Radiation Therapy
To the Abdomen

You will be receiving four to eight weeks of radiation treatment to the abdomen. Some of the common side effects from radiation to the abdomen include nausea, diarrhea and fatigue. If the pelvis is also treated, rectal and bladder irritation may occur. Side effects can begin 2-3 weeks after the treatments start. They last for 2-4 weeks after the treatments end. Nausea can occur any time during the treatment course. You may not have all of these side effects. The side effects may happen at different times.

Positioning for Your Treatment

Each day, right before your treatment, you will be asked to get into position on a treatment table. The radiation therapists will help you get into the correct position. Some patients are put into “molds”. These molds are made during the treatment planning period.

Tiny dots or marks may also have been put on your skin. These marks relate to your treatment field. They look like tiny freckles and will not be easy to see. Oil based skin markers or a dye may be used to make these marks.

If these marks fade, they will be remarked. After your radiation therapy is finished, you can allow the marks to fade. You can also gently remove them using soap and water or baby oil. These marks may rub off on your clothes. If this happens, spray the stains with hair spray or Spray’N’Wash® before you wash your clothes.
Radiation Skin Reaction

Most radiation goes through the skin into body tissues. Even so, the skin in treatment sites can become reddened and irritated. It can also become dry and itchy. Sometimes, the skin will peel and become moist. This happens most often in skin folds and curves. The radiation therapists will tell you which sites to watch.

Watch your skin closely and report any changes you notice. Use the skin care products as directed. As your skin reaction develops, we will also watch it closely. We may tell you to change the way you care for your skin. Some skin reactions can be painful. Tylenol® or ibuprofen is usually helpful. If you need something stronger or help with skin care, let us know.

If you have questions or concerns after your treatments end, call the Radiation Oncology Clinic (open 8am–5pm) at (608) 263-8500 and ask to speak to a nurse. If the clinic is closed, your call will be transferred to the answering service. Give the operator your name and phone number with the area code. The doctor will call you back.

Skin Care during Treatment

In order to protect your skin during treatment, you should follow the guidelines listed below. You will need to follow these guidelines during your treatment and afterwards, until your skin has fully healed.

1. You may bathe or shower as usual using lukewarm water. If you need soap, use one that is meant for dry or sensitive skin. Rinse skin well and gently pat it completely dry. Do not rub the skin in treatment fields.

2. Avoid heat--heating pads, very hot water in the bath or shower, and hot water bottles.

3. Avoid cold. Do not allow the skin to become chilled from exposure to ice or very cold water or air.

4. Avoid sunlight or sunlamps on the skin in the treatment site. When you are outside, keep the area covered with clothing. If clothing does not completely cover the area, use a sunscreen with SPF of 20 or higher.

5. Avoid rubbing or using friction on the skin exposed to treatment. Do not rub or scrub the treated area. Wear comfortable, loose, cotton based clothing that will allow good air flow. Avoid clothing made of nylon or synthetics because they hold moisture next to the skin. Clothes that bind can cause further irritation to the radiated skin.

6. Avoid the use of tape on skin in the treated area.
7. In most cases, nothing should be applied to the treated skin unless approved of by your doctor or nurse. This includes bath oils, perfumes, talcum powders, and lotions. If a skin reaction is expected, we will suggest a skin moisturizer. Use it each day as instructed.

Remember: Your skin needs to be clean and dry before each treatment. Lotions and creams can be applied 2 – 4 times per day to make your skin feel better. If your treatment is late in the day, you may apply a skin care product before your treatment if it will be fully absorbed by the time your treatment is given.

Care of Skin after Treatment

1. Although rare, late effects may occur. These late effects may occur months to years after the end of treatment. Treated skin may continue to be dry. It may also darken in color, or become firm and tough. It may help to apply skin moisturizer or Vitamin E oil.

2. The skin in treatment areas may always be extra sensitive to sunlight. When outdoors, use a sunscreen of SPF 20 or higher on treated skin exposed to the sun. This is because treated skin is at higher risk for a certain type of skin cancer.

