oncologist or radiotherapist suggests.
- **Do not put anything on your skin that is very hot or cold.** Do not use heating pads, ice packs or other hot or cold items on the treatment area.
- **Be gentle when you shower or take a bath.** You can take a lukewarm shower every day. If you prefer to take a lukewarm bath, do so only every other day and don't soak for too long. Whether you take a shower or bath, make sure to use a mild soap. Dry yourself with a soft towel by patting – do not rub your skin.
- **Use only lotions and skin products that your oncologist or radiotherapist suggests.** If you are using a prescribed cream for a skin problem or acne tell your radiation oncologist before you begin radiation treatment and check with them or your radiotherapist before using any of the following skin products:
 - Bubble bath
 - Cornstarch
 - Cream
 - Deodorant
 - Hair removers
 - Make-up
 - Oil
 - Ointment
 - Perfume

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- **Cool, humid places.** Your skin may feel much better when you are in cool, humid places. You can make rooms more humid by using a humidifier. If you use a humidifier, be sure to follow the cleaning directions to prevent bacteria.
 - **Soft fabrics.** Wear clothes and use bed sheets that are made of very soft fabrics.
 - **Do not wear clothes on your treatment area that are tight.** Do not wear clothes that do not breathe like girdles, body shapers or pantyhose.
 - **Protect your skin from the sun every day.** The sun can burn you even on cloudy days or when you are outside for just a few minutes. Do not go to the beach or sunbathe. Wear a broad-brimmed hat, a long-sleeved shirt and long pants when you are outside. Speak to your radiation oncologist or radiotherapist about sunscreen lotions. They may suggest using sunscreen with an SPF of 30 or higher. You will need to protect your skin from the sun even after radiation therapy is over.
 - **Do not use tanning beds.** Tanning beds expose you to the same harmful effects as the sun.
 - **Adhesive tape.** Do not put adhesive bandages or other types of sticky tape on your skin in the treatment area. Speak to your radiation oncologist or radiotherapist about ways to bandage without tape.
 - **Shaving.** Ask your radiation oncologist or radiotherapist if you can shave the treatment area. If you can shave, use an electric razor but do not use a pre-shave liquid.
 - **Rectal area.** If you have radiation therapy to the rectal area, you are likely to have skin problems. These problems are often worse after a bowel movement. Clean yourself with a baby wipe or squirt of water from a spray bottle. Ask your radiotherapist if sitz
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baths might help you. Sitz baths are warm water baths taken in a sitting position which only cover the hips and buttocks.

- **Speak to your radiation oncologist or radiotherapist.** Some skin changes can be severe. Your treatment team will check for skin changes each time you have radiation therapy. Make sure to report any skin changes that you notice.



THROAT CHANGES

What it is

Radiation therapy to the neck or chest can cause the lining of your throat to become swollen and sore. This problem is called oesophagitis. You may feel like you have a lump in your throat or burning in your chest or throat. You may also have trouble swallowing.



