Questions?
Your questions are important. Call your doctor or health care provider if you have questions or concerns. UWMC clinic staff are also available to help at any time –

Radiation Oncology Reception Desk:  206-598-4100
Radiation Oncology Treatment Desk:  206-598-4141
Weekends and after hours, page the Radiation Oncology Resident On-call:  206-598-6190

UWMC Breast Cancer Resources
- **UWMC Cancer Library** on 8-Southeast in room 8348. Open during normal clinic hours.
- **SCCA Patient and Family Resource Center** on the first floor next to Radiation Oncology and the information desk. Open during normal clinic hours.
- **Living Well with Cancer Program:** Provides ongoing classes and support groups for patients and their caregivers.
- **Social Work Services** are available. Ask your nurse about referral.
- **Psychiatry and Psychology Services** are available on referral from your doctor.
- **University of Washington School of Nursing** may sometimes have studies that are free of charge and may benefit breast cancer patients. Ask your nurse or social worker if you are interested in participating.

Community Resources
- **Cancer Lifeline:** Offers no-cost support and education programs for cancer patients and their families. Call 206-297-2100 for program information.
- **Gilda’s Club:** Also offers no-cost support and education programs for cancer patients. Call 206-709-1400 for program information.
- **Team Survivor Northwest:** Offers women cancer survivors a range of fitness and health education programs. Call 206-732-8350 for information.

Radiation to the Breast
What you need to know before, during, and after treatment

If you are scheduled to receive radiation treatment for your breast cancer, please review the information in this brochure. You will learn:
- What to expect during your visits and what to expect from the treatment.
- The side effects of radiation treatment.
- How to help prevent problems during and after treatment.
- About follow-up care and what to be concerned about once your treatment is complete.
Radiation destroys the DNA of cells so they can no longer divide. Cancer cells are highly sensitive to radiation, and are less likely to recover and multiply after being treated with radiation than normal cells.

What to Expect Before You Start Treatment

You will meet with your radiation oncologist, a resident doctor, and a nurse on your first visit to University of Washington Cancer Center. They will perform an evaluation, explain your expected treatment, and answer any questions you may have.

Most patients who receive radiation therapy for breast cancer have the external form of radiation. Most times, this is done in an outpatient setting, 5 days a week, for 6 or 7 weeks. Radiation treatment is generally started after surgery, and can be given alone, or in addition to chemotherapy, depending upon your diagnosis. Even if your surgery has removed all of the tumor, there may still be some remaining cancer cells that can’t be seen. Because they divide much faster than normal cells, cancer cells are especially sensitive to radiation, and cannot repair themselves between treatments.

Simulation Visit

Before you begin treatment, you will be scheduled for a “simulation” appointment. At this visit, measurements are made and X-ray films are taken to help the doctor locate the exact area to be treated. Also, a foam and plastic cradle will be made to help keep your arm and body still during your radiation treatments. Tiny permanent skin tattoos will be placed to ensure that the treatment is delivered to the same site each time. A CT scan will also be done after the cradle has been made to help with treatment planning.

When Treatment Ends

The end of treatment can often be a stressful time. Most people are very happy not to have to come for treatment each day, though it is not unusual to feel some sense of loss of the routine and contact with treatment staff and other patients. A lot of energy has been devoted towards fighting your cancer and when treatment ends it can leave people feeling anxious about what will happen next.

Re-establish daily routines for yourself. Keep in mind that an emotional letdown is normal. Many resources are available to help you before, during, and after your treatment.

Your radiation oncologist will want to see you 1 month after completion of your treatment to make sure your side effects are resolving normally. You should follow up every 3 months with one of your oncologists for the first year after treatment. In addition, you will need to be followed regularly for at least 5 years after completion of your treatment. The specifics of your long-term follow-up should be discussed with your doctor to determine the best plan for your situation.

Follow-up Plan:

__________________________________________________________________________________

Follow-up Appointments:

Radiation Oncology ______________________
Medical Oncology _______________________
Surgical Oncology _______________________

Close follow-up is essential for monitoring treatment success.
Management of lymphedema is more successful when treatment is started early.

