

Radiation Therapy

For Cancer Treatment





You may have many questions as you begin radiation therapy for cancer treatment.

Becoming well-informed about your cancer and treatment can help you feel better able to manage your health during this time. Use this book to learn about radiation therapy and its effects on your body.

For your continued health education, this booklet and others are available on mountcarmelhealth.com.

What Cancer Can't Do

Cancer is so limited.

It *cannot* cripple love. It *cannot* shatter hope. It *cannot* corrode faith.

It *cannot* eat away peace. It *cannot* destroy confidence.

It *cannot* kill friendship. It *cannot* shut out memories.

It *cannot* silence courage. It *cannot* invade the soul.

It *cannot* reduce eternal life. It *cannot* quench the spirit.

Our greatest enemy is not disease, but despair.



Table of Contents

Learning about Radiation Therapy5

Radiation Therapy at Mount Carmel6

Welcome6

Your First Visit6

Treatment Planning/Simulation6

Treatment Visits6

Support Groups8

The Radiation Therapy Team8

What Is Radiation Therapy?8

How Radiation Therapy Works9

Types of Radiation Therapy9

Managing Side Effects11

General Side Effects12

Fatigue12

Skin Changes and Care13

Hair Loss13

Loss of Appetite13

Bone Marrow Depression14

Pain14

Distress16

Sexuality16

Eating and Nutrition19

General Guidelines20

Eat a Healthful Diet20

Plan Ahead20

Managing Eating Problems and Side Effects20

After Radiation Therapy23

General Information24

Follow-up Visits24

Ongoing Side Effects24

Getting Back to “Normal”24

Special Notes for Family and Friends25

Ways Family and Friends Can Help26

Questions for Your Radiation Oncology Team27

Learning about Radiation Therapy



*Start by doing what's necessary, then what's possible,
and suddenly you are doing the impossible.*

– Francis of Assisi

Radiation Therapy at Mount Carmel

Welcome

We want you to know what to expect during your radiation therapy treatments at Mount Carmel. The radiation oncology staff welcomes your questions. We encourage you and your family to share your thoughts and any concerns.

Your First Visit

You will have forms to fill out and will be asked questions about your health, current illness, and family history. You will need a list of your current medications including vitamins, over-the-counter medications, herbal products, and home remedies. Include the doses and how often you take them.

The nurse will provide educational materials and answer general questions. A radiation oncologist, a doctor who treats cancers with radiation, will examine you. The doctor will discuss treatment options with you.

Treatment Planning/Simulation

Simulation is the planning of your treatment site or sites. It is done with a special CAT scan, body measurements, and markings on the skin where the treatments will be given. Your doctor and a radiation therapist will explain what they are doing. The treatment planning is usually done on your second visit and takes from 30 to 90 minutes.

Between this visit and your first treatment, your doctor will complete the treatment plan with other experts based on the simulation. Your doctor then decides:

- ▶ How much radiation is needed
- ▶ How it will be delivered
- ▶ How many treatments you should have

Treatment Visits

Please check in at the front desk each day that you arrive for your treatment. Your first appointment takes 20 to 30 minutes. The length of time for other visits varies depending upon whether you have X-rays, have blood work, or see the doctor, dietitian, or social worker.

The therapist will schedule your daily treatments with you. Tell us your preferred time and we will try to meet your need. Most often we schedule once a day at the same time Monday through Friday for the course of your treatment. If you need to change the time, let the therapist know at least 1 to 2 days in advance.

We ask that you arrive on time. Being late delays other patients' treatments. We do our best to remain on time. Please check at the desk if you have been waiting for more than 15 minutes after your scheduled time.

If you are not able to come for your treatment, please call before your appointment time and speak with your therapist.

During your treatments:

- ▶ You may need to change into a gown or robe.
- ▶ Most of your time spent in the room will be used to get you into position.
- ▶ You will need to hold still during the setup and treatment time.
- ▶ Try to relax and breathe normally during this time.
- ▶ The therapist will leave the room for a short time while you are being given the radiation.
- ▶ You will be monitored on a closed-circuit TV.
- ▶ You may hear a buzzing sound from the machine.
- ▶ You will not feel the radiation.
- ▶ You will not become radioactive.

At some of your treatment visits, you will have:

- ▶ Your weight checked and recorded.
- ▶ Special X-ray images taken to check the treatment position. These take 5 to 10 minutes and do not show the treatment progress.
- ▶ Blood drawn for a complete blood count (CBC), if ordered by your doctor. If you have blood drawn elsewhere, bring a copy of the results for your chart.
- ▶ A weekly meeting with a radiation oncologist. If you need to talk to the doctor between visits, let the therapist or nurse know.
- ▶ A symptom card for you to complete each week to help us manage any side effects.



