

RADIATION THERAPY INFO

SKIN CARE DURING RADIATION THERAPY

Your skin in the treatment area may become red, irritated, sunburned, or tanned after a few weeks of therapy. It is important to notify your doctor or nurse of any skin changes at your next appointment. They can suggest measures to relieve your discomfort and possibly minimize further irritation. The majority of skin reactions to radiation therapy go away a few weeks after treatment is completed. In some cases, though, the treated skin will remain slightly darker than it was before and it may continue to be more sensitive to sun exposure.

Skin in the area where you are receiving radiation therapy needs to be treated with gentle care.

During your course of radiation treatment, please follow these guidelines:

- Keep the treated area dry & free from irritation. Cornstarch, gently patted on with a powder puff, will keep the skin dry.
- Do not wash the treated area until your technologist tells you to. When permitted, wash the treated skin gently, using a mild soap and rinse well before patting dry. Always use lukewarm water.
- Do not remove any lines or ink marks on your skin until the technologist tells you to.
- Be aware that the marks placed on your skin may stain your clothing.
- Avoid harsh fabrics over the treatment area such as wool, corduroy, or starched cloth. Lightweight cotton is recommended.
- Do not wear clothing that is tight or may cause friction by rubbing over the treated skin.
- Women with breast cancer should avoid bras that rub below the breast.
- Avoid irritating the treatment area by using cosmetics, perfumes, colognes, pre or after shave products, topical medications, deodorants, creams, lotions, Vaseline-like products, or powders. Many skin products can leave a coating on the skin that may cause an irritation and interfere with your treatment.
- Do not apply any skin lotions within 2 hours of a treatment.
- Do not use heating pads or hot water bottles on treated skin.
- Avoid ice packs and exposure to extreme cold weather.
- Men should use an electric razor when shaving if they are receiving treatment to the face and/or neck area. Do not use aftershave.
- If treated area becomes reddened or tender, tell your doctor, nurse or radiation therapist. They will recommend something for the discomfort.
- Avoid exposing the area to the sun during treatment and for at least 1 year after your treatment is completed.
- If you expect to be in the sun for more than a few minutes, wear protective clothing (such as a hat with a broad brim and shirt with long sleeves) and use a sunscreen. Ask your doctor or nurse about using sunscreen lotions of SPF 15 or higher.

- Do not give yourself or allow anyone else to give you any shots in the treatment area.
- Unless necessary, do not use adhesive tape, including band aids and paper tape, on the treated area.
- Breast cancer patients should not use deodorant if the axilla is in the treatment field. Create your own non-irritating deodorant: 1/4 cup baking soda and 1/4 cup of corn starch mixed together and applied with cotton balls.
- Do not swim in salt water, lakes, pools or ponds.
- Always report any discomforts or concerns to the Radiation Therapy Staff.

The Most Common Types of Skin Reactions

- Redness
- Change in skin color
- Hair loss
- Flaking or peeling
- Ulceration
- Edema
- Scarring
- Loss of perspiration
- Change in superficial blood vessels

ABDOMEN

The most common side effects from radiation to the abdomen are skin irritation, nausea/vomiting, loss of appetite, and fatigue.

Your skin may become dry and pink after 2-3 weeks of treatment.

- Use a mild soap (i.e. Ivory, Dove, Neutrogena), but do not use anything else on your skin in the treated area.
- If you need something for skin dryness, please let the nurses know.

You may experience nausea and/or vomiting from your treatment. This can begin after your first or second treatment.

- The doctor may prescribe a premedication (e.g. Compazine, Norzine) for you to take 30 minutes before your treatment, and again 2-3 hours after your treatment.
- Try eating smaller, bland meals more frequently. Let the nurses know if you are still having trouble.
- Drink plenty of fluids to avoid becoming dehydrated.

You also may experience a loss of appetite, even if you are not having nausea or vomiting. Sometimes you may need to force yourself to eat. Again, smaller, more frequent meals may be easier.

Your weight will be checked weekly. If you are having problems eating, we may even offer you nutritional supplements.

It should not be surprising that you may also feel more tired, especially if you are not eating well. You will still be able to come for your treatment, but you may need more rest periods during the day.

BONE METASTASES

Radiation Therapy is often used to provide pain relief from metastatic cancer bone involvement. You may also experience skin irritation, fatigue, and other site-specific side effects.

