



cancercare<sup>?</sup>

Radiotherapy

## What is radiotherapy?

Radiotherapy (also known as radiation or x-ray therapy) is the treatment of cancer through the use of high-energy x-ray beams. These rays can penetrate tissue and in doing so they deposit their energy into the cells in the treatment area and cause cell damage and cell death in the cancer growth.

Normal cells are also influenced by radiation. In contrast to cancer cells, most of them recover from the effects of radiation. Normal tissue, however, still needs to be protected from radiation as far as possible; the total amount of radiation is thus limited to the dose that normal tissue can tolerate. The radiation treatment is also given over a varying period of time.

Every patient's treatment is planned individually with the use of computer technology. Normal tissue is protected from radiation beams, where possible, by the use of alloy shielding blocks or special collimation systems.

### **Aims and benefits associated with radiotherapy**

The aim of radiotherapy is to kill cancer cells with as little risk as possible to normal cells. Radiotherapy can be used in the treatment of different kinds of cancer in nearly any part of the body.

Radiation, like surgery, is a local treatment. It thus affects only the tissue in the specific area of the body that is being radiated.

Radiation is often used in combination with surgery to treat cancer. Doctors can give radiation before surgery to shrink a cancer mass, thus enabling them to remove all cancer tissue without using extensive surgical methods. Radiotherapy can also be given after surgery to lessen the chances of regrowth of any remaining cancer cells.

In some cases radiation is used in combination with chemotherapy. The radiation can be given before, during or after chemotherapy. Combination therapy is tailored carefully to suit each individual patient's needs according to the type of cancer, the location thereof and the disease stage.

Where cure isn't a realistic option anymore, radiation is often used to shrink cancer masses and in doing so relieve pressure, pain and other symptoms associated with uncontrolled cancer growth. This treatment is known as palliation (symptom relief). Most cancer patients find that they can lead a better quality life after radiation for problematic symptoms.



## **How is radiotherapy administered?**

Radiation can be given in one of two ways: external or internal radiation. The treatment you will receive depends on the type and stage of the disease as well as the location thereof.

Most people who receive radiation therapy for cancer have external beam radiation. The beams are created in a machine called a linear accelerator. The machine directs the high energy x-rays at the cancer, treating it and a small margin of normal tissue around the edge.

When internal radiation therapy is used, the radiation source is placed inside the body. This method of radiation is termed brachytherapy.

Some patients have both forms of radiation, one after the other. Others receive one or the other.

## **What does treatment planning mean?**

Before starting with the actual radiotherapy treatment, the precise location of the area to be irradiated must be determined. This is done by means of a planning CT scan. The setup at the scanner is duplicated during your treatment to ensure that you will be in the same position every day while receiving treatment. The radiation fields must also be planned, using the CT scan, for you as an individual in order to deliver the maximum amount of radiation to the cancer mass while limiting the dosage to normal surrounding tissue. The final treatment plan takes a few days to develop in order to determine the best possible plan for the patient.

You will be asked to lie very still on a treatment couch while a radiotherapist will use the linear accelerator to treat you. Depending on the location of your cancer, single or multiple treatment fields may be necessary.

Masks or other immobilization devices may be used to prevent any movement during treatment. Again this apparatus is individualized according to the needs of every patient. This will also be used every time when treatment is delivered to ensure correct treatment setup.

Small tattoos in the form of pinpointed dots will be placed under the surface of your skin to define the treatment area. This is to ensure that treatment is delivered to exactly the same area every day; the tattoos also enable one to determine areas where radiation has been delivered previously, even years after treatment. Non-permanent pen marks will also be used to ease daily setup and treatment field determination. These pen marks must not be washed off.

treatment field determination. These pen marks must not be washed off.

Before your first treatment, a set of special x-rays will be taken. This is to again confirm that the radiation will be delivered to the correct area; it also serves as a record of your treatment. These x-rays will be repeated during the course of your radiotherapy to verify the correctness thereof.

Most cancers are treated with radiotherapy for 5 days per week over a period of 6 to 7 weeks. (When radiation is given for symptom control only, shorter treatment periods are used, usually 2 to 3 weeks.) Although treatment lasts 10 to 20 minutes, the actual radiation therapy takes only a few minutes. Setting you up in the correct position makes up for the remainder of the time.