How to Avoid Problems with Lymphedema
If you read about lymphedema, you will find that many suggestions are not based on scientific evidence. Some may be contradictory – for example, lose weight but don’t get overheated. Obesity and infection are both associated with a higher risk of lymphedema. Use common sense and speak with your doctor. These tips may help:

- Avoid injury, cuts, or burns to the affected arm.
- Have all injections, blood draws, and blood pressures performed on the unaffected side.
- Lose weight, if needed, and do moderate exercise to reduce body fat and improve muscle tone in the arms.
- Moisturize your skin regularly.
- If you fly often, consider getting a compression sleeve to reduce pressure changes in the arm associated with changes in cabin pressure.
- Protect your arm from sunburn.
- Elevate your arm when resting.
- Do not drink much alcohol.
- Don’t smoke.
- Do not carry heavy bags with the affected arm.
- Do not wear tight jewelry or watches and avoid elastic banded sleeves.
- Wear gloves when gardening.
- Monitor cuts on the affected arm closely. See your doctor for redness or slow wound healing.

If you develop sudden-onset lymphedema, seek medical attention right away. Infection is usually the prime trigger for sudden onset.

What to Expect During Treatment
External radiation does not cause your body to become radioactive. There is no risk of radiation exposure to other people when you hug, kiss or have sexual relations with them. You will not feel anything during your radiation treatment. Radiation is energy, but you cannot see it, smell it, or feel it.

Treatment Position
When you arrive for your treatment, your radiation therapist will help you into the treatment position. This involves lying on your back in the cradle, with your arm on the affected side. The therapist will then leave the room and deliver the treatment. The therapist can hear you and see you on a television monitor.

“Boost” Treatment
Your doctor may order a “boost” which gives an extra dose to the area where your tumor was removed. This site has a higher chance of the cancer returning. You will need a second simulation visit for your “boost.” This is usually done towards the end of your treatment and means that the site where your tumor was will receive a higher dose of radiation.

Side Effects
Radiation treatment has side effects, which can vary for each patient, especially if chemotherapy is also being given. These side effects are not noticeable right away, but usually begin within the second or third week of treatment. Your doctor and nurse will monitor you for side effects throughout your treatment.

Some people find it helpful to know what treatment will be like before they come in. It is common to be anxious and fearful about radiation.
Skin Reactions

Skin reactions do not usually occur until after 2 to 3 weeks of treatment, and can take 4 to 6 weeks after treatment to heal. Your skin may become reddened, itchy, and possibly inflamed and tender to the touch. Other symptoms may include darkening of the hair follicles and flaking of the skin. In rare cases, the skin can become moist and blistered, and drainage can occur. Your symptoms may be more severe if you have had chemotherapy. Your nurse or doctor will check your skin often during treatment. In rare cases, the reaction can be severe enough to require a break in your treatment.

Your nurse will provide a cream for your skin. You should apply it liberally to the chest/breast, arm/underarm and back 3 times a day, but never right before your treatment. In addition, these suggestions may be helpful:

- Wear loose, soft clothing. If you choose to wear a bra, make sure it has no underwire. You may find that soft camisoles and natural fabrics like cotton are more comfortable.
- Use a mild soap like Ivory, Sensitive Skin Dove, Basis, or Neutrogena.
- Pat your skin dry; don’t rub with a towel or washcloth.
- Do not shave in the treatment area.
- Avoid regular deodorants. Natural deodorants without aluminum are okay. Some deodorants that contain aluminum can enhance the radiation effect on the skin.
- Avoid creams, lotions and ointments unless recommended by your nurse or doctor.

Late Side Effects of Radiation

- **Radiation Pneumonitis:** Symptoms of radiation pneumonitis can occur within the first few months after radiation treatment. These include a persistent dry cough, shortness of breath with activity, weakness, tiredness, and sometimes fever. This is an uncommon side effect, but one that needs to be treated promptly. Treatment may involve steroids to reduce inflammation of the lungs. Antibiotics may also be used to prevent or treat infection. The condition usually clears up in 2 to 3 months.

- **Rib Fractures:** There is a small risk (less than 3%) of developing a rib fracture after radiation treatment. This is a late effect and can occur between 6 and about 36 months after treatment.

- **Lymphedema:** If you have had a mastectomy or lumpectomy with removal of some of the lymph nodes under the arm, lymphedema, or swelling of the arm, can develop. The larger the number of lymph nodes removed, the higher the chances that arm swelling may become a problem. In addition to swelling, there is an increased risk of infection and arm injury on the surgical side. Many cases of lymphedema are reversible with early intervention. If you notice arm swelling at any time, let your doctor know. You may need to be referred to a physical therapist that specializes in management of lymphedema.

In addition, the recommendations on the next page can help prevent infection or arm injury.
Caring for yourself should be your top priority during cancer treatment.

Taking Care of Yourself

It is important to make your health the top priority during your treatment. Let go of or delegate unimportant responsibilities. Take extra time for yourself, focusing on:

- Exercise and nutrition.
- Activities you enjoy.
- Spiritual needs.
- New, creative activities that you have not allowed yourself time for in the past, such as art or music.