Support Groups

Having cancer treatment can be a stressful time. Getting together with others who are also having treatment is often helpful. Several support groups are offered at various times and places. For more information, check the *Support and Resources* handout. You can also talk with your nurse, social worker, or therapist.

The Radiation Therapy Team

The radiation therapy team is made up of many healthcare members. These include:

Radiation Oncologist: A radiation oncologist is a doctor who specializes in using radiation to treat cancer. The radiation oncologist prescribes the type and amount of treatment that is right for you.

Medical Physicist: The medical physicist calibrates the equipment to ensure the correct amount of radiation is given. The physicist is also involved in treatment planning.

Medical Dosimetrist: A medical dosimetrist works with your doctor to calculate the amount of radiation that is right for you.

Radiation Therapist: The radiation therapist positions you for your treatment and runs the equipment that delivers the radiation.

Radiation Nurse: The radiation nurse coordinates your care and teaches you about

your treatment and how to manage your side effects. The nurse also assists the doctor during exams and draws blood or does dressing changes as needed.

Dietitian: The dietitian assists you with any dietary concerns and helps you to manage side effects that affect eating and nutrition.

Social Worker: The social worker helps you arrange for any needed community or home care services. Help with financial concerns can also be addressed.

Front Desk Staff: The staff will greet you at the front desk and help you with registering and scheduling your visits. They can direct you to the correct person for other questions or concerns.

What Is Radiation Therapy?

Radiation therapy is sometimes called radiotherapy, X-ray therapy, or irradiation. Radiation therapy treats cancer by using beams of high-energy waves or streams of particles called radiation. Radiation therapy equipment aims a specific amount of radiation at tumors or areas of the body where there is cancer.

How Radiation Therapy Works

Radiation in high doses destroys cells or keeps cells from growing and multiplying. Cancer cells grow and multiply faster than normal healthy cells. The goal of radiation therapy is to destroy cancer cells with as little risk as possible to normal cells. Normal cells may be affected by the radiation, but most of these cells recover.

Radiation can be used in several ways during cancer treatment:

- ▶ Alone, as the primary cancer treatment
- ▶ Before surgery to shrink a tumor
- ▶ After surgery to destroy cancer cells that may remain
- ▶ Before, during, or after chemotherapy

Types of Radiation Therapy

There are different types of radiation therapy:

External Radiation

External radiation is used most often for cancer treatment. A machine directs high-energy rays at the cancer site. The treatments are painless, and you are not radioactive.

CyberKnife® is a type of stereotactic radiosurgery. It is a form of radiation therapy — not surgery — and involves no cutting.

Internal Radiation

Internal radiation is also called implant therapy or brachytherapy. The radioactive source can be a temporary or a permanent implant inside the body at the site of the cancer. An HDR (high-dose-rate) radiation implant is a type of internal radiation that is an option for some cancer patients. The radiation is delivered inside the body, close to the cancer. This limits the amount of healthy tissue exposed to radiation. If you are having internal radiation, your doctor and healthcare providers will explain how it will be done and any special precautions that must be taken.



Notes

Managing Side Effects



The only courage that matters is the kind that gets you from one moment to the next.

– Mignon McLaughlin

General Side Effects

The side effects of radiation therapy depend on the area being treated. During the course of your radiation therapy, we will be checking with you about any side effects you may be having. Once a week, we will ask you to complete a written checklist rating the amount of symptoms you have had over the past week.

Fatigue

Fatigue or feeling tired is the most common symptom for cancer patients. The exact cause is not always known. You may be feeling tired from the cancer itself or from the treatments. Low blood counts, a lack of appetite, poor sleeping, and stress can also cause fatigue. Even the travel and time involved with treatments can add to fatigue.

Your body uses a lot of energy during the weeks that you are having the radiation therapy. Many people begin to feel tired about the third week of therapy. After treatment is completed, fatigue slowly improves over the next few months.

Some ways to deal with feeling tired are:

- Plan activities for when you feel more rested.
- Set aside time for rests during the day.
- Try to get more sleep during the night.

Staying active is another way to help fatigue. Light exercise such as walking helps raise your energy level rather than making you more tired. Start with a short walk, and slowly increase the amount of time that you walk. Don't push yourself to do more than you can manage. Talk with your doctor about doing other activities.

