Radiation Therapy & Cancer

A Guide For Patients, Families & Friends
CANCERCARE MANITOBA MISSION STATEMENT

CancerCare Manitoba, by an act of the legislature, is responsible for cancer prevention, detection, care, research and education throughout Manitoba.

We are dedicated to excellence in cancer care for all Manitobans. We strive to prevent, endeavour to cure, and are committed to enhance the quality of life for people living with cancer.
INTRODUCTION

The staff and volunteers at CancerCare Manitoba are here for you. You will likely have questions about Radiation Therapy and related concerns. This booklet will try to answer the common questions asked by patients, families and friends. If there is still something you want to know, please ask one of us.

Your first few visits to CancerCare Manitoba may take several hours. We suggest you bring a friend or a book to help you pass the time.

WHAT IS CANCER?

Cancer is the growth and spread of abnormal cells. Normally, the cells that make up all parts of the body reproduce in an orderly manner. Occasionally, cells grow into a mass of tissue called a tumor. A tumor is either benign or malignant (cancer).

Benign tumors may interfere with how the body works normally, but they seldom threaten a person’s life. Malignant tumors, however, grow and replace normal tissue. As well, cells may break away from a malignant tumor and spread through the blood or lymphatic systems to other parts of the body. If this takes place, it is called metastasis or secondary cancer.

WHAT IS RADIATION THERAPY?

Radiation therapy, sometimes called radiotherapy or irradiation, is the use of various forms of radiation to safely and effectively treat cancer and other diseases. Radiation oncologists may use radiation therapy to try to cure cancer, to control the growth of the cancer or to relieve symptoms, such as pain.

Radiation therapy works by damaging the DNA within cancer cells and destroying the ability of the cancer cells to reproduce. When these damaged cancer cells die, the body naturally eliminates them. Normal cells are also affected by radiation, but they are able to repair themselves in a way that cancer cells cannot.
Sometimes radiation therapy is the only treatment a patient needs, and other times it is only one part of a patient’s treatment. For example, early stage larynx cancer is often treated with radiation alone, but a woman with advanced cancer may be treated with surgery, radiation therapy and chemotherapy.

The goal of radiation therapy may be to:

- Destroy tumours.
- Reduce the risk that cancer will return after you had surgery or chemotherapy by killing tiny cancer cells that may remain.
- Shrink tumors that are interfering with your quality of life, such as tumors that is causing difficulty swallowing or are causing bleeding.
- Alleviate pain by reducing the size of your tumor.

It is important for you to discuss the goal of your treatment with your radiation oncologist. An escort, such as a relative or friend, may be present during most visits if you wish. Please ask questions.

**EXTERNAL BEAM RADIATION THERAPY:**
During external radiation therapy a beam of radiation (high energy x-rays) is directed to the tumor and the immediate surrounding area. The radiation beam comes from a treatment machine which does not touch you.

**BRACHYTHERAPY:**
During brachytherapy a tube is inserted into the tumor area and a small radioactive seed travels inside the tube to deliver the radiation dose directly to the tumor.

**WHAT IS A CLINICAL TRIAL?**
Your doctor may ask you to participate in a clinical trial. A clinical trial is done to compare a new method of treatment to the current method of treatment. Clinical trials only involve treatments that will provide good quality care. Your doctor will discuss the details with you. You will be given the opportunity to discuss this with your family and family physician, if you choose, before making your decision.
WHERE DO YOU GO FOR RADIATION TREATMENTS?

CancerCare Manitoba offers radiation treatment at the MacCharles Unit (attached to the Health Sciences Centre at 675 McDemot Avenue). See map at back of book.

YOUR FIRST VISIT

On your first visit, you will meet the Radiation Oncologist and Nurse who will be caring for you. A Radiation Oncologist is a doctor who has specialized in the field of radiation therapy. You may also meet a Radiation Oncology resident. The nurse will ask you to complete a "Self Report Health History". The doctor will review your history, examine you, and possibly order further tests. The plans for your treatment and any possible side effects will be discussed with you. When you arrive for care the communication clerk will direct you where to go.
If you require a mould, you will visit the mould room to have a plastic shell fabricated, which will ensure that you are in the same position for simulation and treatments. You will be required to visit the mould room twice.

