
Radiation Therapy

at the

University of Michigan

A Patient Handbook

Diagnosis: _____

Radiation Oncologist: _____

Radiation Oncology Resident: _____

Doctor visit day: _____

(Plan to be in Radiation Oncology for at least one hour on this day)

Area of the body being treated: _____

How to dress for treatments: _____

Special Instructions: _____

Note:

We will refer to this booklet during many of your visits. Please bring it with you to all Radiation appointments.



University of Michigan
Comprehensive Cancer Center

Welcome

Our goal at the University of Michigan Department of Radiation Oncology and the Comprehensive Cancer Center is to provide our patients and families with the highest quality of care. This includes giving you the necessary treatments as well as providing the education and support needed during your treatments.

This guide provides answers to many common questions about radiation therapy treatment. Offering you ideas to help you prepare for treatment; describing what treatment will be like, and making suggestions about how to care for yourself during treatment.

This booklet should be used along with the Radiation Therapy and You booklet produced by the National Cancer Institute. These two guides will be your main resources for information about radiation, managing its side effects and understanding how to prevent worsening side effects. It is very important to use these books throughout your radiation therapy treatment course. Copies of these booklets and other educational materials can be found at the Patient Education Resource Center (called the "PERC") on level B1 of the Cancer Center.

Your health care team will also provide you with verbal and written instructions about your radiation therapy treatment. You should refer to these materials for information about your specific treatment plan.

A Guide to Radiation Therapy

This Guide Contains:	On page:
Preparing	
What is Radiation Therapy	5
About clinical trials	7
Preparing for Radiation Therapy	9
Consultation	9
Simulation/treatment planning/CT scan	9
Treatment	
Beginning Radiation Therapy	13
First visit to the treatment unit	13
Scheduling treatments	14
During Radiation Therapy	16
Side effects	16
On treatment visits	16
Frequently Asked Questions	18
What should I bring?	18
Can I drive?	18
Where can I park?	
Can I get assistance getting out of the car?	18
Can I bring my family/friends?	19
Should I eat?	19
Is food available?	20
Where can I fill prescriptions?	20
Where do I get my blood drawn?	20
Will my health insurance cover it?	21
When to notify the doctor	21
Next Steps	
After Radiation Therapy/ Follow up care	23
Follow up visits	24
Facing forward	24

Resources

Lodging	27
Fertility Clinic	29
Center for Sexual Health	
Support services	29
Skin Care	29
Special considerations for pediatric patients	31
Child Life Services	32
Glossary	33
Important numbers	39



What is Radiation Therapy

An **Introduction to Radiation** video can be viewed online at the Radiation Oncology Department's website before your appointment. If you can not watch this ahead of time it will be shown to you on the day of your planning appointment, which is also called your "simulation".

http://www.med.umich.edu/radonc/pat_fam/index.html

Radiation Therapy (irradiation or radiotherapy) is the use of high energy radiation, primarily x-rays, to kill cancer cells. In high doses, radiation causes damage to cells by interfering with the cell's ability to grow and reproduce. Cells that are growing and multiplying are very sensitive to the effects of radiation. Because cancer cells reproduce more frequently than normal cells, they are more likely to be damaged by radiation. Normal cells can also be affected by radiation, but normal cells tend to be able to recover from radiation damage.

When radiation treatments are given for cancer, special care is taken to spare as much normal tissue as possible from radiation exposure. The radiation dose is carefully measured and aimed at the tumor to kill as many cancer cells with as little damage to normal tissue as possible.

Radiation Therapy can be used with surgery, chemotherapy and/or biologic therapy to cure, control or relieve symptoms in patients with cancer.

There are two kinds of radiation therapy known as "external beam" and "internal". In external beam radiation therapy a machine outside your body aims the radiation at your cancer cells. For internal radiation therapy (also called brachytherapy or liquid radiation) the radiation is placed inside your body, near the cancer cells.

Most patients will receive external beam radiation and the rest of this guidebook will focus on this type of treatment. For more information about external radiation see page 9 in your [Radiation Therapy and You](#) book. If your doctor recommends internal radiation, you will be given more information about this. For more information on internal radiation see page 15 in the NCI guidebook.

Radiation Therapy can be used to treat almost any type of cancer, anywhere in the body. Radiation is also used to treat some benign (non-cancerous) conditions. For some patients, radiation therapy will be the only treatment necessary for their cancer, but very often it is done along with surgery and/or chemotherapy.

When radiation is combined with surgery, the radiation treatments may be given before or after surgery. When it is done before surgery it is used to shrink the size of a tumor to make removal easier. More commonly the radiation treatments are given after surgery to reduce the chance that the cancer will come back, among other reasons.

Radiation treatments may also be given in combination with chemotherapy treatments, given before, during or after radiation. Chemotherapy is sometimes given weekly, prior to radiation to sensitize the cancer cells to the effects of the radiation.

It takes many health care professionals and support staff to provide your radiation treatment. You will see some of these people each time you come into the department for your treatment, while others you may never see because they work “behind the scenes”. Radiation staff includes but is not limited to the Radiation Oncologist, Resident Physicians, Nurse Practitioners, Physician Assistants, Nurses, Medical Assistants, Radiation Therapists, Dosimetrists and Physicists (see the glossary and your NCI [Radiation Therapy and You](#) booklet for more information about these people).