Figure 6: Radiation to the shaded area may cause throat changes

Why it occurs

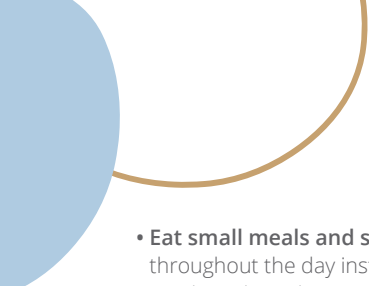
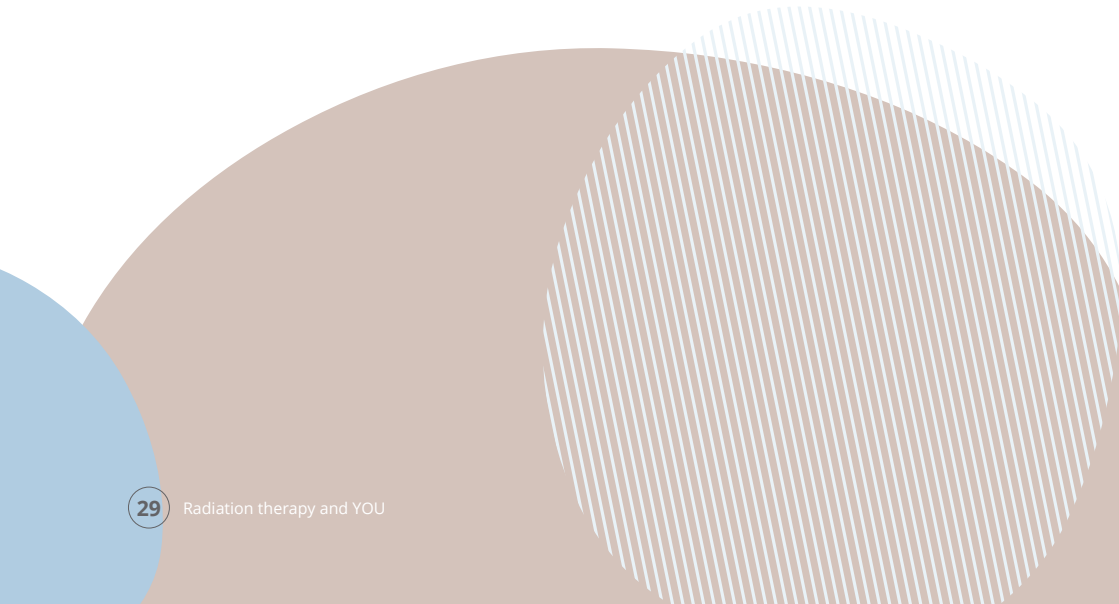
Radiation therapy to the neck or chest can cause throat changes because it not only kills cancer cells but also can damage the healthy cells that line your throat. Your risk for throat changes depends on how much radiation you are getting, whether you are also having chemotherapy and whether you use tobacco and alcohol while getting radiation therapy.

How long it lasts

You may notice throat changes two to three weeks after starting radiation. You will most likely feel better four to six weeks after you have finished radiation therapy.

What to do

- **Be careful what you eat when your throat is sore.**
 - Choose foods that are easy to swallow
 - Cut, blend, or shred foods to make them easier to eat
 - Eat moist, soft foods like cooked cereals and mashed potatoes
 - Wet and soften food with gravy, sauce, broth, yoghurt or other liquids
 - Drink cool drinks
 - Sip drinks through a straw
 - Eat foods that are cool or at room temperature

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- **Eat small meals and snacks.** It may be easier to eat small amounts of food throughout the day instead of eating three large meals – eat five or six small meals and snacks.
 - **Choose foods and drinks that are high in calories and protein.** When it hurts to swallow, you may eat less and lose weight. It is important to maintain your weight during radiation therapy, eating foods and drinks high in calories and protein can help you. See more information about high calorie, high protein food at the end of the booklet.
 - **Sit upright and bend your head slightly forward when you are eating or drinking.** Remain sitting or standing upright for at least 30 minutes after eating.
 - **Avoid things that can burn or scrape your throat like:**
 - Hot foods and drinks
 - Spicy foods
 - Foods and juices that are high in acid, like tomatoes and oranges
 - Sharp, crunchy foods, such as potato or corn chips
 - All tobacco products, such as cigarettes, pipes, cigars and chewing tobacco – and drinks that contain alcohol
 - **Speak to your radiation oncologist or radiotherapist.** Let your radiation oncologist or radiotherapist know if you notice throat changes, you are having trouble swallowing, feeling as if you are choking or coughing while eating or drinking, or if you lose weight. Your radiation oncologist can prescribe medicines that may help relieve your symptoms.
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URINARY AND BLADDER CHANGES

What is it

Radiation therapy can cause urinary and bladder problems, which can include:

- Burning or pain when you begin to urinate or after you urinate (empty your bladder)
- Trouble starting to urinate
- Trouble emptying your bladder completely
- Frequent, urgent need to urinate
- Cystitis, a swelling (inflammation) in your urinary tract
- Incontinence, when you cannot control the flow of urine from your bladder, especially when coughing or sneezing
- Waking frequently to urinate
- Blood in your urine
- Bladder spasms, which are like painful muscle cramps



Figure 7: Radiation to the shaded area may cause urinary and bladder changes

Why it occurs

Urinary and bladder problems may occur when you have radiation therapy to the prostate or bladder. Radiation therapy can harm the healthy cells of the bladder wall and urinary tract, which can cause swelling, ulcers and infection.

How long it lasts

Urinary and bladder problems often start three to five weeks after radiation therapy begins. Most problems go away two to eight weeks after treatment is over.

What to do

- **Drink lots of fluids.** Drink six to eight cups of fluids each day, enough so that your urine is clear to light yellow.
- **Avoid coffee, black tea, alcohol, spices and all tobacco products.**
- **If you think you have a urinary infection or have bladder problems.** Speak to your radiation oncologist or radiotherapist as you may need to provide a urine sample to check whether you have an infection.
- **Speak to your radiation oncologist.** If you have incontinence, they may refer you to assess your problem.
- **Medicine.** Your radiation oncologist may prescribe antibiotics if your problems are caused by an infection. Other medication can help you urinate, reduce burning or pain and ease bladder spasms.

LATE EFFECTS

Radiation therapy can also cause health problems that may not show up for months or years after treatment has ended. Late effects are specific to the part of your body treated and the doses of radiation you received. Your radiation oncologist should discuss late effects with you during your follow-up care.

LISTS OF FOOD AND LIQUIDS

Clear liquids

This list may help if you have diarrhoea.

Soups

- Clear, fat-free broth
- Strained vegetable broth

Drinks

- Apple juice
- Cranberry or grape juice
- Fruit punch
- Tea
- Clear carbonated beverages
- Fruit-flavoured drinks
- Sports drinks
- Water

Sweets

- Fruit ices without fruit pieces
- Honey
- Fruit popsicles without milk
- Jelly

LOW FIBRE FOODS

This list may help if you have diarrhoea.

Main Meals

- Chicken and turkey, without the skin
- Cottage cheese
- Fish
- White bread
- Potatoes, baked or mashed without the skin
- Cooked refined cereals
- Eggs
- Noodles
- White rice

Fruits and Vegetables

- Asparagus
- Clear fruit juice
- Canned fruits, such as peaches, pears and applesauce
- Bananas
- Vegetable juice

Snacks

- Salty crackers
- Yoghurt, plain or vanilla
- Sherbet or sorbet

Food And Drinks That Are High In Calories Or Protein

This list may help with ideas for maintaining your weight.

Soups

- Cream soups
- Soups with lentils, dried peas or beans, such as black, red or kidney

Drinks

- Instant breakfast shakes
- Smoothies
- Milkshakes
- Whole milk (instead of low fat or skim)

Main Meals and Other Foods

- Butter, margarine or oil
- Chicken, fish, or beef
- Cream cheese on crackers or celery
- Eggs, such as scrambled eggs
- Nuts, seeds, wheat germ
- Legumes, such as lentils and pinto, kidney and black beans
- Cheese
- Cottage cheese
- Deviled ham
- Muffins
- Peanut butter

Desserts and Other Sweets

- Custards, soft or baked
- Ice cream
- Puddings
- Frozen yoghurt
- Muffins
- Yogurt

Food and drinks that are easy on the stomach

This list may help if you have diarrhoea or nausea and vomiting.