During the first visit a mould room technician will take an impression of your treatment area. Other members of the radiation therapy team may be present to assist with positioning. From this impression a clear plastic shell will be made.

For your shell fabrication you will need to remove eyeglasses, hearing aids, wigs and jewelry if they are in the treatment area. You will need to lie on an examination table. This will be your treatment position. Moist plaster bandages will be placed on you and smoothed down. The plaster of Paris bandage will get warm as it starts to set. When the plaster of
Paris bandage has set, the impression will be lifted off. This visit takes approximately thirty minutes.

During the second visit your plastic shell will be adjusted to ensure the best possible fit. This visit is usually scheduled 30 minutes before your simulation visit.

**SIMULATION AND TREATMENT PLANNING**

You may be required to have a simulation prior to your treatment. There are two simulators; one is a CT Simulator (similar to a CT Scanner) and the other is a Conventional Simulator.

During simulation, radiation therapists will place you in treatment position (with your plastic shell if the shell is required for your treatment). The radiation therapists then scan or x-ray the area to be treated and place marks on your skin (or plastic shell). For some treatments, small permanent tattoo marks are made.

You will be required to lie very still and breathe normally. It is very important that you do not move once the markings are on your skin (or shell). Even lifting your arm or turning your head can change the location of the markings. This visit takes approximately 30 minutes.
The Simulator x-rays or CT scans will be used to plan your treatment. Radiation therapists and oncologists use treatment planning computer software to help design your treatment plan. The treatment planning process takes approximately 2 weeks to complete.

You may be asked to have a verification simulation to complete the treatment planning. At this time, additional marks may be placed on your skin or plastic shell. This visit is scheduled one or two days prior to your first treatment and will take approximately 30 minutes.

THE TREATMENT MACHINES

We have a variety of radiation therapy treatment machines. They are:

Cobalt
Most people have heard of this type of radiation therapy machine. The radiation is produced by a radioactive source (Cobalt-60). The source is inside the treatment machine. Cobalt machines are used for external radiation therapy. When the machine is turned "on" or "off" you will hear a loud "swoosh" or "bang" sound.
Linear Accelerators
All the Linear Accelerators that we have are very similar in operation and appearance. They use man-made technology to produce radiation. The main difference between these machines is the energy (which determines the depth of treatment) that they produce. These machines are used for external radiation therapy. The machines just hum when turned "on".

Superficial X-Ray Therapy
This machine is smaller and produces a lower energy than the others. It is used to treat areas close to the skin surface. Unlike the other machines, this one will gently touch your skin during treatment. This machine is used for external treatment. You will hear a humming sound when the machine is "on".
Brachytherapy (HDR)
This machine is used for internal treatment. A small tube is inserted into a body cavity. The machine contains a small radioactive seed which travels inside the tube, to deliver radiation to the tumor.

TREATMENT

During treatment, the radiation is directed to your tumor from the treatment machine. To administer the treatment, the radiation therapist will place you in your treatment position and position the treatment machine and treatment table to target the radiation beam to the exact area of the tumor. Therapists will closely monitor you on a video monitor from outside the treatment room while you are receiving your treatment. If you would like to you may speak with the therapists through an intercom system.

As treatment is administered, the machine may make clicking or whirring sounds. Each session is painless, like getting an X-ray and the treatment can be stopped at any time if you are feeling ill or uncomfortable. The treatment visit takes approximately 15 minutes.
Radiation treatment visits are scheduled five days a week, every day except Saturday and Sunday, and continue for one to eight weeks. This schedule allows your healthy cells surrounding the tumor to repair the radiation damage between treatment visits. The number of radiation treatments you will need depends on the size, location and type of cancer you have, your general health and other medical treatments you may be receiving. Most patients are treated on an outpatient basis. Please arrive on time and try not to miss any of your appointments.

BRACHYTHERAPY
For internal treatment (Brachytherapy), you will be in the room between 30 minutes and 3 hours. The actual treatment takes about 10-20 minutes. The rest of the time is needed for preparation and planning. This process must take place on the day of the treatment and cannot be done ahead of time. Your doctor, nurse or therapist can estimate the time for you on an individual basis.