Depending upon your energy level, you may want to keep your normal work schedule or work a reduced amount. It is a good idea to ask friends and family members to help with chores, shopping, housework, or driving. Conserve your energy for what is most important to you.

Sometimes you may find that you are not only tired but feeling "down." Depression can occur with a major illness. If you or a family member suspect that you may have depression, talk to your doctor.

Feeling tired may make you less able to focus. Try to wait until you are rested to do things that require a lot of concentration. Do not drive when you are very tired.

Fatigue may also affect your desire for sexual activity. Try to plan for sexual activity when you are rested.

Other than fatigue, side effects from radiation therapy affect only the part of the body being treated. The type and amount of side effects vary depending on the part of your body being treated, your treatment dose, and your general health. Some people have very few side effects while other people are bothered by more.

Skin Changes and Care

Markings on the skin will be made at the simulation visit to define the area being treated. A semi-permanent marker or a permanent tattoo may be used. If the markings start to fade, the therapist will darken them. Do not try to draw over faded lines at home. Also, do not put lotions or creams on your skin 4 hours before you have your treatment.

Everyone having radiation therapy needs to take extra care with their skin in the area being treated. After a few weeks of treatment, skin at the treatment site may look irritated, reddened, or tanned. Some people have a more severe skin reaction than others.

Some things to avoid in the treatment area are:

- ▶ Any powders, creams, perfumes, body oils, lotions, or ointments
- ▶ Rubbing, scratching, or scrubbing
- ▶ Tight clothes that rub or constrict
- ▶ Heating pads, hot water bottles, or ice packs
- ▶ Direct sunlight
- ▶ Hot or cold water

Use warm water and gentle, unscented or non-deodorant soaps (such as Dove® Sensitive Skin Unscented) when bathing. Use only prescribed ointments, lotions, and powders on the area.

If you need to shave in the treatment area, use an electric razor. Do not use a regular razor blade.

Check skin folds daily for redness in the area close to the radiation treatment area. Bacteria and fungus can grow in these folds. Keep these areas clean and dry. Tell your therapist or nurse if your skin becomes red, moist, or wet. You will be told how to care for this in order to protect the skin and prevent infection.

Hair Loss (Alopecia)

Hair loss resulting from radiation therapy may occur only on the body site that is being treated. Unlike chemotherapy, which can produce hair loss on the entire body, hair loss from radiation therapy only occurs where the treatment is given.

Loss of Appetite

Loss of appetite can occur with radiation therapy. Though your appetite may decrease, it is important to keep eating a healthful diet. Your weight will be checked often during your treatment.

Bone Marrow Depression

Sometimes radiation therapy can cause low blood cell counts:

- ▶ **Neutropenia** — low white blood cells, which fight infection.
- ▶ **Anemia** — low red blood cells, which carry oxygen to cells throughout the body.
- ▶ **Thrombocytopenia** — low platelets, which control bleeding.

Your blood will be checked as needed. If your blood cell levels drop, a treatment may need to be delayed. You may also be given special instructions.