The use of smaller daily doses of radiation given over a longer period of time instead of a few large doses over a shorter time period helps to protect normal tissue in the treatment area. Rest periods over weekends also help normal cells to recover from the radiotherapy. Treatments are therefore scheduled for every day of the week except on a Saturday and Sunday. This fits in with a normal working week that also leaves time for tissue repair.

### **What happens during radiation treatments?**

You are advised to wearing clothes that are easy to take off and put on.

The radiotherapist will use the marks on your skin to position you correctly and to determine the treatment field. You will be asked to lie very still on the treatment couch and although you will be alone in the room during the treatment, there will be continuous monitoring through a closed circuit camera and intercom system. External beam radiation is painless; comparable to x-rays taken for diagnostic purposes. You will not hear, see or smell the radiation. The radiation will also not make you radioactive. After starting treatment, your doctor will see you at least once a week to monitor your treatment progress as well as your reactions to the treatment.



## **Chemoradiation**

Chemoradiation involves a combination of treatments given together: chemotherapy and radiotherapy.

Chemotherapy is a form of drug treatment given to treat or control cancer cells, while radiotherapy is the use of precise, accurately measured doses of radiation (x-ray beams) directed to a specific area to treat cancer cells.

Chemoradiation can be used to treat all types of oesophageal cancers, but has a specific, defined role in squamous cell cancer. It can be used either as an alternative to surgery or when a tumour cannot be surgically removed.

The chemotherapy increases the sensitivity of the cancer cells to radiation and it is known as a radiosensitizer.

Chemotherapy is usually given by an injection directly into a vein, usually by an infusion or drip. Chemotherapy drugs can sometimes be given orally in a tablet form. The intravenous chemotherapy is usually given in the first and last week of treatment. Radiation therapy is given as an out-patient. Some chemotherapy infusions will require an overnight hospital stay. This is usually to hydrate the patient and monitor their urine output.

The drugs commonly used for chemoradiation to treat cancer of the oesophagus are Cisplatin and 5 Fluoro-uracil or Capecitabine.

Treatment usually ranges from 5 to 6 weeks, depending on the duration of the radiotherapy. Your oncologist will discuss the duration of the treatment with you. A treatment request will be submitted to your medical aid scheme. Once authorisation has been obtained a radiographer will contact you to make an appointment to set up a scan. This is a special X-ray taken with you lying on a couch.

You will be asked to undress from the waist up. You will have the radiation treatment on a linear accelerator, which is a special type of X-ray machine.

When radiation and chemotherapy are given in combination it is likely that the side effects will increase. Your oncologist will discuss these side effects in more detail with you

## Managing common side effects during radiation therapy

### Are side effects the same for everyone?

*The side effects of radiation treatment vary from patient to patient. The side effects depend mostly on the radiation dose and the part of your body that is treated. Before beginning your treatment, your doctor will discuss the side effects you might experience, how long they might last, and how serious they might be.*

*Side effects may be acute or chronic. Acute side effects are referred to as “early side effects”. They occur soon after the treatment begins and are usually gone within a few weeks of finishing therapy. Chronic side effects may take months or years to develop and are usually permanent.*

*The most common early side effects of radiation therapy are fatigue and skin changes. They can result from radiation to any treatment site. For example, temporary or permanent hair loss may be a side effect of radiation treatment to the head. Fortunately, most side effects will go away in time. In the meantime, there are ways to reduce discomfort.*

*Be sure to tell your doctor, nurse, or radiation therapist about any side effects that you notice. They can help you treat the problems and tell you how to lessen the chances that the side effects will come back.*

### Will side effects limit my activity?

*Not necessarily. It will depend on which side effects you have and how severe they are. Many patients are able to work and enjoy their usual leisure activities while they are having radiation therapy. Others find that they need more rest than usual. Try to continue doing the things you enjoy, as long as you don't become too tired.*

### What causes fatigue?

*Fatigue is the most common symptom reported by cancer patients. The exact cause is not always known. It may be due to the disease itself or to treatment. It*



Most people begin to feel tired after a few weeks of radiation therapy. During radiation therapy, the body uses a lot of energy for healing. You may also be tired because of stress related to your illness, daily trips for treatment, and the effects of radiation on normal cells. Feelings of weakness or weariness will go away gradually after your treatment has been completed.