This is a good place to stop and review the section called “Questions and Answers About Radiation Therapy” in Radiation Therapy and You (page 1).

About Clinical Trials

Your doctor may talk to you about clinical trials, also called a research study or protocol, and may suggest that you think about joining one.

Clinical trials are used to test and develop new treatments. The goal of these trials is to find ways to improve treatment. While a study is active we do not know whether any benefit has been found. The trial must be closed and the data analyzed before the benefit is known and the treatment is made widely available to patients.

There may be some added risks associated with research. Your doctor will discuss in detail with you both the potential risks and benefits of joining the trial. Your written permission must be given before you can start on a clinical trial.

An oversight committee called an Institutional Review Board or IRB has the important job of reviewing all clinical trials that take place here. The IRB is composed of cancer doctors, doctors in other specialties and lay people. The IRB reviews all clinical trials before they are available to patients and again at different times during the research. This ensures the safety of clinical trials for patients.

Patients who are on a clinical trial receive a great deal of supportive care. Their reactions to the treatment are watched closely. The patient may choose to leave the study at any time. If a patient leaves a study for any reason, standard care will be started.

Clinical trials are voluntary. Your cancer will be treated whether you decide to join a trial or not. Talk to your doctor about any questions you have regarding clinical trials at the University of Michigan.

If you are on a clinical trial, your care will also be monitored and coordinated by a Clinical Research Coordinator. Their job is to collect data and help arrange your follow up appointments. They will work closely with you and your doctor.

Preparing for Radiation Therapy

Starting radiation therapy can be scary. When you do not know what to expect, you may feel nervous or anxious about what is to come. This guide will help you prepare for your treatment by letting you know what steps are next in the process and how to prepare for each one.

Consultation visit

During the consultation visit, your Radiation Oncologist (and a Resident Physician, Nurse Practitioner, or Physician's Assistant) will examine you and reconfirm your diagnosis with the use of your x-rays, medical images and pathology to determine and discuss your treatment options. Once it is determined that you will undergo a course of radiation therapy, your simulation/treatment planning visit will be scheduled.

Your appointments will appear as "MD SIM" and "simulation" on your printed schedule. They will both take place in Radiation oncology on level B-2. You may be given special instructions about how to prepare for this appointment.

Simulation/ Treatment Planning

Simulation is the first step of your treatment planning process, and it often includes a CT scan. A simulation is an imitation of your radiation treatment in the position that you will be treated. No treatment will take place during simulation. Your simulation may take 30-90 minutes depending upon the area being treated. You may receive a call from the clinic before your visit if there are special instructions, such as not eating before your appointment, not taking certain medications, arriving early to have blood drawn, or whether you will need an appointment to have an IV placed, or your power port accessed (if you have one) prior to your simulation.

Just before your simulation, you will have a clinic visit that will appear on your schedule as “MD SIM”. During this time you will watch a video, if you haven't already(see page 5). After the video you will talk with your doctor or nurse about side effects specific to your kind of treatment, and how to manage them. It may be necessary for you to change into a gown, or drink a contrast solution during this appointment. You will then go from the clinic to our simulation room. Radiation Therapists will perform the simulation under the guidance of your Radiation Oncologist.

Your Radiation Oncologist will decide if an immobilization device is needed for your treatment. If an immobilization device is needed it will be made for you at this appointment and it will be used during your simulation and your treatment, and will be labeled with your name and stored in our department. Some types of immobilization devices include:

Plastic Mesh Masks: are used for radiation therapy to the head (including brain) and neck regions. The masks are made from a hard plastic material that becomes very flexible in warm water. When it is wet, it shapes to the contour of your face, then dries quickly and hardens.

Foam Cradles: are made with a liquid styrofoam that expands and hardens. As it expands it forms to the shape of your body. While expanding, the foam gets very warm and cools as it hardens.

Vacuum Bags: are made by shaping a bean bag to your body, and removing the air in the bag with a vacuum.

If you are having radiation to your head or neck:

- * do not wear makeup and/or hair products the day of your simulation visit
- *Please notify your physician if you know you have claustrophobia, anxiety, and/or if you have had difficulty with MRIs in the past

The therapists will draw marks on your skin or on the immobilization device during simulation so that your exact position can be used for each treatment session.

During simulation, laser beams are used to help confirm your precise alignment. These lasers are not harmful to you and are just for positioning purposes. Permanent tattoos may be given at the end of your simulation appointment, or on your first day of radiation treatment. ***If temporary marks are placed on your skin, be careful not to remove them before your first treatment. If the marks are gone at your first treatment visit they will have to be re-drawn which will add time to your visit.*** Pictures will be taken of the marks on your skin and of the position that you will be treated in. The pictures are for documentation purposes only and will be placed in your treatment chart.

In some cases, you may be given an injection of a special dye called IV contrast that helps your doctor to see certain organs more clearly on a scan. The Radiation Oncologist may also ask you to drink a contrast solution to help visualize other organs. You may be given instructions not to eat or drink before this appointment if contrast is being used. If you will be getting IV contrast it is important to notify your physician if you are on any medications that contain

If you are getting IV contrast, it is important to tell your doctor if:

- You have an allergy to IV contrast
- You have a severe life threatening medication or food allergy and have never had IV contrast
- You have severe asthma
- You are taking a metformin containing medication

metformin. Metformin is sold as a generic drug used to treat diabetes and is also present within drugs named Glucophage, Glucovance, Avandamet and Metaglip.