Soups and Drinks

- Clear broth, such as chicken or beef
- Clear carbonated beverages
- Fruit flavoured drinks
- Sports drinks
- Water
- Drinks
- Cranberry or grape juice
- Fruit punch
- Tea

Main Meals and Snacks

- Chicken, broiled or baked without skin
- Noodles
- Pretzels
- White rice
- Crackers
- Potatoes, boiled without skin
- Salted crackers
- White toast

Sweets

- Canned fruit; applesauce, peaches and pears
- Ice pops
- Sherbet or sorbet
- Yogurt, plain or vanilla

NETCARE HOSPITALS OFFERING RADIATION TREATMENT

GAUTENG

Netcare Milpark

9 Guild Road, Parktown West • Tel: 011 480 5600

Netcare Unitas

Clifton Avenue, Lyttelton, Centurion • Tel: 012 677 8000

Netcare Olivedale

Cnr President Fouché and Windsor Way, Randburg • Tel: 011 777 2000

Netcare Pinehaven

1 Gateway Road, Pinehaven Estates, Krugersdorp • Tel: 011 950 5400

Netcare Clinton/Alberton

1 Netcare Avenue, Newmarket Precinct, Alberton • Tel: 011 742 3406

KZN

Netcare St Anne's Hospital

331 Burger St, Pietermaritzburg • Tel: 033 897 5000

Netcare Parklands

75 Hopelands Road, Overport, Durban • Tel: 031 242 4000

Durban Oncology Centre

99 King Cetshwayo Highway, Westridge • Tel 031 273 3460

WESTERN CAPE

Netcare N1 City

Louwtjie Rothman Street, Goodwood • Tel: 021 590 4444

ADDITIONAL RESOURCES

ADVOCACY/SUPPORT GROUPS

CANSA

www.cansa.org.za

info@canceralliance.co.za

www.canceralliance.co.za/resources

Non-fiction recommendations:

- **Laura Bond**, *Mum's NOT having chemo*
- **Louise L. Hay**, *Cancer Discovering Your Healing Power*
- **Bernie Siegel**, *Faith, Hope and Healing*
- **Mark Bunn**, *Ancient Wisdom Modern Health*

Audio lectures

- **Pema Chodrom**, *When Pain is the Doorway: Awakening in the Most Difficult Circumstances*
- **Bernie Siegel**, *Getting Ready: Preparing for Surgery, Chemotherapy and Other Treatments*
- **Randy Pausch and Jeffrey Zaskow**, *The Last Lecture*

WEBSITES

BUDDIES FOR LIFE

www.buddiesforlife.co.za

CANSURVIVE

www.cansurvive.co.za

REACH FOR RECOVERY

www.reach4recovery.org.za

CAMPAIGNING FOR CANCER

www.campaigning4cancer.co.za

LOOK GOOD FEEL BETTER

www.lgfb.co.za

BOSOM BUDDIES

www.bosombuddies.co.za

INTERNATIONAL UNION AGAINST CANCER

www.uicc.org

THE SOUTH AFRICAN ANXIETY AND DEPRESSION GROUP

www.sadag.co.za

NATIONAL CANCER INSTITUTE

<https://www.cancer.gov/resources-for/patients>

NETCARE CANCER CARE

<https://www.netcare.co.za/cancer-care>

REFERENCES

National Cancer Institute. Radiation and You.

Accessed 01 October 2021. Available from:

<https://www.cancer.gov/publications/patient-education/radiation-therapy-and-you>

Every cancer story is unique

In the same way that no two fingerprints are the same, two people may have the same diagnosis but they will respond completely differently.

Netcare recognises that everyone will have their own fears and their own coping mechanisms. The way we live and the way we feel create a unique outcome, which is impossible to determine beforehand. It means we can each take charge over the process. We are not beholden to statistical data. We are not linear. We are organic. We are individual. Just like our fingerprint. Netcare's approach is designed with this in mind. Not the other way round.

Disclaimer: The information contained in this booklet is provided for information purposes only and is not intended to be a substitute for professional medical advice, diagnosis, or treatment. Always seek the advice of your physician or other qualified health professional with any questions you may have regarding a medical condition.

www.netcarehospitals.co.za