Skin

- May become dry and pink after 2-3 weeks of treatment.
- Use a mild soap (i.e. Ivory, Dove, Neutrogena), but do not use anything else on your skin in the treated area.
- If you need something for skin dryness, please let the nurses know.

Fatigue

- During the treatment course, you may feel more tired.
- You will still be able to come for your treatment.
- You may need more rest periods during the day.

Pain

- You may experience pain from the cancer in the area being treated. If so, you may be taking a narcotic medication to relieve the pain. Let us know what you are taking and how effective it is.
- Monitor your bowel movements and avoid constipation from the narcotic by watching your diet (high-fiber). You may need a stool softener and/or laxative in addition to diet changes.
- Avoid using a heating pad, hot soaks, etc. to the treated area. You may use tepid/warm water in the area.

You should also be aware of minimizing stress involved on the bone, such as weight-bearing and pulling-pushing/carrying heavy objects. You may need to use a cane, walker, crutches, or wheelchair.

BRAIN CANCER

Side Effects from Radiation Therapy to the Brain

You may experience several side effects from radiation to the brain. The most common are hair loss, skin irritation, and fatigue.

Hair Loss

Any hair loss you experience will only be in the treatment area (i.e. partial vs. whole brain). It can begin 2-3 weeks after treatment begins. Your hair may only thin out or may

be lost completely. It is usually temporary, but can be permanent (depending on the amount of radiation received).

- If considering a wig, see a wig stylist before radiation treatment begins so that the stylist can match a wig to your natural hair color and texture.
- Ask your doctor for a prescription for a wig, as some insurance companies cover this cost.
- Consider scarves, turbans or wigs.
- Get a short, stylish haircut before beginning radiation in order to prepare yourself for the change in your appearance.
- Some patients feel more in control if they shave their head completely, rather than dealing with the hair falling out.
- Once radiation treatments begin, use a mild shampoo, pat the hair dry and comb the hair carefully, without tugging.
- Only use a hairdryer if necessary and keep it on a low heat setting.
- Avoid hair dyes, rollers, curling irons or perms.
- Sleep on a satin pillowcase to avoid friction between hair and scalp.

BREAST CANCER

You may be asked to undergo a treatment planning CT scan prior to your simulation. This helps determine how best to arrange the treatment specially chosen for your situation.

Once you get started with your treatment, your therapist may place a very small permanent tattoo (.) on your skin. This is used in your daily set up and also for your safety, should you ever need radiotherapy in the future-- A radiation oncologist can determine a previously irradiated area by identifying your tattoos.

After your planning session you will be given an appointment for your first treatment...

THE TREATMENT

There may be some slight variation in the technique and schedules used by different radiation oncologists, however the general scheme is as follows:

Radiotherapy is usually given every day, 5 days/week for approximately 6-7 weeks. During the first 4 1/2 to 5 weeks, the radiation will be directed to your entire breast or chest wall and sometimes lymph glands. During the last week or so, you will receive an electron "boost" to your lumpectomy or mastectomy scar. Electrons are less penetrating than X-rays and will deliver the dose of radiation directly to the area where the original tumor was. The same daily dose will be given during the boost--just to a smaller area. This allows a higher dose to the area at highest risk of recurrence-sparing more of the normal tissue.

You will be given a specific time to come in each day that will be fairly consistent during those 6 or so weeks. We will try our best to accommodate our patients with tight schedules or time restrictions.

The first day of your treatment will take a little longer because all fields will be filmed to confirm proper positioning and block placement. Once your radiation oncologist reviews your films and gives the go-ahead, you will receive your first treatment.

The treatment only takes a couple of minutes depending on the number of fields. You will not feel anything. You will need to remain as still as possible during your treatment.

You will see your Radiation Oncologist on a weekly basis. The purpose of the visit is to evaluate the area being treated for any radiation reaction as well as to assess how you are feeling. The oncologist will review your chart thoroughly as well as your port films (the films that are taken weekly to ensure proper set up). These films do not tell us anything about your cancer-they are for position verification only.