All of the information from your simulation will be used to determine the type of treatment fields, energy and angle of the beams used for your radiation treatment. This planning can sometimes take several days after this appointment.

After your simulation you will be taken on a tour of our department. You will be taught how to check-in, and shown where the locker rooms, treatment machines and patient waiting rooms are located. You will typically have your first treatment scheduled after your simulation.

NOTE: Only the first appointment will be made on the day of your simulation. On your first day of treatment the rest of your treatments will be scheduled, after your treatment plan has been completed. **Keep in mind:** Your Radiation Oncologist will prescribe the number of treatments for you and they may add on treatment appointments or cancel treatment appointments throughout the course of treatment. (see scheduling in the treatment section of this guide book)

Beginning Your Treatment

First Visit to Treatment Unit

Your skin in the area being treated needs to be clean and dry when you arrive for treatment. Radiation oncology is a scent free zone. This means you should not wear any fragrances, cologne, scented lotions, or aftershaves. This is necessary for your comfort as well as that of the other patients receiving treatment here. Patients may receive treatments that cause sensitivity to smells often resulting in nausea.

Check in at the computer that is located through the first set of double doors and on your left. There are reminder instructions and a map on the wall to the left of the computer. If you have any difficulty checking in, see a Patient Services Assistant in the front lobby.

Most patients will need to wear gowns for their treatments. If you would like to wear your own clothing discuss this with your radiation therapist. In some cases wearing sweatpants or loose fitting clothing is allowed. Otherwise, a gown is available in the dressing room. You may bring a bathrobe, sweater or sweatshirt to wear over your gown. Lockers are available, but locks are not provided. You may bring a lock with you.

For all patients' privacy and safety, only patients are allowed in the gowned waiting areas. Family and friends are asked to wait in the lobby and not in the halls outside the treatment rooms. If you need any help with dressing or while waiting, please let our staff know so that we can assist you, and still maintain the privacy of the other patients.

Before you begin your treatment you will be placed on the treatment machine and you will have some digital images (x-rays) taken that will be compared to

those taken during your simulation to verify your positioning. You may receive tattoos that are about the size of a freckle. Tattoos assist the radiation therapist in getting you in the correct position for each treatment. These tattoos are permanent. Your first visit to the treatment unit may or may not include your initial treatment.

During your radiation treatment you will be asked to lie very still. You will not see or feel anything but you may hear electrical noises. There is a CD player and i-pod docking station in the treatment room and you are welcome to bring your own music to play while you are being treated, it can help you to relax. Although you are in the treatment room alone, the therapists are monitoring you through the use of an intercom and closed circuit television system. Most of the time spent in the treatment room is spent getting ready for the treatment (getting you into position, x-rays). In most cases the actual radiation treatment takes just a few minutes. Your first treatment visit should take about 60 minutes. After that your daily treatment should only take about 25 minutes.

Scheduling of Treatments

After your first treatment, a Patient Services Assistant will work with you to schedule your daily treatments. The Patient Services Assistant is in charge of scheduling, cancellations and adjusting all treatment appointments. The goal is to have your treatment time at the same time every day. We will do our best to schedule your visits at a time that works well for you. If this is not possible, you will be placed on a wait list until your desired time is available.

NOTE: If you are receiving chemotherapy and you have been told that it must be given before your radiation treatment, the time of your chemotherapy will determine the time for all of your radiation therapy appointments.

If you need to change your time on a specific day, please talk to the patient service assistant 1-2 business days prior to that appointment day. If you need to

change your entire schedule time, you may be placed on a waiting list if your desired time is not available and notified once that time becomes available.

Sometimes we may have treatment unit delays that are out of our control, if this happens, we will try to accommodate you on one of the other treatment units. This may cause delays in our schedules. We will try to notify you of these delays. **Please make sure we have a phone number where you can be reached.**

Our goal is not to cancel appointments, but on rare occasions it may be necessary. In cases of severe weather we do not close, however if you need to cancel due to unsafe conditions please call us as soon as you know.

We are closed on the holidays observed by the University of Michigan Hospital and Health System, and this will be reflected on your printed schedule that your Patient Services Assistant provides you.

Be advised that your schedule may change. Ultimately it is the doctor who decides your treatment plan. There may be treatments added to or removed from your schedule.

Please address all scheduling issues with your Patient Services Assistant during the clinic hours of 7:00 a.m. to 5:30 p.m. Monday thru Friday at 734-232-4873 or 1-800-882-7150, and ask to speak with the Clinic Scheduler.

During Your Treatment

Side effects

It is normal to be concerned about the possible side effects of radiation therapy. These feelings can be overwhelming before treatment begins. It is important to discuss your concerns with your doctor or nurse. Remember that not all patients experience side effects in the same way. In fact, many people have few or no side effects from their treatment. The severity and type of side effects that occur will depend on the treatment you are receiving, the dose prescribed, the area being treated, how many treatments you receive, and your current state of health. These side effects will be listed on the consent form that the doctor reviews with you. There it will list both short term and possible long term side effects. A signed copy of this form will be provided to you.