Pain

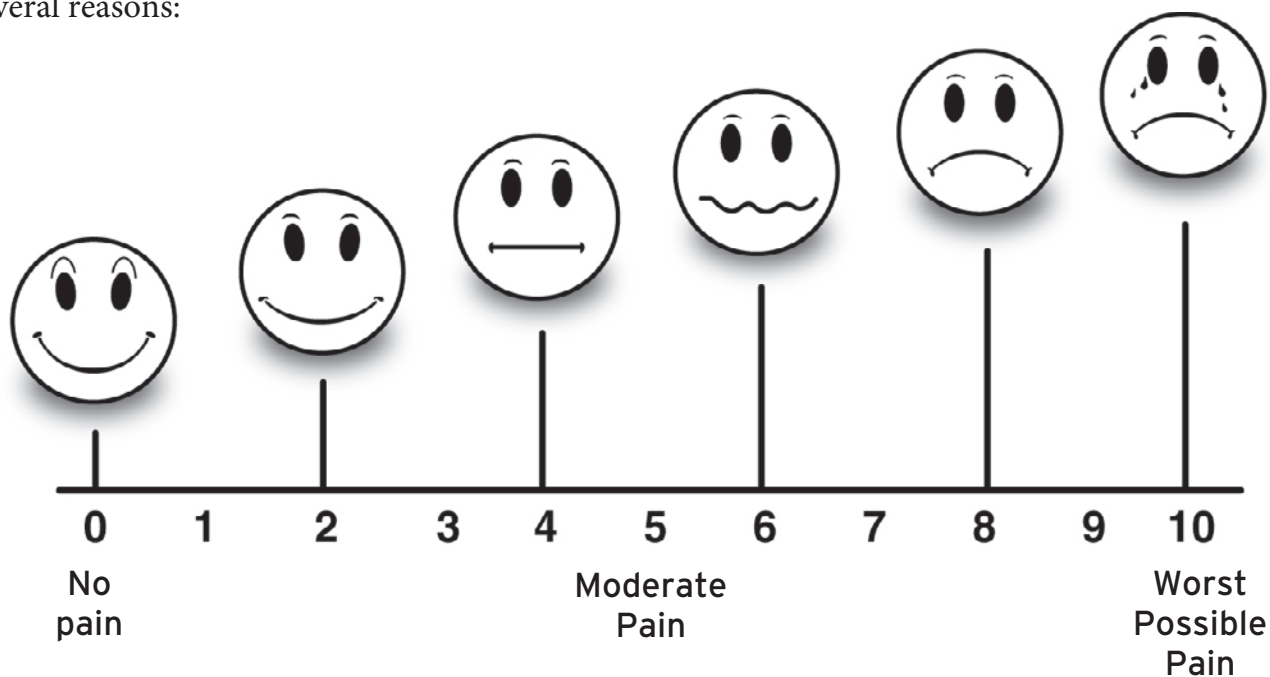
Pain is the body's way of sending the message that something needs attention. Cancer-related pain can be acute (sudden and sharp) or chronic (steady and persistent). Cancer pain may occur for several reasons:

- ▶ Tumor pressing against sensitive areas such as nerve or bone
- ▶ Tumor pressing against organs
- ▶ Nerve and tissue damage because of surgery, radiation, or chemotherapy

All cancer pain is treatable. The first step toward relief is talking with your doctor. When pain is controlled, you will feel better and have more energy for your treatments and daily activities.

Many medications are used to treat cancer-related pain. The medication the doctor prescribes is based on your description of the pain.

Your nurse or doctor will ask you questions about your pain to help make sure the medications are working properly. You will be asked to rate the pain on a scale of zero (0) to ten (10). Zero means you have no pain; ten means you have the worst possible pain. Because it is not always possible to take all discomfort away, you will also be asked to tell the nurse what level of pain is acceptable to you.



When Describing Pain

- ▶ Rate your pain from 0 to 10.
- ▶ State the location of the pain.
- ▶ Describe the sensation of pain, such as sharp, burning, aching, throbbing, tingling, or stabbing.
- ▶ Describe what seems to make the pain better and what seems to make it worse.

Important Guidelines

- ▶ If your pain is constant, pain medication should be taken on a regular schedule. This maintains a steady level of the medication in your bloodstream.
- ▶ Keep a record of your pain rating, and what medication helped at the time.
- ▶ Addiction is rarely a problem if you are taking medications for pain management.

Hints to Help with Comfort

- ▶ Take slow, deep breaths to help you relax.
- ▶ Support your back and the bony areas of your body by changing position occasionally.
- ▶ Try light and gentle touch. Ask your doctor before having any deep massage, which may not be advisable for some cancers.

- ▶ Adjust the temperature and lighting in the room to make a calmer, more soothing environment.
- ▶ Use the power of your mind and imagine being in a peaceful, relaxing place.
- ▶ Avoid focusing on discomfort by doing other things such as listening to music, watching TV, reading, or visiting with family and friends.

Remember that the goal of pain management is to help you be comfortable throughout your treatments and in your daily activities. You may need to try several pain medications before finding the one that works best. Tell your doctor or nurse if you experience any of the following:

- ▶ Pain in a new area
- ▶ Numbness, tingling, or a “pins and needles” feeling
- ▶ Increased pain while taking the same amount of medication
- ▶ Changes in the characteristics of pain, such as dull pain becoming sharp
- ▶ Discomfort from the side effects of pain medicines, such as constipation or sleepiness

Distress

A diagnosis of cancer can be very difficult for both patients and their loved ones. It causes a great deal of distress for many people. Common symptoms of distress include:

- Feelings of sadness and fear
- Depression
- Anxiety
- Panic
- Loneliness
- Struggles with spiritual beliefs

Distress can be treated and managed. The first step to getting treatment is to discuss your symptoms with your healthcare provider. Your treatment team can make an evaluation and help you find effective treatment. Counseling, support groups, relaxation, and stress management are often helpful. At times, medication may be needed.