ON TREATMENT CLINIC REVIEWS
During your treatment schedule, your radiation oncologist and nurse will review your progress regularly. The radiation team will follow your progress, evaluate whether you are having any side effects, recommend treatments for those side effects (such as medication) and address any concerns you may have. As treatment progresses, your radiation oncologist may make changes in the schedule or treatment plan depending on your response or reaction to the therapy. These clinic visits are scheduled once a week or as often as your radiation oncologist requests.

TREATMENT BEAM FILMS
During treatment, your team may use the treatment machines to take special X-rays called beam or port films. Your treatment team routinely reviews these films to be sure that the treatment beams remain precisely aimed at the proper target. These X-rays are not used to evaluate your tumor.
AFTER TREATMENT

After treatment is completed, follow-up appointments will be scheduled so that your radiation oncologist can make sure your recovery is proceeding normally and can continue to monitor your health status. Your radiation oncologist may also order additional diagnostic tests. Please let your nurse know which physicians you would like your reports sent to. As time goes on, the frequency of your visits will decrease. However, you should know that your radiation oncology team will always be available should you need to speak to someone about your treatment.

SKIN CARE

SKIN CARE FOR RADIATION TREATMENT AREA
Skin care should begin on the first day of radiation treatments and continue until skin reaction has healed. Skin reactions in the treatment area may increase for about two weeks after your treatments are complete.

WASHING
You may wash, shower or bathe daily as long as you are gentle to the treatment area. Wash with warm water (avoid hot or cold water). Avoid using wash cloths. Pat the treated skin dry with a soft, clean towel. Do not rub. Body areas not being treated can continue to receive their normal skin care routine.

DO...
• Report any rash or break in the skin to your therapist or nurse - Prevent infection with good hand washing, skin care and by avoiding smoking
• Use a gentle soap (e.g. Dove) or a mild skin cleanser with no perfume (e.g. Cetaphil)
• Use unscented lotions (e.g. Glaxal Base) and mild shampoos
• Wear loose fitting, cotton clothing
• Use cotton bed sheets
• Use low residue laundry soaps (e.g. Ivory Snow)
• Protect from sun and wind
• Use sunscreen or cover the area with clothing
• Protect from frostbite
• Use hair dryer on cool setting or air dry
DONT...
Use harsh soaps, cosmetics, deodorants, powders or other drying agents such as hydrogen peroxide on the treatment area
- Use tape or band-aids
- Scratch
- Wear jewelery over the skin in the treatment area
- Use icepacks, heating pads or hot water bottles
- Use hot tubs and saunas
- Rub the skin (avoid friction)
- Shave (unless using an electric razor)
- Use tanning parlours
- Use hairspray, mousse, gel, and other styling products.
- Smoke – smoking interferes with healing and increases itching

IF YOU HAVE MARKS ON YOUR SKIN
Wash in and around the marks but do not wash them off. If a large portion of the markings disappear before the treatments are over, please phone (204) 787-2252. Do not attempt to redo the marks yourself.

SKIN CARE FOLLOWING TREATMENT
Changes to the skin in the treatment area may increase for the two weeks following treatment.

The reaction will subside gradually within four weeks of completing treatment.

Once the redness has subsided, you may bathe and shower as usual. At this time, you may also use cosmetics and deodorants in the treated area.

Over time the treated skin may become darker and appear tanned. The skin in the treated area will always be more sensitive. Avoid exposing the area to excessive sun and use a sunscreen of SPF 15 or higher. A recommended sunscreen is Pre-Sun.
MOUTH CARE

If your treatment is to your mouth or throat, you must take special care of this area. Start following these mouth care instructions at the beginning of your treatments.

Clean your teeth and mouth after each meal and snack. Use a soft toothbrush and mild-tasting toothpaste with fluoride that does not contain peroxide or tarter control (e.g. Biotene). Floss gently each day.

Do not use regular mouthwash. Rinse your mouth with salt water or mix 1/2 teaspoon of baking soda in a glass of lukewarm water. Rinse and gargle at least 4 times a day. This may also help before meals.