Even though certain side effects might be expected, you should always notify your doctor or nurse of any side effects that occur.

Review the “Radiation Therapy Side Effects” section of Radiation Therapy and You (page 23) before you begin your treatment. You will find a detailed description of some of the common side effects of radiation based on the area of the body being treated. It will provide suggestions about how to manage side effects that you might experience. Your health care team will continue to provide information to you as you progress through your treatments. Remember that everyone is different, and even someone with the same diagnosis and treatment can experience side effects in different ways. Additional information about skin care can be found at the back of this book under resources.

On treatment visits

Once a week while you are on treatment you will see your doctor in the Radiation Oncology Clinic, for a treatment visit. You may hear this referred to as an “OTV” or on treatment visit. These visits are required and each doctor has

certain days in the clinic to see their patients. These appointments will not appear separately on your appointment calendar, and typically do not take long, however if the clinic rooms are occupied or your physician is with another patient you may have to wait. Reminders will be posted outside the locker room and in the waiting rooms. Your Radiation Therapists will also help to remind you about these visits.



Frequently Asked Questions

What should I bring?

Please bring the following items with you on the day of treatment:

- This education book
- If you need medications for nausea, pain or anxiety that you would normally take during your treatment time, please bring them with you so that you do not miss a dose.

You may also wish to bring:

- A lock if you want to lock up your personal items during treatment
- A bathrobe or sweatshirt to wear over your gown
- CD's that you want to listen to during treatment or an iPod or mp-3 player.

Can I drive while I am on treatment?

Driving to and from your treatments is usually not a problem, unless you are taking any medications that have a side effect of drowsiness or another doctor has told you that you can not drive.

Where should I park?

All patients in the department of Radiation Oncology receive free parking in our lot. You will be given a hang tag at check in to place in your car, which gives you access to the parking lot in front of the Radiation Oncology lobby.

Remember to always hang your tag on you rear view mirror. Radiation Oncology is not responsible for parking tickets. The parking is monitored by the City of Ann Arbor.

Can I get help getting in and out of my car?

There are wheelchairs available at the Radiation Oncology entrance. However, if you need assistance getting in or out of your car you should use the main entrance of the Cancer Center or the University Hospital. A patient attendant

at these locations can assist you in and out of your car and a transporter can bring you to the Radiation Oncology department, while your friend or family member returns to our lot to park.

Can I bring my family to the treatment area?

We encourage you to bring a friend or family member with you to your appointments in Radiation Oncology. When you are going back to the waiting areas for treatment we ask that your support person stay in lobby.

Should I eat before treatment?

Many patients worry about eating before their treatment. Unless you are told to do otherwise, please eat as you normally would, don't skip any meals and take your medications as scheduled.

It is important that you eat a healthy diet that provides enough calories and protein during your radiation therapy treatment. There is a list of foods and drinks provided in the Radiation Therapy and You booklet on page 54. You may be asked to provide information on any vitamins and supplements you are currently taking. It is recommended that you avoid taking more than the recommended daily dose of vitamins.

If you need help making sure that your diet is sufficient or you are told that your treatment may cause difficulty eating (nausea, diarrhea, loss of appetite, mouth and/or throat pain) you can meet with a dietician at the Cancer Center.

Diet changes may be recommended if you are experiencing side effects that can be managed with diet, such as diarrhea, constipation or nausea, or bladder changes. Some of these suggestions can be found in your NCI Radiation Therapy and You book.

Please see a Patient Services Assistant to set up an appointment with the dietician in the cancer center. This may be covered by your insurance while you are on treatment, but please call your insurance company to confirm.

Is food available?

Coffee and tea are available in the main lobby. Other food services are available throughout the hospital.

Vending machines: There are vending machines available on level 2 in front of the cafeteria.

Cafeteria: Located on level 2 of University Hospital., the cafeteria is open 24 hours a day, seven days a week.

Einstein Bagels: Level 2 of University Hospital, in front of cafeteria. Available Monday through Friday, from 6:00 a.m. to 8:00 p.m. and weekends 6:00 a.m. to 3:00 p.m.

Where can I fill my prescriptions?

Any pharmacy is fine to use, however it is preferred that you use hospital pharmacies that we are able to work closely with. These pharmacies have pricing that compares to other pharmacies.

Cancer Center Building: An outpatient pharmacy is located on the B1 level. Both prescription and non-prescription medications are sold here. Hours: Monday through Friday: 9am to 5:30 pm.

University Hospital (Taubman Building): An outpatient pharmacy is located on level 1 of the Taubman clinic building, near the main Information Desk. Both prescription and non-prescription medications are dispensed or sold here. Hours: Monday through Friday 9am – 6pm and Saturday 9am – 4pm.

Where do I get my blood drawn?

You may need to have your blood drawn during your treatment. The frequency of blood draws depends on the area of the body being treated. Whenever possible your blood will be drawn in the radiation oncology department, or in

the Comprehensive Cancer Center on B2. Ask your Medical Assistant or Nurse for more information.

Will my health insurance cover treatment costs?