You can help manage your symptoms as treatment begins to take effect:

- Spend time with other people. Reach out to a family member, friend, or co-worker.
- Increase your activity or exercise if you are able.
- Expect your symptoms to improve gradually, not right away.
- Allow your family and friends to help you.

After you are diagnosed with cancer, you and your family members may want to talk to a counselor. There are many agencies that offer services such as counseling, support groups, and resource referrals. Ask a member of your care team for resources.

Distress symptoms may become severe. Tell your doctor or a member of your care team if your symptoms last longer than 2 weeks or you have problems concentrating, sleeping, or eating, or if you are extremely tired.

Seek treatment right away if you have thoughts of suicide – call 911 or go to the nearest emergency room immediately.

Sexuality

Your first thought after you learned you had cancer may not have been about your sexual functioning. But as treatment begins and time passes, questions about your ability to have sex and a relationship may arise. You may wonder if this part of your life can be normal.

Sexual functioning and feelings are important parts of life. They can affect your outlook on life, your self-image, and your relationships with others. Everyone has a need for closeness, touch, caring, and pleasure. These remain important in life even when you are dealing with an illness such as cancer.

Cancer treatments may affect your sex life. It is important to talk about the effects of cancer treatments. Strive for good communication with both your doctor and your partner.

- You may or may not have a desire for sexual activity, and this is okay.
- Talk openly and honestly with your partner. Talking and hearing about each other's concerns helps you to avoid blame and to stay positive. You will each have a better sense of how the other is feeling.

- ▶ Ask your doctors and nurses for information about the usual effects of your cancer treatment on sex and relationships. When you know what to expect, you can plan ways to cope.
- ▶ Keep in mind that no matter what kind of cancer treatment you have, the ability to feel pleasure from touching almost always remains.
- ▶ Keep an open mind about ways to experience closeness and sexual pleasure — especially if your normal routine has changed.

- ▶ Your self-image and feeling of well-being are an important part of your sexuality. Take the time to pamper yourself in ways that are relaxing and that help you to feel good about yourself.

If you would like to talk with someone about these issues or other concerns, ask your doctor or nurse. You can also talk with a counselor, or you may find a support group to be helpful.



Eating and Nutrition



*The incredible gift of the ordinary!
Glory comes streaming from the table of daily life.*

– Macrina Wiederkehr

General Guidelines

You will find that some of the guidelines for healthful eating for cancer treatment and dietary management of side effects may differ from the usual healthful eating guidelines. This can be confusing because many of the tips may be the opposite of what you have learned. Nutrition guidelines for cancer patients differ because they are aimed at building up strength and managing side effects of treatment.

We are usually told to eat a lot of fruits, vegetables, and whole-grain breads and cereals; a moderate amount of meat or other protein and dairy products; and lesser amounts of fat, sugar, alcohol, and salt. During treatment, you may be told to eat higher-calorie foods and more protein. When you are healthy, eating enough food to get the nutrients you need is not a problem. During cancer treatment, this may be a challenge if you have side effects or simply don't feel well.

Some side effects from radiation therapy affect healthful eating. You may or may not have any of these side effects. The type of cancer you have, the part of your body being treated, and the type, dose, and length of treatment all affect whether these side effects will occur.

Eat a Healthful Diet

A healthful diet is key for the body to work its best. This is even more important for cancer patients. If you've been eating a healthful diet, you'll go into treatment with reserves to help keep up your strength and maintain your defenses against infection.

Plan Ahead

Stock up on foods so you won't have to shop as often. Include foods you know that you can eat even if you don't feel well. Keep foods handy that need little work to prepare — pudding, peanut butter, tuna, cheese, and eggs. Do some cooking in advance and freeze meal-sized portions.

- Talk to friends or family members about helping with shopping and cooking.
- Talk to a dietitian about your concerns and what you might expect. She or he can give you ideas and help you plan meals.

Managing Eating Problems and Side Effects

All methods of treating cancer — surgery, radiation therapy, chemotherapy, hormone therapy, and biological therapy (immunotherapy) — are very powerful. Although these treatments target the fast-growing cancer cells in the body, healthy cells can also be damaged. Healthy cells that grow and divide fast, such as those in the mouth, digestive tract, and hair, are often affected by cancer treatments. The damage to the healthy cells produces the side effects that can cause eating problems.