If you wear dentures, ask your doctor or dentist if you should wear them at this time.

Continue following these instructions after your treatments are completed until any mouth reaction has improved.

NUTRITION

A well-balanced diet is important before, during and after cancer treatment.

Maintaining a good diet helps your body repair radiation damage to healthy cells.

Canada's Food Guide to Healthy Eating is a good reference to use to ensure you are providing your body with all the nutrients it needs. Copies can be obtained from the Patient Resource Centre on the main floor.

For specific suggestions for eating problems that may result from your radiation therapy, see the section on "Care for Side Effects".
Persons having radiation therapy may have side effects. Side effects from radiation therapy only affect the area treated. Below is a list of areas of the body and the side effects that you may experience. Every person is different. You may or may not have any of the side effects listed for the area of the body you are having treated.

If you have any questions not answered on the following pages please ask your therapist, nurse or doctor.

POSSIBLE SIDE EFFECTS
“Listed By Area Treated”

**Treatment To The Brain**
- Headaches
- Loss of hair
- Skin reaction
- Feeling tired

**Treatment To The Head And Neck**
- Dry mouth
- Loss of or change in taste
- Difficulty swallowing
- Loss of appetite
- Sore mouth and throat
- Loss of facial hair
- Skin reaction
- Feeling tired
- Dental care - talk to your Radiation Oncologist about specific dental care needs

**Treatment To The Lung**
- Sore throat
- Difficulty swallowing
- Loss of appetite
- Shortness of breath
- Nausea
- Productive cough
- Skin reaction
- Feeling tired
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Treatment To The Breast
Swelling
Change in the feel of the breast
Skin reaction
Feeling tired

Treatment To The Abdomen
Diarrhea
Cramping and gas
Bladder irritation
Constipation
Rectal irritation
Hemorrhoids
Skin reaction
Feeling tired

Treatment To The Arms Or Legs
Swelling
Skin reaction
Feeling tired

LONG TERM SIDE EFFECTS

Also called “Late Effects” may begin within a few weeks to a few months of completing radiation treatments. All normal tissues do not follow the same behavior pattern in response to radiation. The types of tissues and organ tolerance of radiation is a major factor in the incidence and severity of late effects. This means that tissues that are most sensitive to radiation will likely show long term side effects earlier and may be permanent.

Any long term side effects should be discussed with your doctor or nurse.
CARE FOR SIDE EFFECTS

FEELING TIRED

Healthy Sleep
A good night sleep is important. You may find that during your illness you need more than your usual hours of sleep. A good night’s sleep helps you function during the day and with general well being. Cancer and cancer treatment can lead to lack of sleep or too much sleep. There are things you can do to help your sleep stay healthy during cancer treatment.

Tips to Ensure Healthy Sleep

• Follow a set bedtime and wake time.

• Try not to worry about getting to sleep or getting enough sleep.

• Try to deal with your problems or worries during the day, well before bedtime.

• Avoid foods and liquids that contain caffeine (coffee, tea, colas) after 5pm and minimize heavy intake during the day. Nicotine (cigarettes) can also disrupt sleep.

• Avoid or minimize alcohol intake. Alcohol while it may help you fall asleep does not allow you to have a refreshing sleep.

• Exercise on a regular basis; even if it is only a small amount it can help improve sleep. Exercising in the morning or afternoon is best. Discuss with doctor before starting any exercise program.

• Learn what things help you sleep (no noise, dark room, cool room). Use these in planning your sleep.

• Nap only for short periods of time (e.g. 20-40 minutes). Avoid napping in the evening as it may make it more difficult to fall asleep later.
SKIN REACTION

Patients having Radiation Therapy may get a skin reaction in the treatment area. If you get a skin reaction, it likely won't begin until you've had about two weeks of treatments. Your skin may get pink, dry and itchy. It may feel like you have been out in the sun too long. The amount of reaction will depend on your skin type, the area of the body treated, the energy and the dose of radiation. Start following the "Skin Care Instructions" right at the beginning of your treatment so that your skin reaction will be as little as possible.