The Radiation Oncology Billing Office submits claims to insurance companies, government programs such as Medicare and Medicaid or to any other payer indicated by you. The billing office personnel will verify the completeness of necessary billing forms and supply all the necessary information for the payers to process and pay the claim. Please bring with you any referrals or authorizations which your insurance company requires in order to make payment for services.

During the first week of your radiation treatment a Financial Counselor may meet with you. The Financial Counselor will discuss your insurance benefits relating to radiation therapy and answer any questions you may have about any payments you will be responsible for. At the same time you will receive a general explanation of the billing process at the University of Michigan Medical Center. You can reach a Financial Counselor to answer your questions at (734) 647-5299, or 1-800-914-8561, or 1-800-992-9475 between the hours of 8:00 am and 4:30 pm).

When should I contact my doctor?

Notify your doctor for the following:

- Shaking chills or fever (a temperature of 101° F or 38.3° C) Notify your doctor immediately if you develop a temperature, do not delay.
- Unusual cough, sore throat, lung congestion or shortness of breath
- Burning discomfort when you urinate
- Redness, pain or sores in your mouth
- Nausea, vomiting or inability to eat or drink for more than 24 hours.
- Diarrhea (loose, watery stools) for more than 24 hours.
- Constipation (no bowel movement in 2-3 days)
- Bleeding or unusual bruising
- Pain not controlled by your current medications

- Any new or unusual symptom that concerns you

Tell your doctor or nurse if you are having any new problems, even if they do not seem to be related to your radiation treatment. If the issues you are having are in fact not related to your radiation therapy, you will be referred to your primary care doctor or oncologist to discuss them.

Who do I call with questions?

Before you start your radiation therapy and through out your treatment you will be cared for by your Radiation Oncologist and the Resident working with them. After treatment has completed, and you are coming for follow-up care, you will be working with your Radiation Oncologist and the mid-level provider (Nurse Practitioner or Physicians Assistant). The Nurses are available to help before, during and after treatment.

On weekdays (7am to 5pm; Monday-Friday); contact the Radiation Oncology Department at (734) 936-4300. Nursing can be reached at 734-936-4299.

On weekends, holidays or after 5pm on weekdays; contact the page operator at (734) 936-6267. Ask to have the On-Call Radiation Oncology Resident paged.

After Radiation Therapy Treatment

On your last day of treatment or during your last on treatment visit, your doctor and or nurse will review what is normal to experience after radiation therapy treatment. The [Radiation Therapy and You](#) book is another valuable resource during the time after your treatments. Refer to it for any questions and then contact your health care team if you don't find answers.

Instructions after completing radiation therapy

Following radiation therapy, you may continue to have side effects related to your treatments. Below are some guidelines that will tell you what to expect and how to care for yourself after you complete your radiation treatments.

Most side effects that you experienced during your treatments will gradually improve. Some may get worse for a few days after treatment before they start to improve. However, some may persist for months or may even be permanent. Your doctor will ask you about your symptoms when you return for a follow up visit. You may refer back to your consent form that was signed before you started treatment for a review of the short-term and long-term side effects.

If at any time you have a question about a side effect, refer back to "When should I contact my doctor" on page 21.

SKIN: If you experienced a skin reaction during your treatments, it may worsen for 7-10 days after your final treatment and then begin to heal. Continue to gently cleanse and moisturize with recommended skin products as instructed by your doctor or nurse. If you notice that areas of your skin become open or weepy, if you have a fever (101 or above) or notice large amounts of thick drainage, contact your radiation doctor or nurse. Once the skin has healed, be sure to protect it from injury and avoid direct sun exposure. Use a sunscreen with a SPF rating of at least 30 if you cannot avoid the sun.

DIET: If you have been on a special diet to control the side effects of your treatment, follow this diet until the side effects have resolved. Then, slowly advance to your normal diet. Diets high in protein and vitamin C will promote tissue healing.

ACTIVITY: As tolerated. Fatigue and weakness can continue for several weeks. You may need to have rest periods and/or pace your activities.

ADDITIONAL INSTRUCTIONS:

Follow Up Visit

Your first follow-up visit is scheduled for_____.

Often, at your follow-up visit you will see a mid-level provider (Nurse Practitioner or Physician's Assistant) that works closely with your doctor. The doctor is available if needed. Your appointment will be with:

Facing Forward After Cancer Treatment

The end of cancer treatment is often a time to rejoice. You are probably relieved to be finished with the demands of treatment and are ready to put the experience behind you. Yet at the same time, you may feel sad and worried. It's common to be concerned about whether the cancer will come back and what you should do after treatment.

When treatment ends, you may expect life to return to the way it was before you were diagnosed with cancer. But it can take time to recover. You may have permanent scars on your body, or you may not be able to do some things you once did easily. You may also have emotional scars from going through so much. You may find that others think of you differently now - or you may view yourself in a different way.

One of the hardest things after treatment is when you do not know what to expect next. Many cancer survivors feel that they had a lot of information and support during their illness and once treatment ends; they enter a whole new world - one filled with new questions.

There are a number of resources available to help you once you complete your radiation therapy including the Facing Forward guidebook written by the National Cancer Institute which is available to all patients following treatment. If you don't receive one after your treatment concludes, contact our department or the Patient Education Resource Center (PERC) on Level B1 of the Cancer Center at (734) 647-8626. There are other books and resources about survivorship and life after cancer treatments available in the PERC.