What About Children

Many patients have questions about what to tell their children about their cancer and treatment. It is common to feel torn between wanting to inform your children and wanting to protect them. There is no one right approach, but these suggestions may be helpful:

- It is best to be honest with children and talk with them about your cancer.
- If you don’t talk with your children, they may harbor fears that can be worse than the reality. They may overhear or misunderstand information from someone else.
- Children need reassurance that they are not responsible for the illness in any way and that their needs for care and comfort will continue to be met.
- They can be very resilient, and can learn to cope with almost any event, if they feel informed and included.

- No lotions, creams, or ointments on your skin at the time of your treatment.
- Protect your skin from the sun, during and after treatment.

Radiation Skin Care

You may have some skin changes during radiation. Treatments for each are listed below.

**Redness**

Start Radiacare gel the first day of treatment, before any redness starts (your nurse will give you a supply). Use 3 or 4 times a day. Do not apply just before your treatment.

**Dry skin with flaking or peeling**

This is often referred to as “dry desquamation” and occurs later in treatment. Your doctor may recommend that you use Aquaphor lotion in addition to the Radiacare gel for this. If itching is also a problem, 1% hydrocortisone cream may be used, but check with your nurse or doctor first. Some of these products will need to be washed from the skin before treatment.

**Skin irritation or inflammation**

Mix up some Domboro solution (supplied by your nurse) and apply soaks 2 or 3 times a day. Apply gel after this treatment.

**Blistering, open skin with drainage**

This is often referred to as “moist desquamation” and although it is a less common reaction, it can occur towards the end of your treatment. This can be painful and can lead to infection if not managed closely. Your nurse may supply you with some gel sheets to place over the open areas between treatments. These are soothing and

Your nurse or doctor will check your skin often during treatment.
Some fatigue is expected with radiation, especially toward the end of treatment.

Some fatigue is expected with radiation, especially toward the end of treatment. Your doctor may prescribe other products as well. If the reaction is severe, your doctor may order a treatment break for your skin to recover.

**Fatigue**

Fatigue linked to breast radiation does not occur right away, and is often mild. This will vary from patient to patient, and may be more severe for patients who have had chemotherapy. Anxiety about your diagnosis and treatment, as well as hormonal changes, can also contribute to fatigue. These suggestions may be helpful:

- While many patients will continue to engage in their usual activities throughout treatment, you can expect to be more tired. Pace yourself.
- Plan extra rest breaks and ask friends and family for help.
- Nutrition is very important. Maintain a healthy diet to help sustain your energy level.
- Regular exercise, such as walking for 10 to 30 minutes a day, can be helpful for managing fatigue. Many women are motivated by working with a personal trainer to help meet fitness goals established with their doctor or nurse.
- Make sure you are getting enough sleep at night. If you are having problems with sleep, talk with your nurse or doctor.
- Report any pain problems to your nurse or doctor. Pain can interfere with your sleep and in itself make you tired. Adequate pain management during treatment is key.

While some fatigue is expected, especially towards the end of your treatment, severe fatigue could indicate more serious problems. Let your

**Dealing with Stress and Anxiety**

- Many patients have found that using relaxation techniques, meditation and/or imagery for stress management helps them feel better and gives them more energy to cope. Many audiotapes are available; a good one is *Letting Go of Stress* by Dr. Emmett Miller, available through many bookstores and through the hospital gift shop.
- Exercise is also a good way to reduce stress; even a brief 20- or 30-minute walk can help relieve some stress and anxiety.
- Sharing personal stories about living with cancer can help people learn, solve problems, and find meaning in what they’ve been through (see support group information).

**Managing Information**

These strategies can help you feel better informed and more in control of your treatment process:

- Collect information in a notebook or binder so it will all be available in one place. Your nurse will be happy to supply you with a Care Binder.
- Keep a calendar of important appointments.
- Write down questions for your doctors before you see them and take notes during your appointment. It may be helpful to bring someone with you to help remember all that is discussed.
- Ask your doctor to write down the exact type and stage of your cancer, then do your own research. Your doctor may be able to recommend articles about your illness and treatment.
- Some patients find cancer information on the Web very helpful; others are overwhelmed. If you decide to use the Web, start with sites that are patient-oriented and have accurate information such as the American Cancer Society (www.cancer.org) or People Living with Cancer (www.plwc.org).
Many resources are available in the Cancer Center and in the community to help you cope with your diagnosis and treatment.