POSSIBLE REMEDIES

Camomile Tea
If your skin has become red, sore and irritated from the treatment, camomile tea may soothe the area.

Make a strong pot of camomile tea and let it cool completely. Soak a clean, soft facecloth in the tea. Wring out a bit, leaving the facecloth soggy. Hold the facecloth to the irritated area. Repeat this for about 20 minutes. Use a clean facecloth and a fresh pot of tea each time you do this. You can do this several times throughout the day.

Aloe Vera
If your skin has become red, sore and irritated from the treatment, Aloe Vera may soothe the area. Use Aloe Vera Gel that is more than 90% Aloe Vera.

Before using in the treatment area, check for a reaction to the Aloe Vera by putting a small amount on your skin, on another part of your body. If that area shows changes (example, redness, rash) do not use it on the treatment area.

For use, apply to a small area at a time, inside the treatment lines, but not on the treatment lines, to avoid them coming off.

REACTION OF TREATMENT TO THE BREAST

You may get a skin reaction in the treated area. This reaction will be only to the breast and underarm that is being treated. The reaction will likely not be noticeable until about the third
week of treatment. Then your skin may turn pink and be dry and itchy. Your nipple and scars may become sore. Your breast may swell slightly after you have started treatment and after your treatments, your breast may feel more firm to the touch than the breast that has not been treated.

When you start your treatments, stop wearing a bra. A bra rubs and will irritate your skin. This will cause the skin reaction to be worse. Wear a loose cotton top and follow the skin care instructions.

• See "Skin Care Instructions".

• See "Camomile Tea" and "Aloe Vera".

**REACTIONS OF TREATMENT TO THE BRAIN**

If your head is being treated you may lose your hair. This will be in the treatment area ONLY. It may start to fall out 2 to 3 weeks after you start treatment. The hair loss will be temporary or permanent depending on how much radiation you receive. If temporary, the hair will start to grow 3 to 6 months after your treatments are finished. Wigs are available. See "Looking your Best".

See the "Skin Care Instructions".

If you have symptoms such as:

• Headaches
• Change in vision, hearing, speech, skin sensations
• Weakness of arms or legs
• Unsteady walk
• Seizures or "blackouts"

Inform your therapist, nurse or doctor. A change may be needed in your medications or your treatment.

Some medications you are taking may also have side effects. These include rash, swelling, sedation, insomnia, mouth infection and stomach irritation.
REACTIONS OF TREATMENT TO THE HEAD AND NECK

Dry Mouth
Your mouth may be dry if you are treated in that area. If this happens, try the following:

• Breathe through your nose, not your mouth.

• Increase the humidity in the room you spend the most time in.

• Keep a glass of water close to you and take small sips often.

See also "Difficulty Swallowing".

Loss of Taste or Change in Taste
The taste of food may change, especially if you are treated in the area of the mouth. If this happens, try the following:

• If the taste of meat changes, try poultry (chicken/turkey), eggs, fish or milk products instead.

• If foods taste too salty, try adding a pinch of sugar to mask the saltiness.

• If foods taste too sweet, try adding a pinch of salt to decrease the sweetness.

• If foods taste bland, try adding herbs or mild spices to add extra flavor.

• If foods have a "metal" taste, use plastic utensils and dishes for cooking and eating.

• Try sugar-free gum, candies or popsicles to mask an unpleasant taste in your mouth.

• Drink through a straw if the smell bothers you.

• Choose foods that can be eaten cold or at room temperature (e.g. sandwiches, pasta salads, boiled eggs, cheese, milkshakes).

• Marinate foods in wine, juice, soy sauce, teriyaki or
barbecue sauce unless your mouth or throat is being treated. If so, the acid in these marinades may be too irritating and should be avoided.

- Rinse your mouth often with a rinse made of 1/2 teaspoon of baking soda mixed with one cup of lukewarm water. Do this at least four times a day.