SIDE EFFECTS OF THERAPY

Your oncologist will discuss the possible acute (early) and chronic (late) effects of radiotherapy thoroughly with you when obtaining your consent for treatment and will be happy to address any special concerns that you may have. Possible treatment related side-effects include but are not limited to the following:

ACUTE (EARLY SIDE EFFECTS)

Beginning about the third week of radiotherapy, you may begin to notice some redness of your breast/chest wall (like mild sunburn). You may experience itching and dry scaly skin in the treatment area-especially around the nipple. Your doctor will prescribe specific skin care products to help alleviate these effects. (See below)

It is possible to experience some blistering of the skin, especially if you have large breasts. Your doctor will prescribe treatment for this as well. It is important to keep this area clean-especially if there are any skin breaks-to reduce the possibility of infection.

Eventually, the redness will turn darker (hyperpigmentation), just like a suntan. This area may remain discolored for several months.

Some patients experience fatigue during their treatment. This may be due to disease or the treatment itself. It may also result from low blood counts, lack of sleep, pain and poor appetite. To help combat fatigue, continue a healthy exercise and diet regimen. A high protein, low fat diet with abundant fruits/vegetables helps to boost energy levels. Sometimes light exercise such as light walking may help combat fatigue.

Some women experience mild intermittent discomfort in the breast or chest wall. This is generally short-lived and is related to the healing surgical wound.

CHRONIC (LATE SIDE EFFECTS)

These side effects may occur months to years after therapy.

You may notice a change in the size, shape or consistency of your breast. Due to both surgical changes and fibrosis (scarring) from radiation, it is possible for the breast to shrink in size just a bit. There also may be some retraction-or pulling of the skin where the lumpectomy scar is. Generally this is fairly subtle.

The skin and soft tissue may become thicker and firmer from radiation-this is called fibrosis. You may notice a slight discoloration of the skin (hyperpigmentation) and or tiny red blood vessels near the skin surface (telangiectasias).

A portion of your lung may be in the treatment field-the amount depends on the specific areas treated. If just the breast is receiving treatment, the volume of lung tissue will be very small. If the lymph node-bearing areas are being treated, the volume may be higher. This should not cause any problems with your breathing. If you have underlying lung disease, are a heavy smoker, or have had chemotherapy that is known to be especially toxic to lung tissue, you are at higher risk for potential lung damage.

If you have a left breast cancer, there is the possibility of a small area of your heart being included in the treatment volume. We make aggressive attempts to eliminate as much of your heart from the treatment field as possible. Radiation may accelerate the development of coronary artery disease but this effect takes many years to develop. We do protect most if not all of the heart from the radiation using specialized techniques.

A portion of your ribs may be included in the treatment field. This may place you at slightly higher risk of rib fracture in the future.

If you have had a mastectomy or axillary node dissection, you have a slight risk of developing arm swelling (lymphedema). This can occur because lymph glands have been removed making it difficult for lymphatic fluid to drain from your arm. This happens in less than 18% of patients and can range from mild swelling that is barely noticed to a large amount of swelling requiring more aggressive treatment. The risk of significant arm edema is 1-2%. Radiotherapy may increase this a small amount, however we usually do not treat previously dissected axillae unless there is still cancer in that area.

PROPER SKIN CARE

Moisturizers - During your weekly doctor visits, your oncologist may give you samples or a prescription for creams or ointments that are made specifically for patients to use during radiotherapy. Please do not use any skin care products from home in the treatment area unless you ask your doctor. Some lotions, and especially deodorants, may have perfumes, alcohols, and even metallic agents that may make your skin reaction worse.

Deodorant - You may use baby cornstarch under your arm to help absorb perspiration.

Skin Moisturizers - Some patients like to use aloe. There is no proven clinical benefit to using aloe but it is soothing. I recommend aloe direct from the plant, however. Many of the "pure aloe" gels sold in drug stores contain alcohol, which is very drying to the skin.

Shaving - If you have had an axillary node dissection and if you must shave under your arm, please do so with an electric razor to avoid skin nicks. Breaks in the skin may become infected because of the disturbance of your lymphatic tissue. For the same reason, if you garden-be sure and wear protective gloves and be very careful with

manicures. Make sure that manicure tools are clean and that you are very gentle to avoid breaks in the cuticle.

Sun Exposure - As a general rule of thumb, you should always wear sunscreen to avoid sun damage and help prevent skin cancer. It is especially important for you to protect the area receiving radiation from sun exposure. You may use sunscreen or keep the area covered with clothing. We want to keep your skin reaction to a minimum and avoiding sun exposure will help.