Diarrhea

Diarrhea, or loose bowel movements, can occur with radiation to the abdomen. This is because the lining of the bowel is very sensitive to radiation. How severe diarrhea becomes depends on the amount of bowel in the radiation field. It also depends on the total dose of radiation. When diarrhea develops, it most often begins during the 3rd or 4th week of treatment and may continue for two weeks after treatment.

If you do not have diarrhea, you may continue to eat your normal diet. Try to eat foods high in protein such as meat, fish, milk, cheese, eggs, and peanut butter.

If you do get diarrhea, be sure to let us know. You may be instructed to take some medicine, such as Imodium. You may also need to change your diet.

These are some guidelines to follow.

1. Decrease the amount of fiber and fat in your diet.

2. Avoid foods that cause gas or cramps such as beans or cabbage.

3. Drink at least 8 – 12 glasses of liquids per day to replace fluids lost.

4. Eat foods rich in potassium such as bananas, cantaloupe, tomato juice, and orange juice (pulp-free).

5. Eat foods rich in protein such as meat, fish, cheese, peanut butter, and milk products.
**Eating Hints for Diarrhea**

Below are listed some foods to choose and some foods to avoid.

<table>
<thead>
<tr>
<th>Choose These Foods</th>
<th>Avoid These Foods</th>
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<tbody>
<tr>
<td><strong>Proteins</strong></td>
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<tr>
<td>Two or more servings per day of lean meat, pork, veal, poultry, fish, eggs, or cottage cheese.</td>
<td>Fatty or fried meats.</td>
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<td>Legumes (peas and beans).</td>
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<td><strong>Fruits</strong></td>
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<tr>
<td>Two or more servings per day of banana, melon, cooked or canned fruits (no skin or seeds), juices, and nectars.</td>
<td>Most fresh fruits, dried fruits, and prune juice.</td>
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<td><strong>Vegetables</strong></td>
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<tr>
<td>Two or more servings per day of cooked or juiced vegetables.</td>
<td>Raw vegetables, dried peas or beans, gassy vegetables (such as cabbage, cauliflower, broccoli, and onions).</td>
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<tr>
<td><strong>Carbohydrates</strong></td>
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<td>Four or more servings per day of enriched white and refined breads, pancakes, most cereals (except high fiber, whole grain varieties), enriched rice, macaroni, noodles, and spaghetti.</td>
<td>Breads or cereals made of whole grain, bran, granola, wheat germ, oatmeal, wheatena, Ralston, or other high fiber grains.</td>
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<td><strong>Fats</strong></td>
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<tr>
<td>Small amounts of margarine, oil, butter, and cream.</td>
<td>Fried or fatty foods, rich sauces.</td>
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<td><strong>Desserts</strong></td>
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<td>Small amounts of sweets, ice cream, puddings, Jello®, and sherbet.</td>
<td>Nuts or seeds, “sugar free” products made with sorbitol, spicy foods, large amounts of carbonated beverages.</td>
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<tr>
<td><strong>Dairy</strong></td>
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<tr>
<td>At least two servings per day of whole, low fat, or skim milk, cheese, or yogurt.</td>
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Food Supplements

Liquid or powdered food supplements add protein and calories to your diet. These supplements can be found in grocery, drug, and health food stores. Some brand names include: Carnation Instant Breakfast®, Boost®, Ensure®, Sustacal®, Osmolyte®, and Skandi-Shake®. Persons with diabetes may use Glucerna® or Choice® products. GNC (a health food store) also carries a supplement called Gainer’s Fuel® by Twinlab. Many stores carry generic brands of these supplements. Canned liquid supplements are easy to use. Just pop the can and drink. Powders can be mixed into fluids or foods.

Rectal Irritation

If your pelvis is in the treatment field, you may develop a sore rectum. This is a short-term side effect. Rectal irritation develops because the lining of the rectum is very sensitive to radiation. Diarrhea may also worsen rectal irritation. If you have a history of hemorrhoids, they may worsen or flare up during radiation. Rectal symptoms include burning, itching, and small amounts of bleeding. These symptoms can occur both inside and outside of the rectum.