**Difficulty Swallowing**

You may have difficulty swallowing if you are treated in the head and neck or chest area. If this happens, try the following:

- Take small sips of liquids with each mouthful of food.
- Moisten foods by dunking in milk, gravy or sauce.
- Avoid dry, coarse foods like toast and crackers.
- Add a sauce, mayonnaise, salad dressing or gravy to moisten food.
# EASY TO SWALLOW FOODS

## VEGETABLES & FRUITS
- well cooked or canned vegetables such as squash, cauliflower, green and yellow beans, peas, turnip, beets
- mashed potatoes
- grated or shredded vegetables
- canned fruit such as peaches, apricots, pears
- applesauce, baked apples
- poached or cooked fruit, eaten on its own or used to flavor milkshakes, ice cream, yogurt and cereal
- watermelon, honeydew, grapes, kiwi, berries, bananas juices
- fruit nectars, apple, grape, prune juice
- Fruits & Vegetable Juices

## MILK & MILK PRODUCTS
- whole milk, milkshakes, chocolate milk
- custard
- yogurt and yogurt drinks
- cream soups
- cottage cheese
- cheese cake
- cream and cheese sauces
- ice cream
- pudding; ready to eat, cooked or instant

## MEAT & ALTERNATES
- tender meats and poultry (stew or braise)
- ground beef, chicken or turkey
- fish fillets, canned fish
- soft boiled, scrambled or poached eggs
- omelettes, soufflés
- baked beans
- casseroles, e.g. macaroni and cheese, pasta and sauce, creamed chicken or tuna
- tofu (soybean curd)
- blenderized or minced meats
- strained baby food
- cottage cheese
- grated cheese added to vegetables, omelettes, casseroles
- smooth peanut butter

## GRAIN PRODUCTS
- hot cereal thinned with milk or cream
- pablum, grits
- rice pudding
- buttered rice or noodles pasta cooked in milk
- soft pasta dishes
- bread or cookies dipped in milk or cocoa
- soups thickened with barley, noodles or rice
- mashed or whipped potatoes
- pancakes or French toast with syrup

## OTHER CHOICES
- gelatin desserts, fruit whips and sherbet
- cream cheese, sour cream, whipping cream
- mayonnaise
- high energy high protein nutritional supplements, e.g. Ensure, Boost, Carnation Instant Breakfast
(ask your dietitian for more information)
LOSS OF APPETITE

Maintaining your weight during treatment is important. Eat frequently even if it is only a few bites at a time.

These hints apply to anyone who doesn't feel like eating:

- Eat when you are feeling good.
- Invite a guest.
- One glass of wine or beer before dinner may increase your appetite. Check with your doctor first.
- Get some fresh air before you eat.
- Make the table and your plate look nice.
- Put small amounts of food on your plate.
- Eat your favorite foods.
- Chew slowly and take breaks during the meal.
- Keep convenient, non-perishable snacks on hand such as packaged milkshakes and juices, crackers and cheese, canned pudding, packaged cookies and nuts.
- Limit your intake of coffee and tea as they may fill you up and decrease your appetite.
- If you are losing weight, milkshakes and commercial liquid nutritional supplements may be recommended.

SORE MOUTH AND THROAT

If your mouth and throat are being treated, the area may get sore. It will likely not be noticeable until about 3 weeks after you start treatment.

Right from the start of your treatments:

- Avoid foods that will irritate you mouth. Examples are: acidic foods (like tomatoes), spicy foods (like pizza), rough
foods (like toast) and salty foods. This will reduce the reaction you may get later on.

- Eat soft foods like eggs, soup, ice cream and pudding.
- Put foods in a blender to soften them.
- Do not eat food too hot. Cool or room temperature food is generally less irritating.
- Rinse your mouth and gargle with 1/2 teaspoon of baking soda in a glass of lukewarm water. Do this 4 or more times a day. It is especially soothing after a meal.

Follow the directions for "Mouth Care".

See also "Difficulty Swallowing".

**Loss of Facial Hair**

You may lose facial hair (beard, moustache, eyebrows, eyelashes) only if it is in the treatment area. It may start to fall out 2 to 3 weeks after you start treatment. The hair loss will be temporary or permanent depending on type of radiation you receive. If temporary, the hair will start to grow 3 to 6 months after you are finished treatment.

See "Look Good...Feel Better".