You can help yourself by not trying to do too much. Save your energy for doing the things that you feel are the most important. Try to get more sleep at night and plan your day so that you have time to rest if you need it.

Sometimes, light exercise such as walking may combat fatigue. If you have a fulltime job, you may want to try to continue to work your normal schedule. However, some patients prefer to take time off while they're receiving radiation therapy; others work a reduced number of hours.

Whether you're going to work or not, it's a good idea to ask family members or friends to help with daily chores.

### **How are skin problems treated?**

You may notice that your skin in the treatment area is red or irritated. It may look as if it is sunburnt or tanned. After a few weeks your skin may become very dry from the therapy.

With some kinds of radiation therapy, treated skin may develop a "moist reaction", especially in areas where there are skin folds (for example: in the groin, between the buttocks and under the arm.) When this happens, the skin is wet and it may become very sore. It is important to notify your doctor or radiotherapist if your skin develops a moist reaction.

*During radiation therapy you will need to be very gentle with the skin in the treatment area. Here are some suggestions:*

- Avoid irritating treated skin.
- When you wash, use only lukewarm water and no soap; pat dry with soft towel.
- Do not wear tight clothing over the area.
- Do not rub, scrub or scratch the skin in the treatment area.

Do not use any powders, creams, perfumes, deodorants, body oils, ointments, lotions or home remedies in the treatment area while you are being treated and for several weeks afterwards.

- Avoid exposing the radiated area to the sun during treatment.

The majority of skin reactions to radiation therapy go away a few weeks after treatment is completed. In some cases, though, the treated skin will remain slightly darker than it was before and it may continue to be more sensitive to sun exposure.

### **What can be done about hair loss?**

Radiation therapy can cause hair loss, also known as alopecia, but only in the area being treated. If you are receiving treatment to your hip, you will not lose the hair from your head. Radiation of your head may cause you to lose the hair on your scalp. Many patients find that their hair grows back again after the treatments are finished. You may notice that your hair has a slightly different texture or colour when it grows back.

Although your scalp may be tender after the hair is lost, it's a good idea to cover your head with a hat, turban or scarf. You should wear a protective cap or scarf when you're in the sun. If you plan to buy a wig, it's a good idea to select it early in your treatment if you want to match the colour and style to your own hair.

## **Dietary tips during radiotherapy**

### **Will eating be a problem?**

Sometimes radiation treatment causes loss of appetite and interferes with eating, digesting and absorbing food. Try to eat enough to help damaged tissues rebuild themselves. It is not unusual to lose half or one kilogram a week during radiation therapy.

It is very important to eat a balanced diet. You may find it helpful to eat small meals often and to try to eat a variety of different foods. A dietician will have some ideas that will help you maintain your weight. Coping with short-term dietary problems may be easier than you expect.



If it's painful to chew and swallow, your doctor may advise you to use a powdered or liquid diet supplement. Many of these products are available at pharmacies and supermarkets and come in a variety of flavours. They are tasty when used alone or combined with other foods such as pureed fruit, or added to milkshakes.

You may lose interest in food during your treatment, and fatigue from your treatments may cause loss of appetite. Some people just don't feel like eating because of stress from their illness and treatment, or because the treatment changes the way food tastes. Even if you're not very hungry, it's important to keep your protein and calorie intake high.

The list below suggests ways to perk up your appetite when it's poor and to make the most of it when you do feel like eating.

- Eat when you are hungry, even if it is not mealtime.
- Eat several small meals during the day rather than three big ones.
- Ask your doctor or radiotherapist whether you can have a glass of wine or beer with your meal to increase your appetite. Keep in mind that, in some cases, alcohol may not be allowed because it could aggravate the side effects of treatment. This may be especially true if you are receiving radiation therapy for cancer of the head, neck or upper chest area, including the oesophagus.
- Keep simple meals in the fridge for when you become hungry.
- If other people offer to cook for you, let them. Don't be shy about telling them what you'd like to eat.
- Keep healthy snacks close by for nibbling when you get the urge.