Facing Forward is also offered as a one day session four times a year, with speakers on topics described in the NCI booklet. This class is available at no cost to UM patients and offers the opportunity to meet experts on survivorship issues (such as worker's rights, legal issues, managing health concerns etc.). Information about future dates can be found online at www.cancer.org or by calling the CancerAnswerline at 1-800-865-1125.



University of Michigan
Comprehensive Cancer Center

Resources

There are many resources available to patients and their families at the University of Michigan that will help you throughout your treatment. These resources can be found in the Patient and Family Support Services Handbook. (notify us if you have not received this handbook)

These services include:

- Nutrition Services and the Nutrition Counseling Clinic
- Managing Emotions and the PsychOncology Clinic
- Financial Assistance Programs
- Hair loss resources, community organizations and websites for hair loss products
- Information about chemotherapy, side effects and resources available at the Patient Education Resource Center (PERC)
- Information about the Facing Forward Program

Information about patient and family resources can be found at the Patient Education Resource Center on Level B1 of the Cancer Center or online at www.mcancer.org

Housing Options

The Patient and Visitor Hotel Accommodations Program is available to assist UMHS patients and hospital visitors with securing lodging in Ann Arbor conveniently and at the very best rates possible for the accommodations desired.

The Patient and Visitor Accommodations Program has negotiated rates with fourteen area hotels. These hotels have agreed to offer the best possible rates for patients and their families during their visit to the University of Michigan Health System. The rates for these hotels range from \$39 - \$192 nightly, with amenities ranging from shuttle service, fitness rooms, indoor or outdoor pools, onsite restaurants and in-room dining. If your stay in the Ann Arbor area will be for six

weeks or more, there are also extended stay hotels along with an apartment option with monthly rates ranging from \$900 - \$1800. Apartment amenities include cable TV, internet access and housekeeping service.

For reservations or further information, contact the Patient and Visitor Accommodations Program at 800-544-8684 or 734-936-0135 or visit the Web site at <http://www.med.umich.edu/hotels>. Their staff will take your information and preferences on accommodations, and make the reservation for you. You will receive information about the amenities of the particular hotel or apartment you will be using, directions to your lodging, and staff will answer any questions you have.

The goal of the Patient and Visitor Hotel Accommodations Program is to provide enhanced guest-services by handling the lodging needs of our patients and visitors so they can focus on the important things; providing support and care to loved ones or focus on their own care.

Another option is **Wilmot House**, a two story, four bedroom house; located within one-half mile of the hospital and is available to adult patients (18 or older) of the Department of Radiation Oncology. You must live 50 miles or more from the University Hospital and not be wheelchair dependent to be eligible to stay at Wilmot House. Patients who need more assistance than a companion can provide are also not able to use Wilmot House.

Wilmot House has community style living. Each guest has a room that contains two twin beds. There is one bathroom for every two guest rooms. The fully furnished common living areas include a large living room with a TV and stereo, a kitchen (including dishes and cooking utensils), laundry facilities, wireless internet, and a parking space for each room. No smoking or alcoholic beverages are allowed in the House. If you do not have your own transportation to your radiation appointments, transportation can be arranged. For more information and reservations, call Carly Noland (734) 936-0100.

Fertility Program

Some men and women who receive chemotherapy become infertile, which means they are unable to have children. If you plan to have children, talk to your doctor before your treatment begins. The UM Cancer Center has a Fertility Counseling Program for cancer patients. Information about this program can be found online at www.mcancer.org or by calling (734) 647-8626.

Patient Education Resource Center

The Patient Education Resource Center (or PERC) offers many resources (videos, books, brochures, tapes). The PERC is located on level B1 of the Cancer Center and can be reached at (734) 647-8626. Hours of operation are Monday through Friday, 9am until 4pm.

Skin Care

Skin changes can happen in the area being treated with radiation. They usually get better after treatment and how you manage them will depend on how severe they are. Skin changes can be different for each person depending on which part of the body, the size of the area being treated, the dose of radiation, other illnesses, treatments, stress, infection, medication, and anemia. See page 40 of the **NCI Radiation Therapy and You** booklet for more information about what to expect, and how to care for your skin changes.

What you need to know

Your **skin in the area being treated** should be gently cleaned and dry when you arrive for your daily treatments. Use mild soaps that are for sensitive skin. If you use a skin care product before your treatment, allow four hours for it to absorb. The goal is to

In the area being treated:

Your skin should be clean and dry prior to treatment.

Avoid soaps with deodorant, anti-bacterials, heavy fragrances

Avoid friction (scrubbing, scratching, tight clothing etc)

protect the skin that may be irritated by the radiation treatments. To prevent additional irritation in the area being treated; avoid shaving using a razor blade (electric shavers are okay to use during this time), avoid perfumes, powders or cosmetics in this area, avoid the use of deodorants and/or antiperspirants that contain aluminum. Your doctor may tell you it is okay to apply non-aluminum deodorants or to use pure cornstarch. Warning: stop the use of cornstarch if you develop open areas.

Your doctor may suggest one of the following items for you to use. They do not require a prescription (***Please talk to your doctor before using any product not listed***) **To use:** Apply to the area after your treatment and again before bedtime unless otherwise directed.