Some eating problems are caused by the treatment. Other times, patients may have trouble eating because they are upset,

worried, or afraid. Losing your appetite and feeling sick to your stomach are normal responses to feeling nervous and fearful. Once treatment begins and you have a better sense of what to expect and how you will react, these eating problems should get better.

Remember, there aren't any hard-and-fast nutrition rules during cancer treatment. Some patients continue to enjoy eating and have a normal appetite through most of their treatment. Others may have days when they don't feel like eating at all. Here are some things to keep in mind:

- ▶ When you can eat, try to eat meals and snacks with good amounts of protein and calories.
 - ▶ Many people find their appetite is best in the morning. If this occurs, try eating more food early in the day.
 - ▶ If you feel like eating only one or two things, eat those until you feel you can eat other foods. Try a liquid meal replacement for extra calories and protein.
- ▶ If you have days when you can't eat at all, don't worry about it. Do what you can to make yourself feel better. Get back to eating as soon as you can, and let your doctor know if this problem doesn't get better within a couple of days.
 - ▶ Try to drink plenty of fluids, especially on days when you don't feel like eating much. Water is key to the body's functions, so drinking enough fluids is important. For most adults, a good target is 6 to 8 cups per day. Try sipping on water or other fluids throughout the day.

Tell your doctor or nurse if you are taking vitamins or herbal supplements or are on a special diet. This is important because vitamins, supplements, and certain diets can affect how your body responds to your cancer treatments.



After Radiation Therapy



This day is all that is good and fair. It is too dear, with its hopes and invitations, to waste a moment on yesterdays.

– Ralph Waldo Emerson

General Information

Follow-up Visits

By your last treatment visit, your doctor will talk to you about whether you need follow-up visits. The purpose for these visits is to:

- ▶ Check your response to the treatments
- ▶ Check your recovery from side effects
- ▶ Watch for any late effects of treatment

Ongoing Side Effects

Some side effects will take time to resolve. Others may not go away completely.

- ▶ If you find you are having problems with your skin or other side effects that are not improving, call the radiation therapy department.
- ▶ Be patient with your energy level. Continue to pace yourself and take rests. You will notice that you are less tired as the months pass.

Getting Back to “Normal”

Having radiation therapy for cancer treatment is a lengthy and intense process. Recovery can take more time than you expect. You have looked forward to completing your treatments and being back to your normal routine. Even though you are pleased to have finished your radiation therapy, you may still be feeling tired or even worried, anxious, or sad at times.

Recovery means feeling better, but it also means that it is all right to feel sad from time to time and to talk about those feelings with someone who can listen. Often you have to live with a “new normal” as you adjust and recover from radiation therapy. Things will not be the same as before your diagnosis and treatment. It is important to consider that a “new normal,” though changed and different, can be good and fulfilling.

If you find after a few months that you are not as energetic as you expected, talk with your doctor. Let your family and friends know how you are feeling and how they can help. Consider new activities that are not as demanding of your time and energy. Talking about your concerns, as well as not expecting too much of yourself too soon, can help your recovery and your return to normal daily living.

Special Notes for Family and Friends



The secret of life is that all we have and are is a gift of grace to be shared.

– Lloyd John Ogilvie

Ways Family and Friends Can Help

There are many helpful things that you can do to support your family member or friend during cancer treatment.

The number of appointments can be overwhelming. You can offer to:

- Go to appointments to take notes.
- Make some of the many phone calls that need to be made.
- Drive to and from appointments.

Some people talk more openly about their feelings and worries while others do not. To provide emotional support:

- Listen to your family member's needs and concerns if they are voiced.
- Spend quiet time together. Even if feelings are not discussed, being there is most important.
- Be patient. Your loved one may repeat things to work through them.
- Do not feel like you have to have all the answers or fix everything.

Fatigue is a very common side effect of radiation therapy. To help your family member or friend conserve energy for the things that are important, you can offer to:

- Run errands or do chores.
- Prepare meals and go food shopping.
- Do the things that your loved one enjoys — going to movies, being outdoors, or taking part in any favorite hobby or activity.

Take care of yourself. Having a close friend or family member undergoing cancer treatment is a stressful time. Make certain to eat healthfully and stay rested. You cannot be as helpful as you would like to be if you are tired or feeling poorly. You may also find that you need to talk to someone about your feelings and concerns. Talk to the social worker about any needed resources.

Questions for Your Radiation Oncology Team



*What lies behind us and what lies before us are
tiny matters compared to what lies within us.*

– Ralph Waldo Emerson

Questions



MOUNT CARMEL