*If you are able to eat only a small amount of food, you can increase the calories per serving by:*

- adding butter or margarine.
- mixing canned cream soups with milk or half-and-half rather than only water.
- drinking eggnog, milkshakes, or try adding cream sauce or melted cheese to your favourite vegetables.
- Some people find they can drink large amounts of liquids even when they don't feel like eating solid foods. If this applies to you, try to get the most from **each glassful by making drinks enriched with powdered milk, yoghurt, honey or prepared liquid supplements.**

## *Tips on eating*

*You may find that it's difficult or painful to swallow. You might feel as if something is stuck in your throat. Soreness or dryness in your mouth or throat can also make it difficult to eat.*

*The following tips may help to make eating more comfortable:*

- *Choose foods that you find palatable and are easy to eat.*
- *Try changing the consistency of foods by adding fluids and using sauces and gravies to make them softer.*
- *Avoid highly spiced foods and textures that are dry and rough, such as crackers.*
  
- *Eat small meals and eat more frequently than usual.*
- *Cut your food into small, bite-sized pieces.*
- *Ask your doctor for special liquid medicines to reduce the pain in your throat so that you can eat and swallow more easily.*
- *Liquid food supplements are easier to swallow than solids. They can help you get enough calories each day to avoid losing weight.*
- *If familiar foods no longer taste good, try new foods and use different methods of food preparation.*

## **Frequently asked questions about radiotherapy**

### **How long does a course of radiotherapy treatments usually last?**

*Most radiation therapy treatments are daily, five days per week, for a specified period of one to eight weeks, depending on the disease and the course that your physician prescribes.*

### **Will I be able to drive after my radiotherapy treatment?**

*Almost all patients are able to drive while receiving radiotherapy treatment. However, with some types of cancer, driving may NOT be recommended due to fatigue or strong pain medication. Your physician will be able to address your specific case.*



## **Will I feel anything after my treatment?**

Many patients continue with most of their normal activities during treatment – working, golfing, gardening, etc. Depending on the area being treated, however, there may be side effects, including fatigue, nausea, “sun-burnt” skin and diarrhoea. Your physician can discuss the likely side effects and prescribe medication for some conditions. Making certain that you are taking care of your body’s needs is very important. Maintaining your weight and getting adequate fluids and rest are important goals to consider.

## **How long does each treatment take?**

Radiation therapists, who are under the direction of your radiation oncologist, will be taking all the time necessary to ensure that you are accurately positioned for your treatment. The actual time when the radiation is “on” is generally only about a minute or two for each treatment field. Most of the time, patients are in and out of the department in less than 30 minutes. The staff attempt to arrange the schedules to ensure that appointments are kept on time, but on some days there may be delays because of unforeseen circumstances or emergencies.

## **What is the difference between chemotherapy and radiation therapy?**

Chemotherapy involves medications given by injections or pills for cancer. This type of treatment is circulated throughout the entire body and is generally prescribed by a medical oncologist. Radiation therapy or radiotherapy is produced by a linear accelerator or another radiation source, and is prescribed by a radiation oncologist. The radiotherapy beams are focused on a very specific area of the body, and thus the effects are highly localized.

## **How does the physician know how much radiation to give me?**

Through years of research and experience, there are ranges of doses that are recommended for each specific type of cancer. Your case will be thoroughly reviewed by the radiation oncologist, and a customized dose (as per protocol) and treatment field will be prescribed based on the cancer diagnosis, the cell type and the location of the cancer.

- [www.oncolink.upenn.edu](http://www.oncolink.upenn.edu)
- <http://www.plwc.org.za>
- <http://reach4recovery.org.za>
- <http://nccn.com>

*Time flies. It always has, but after cancer, you treasure the time you have and carefully make the most of it.*

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

Good nutrition is important during your radiation treatments, and taking a multivitamin at this time is acceptable. Your physician will, however, need to be aware of all medication and/or herbal products that you are currently taking, including large doses of any one vitamin. In some cases, mega-vitamins may be harmful.

### **Should I avoid the sun?**

As a general rule, the area that is being treated with radiation should NOT be exposed to much direct sunlight for up to a year after treatment. Sunscreen is highly advisable for these regions. However, sunscreen may not be applied on treated area while undergoing treatment.