Bathing/Showering - You may bathe or shower as usual. However, try to retain any skin marks your therapist has placed on your skin. Water can flow over the treatment area, but it is a good idea to let soap skip this area. If you must cleanse the area more thoroughly, I recommend you use Dove soap or Basis-as these soaps are gentle, free of perfumes and are less drying than other soaps.

Undergarments/Clothing - It may be more comfortable for you to not wear a bra during your treatment, as your skin will be irritated. If you have large breasts or feel more comfortable wearing a bra, I suggest you purchase a white cotton exercise bra that is one size too big (so not too tight). These bras have a wide cotton-covered elastic band that is more comfortable and not as abrasive as regular bras. Also, loose fitting cotton shirts will help with ventilation.

FOLLOW UP SCHEDULE

You will see your radiation oncologist four weeks or so after completing your course of radiotherapy so that he or she can check to see that you are healing properly. You will be scheduled for a baseline mammogram approximately 6 months from completing your treatment. At this point the architectural changes caused by the surgery/radiotherapy have stabilized. This is why we call it a baseline exam. The radiologist will need this for comparison of subsequent mammograms. You will also continue to follow up with your medical oncologist and or surgeon as scheduled by their offices.

We will see you every four months for the first 3 years, then every 6 months for the next 2 years and yearly thereafter. Breast cancer is most likely to recur in the first 2-3 years after therapy. This is the reason for such close surveillance early on.

Mammograms will be obtained yearly unless the radiologist finds reason to recommend closer intervals.

CHEST

Skin

- May become dry and pink after 2-3 weeks of treatment.
- Use a mild soap (e.g. Ivory, Dove, Neutrogena), but do not use anything else on your skin in the treated area.
- If you need something for skin dryness, please let the nurses know.

Eating

- You may experience a feeling of indigestion (lump in chest) and/or difficulty swallowing after 2-3 weeks of treatment.
- Try an antacid (e.g. Maalox, Mylanta) before meals to make it more comfortable to eat.
- Softer and “wet” foods will be easier for you to eat.
- Your weight will be checked weekly.
- Let the nurses know if you are having trouble, they will give you more detailed information.

HEAD AND NECK

You may experience several side effects from radiation to the head and neck area. The specific effects depend upon what part is actually being treated. Mouth care and nutrition are very important at this time. You may be asked to see a dentist before beginning your treatment. As for nutrition, we can give you more detailed information and may even offer you nutritional supplements. Your weight will be checked weekly.

Skin

- May become dry and pink after 2-3 weeks of treatment.
- Use a mild soap (e.g. Ivory, Dove, Neutrogena), but do not use anything else on your skin in the treated area, including shaving products.
- Pat dry, rather than rub.
- Use an electric razor.
- If you need something for skin dryness, please let the nurses know.
- Wear a hat and a cotton shirt with a collar when outside for long periods of time to protect your skin from the sun, wind and cold.

Hair Loss

- Any hair loss you experience from radiation will only be in the treatment area. It can start 2-3 weeks after treatment begins.
- It may be temporary, but it can be permanent (depending on the amount of radiation you receive). Regrowth will begin several weeks after treatment ends.
- If considering a wig, see a wig stylist before radiation treatment begins so that the stylist can match a wig to your natural hair color and texture.
- Ask your doctor for a prescription for a wig, as some insurance companies will cover this cost.
- Consider scarves, turbans or wigs.
- Get a short, stylish haircut prior to beginning radiation in order to prepare yourself for the change in your appearance.
- Some patients feel more in control if they shave their head completely, rather than dealing with the hair falling out.
- Once radiation treatments begin, use a mild shampoo, pat the hair dry and comb the hair carefully, without tugging.
- Only use a hairdryer if necessary and keep it on a low heat setting.

- Avoid hair dyes, rollers, curling irons or perms.
- Sleep on a satin pillowcase to avoid friction between hair and scalp.