Coping with Breast Cancer

Treatment of your cancer can dramatically impact your routine and lifestyle. Such major changes can make people feel less in control. It is common to feel overwhelmed or anxious. Even the most capable people may need help during this time. The following advice may be helpful to you, your family, and/or your friends.

*Feeling in Control*
- Acknowledge that you are dealing with a major issue. **Do not** minimize your situation.
- Clarify the problems that bother you most.
- Ask for help from family and friends.
- Use available emotional support.

The Cancer Center social worker is available to help patients find a strategy to manage this new and difficult situation. Often talking just a few times can help you find ways to feel more in control. Call **206-598-4108** to arrange a visit.

*Using Support Groups and Classes*

Support groups can be a good source of emotional support and information about cancer treatments. You may find it comforting to be with others who understand what the diagnosis of cancer can mean in a way that family and friends sometimes cannot.

Even if you do not like the idea of a support group, find a professional or another breast cancer survivor who can answer your questions, provide emotional support, and act as an advocate for you. Some local resource information is listed on the back of this pamphlet.

health care providers know if you are sleeping long periods of time during the day or if you feel especially anxious or depressed.

**Breast or Chest Wall Swelling**

Just as the skin is affected by radiation, the soft tissues of the breast and the muscles of the chest can develop swelling and irritation. Breast tissue can become more tender and full and the nipple may become sore and red. The soft tissue below the armpit can also become swollen and tender.

To help relieve tenderness, your doctor may recommend two tablets of acetaminophen (Tylenol) or ibuprofen every 4 hours as needed. Cool (not icy cold) compresses over the swollen areas can provide temporary comfort. Follow the skin care instructions as well.

**How to Minimize Side Effects**

Some simple steps can help to minimize expected radiation side effects:
- Do not smoke.
- Maintain a healthy diet. A dietitian is available during treatment to help you or answer questions you may have about your nutrition.
- Daily, moderate exercise is helpful and limits fatigue as well as other side effects.
- Get plenty of rest. Set aside uninterrupted time each day to relax or take a nap.
- If you are diabetic, keep your blood sugar level under good control.

Following some simple advice can help to minimize side effects.
Cancer treatment can have a number of effects on a woman’s sense of sexuality.

- Avoid taking antioxidants such as vitamin E while you are being treated because they might interfere with the effectiveness of the radiation.
- Check with your radiation oncologist or medical oncologist about herbal or mineral supplements. Since many supplements contain a wide variety of ingredients, it is best not to take them during treatment.

Changes in Sexuality

Treatment for breast cancer can lower a woman’s self-esteem and affect her sexual identity. Many cultures view women’s breasts as the basis of beauty and femininity. Therefore the loss of a breast or radiation treatment to the breast can impact a woman’s feelings about her sexuality.

Some women experience premature or induced menopause from chemotherapy or hormonal treatment. Hot flashes, vaginal dryness, feeling cranky, and emotional outbursts are common complaints linked with the sudden loss of estrogen. Also, fatigue and painful, swollen breasts can make previously pleasurable intimate activities tiring or uncomfortable.

Although these changes can seem overwhelming during treatment, none of them permanently impact your ability to feel sexual desire or to reach orgasm. Proper management of symptoms during and after treatment can help you maintain a positive sense of sexuality and satisfying sexual relationships.

For patients who are sexually active and also ovulating, it is essential to maintain adequate birth control to prevent pregnancy. If you become pregnant during radiation, your treatment may have to be stopped.

Tips for Managing Sexual Changes

Although your cancer treatment can impact your sense of sexuality as well as your relationships, these tips can help you to manage your symptoms and maintain satisfying intimate experiences.

- Maintain open communication with your partner about your feelings surrounding your cancer, your treatment and the impact on your sexual desire. Plan time for yourself and your partner to be alone when you are less fatigued and feel relaxed. Be open to finding new intimate experiences.
- Exercise (20 to 30 minutes a day) has been shown to reduce menopausal symptoms, maintain bone density, and help manage fatigue.
- Drink 8 glasses of water daily and avoid alcohol and caffeine, which can make symptoms worse.
- Prescription medications are available to help treat hot flashes and irritability. Contact your primary medical doctor, your oncologist, or your gynecologist if you are affected by these symptoms.
- Use a water-based lubricant for intercourse. These can be obtained at any local pharmacy. Avoid oil-based lubricants such as petroleum jelly, as these can irritate mucous membranes in the vagina. One of the best ways to prevent vaginal dryness, even after menopause, is to remain sexually active.
- Experiment with different positions during intercourse to avoid tender, swollen tissue.