Your doctor would like you to use the product checked below:



Alra® - Is a combination of aloe gel, vitamin E, lanolin, allantoin, and soluble collagen. It was designed to soothe skin affected by radiation therapy. It is water soluble and rinses off easily. Alra® can be purchased at the pharmacy on the first floor of the Taubman Center, at the pharmacy on B1 of the Cancer Center, or online at Alra's website

<http://www.alra.com/> . ****Dr Pierce's patients should only use this lotion****



Boiron® Calendula Ointment- Calendula is a homeopathic treatment for burns. This ointment can be found at Whole Foods marketplace and Plum Market in Ann Arbor, or online.



Aquaphor™ healing ointment is a thick lotion that can be very soothing on skin that is dry and irritated from radiation. It is available in most drug stores over the counter, if you don't see it ask your pharmacist.

Pure Aloe gels (98%-99%) - Look closely at the label. Many aloe gels have high alcohol content, or contain other products that could irritate the skin more, which is why it is important to buy aloe gels that are 98-99% pure aloe, or use the gel directly from an aloe plant.

Other-

Problems You May Encounter

Please notify your Doctor if you experience any of the following:

- ◆ Raw open areas that are moist, unusual drainage or foul odor
- ◆ Unrelieved pain
- ◆ Fever over 101° F

Special Considerations for Pediatric Patients

Children of all ages are treated here at the University of Michigan Health System Radiation Oncology department. Some children, particularly infants, may need to be sedated or anesthetized for treatments and treatment planning appointments. Whenever possible, we will work with your child, through the use of play therapy, to obtain her/his cooperation without the use of medications.

We also encourage children to bring security objects such as stuffed animals, blankets, CD's with their favorite music, books or a parent's voice to help ease their fear.

To help your child become more familiar with the Radiation Oncology Department, we would recommend a tour that can be scheduled before they begin their treatment. In addition, it may be possible for your child to meet the Therapists that will be treating them.

While your child is having their radiation treatment, it is required that parents wait in the waiting areas and not the hall. This is requested for the other patients' privacy.

Child and Family Life Services

Certified Child Life Specialists are available to offer support to you and your child before, during and after healthcare experiences. Child Life Specialists can help children, teens and young adults cope in different ways specific to their age, developmental level and needs. They will provide emotional support and advocate for the needs of pediatric patients and their families within the healthcare system.

Child Life Specialists can help children and young people by preparing them for radiation using age appropriate language and other materials and play. They may also teach them relaxation and coping techniques that can be used during radiation treatment, including; distraction, guided imagery, deep breathing and progressive muscle relaxation.

They will work with the Radiation Oncology team to help develop ideas that can help children manage and cope throughout their therapy.

Referrals are usually made for you to Child Life prior to the first radiation appointment. However, if you have not yet met with Child Life and would find their services helpful you can contact them by calling 734-936-6519 prior to your radiation planning (simulation) appointment.

Glossary – see the NCI radiation therapy and you guidebook for more definitions.

ABC device

The active breathing control (ABC) device, used when a treatment area in the chest or abdomen moves during normal breathing. The ABC device holds the patient's breath at a precise lung volume, and radiation is given during breath holds to provide a more accurate treatment.

Adjuvant therapy

Treatment that is given along with the primary treatment to increase it's effectiveness, and reduce re-occurrence.

Anesthesia

Loss of feeling or sensation resulting from the use of certain drugs or gases.

Antiemetic (an-tee-eh-MET-ik)

A medicine to prevent or relieve nausea or vomiting.

Benign tumor

A growth that is not a cancer and does not spread to other parts of the body.

Biological therapy

Treatment by stimulation of the body's immune defense system.

Biopsy

The removal of a sample of tissue to see whether cancer cells are present.

Boost

Additional doses of radiation given to a smaller target area, after the initial course of treatment has completed.

Brachytherapy (BRAK-ee-THER-ah-pee)

Internal radiation treatment achieved by implanting radioactive material directly into the tumor or very close to it. Sometimes called "internal radiation therapy."

Cancer

A general term for more than 100 diseases that have uncontrolled, abnormal growth of cells that can invade and destroy healthy tissues.

Catheter

A thin, flexible tube through which fluids enter or leave the body.

Chemotherapy

Treatment with anticancer drugs.

CT Scan

Computerized Axial Tomography form of X-ray and a computer that obtains "3-D" picture of the area of interest within the body

Dietician (also "registered dietician")

A professional who plans diet programs for proper nutrition.

Dosimetrist (do-SIM-uh-trist)

A person who plans and calculates the proper radiation dose for treatment using a treatment planning computer system.

Electron beam

A stream of particles that produces high-energy radiation to treat cancer.

External radiation

Radiation therapy that uses a machine located outside of the body to aim high-energy rays at cancer cells.

Fluoride

A chemical applied to the teeth to prevent tooth decay.

Fractionation

Dividing the total dose of radiation into smaller doses in order to give healthy tissue time to repair itself.

Gray

A measurement of absorbed radiation dose; 1 Gray = 100 rads.

High-dose-rate remote brachytherapy

A type of internal radiation in which each treatment is given in a few minutes while the radioactive source is in place. The source of radioactivity is removed between treatments. Also known as "high-dose-rate remote radiation therapy."