Mouth and/or Throat

- May become dry after 2-3 weeks of treatment, especially if the salivary glands are in the treated area.
- The dryness may be temporary or permanent.
- It may take several weeks or months to resolve.
- Sip and drink fluids often during the day. Carry water with you at all times. Also, keep water by your bedside for middle of the night sips.
- Chew sugarless gum or suck on sugarless hard candy.
- Use a humidifier at home.
- Artificial saliva is available, if needed.
- If you have any problems with thick saliva, you can try gargling with half-strength hydrogen peroxide and water, in addition to the above.
- Carbonated water is also useful for thick saliva.
- Mouth sores or sore throat may develop after 2-3 weeks of treatment. If this is a problem, let us know.
- You may also find you are not eating as well at this time. Soft and “wet” foods will be easiest; room temperature and cold foods may also be better tolerated. Let the nurses know if you are having trouble; we will give you more detailed information.
- Difficulty swallowing because of dryness, sore throat, and/or any swelling from the treatment. You may need to alter your diet at this time; again, softer and “wet” foods will be easier.
- If the larynx is in the treatment area, your voice may become hoarse. This is temporary and will go away a few weeks after your treatment ends.

Dry mouth (Xerostomia)

This chronic dry-mouth condition is caused by damage from radiation therapy to the salivary glands. It can greatly impair a patient’s ability to speak, chew, swallow and taste.

- Sweet or tart foods or beverages, such as lemonade, might help the mouth to produce saliva. (Avoid these, however, when experiencing a sore mouth or throat.)
- Suck on sugar-free, hard candy or popsicles or chew sugar-free gum in an effort to produce more saliva.
- Eat soft and pureed foods that are easier to swallow.
- Keep lips moist with lip salves.
- Eat foods with sauces, gravies and salad dressings to make them moist and easier to swallow.
- Take a sip of water every few minutes to make swallowing and talking easier.
- If the dry mouth problem is severe, ask your physician or dentist about products that coat and protect the mouth and throat.

Taste Changes

Your taste changes may be temporary and may take several weeks to resolve or they may be permanent.

- You may also experience a bitter or metallic taste.
- Loss of tolerance for sweet foods.
- Complete loss of taste can occur.
- You may need to “force” yourself to eat, experimenting with various foods to see what you can tolerate.
- Serve foods at room temperature.
- Try using small amounts of flavorful seasonings and/or marinades.
- Try tart foods such as oranges or lemons that may have more taste.

Fatigue

Fatigue is a feeling of tiredness, weariness, weakness, exhaustion or a lack of energy to carry on. Fatigue is one of the most common side effects of radiation therapy. Fatigue is typically strongest 2-4 hours after treatment. The feeling of fatigue should wear off several weeks after the completion of radiation therapy.

- Limit your activities, if possible.
- Plan to get some exercise each day.
- Prepare meals ahead of time and freeze them.
- Use convenience foods that are ready to eat.
- Accept offers of help from friends and relatives.
- Drink three quarts of fluid each day to avoid the build-up of cellular waste products.
- Increase rest. Get more sleep at night and take naps during the day.
- Try to eat even when you are tired. Sometimes a little food will increase energy.
- Maintain your treatment schedule.

PELVIS

Radiation therapy uses high-energy radiation (such as x-rays) to kill cancer cells. These treatments may be given externally in a procedure that is much like having a diagnostic x-ray. This is called external beam radiation therapy. Radiation therapy also may be given by placing radioactive materials near the tumor. This is called brachytherapy. A multidisciplinary team, consisting of a nurse, physicist, radiation oncologist and radiation therapist, is responsible for implementing the treatment plan developed by your radiation oncologist.

External Beam Radiation

This is the more familiar type of radiation therapy in which the high energy x-rays are delivered from a source outside of the body. In some situations, both brachytherapy and external beam radiation therapy are given. External beam radiation therapy requires 4 or 5 weeks of 5-days-a-week treatment. The actual treatment takes less than a half-hour.

Brachytherapy

How much of the pelvis needs to be exposed to radiation therapy depends on the extent of the disease. In cases where only the upper third of the vagina, the vaginal cuff, needs to be treated, a radioactive application is inserted through the vagina. This internal application of radiation therapy is called brachytherapy.

4 to 6 weeks after the hysterectomy, the surgeon or radiation oncologist inserts a special applicator into the woman's vagina and pellets of radioactive material are inserted into the applicator. Several treatments may be necessary. With vaginal brachytherapy, there is little radiation effect on nearby structures, such as the bladder or rectum.