### **How long will I have to come for follow-up visits?**

Most patients are seen by their radiation oncologist or referring surgeon for some period of time after their treatments are completed. Your specific schedule will be determined by your radiation oncologist, in collaboration with your other physicians.

### **Is it a problem if I miss a treatment?**

If you miss an appointment during your prescribed treatment, it will extend your treatment course by a day. We strongly recommend that you attempt to make all appointments as prescribed by your radiation oncologist. Keep in mind that the treatments are generally given Mondays to Fridays. Weekend treatments are only given in emergency cases.

### **Will I feel any pain from the radiation treatment?**

There is usually no pain associated with the radiation treatments. It is very much like having an X-ray taken. Sometimes a sunburn effect may cause the area to be tender



### **Can I get a second opinion?**

Getting another opinion is your decision and prerogative. It is important to us that you are aware of all of your options before starting a course of treatment.

### **Is there assistance for transportation?**

Most patients drive their cars to the treatment unit. The oncology social worker can help to arrange transport for patients who need this kind of help. There is usually a fee involved for the transport. Wheelchairs are available in the unit. Please ask the receptionist where the wheelchairs are stored.

### **Will my medical aid/hospital plan cover radiation therapy costs?**

We accept most forms of medical aid plans, as long as the appropriate authorisation has been obtained. We will submit the codes for authorisation to your medical aid and will wait for an authorisation number before starting with ANY treatment. You may be responsible for a portion of the balance, depending on your cover. Please contact the medical administration clerk at the unit with any queries regarding billing and authorisation. Please note that you remain responsible for payment of the treatment should your medical aid fail to pay.

### **How long will the consultation take?**

Your initial visit with the radiation oncologist will take 1 to 1-1/2 hours. At this time, the doctor will review your records and discuss treatment options. The risks, benefits and alternatives to radiotherapy will also be discussed at this time. If you wish, your spouse and/or family member may be present during your visit and may ask questions or take notes.

### **While receiving radiation therapy treatment, how often will I see my radiation oncologist?**

In general, you will be scheduled to see your doctor once a week during your treatments. You will also be monitored daily by the radiation therapists who actually deliver the radiation treatments. In addition, all departments are staffed with nursing personnel who can manage your needs and answer health questions relating to your treatments. There is an oncologist on call for ONCOLOGY EMERGENCIES ONLY 24 hours a day and 7 days a week. Please phone the unit telephone number for the details of the doctor on call.

## **Are side effects the same for everyone?**

The side effects of radiation treatment vary from patient to patient. You may have no side effects or only a few mild ones during your course of treatment. Some people do, however, experience serious side effects. The side effects that you are likely to have depend primarily on the radiation dose and the part of your body that is treated. Your general health can also affect how your body reacts to radiation therapy and whether you will have side effects. Before beginning your treatment, your doctor and radiotherapist will discuss the side effects you might experience, how long they might last and how serious they might be.

The most common early side effects of radiation therapy are fatigue and skin changes. They can result from radiation to any treatment site. Other side effects are related to treatment of specific areas. For example, temporary or permanent hair loss may be a side effect of radiation treatment to the head. Appetite can be altered if treatment affects the mouth, stomach or intestine.

Fortunately, most side effects will go away in time. In the meantime, there are ways to reduce discomfort. If you have a side effect that is significant, the doctor may prescribe a change in your treatments or even give you a temporary break.

## **What causes fatigue?**

Fatigue, feeling tired and lacking energy are the most common symptoms reported by cancer patients. The exact cause is not always known. It may be due to the disease itself or to the treatment. It may also result from lowered blood counts, lack of sleep, pain and poor appetite.

Most people begin to feel tired after a week or two of radiation therapy. During radiation therapy, the body uses a lot of energy for healing. You may also be tired because of stress related to your illness, daily trips for treatment and the effects of radiation on normal cells. Feelings of weakness or weariness should go away gradually after your treatment has been completed.