**REACTIONS OF THE TREATMENT TO THE CHEST**

**Shortness of Breath**

Shortness of breath may be a problem if your chest is being treated. If this happens, try the following:

- Don’t try to do too much at once.
- Try different positions to sit or lie down.
- Put pillows under your head and shoulders instead of lying flat on your back.
- Try lying on your side.
• Try sleeping in a reclining chair with your head propped up so you don’t get a "kink" in your neck.

• Set up a humidifier where you spend most of your time. Moist air is easier to breathe.

REATIONS OF TREATMENT TO THE STOMACH

Nausea and Vomiting

If your stomach is being treated you may feel nauseated or like vomiting. If this happens, try the following:

• Get fresh air.

• Have someone else do the cooking if possible.

• Wear loose clothing.

• Eat slowly.

• Chew your food well.

• Eat dry toast or crackers before you get up in the morning.

• Eat small meals, more often.

• Avoid fluid with meal.

• Drink 8 glasses of fluids a day to avoid dehydration.

• Try meals cold. There is less odour to cold food.

• Do not eat hot and cold foods at the same meal.

• Avoid fried, spiced and fatty foods.

• Avoid caffeine. It is in tea, coffee, colas and chocolate.

• After eating, relax in a chair to aid digestion.

• Don’t lie down for 2 hours after eating.

Let your therapist, nurse or doctor know if you are having nausea or vomiting. A medication may be needed.
Cough

If your chest is being treated, you may begin to cough. Try to cough up any phlegm that you feel in your throat. Do not take a suppressant cough syrup. Keep a glass of water by your side and take small sips often.

REACTION OF TREATMENT TO THE LOWER ABDOMEN OR PELVIS

Diarrhea

You may have diarrhea if your treatment is to the lower abdomen or pelvis. If you get diarrhea, it likely won’t start until you’ve had about two weeks of treatment. Watch for your stools to become softer and occur more often. At this time, adjust your diet and eating habits. Eat foods at room temperature, not hot or very cold.

• Eat small meals, more often (4 - 6 small meals a day).

• Don't drink much with meals. Drink lots between meals.

• Chew with your mouth closed so you don't swallow air.

• Do not eat foods which tend to cause diarrhea. Examples are raw fruit and vegetables, whole grain cereals, bran and nuts.

• Do not eat foods which cause cramping and gas. Examples are cabbage, onions, brussel sprouts, broccoli, cauliflower, dried beans and peas, corn, chewing gum, garlic, spices, beer, carbonated drinks and sweets in large amounts.

• Avoid fatty foods. Eat lean meat, fish or chicken instead.

• If the above ideas do not control your diarrhea, reduce your milk and milk products intake. Try "Lacteeze", which is 90% lactose-free, instead of milk.

Let your therapist, nurse or doctor know that you have diarrhea. A medication (example Immodium) may be needed to control your diarrhea if the above steps do not work for you. If diarrhea persists, ask for a referral to the dietitian.
Cramping and Gas

If you experience cramping or gas, try the following:

• Chew with your mouth closed.
• Do not talk while chewing.

See information under "Diarrhea".

Bladder Irritation

This may be a side effect if your treatments are to your lower pelvis or it may be an infection. You may need to provide a urine sample to check if it is an infection.

Bladder irritation means one or more of:

• The need to empty your bladder often
• The need to do it right away
• Burning

• From the first day of your treatments, drink 8 or more large glasses of water a day.
• Cut down on your water intake in the evening if you have to get up to go to the bathroom during the night.
• Cranberry juice may help the symptoms of bladder irritation. Dilute it with water if you find the taste too strong. If you have diabetes or high blood sugars, speak to your dietitian before using large quantities of cranberry juice.
• Avoid caffeine. It is found in tea, coffee, colas and chocolate. Caffeine may irritate your bladder.
Constipation

Constipation is not likely to be a result of radiation therapy. Operations, some medications and change in eating habits or living conditions may be the cause of constipation.

If your treatment is to the pelvis, check with your doctor before taking any medication for constipation.