Rectal symptoms may be mild. They may also be severe and require treatment. Hemorrhoid medicines with hydrocortisone (Preparation H®, Anusol HC®, or generic) may relieve rectal symptoms. Discuss rectal symptoms with your doctor or nurse.

Bladder Irritation

Bladder irritation (cystitis) is a swelling or soreness of the bladder lining. It may occur if your pelvis is in the treatment field. It is a short-term side effect. Symptoms of bladder irritation include feeling as if you need to urinate suddenly. It can also include feeling as if you need to urinate often. It can be signaled by burning or pain on urination. Tell your doctor or nurse if you have any bladder symptoms. Be sure to drink plenty of liquids. Bladder symptoms may also be a sign of an infection. You may be asked to provide a urine sample. Sometimes, medicine is prescribed for bladder irritation.

Nausea

Radiation to the abdomen can cause nausea and vomiting. Some patients reduce their intake or stop eating entirely to avoid these symptoms. This is not recommended. Your body needs food to heal and rebuild normal tissue damaged by radiation. Food also provides energy and strength to help you complete your treatments. Tell your doctor or nurse if you have nausea or vomiting. Often, these symptoms can be controlled.

Some of the tips listed below may be helpful.

1. Eat small amounts of salty foods such as crackers or pretzels.

2. Drink small amounts of clear, cold drinks such as 7-up®, ginger ale, and caffeine-free cola. Avoid drinking large amounts, as this can cause gas.

3. Try cold foods such as Popsicles®, gelatin desserts, yogurt, cottage cheese, cheese, deviled eggs, and cold meats.

4. Relax, eat slowly and chew your food well. Eat small meals (4-6 per day). This will also help a tense stomach.
5. Avoid eating 1 – 2 hours before and after treatment.

**Feeling Tired**

Feeling tired (fatigue) during radiation treatment is a common side effect. The severity of fatigue varies from person to person. Fatigue does not mean that your tumor is getting worse. Some people feel no fatigue and are able to keep up with their normal routines. Others feel the need to take an extra nap each day. Still others change their routines, working only part time, for example. Some people don’t do anything that requires a large amount of energy. Fatigue can begin right away, or it can occur after 1 – 2 weeks of treatment. It can go on for several weeks to months after treatment has ended. Rarely, it can last for up to a year.

Low blood counts may also cause you to feel tired. Your bone marrow makes blood cells. If a lot of bone is in your radiation field, your production of blood cells may be slowed down for a time. This is a short term side effect. Your doctor may order a blood test from time to time to check your blood cell counts.

Here are a few tips that may help with feeling tired.

1. Listen to your body and rest when you need to. A short nap during the day or sleeping a little longer may help.

2. Make time for activities you enjoy. Take a walk in the fresh air, visit with a friend, or pursue a hobby during the times that you feel most energetic. Do things that help you feel good.

3. Stop smoking and do not drink alcohol to excess! Do something healthy for yourself. If you need help with this, talk with your doctor or nurse. There are ways we can help.

4. If you work you may want to keep working. Some people are able to maintain a full time job. Others find it helpful to work fewer hours. Many employers understand and will agree to part time work. We can schedule your treatment times to fit in with your work schedule.

5. Plan regular active exercise – daily walks, riding an exercise bike, or any mild exercise. Go at your own pace. Never exercise to the point of fatigue. A good rule of thumb is that you should feel less tired after the exercise than you did before the exercise.
6. Take advantage of emotional outlets. Pent-up emotions can add to fatigue. Talk with family or friends. Having a good cry or laugh can be helpful.

7. Eat well. Keep foods around that need little effort to prepare – cheese, yogurt, or slices of meat. When you feel well, prepare and freeze meals to eat later when you are tired. Extra calories and protein are needed to maintain energy while getting treatments. They also help repair normal skin cells damaged by your treatment. Speak with a clinic nurse if you have problems eating.