You can help yourself during radiation therapy by not trying to do too much. If you do feel tired, limit your activities and use your leisure time in a restful way. Save your energy for doing the things that you feel are most important. Do not feel that you have to do everything you normally do. Try to get more sleep at night, and plan your day so that you have time to rest if you need it. Several short naps or breaks may be more helpful than a long rest period.



If you have a full-time job, you may want to try to continue to work your normal schedule. However, some patients prefer to take time off while they are receiving radiation therapy; others work a reduced number of hours or arrange for a late afternoon nap.

Whether you're going to work or not, it's often a good idea to ask family members or friends to help with daily chores, shopping, child care, housework or driving. Neighbours may be able to help by picking up groceries for you when they do their own shopping. It is important to keep your spirits up and not become overly depressed.

### **How are skin problems treated?**

You may notice that your skin in the treatment area is red or irritated. It may look as if it is sunburnt or tanned. After a few weeks, your skin may be very dry from the therapy. Ask your doctor or nurse for advice on how to relieve itching or discomfort. Do not use any skin creams or powders that you have not discussed with your treatment team.

With some kinds of radiation therapy, treated skin may develop a "moist reaction," especially in areas where there are skin folds. When this happens, the skin is wet and it may become very sore. It's important to notify your doctor or radiotherapist if your skin develops a moist reaction. They can give you suggestions on how to care for these areas and prevent them from becoming infected.

*During radiation therapy, you will need to be very gentle with the skin in the treatment area. The following suggestions may be helpful:*

- Avoid irritating treated skin.
- When you wash, use only lukewarm water and mild soap and pat dry.
- Do not wear tight clothing over the area.
- Do not rub, scrub or scratch the skin in the treatment area.
- Avoid putting anything that is hot or cold, such as heating pads or ice packs, on your treated skin.
- Ask your doctor or radiotherapist to recommend skin care products that will not cause skin irritation. Do not use any powders, creams, perfumes, deodorants, body oils, ointments, lotions or home remedies in the treatment area while you're being treated and for several weeks afterwards unless approved by your doctor.

- Avoid exposing the radiated area to the sun during treatment. If you expect to be in the sun for more than a few minutes, you will need to be very careful.  
Wear protective clothing, such as a hat with a broad brim and a shirt with long sleeves, and use a sunscreen. Ask your doctor or radiotherapist about the use of sun blocking lotions. After your treatment is over, ask your doctor how long you should continue to take extra precautions in the sun.

The majority of skin reactions to radiation therapy are mild and go away a few weeks after treatment is completed. In some cases, though, the treated skin will remain slightly darker than it was before and it may continue to be more sensitive to sun exposure.

### **What can be done about hair loss?**

Radiation therapy can cause hair loss, also known as alopecia, but only in the area being treated. For example, if you are receiving treatment to your hip, you will not lose the hair from your head. Radiation on your head may cause you to lose some or all of the hair on your scalp. Many patients find that their hair grows back again after treatments are finished. The amount of hair that grows back will depend on how much and what kind of radiation you receive. You may notice that your hair has a slightly different texture or colour when it grows back. Other types of cancer treatment, such as chemotherapy, also can affect how your hair grows back.

Although your scalp may be tender after the hair is lost, it is a good idea to cover your head with a hat, turban or scarf. You should wear a protective cap or scarf when you're in the sun or outdoors in cold weather. The oncology social worker advise you about wigs or hairpieces.

### **How are side effects on the blood managed?**

In some cases, radiation therapy can cause low levels of white blood cells and platelets. These blood cells normally help your body fight infection and prevent bleeding. If large areas of active bone marrow are treated, your red blood cell count may be low as well. If your blood tests show these side effects, your doctor may wait until your blood counts increase to continue treatments. Your doctor may check your blood counts regularly and change your treatment schedule if it is necessary.



## Will eating be a problem?

Sometimes radiation treatment causes loss of appetite and interferes with eating, digesting and absorbing food. Try to eat enough to help damaged tissues rebuild themselves. It is not unusual to lose some weight during radiation therapy, though we will try hard to help you maintain your weight.

It is important to eat a reasonable diet. You may find it helpful to eat small meals often and to try to eat a variety of different foods. Your doctor can tell you whether you should eat a special diet, and a dietician could help you to maintain your weight. Please ask for a referral should you feel that this is needed.