Hyperfractionated radiation

Division of the total dose of radiation into smaller doses that are given more than once a day.

IMRT

Intensity Modulated Radiation Therapy. The intensity of the radiation can be changed during treatment to spare more adjoining normal tissue than with radiation therapy and allows for increasing the dose of radiation to the tumor. IMRT is also known as "conformal radiation."

Implant

A small container of radioactive material placed in or near a cancer.

Internal radiation:

A type of therapy in which a radioactive substance is implanted into or close to the area needing treatment.

Interstitial radiation

A radioactive source (implant) placed directly into the tissue (not in a body cavity).

Intracavitary radiation

A radioactive source (implant) placed in a body cavity such as the chest cavity or the vagina.

Linear accelerator

A machine that creates high-energy radiation to treat cancers, using electricity to form a stream of fast-moving subatomic particles. Also called "megavoltage (MeV) linear accelerator" or "LINAC."

Malignant

Cancerous (see "cancer").

Medical oncologist

A doctor who specializes in using chemotherapy/biotherapy to treat cancer.

Metastasis

The spread of a cancer from one part of the body to another. Cells in the second tumor are like those in the original tumor.

Oncologist

A doctor who specializes in treating cancer.

Oncology

The branch of medicine devoted to the diagnosis and treatment of cancer.

Palliative Care

Treatment to relieve, rather than cure, symptoms caused by cancer. Palliative care can help people live more comfortably.

Physical therapist

A health professional trained in the use of treatments such as exercise and massage.

Port (also "treatment field")

The area of the body through which external beam radiation is directed in order to reach a tumor.

Power Port

A small device that is placed under the skin that connects to a vein, and is often used for frequent chemotherapy infusions and blood draws. Power ports are the type of port commonly placed at U of M, and they can be used for CT and MRI scans that require IV contrast.

Radiation

Energy carried by waves or a stream of particles.

Radiation Oncologist

A doctor who is a specialist in cancer treatment with radiation. The Radiation Oncologist is responsible for planning your care and prescribing your treatment.

Radiation Oncology Resident Physicians

He or she has completed four years of medical school, one year of internship and is specializing in the field of Radiation Oncology. The residents rotate among the different Radiation Oncologists every three months as part of their training.

Radiation Oncology Nurse

A registered nurse who has extensive training in oncology and radiation therapy.

Radiation Oncology Nurse Practitioner

A nurse that has advanced training and who works under the supervision of a physician. A nurse practitioner can take your medical history, do physical exams, order tests, manage side effects, watch your response to treatment or see you for follow up care.

Radiation Oncology Physicians Assistant

Are health professionals that has advanced training that works under the

supervision of a physician. A Physicians Assistant can take your medical history, do physical exams, order tests, manage side effects, watch your response to treatment or see you for follow up care.

Radiation Physicist

A person trained to ensure that the radiation machine delivers the right amount of radiation to the treatment site.

Radiation Therapist

A person with special training who runs the equipment that delivers the radiation.

Radiation therapy

The use of high-energy penetrating rays or subatomic particles to treat disease. Types of radiation include X-ray, electron beam, alpha and beta particles and gamma rays. Radioactive substances include iridium, and cesium. (See also brachytherapy and X-ray.)

Radiologist

A physician with special training in reading diagnostic X-rays and performing specialized X-ray procedures. This is different from a radiation oncologist.

Radiosensitivity

How susceptible a cell, cancerous or healthy, is to radiation. Cells that divide frequently are especially radiosensitive and are more affected by radiation.

Simulation

A process involving special X-ray pictures that are used to plan radiation treatment so that the area to be treated is precisely located and marked for treatment.

Social worker

A mental health professional with a master's degree in social work (MSW). A social worker can provide assistance in dealing with medical, psychological, social and educational needs.

Stereotactic radiation

A non-surgical procedure that delivers a single high-dose of precisely-targeted radiation using highly focused gamma-ray or x-ray beams that converge on the specific area or areas of the brain where the tumor or other abnormality resides, minimizing the amount of radiation to health brain tissue.

Treatment port or field

The place on the body at which the radiation beam is aimed.

Tumor

An abnormal mass of tissue. Tumors are either benign or malignant.

Unsealed internal radiation therapy

Internal radiation therapy given by injecting a radioactive substance into the bloodstream or a body cavity. This substance is not sealed in a container.

X-ray

High-energy radiation that can be used at low levels to diagnose disease or at high levels to treat cancer.

Important Phone Numbers:

Radiation Oncology Department
On weekdays (7am to 5pm; Monday-Friday)

(734)936-4300

(800)882-7150

Nursing

(734)936-4299

For Urgent matters on weekends, holidays or after 5pm on weekdays, contact the page operator and ask to have the "On-Call Radiation Oncology Resident" paged.

Page Operator

(734)936-6267

Treatment Appointments

(734)232-4873

Director of operations (non-medical)

(734)936-4291

Financial Counselor

(734)647-5299

(800)914-8561

Child and Family Life Services

(734)936-6519

Social Work

(800)888-9825

This document is not intended to take the place of the care and attention of your personal physician or other professional medical services.

Our aim is to promote active participation in your care and treatment by providing information and education.

Questions about individual health concerns or specific treatment options should be discussed with your physician.

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