8. Drink lots of fluid – 8 to 12 glasses per day. The water will help to flush some of the by-products of your cancer fighting treatment out of your body.

9. If you need help with your basic daily needs, ask your nurse or the social worker to help you contact your local resources. You may be able to receive help with meals, housekeeping, personal care, transportation, support groups, and respite care.

10. Accept offers of help from family and friends. If friends ask if they can help, accept it! If they ask you to call if you “need anything,” they may need specific ideas from you. Often people want to help but don’t know what things you need the most help doing. Things like mowing the lawn, baking a casserole or watching the kids, can help both you and your friends to feel good.

11. Visits from family and friends can be pleasant, but also tiring. You do not need to be the perfect host or hostess. Let your friends and family fix dinner, and get the drinks and snacks for you!

12. Some people may have pain from cancer or other causes. Pain can be very tiring. Your doctor and nurse can work with you to achieve good pain control. Let them know about any discomfort you have during treatment.

**Effects on Fertility**

**If your treatment field includes the pelvis, these side effects will also apply.**
Radiation to the pelvis (the area between your hips) can affect sexual and reproductive functions.

**Women:** Women having radiation in the pelvic area may stop menstruating. They may also have symptoms of menopause. Treatment can also result in vaginal itching, burning, and dryness. Report these symptoms to your nurse or doctor.

A woman in childbearing years should discuss birth control measures with her doctor. You should not become pregnant during treatments. If you are pregnant before starting radiation treatments or suspect you may be, please tell your nurse or doctor right away.

**Men:** Radiation to an area that includes the testes can reduce both the number of sperm and their ability to fertilize. This does not mean that conception cannot occur. You will need to follow birth control practices. Discuss your concerns with your doctor or nurse.

**Effects on Sexuality**

Sometimes, when you have cancer and are going through treatment for cancer your sexual drive will decrease. The lessened interest in sex will most likely go away when the treatment ends. It helps to tell
your partner your needs and feelings. If you have questions or concerns, feel free to discuss them with your doctor or nurse.

**Women:** You may continue to have intercourse throughout your treatment unless you doctor advises you not to. Intercourse may become uncomfortable due to the shrinking and the drying of vaginal tissues. These symptoms may be reduced through the use of vaginal lubricants and changes in position during intercourse. Your doctor may suggest using a vaginal dilator during and after treatment to prevent vaginal tightness. Your nurse will instruct you on its use.

Radiation to the pelvis causes ovarian function to stop. If you have not gone through menopause, you will do so at this time. You may or may not have symptoms of menopause. Symptoms of menopause may include: hot flashes, mood changes, vaginal dryness, tingling, and insomnia. Your doctor will talk with you about ways to manage these symptoms. This may or may not include hormone replacement therapy.

**Men:** Radiation to the pelvis may affect your ability to obtain or maintain an erection (impotence). Most of the time, this is a short-term side effect. Rarely, it can be a permanent side effect caused by a toughening of the nerves and blood vessels in the penis. If you have any questions or concerns, please discuss them with your doctor or nurse.

Both men and women: Radiation can cause a thinning of pubic hair. It begins about 2-3 weeks after treatment has started. It can be a short term or permanent side effect. How long this side effect lasts depends on the total dose of radiation given.

**Other Concerns**

A diagnosis of cancer brings concerns other than the need to manage the acute side effects of treatment. Often, it affects many other areas of your life. Patients feel its impact on their emotions, marriage, family, jobs, finances, thoughts and feelings about the future, and many other important areas of life. The nurses and social workers can help you cope with these issues. They can suggest support services and resources. Feel free to speak them at any time.
Cancer Resource Services

There are many resources for cancer patients and their families.

Cancer Connect is a toll-free telephone service of the University of Wisconsin Hospitals and Clinics. The staff of Cancer Connect can answer your questions about treatments available at UWHC. Cancer Connect has knowledge of community resources and support services. The phone number is (608) 262-5223.

Cancer Information Service is a nationwide telephone service of the National Cancer Institute. It has information about local cancer care as well as around the country. The toll-free number is 1-800-422-6237.