*The list below suggests ways to perk up your appetite when it's poor and to make the most of it when you do feel like eating.*

- Eat when you are hungry, even if it is not mealtime.
- Eat several small meals during the day rather than three big ones.
- Use soft lighting, quiet music, brightly coloured table settings or whatever helps you feel good while eating.
- Vary your diet and try new recipes. If you enjoy company while eating, try to have meals with family or friends. It may be helpful to have a radio or television on while you eat.
- Ask your doctor whether you can have a glass of wine or beer with your meal to increase your appetite. Keep in mind that, in some cases, alcohol may not be allowed because it could aggravate the side effects of treatment. This maybe especially true if you are receiving radiation therapy for cancer of the head,neck or upper chest area, including the oesophagus.
- Keep simple meals in the freezer to use when you feel hungry.
- If other people offer to cook for you, let them. Don't be shy about telling them what you'd like to eat.
- Keep healthy snacks close by for nibbling when you get the urge.
- If you live alone, you might want to arrange for "Meals on Wheels" to bring food to you. Ask your doctor, nurse, social worker or local social service agencies about "Meals on Wheels." This service is available in most large communities.

If you are able to eat only small amounts of food, you can increase the calories per serving by:

- Adding butter or margarine.
- Mixing canned cream soups with milk or half-and-half rather than only water. drinking eggnog, milkshakes or prepared liquid supplements such as “Ensure” between meals.
- Adding cream sauce or melted cheese to your favourite vegetables.

### **Will radiotherapy affect me emotionally?**

Nearly all patients being treated for cancer report feeling emotionally upset at different times during their radiotherapy. It's not unusual to feel anxious, depressed, afraid, angry, frustrated, alone or helpless. Radiotherapy may affect your emotions indirectly through fatigue or changes in hormone balance, but the treatment itself is not a direct cause of mental distress.

You may find that it's helpful to talk about your feelings with a close friend, family member, chaplain, nurse, social worker or psychologist with whom you feel at ease. You may want to ask your doctor or nurse about meditation or relaxation exercises that might help you unwind and feel calmer. We have a social worker available to help you work through some of these issues. She will see all new patients before starting treatment, but is available throughout your course of treatment should you need her.

### **Words that may be new to you....**

**Adjuvant therapy:** administration of chemotherapy and/or radiation therapy after the surgical removal of the tumour

**Benign:** not cancerous

**Biopsy:** removal of cells or tissues for examination by a pathologist

**Bone marrow:** the soft sponge-like tissue in the centre of most large bones. It produces white blood cells, red blood cells and platelets.



**Brachytherapy:** a procedure in which radioactive material, sealed in needles, seeds, wires or catheters, is placed directly into or near a tumour, under general anaesthetic

**Cancer:** a term for diseases in which abnormal cells divide without control

**Carcinoma:** cancer that begins in the skin or in tissues that line or cover internal organs

**Cell:** individual unit that makes up the tissues of the body

**Chemotherapy:** treatment with drugs that kill cancer

**CT scan:** a series of detailed pictures of areas inside the body taken from different angles (computerised tomography)

**Estrogen (oestrogen):** a hormone that promotes the development and maintenance of female sex characteristics

**Haematology:** the study of blood disorders

**Haemoglobin:** an iron-containing protein in red blood cells that transports oxygen around the body

**Histology:** the science of dealing with the minute structure of tissues

**Hormone therapy:** treatment that adds, blocks or removes hormones

**Infection:** invasion and multiplication of germs in the body

**Lymph node:** these are found all over the body and filter lymph and store white blood cells

**Lymphatic system:** tissues and organs that produce, store and carry white blood cells that fight infections and other diseases

**Malignant:** cancerous

**Tumour:** a mass of excess tissue that results from abnormal cell division. The tumour performs no useful body function and can be either benign or malignant

**Tumour marker** (also called bio-markers): a substance sometimes found in the blood that may indicate the presence of certain cancers. Not all cancers have tumour markers

**White blood cells:** found in the blood and help the body to fight infection

**X-ray:** a type of high energy radiation used to create images of the inside of the body

*For more details on side effects related to your specific treatment, please talk to the radiotherapist in your unit.*



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\*These units have clinical research units on site