If constipated, eat natural laxative-type foods such as bran, prune juice, raw fruit and vegetables. Once your bowels loosen, cut back on these foods so that you do not end up with diarrhea. Radiation Therapy to the pelvis and these foods together can cause diarrhea.

• Drink 6 - 8 glasses of fluids a day.
• Tea or hot lemon water may help to relieve constipation.
• Get some light exercise, such as a walk.

Rectal Irritation

Rectal Irritation may be a problem if your lower pelvis is being treated.

Rectal irritation means one or more of:
• Pain
• Burning
• Itching

Rectal irritation may sometimes lead to constipation. See "Constipation".

Clean the area at least once a day, following the skin care instructions. Between washings, keep the area as dry as possible. Wear loose, cotton underwear.

Expose the area to the open air as much as possible. Lay on your side on the bed or the couch. Uncover the area. Bend your top leg up on a pillow and hold your buttocks apart with your hand. Air movement also helps. Set a fan across the room on a low setting and aim it at your behind.
A warm bath may soothe the irritation. Clean the tub really well. Rinse out all of the cleaner that was used to scrub the tub. Fill the tub with warm water (not hot) up to your waist. Sit in the tub and move your buttocks apart so the water can reach the irritated area. Bend your knees up so as much of your legs are out of the water as possible. Sitting in the warm bath for 10 minutes may relieve the irritation. This may be repeated several times a day.

Hemorrhoids

If you have had hemorrhoids in the past, they may flare up if they are in the treatment area.

- Keep the area clean, following the skin care instructions.
- A warm bath may relieve the irritation. Move your buttocks apart so the water can soothe the area.
- You may use Anusol cream for your hemorrhoids (you do not need a prescription for this). Let your therapists and doctor know you are using this cream the next time you see them.

See "Rectal Irritation".

REACTIONS OF TREATMENT TO THE ARMS OR LEGS

The treatment area may swell during radiation therapy treatment. You probably would not notice this until 2 or 3 weeks into the treatment. Make sure your clothing is not too tight over the area. Do not use heat or cold to reduce the swelling.

The whole arm or leg may swell. This is usually caused by removal of the lymph nodes during surgery. This may also be a side effect of radiation therapy if a large part of the arm or leg is being treated. Let your therapist, nurse or doctor know if you notice this.

The skin reaction would be the same as that described under "Skin Reaction". However, it would be more noticeable where your arm or leg bends, the underarm or the groin. Follow the skin care instructions closely. See "Camomile tea" and "Aloe Vera".
NUTRITION

Commercial Liquid Food Supplements

If you are having difficulty eating enough and maintaining your weight, you may want to try commercial liquid nutritional supplements. They can be used as meal replacements if necessary and can meet your nutrient requirements for vitamins and minerals if consumed in the recommended amounts. These products are often lactose-free and are available in a variety of flavours. They are convenient and require very little preparation if any. Samples are available from your therapist, nurse or dietitian. Samples of more specialized supplements (e.g. higher in protein, higher in calories, lower in sugar for people with diabetes) are available from the dietitian.

Nutritious Recipes

High Protein Milk
1 cup whole milk
1/4 cup skim milk powder
Blend together

Milkshake
1 cup high protein milk (see above)
3/4 cup ice cream
flavoring of your choice
Blend together

Pudding
1-4 1/2 oz. pkg. instant pudding
2 cups whole milk
2 T. oil
3/4 cups skim milk powder
Blend together

Soup
1 cup cream soup
2 oz. cooked meat or poultry
2 T. skim milk powder
Blend together

For All Recipes:
• Keep refrigerated
• Throw out after 24 hours.
• Do not keep at room temperature for more than 2 hours.
**WORDS**

- **Benign**
  An uncontrolled growth of cells that does not spread to other areas of the body.

- **Cancer**
  An uncontrolled growth of cells. The cells may spread to another area of the body.

- **Lymphatic System**
  The body's way of removing fluid from tissue. This is one way that cancer can spread.

- **Malignant**
  See "Cancer".

- **Metastasis**
  The spread of cancer cells from one site to another.

- **Tumor**
  A growth that may be either benign or malignant.
Various parking facilities are available including parking lots, parkades, and metered parking.