Commonly Experienced Short-Term Side Effects of Radiation to the Pelvis

- Changes in bowel habits: frequent soft bowel movements, gas pains, abdominal cramping
- Changes in urination: frequency, urgency, or burning
- Women: vaginal changes, vaginal discharge
- Fatigue
- Skin changes in the treatment area - dryness or redness
- Temporary hair loss in the area being treated with radiation

Any of these symptoms may occur during radiation therapy and can persist for several weeks following completion of treatment. Severity of side effects varies from patient to patient. Report all symptoms of discomfort and concern to your nurse or radiation oncologist as soon as possible. Do not institute any changes without their knowledge.

During Radiation Therapy We Encourage You to:

- Wear loose fitting, soft cotton clothing next to the skin in the area that is being treated.
- Use only those skin care products recommended. Avoid shaving, using talcum powder, deodorants or perfumes in the area that is being treated with radiation.
- Match your activity level to your energy level.

Skin Care

On the first day of your treatment planning, you will have skin marks (made with a colored dye) placed on the pelvis area to be treated. As the days of treatments progress, the radiation therapists may place some tiny tattoos that will replace the skin marks. Do not attempt to refresh or wash these marks off your skin. Using warm water, you may shower or bathe as usual but avoid vigorous scrubbing in the treatment area. Gentle soap (e.g. Ivory, Dove, Neutrogena) and water running over the treated skin will usually cause no harm; in fact, keeping this area clean is beneficial. It is also important to keep the perineum clean. This is the region between the thighs and the anus. Gently and thoroughly cleansing this area after urination with a front to back motion will help you feel fresh.

- To wash the area being treated, use a small amount of soap on your hand and gently wash. Rinse well and gently pat dry with a soft towel.
- Do not apply any powders, creams, lotions or deodorants to the skin of the treatment area while undergoing therapy except as directed by the health care team.
- Dry cornstarch may be applied during the day in the creases of the groin area. This helps to keep the area friction free and reduce irritation and itching. Do not apply cornstarch before your treatment.
- Avoid additional heat sources such as sunbathing, heating pads, hot water bottles, hot tubs and heat producing ointments.

- Skin reactions may become more severe if you are receiving chemotherapy and radiation at the same time.
- Skin changes are more likely to occur in areas with skin folds.
- Sensitive treatment areas respond well to pure cotton underclothing and the avoidance of tight, restrictive clothing such as jeans, slacks, and pantyhose.

The area being treated and the amount of radiation being given will determine the kind of skin changes, if any, you may experience. Skin changes vary from no changes to a dry, pink color, to a bronzed appearance. In the case of an obese abdomen, be sure to keep skin areas clean under folds of skin.

Bladder

The bladder may lie in the treatment field and irritation of the lining may occur, resulting in increasingly frequent urination (especially at night) or discomfort with urination.

Drinking sufficient fluids can minimize this irritation. Feel free to drink Kool Aid, soups and juices. Cranberry juice may help.

Please inform your health care team of any symptoms you may develop with urinating, such as increased frequency, burning or cloudy urine.

The technologists may ask you to come for treatment with a full bladder. When the bladder is full, it helps push the small bowel out of the irradiated field. The goal is to have a noticeably full bladder at the time of treatment, but not significant discomfort.

This can usually be accomplished by urinating two hours before treatment and drinking a tall glass of water. Everyone's system is different, however, and you may need to make adjustments. It is not necessary to have a full bladder for all treatments. If you are significantly uncomfortable with a full bladder shortly before treatment, you may void.

This will not compromise the effectiveness of having a full bladder during many or most of the treatments.

Bowel

Often, after receiving between 8 to 12 treatments, you may develop a tendency toward increased bowel activity and increased gas production. Each person's bowel response to radiation differs, and it is difficult to predict the amount of diarrhea, if any, you may experience. You will usually have some warning such as gas and/or cramping. Changes in the diet may be necessary (low-residue, low-fat). Please alert the health care team if loose stools or diarrhea occur. Immodium may be used (available over the counter).

The rectal area may become irritated as a result of the radiation and/or diarrhea. Please inform us of any symptoms you may be having, such as rectal discomfort, hemorrhoid problems, skin irritation, etc. Prescription creams may be necessary to reduce rectal/anal irritation.

Pelvis (Women)

Radiation therapy to the female pelvis can result in irritation of the vaginal tissues and can decrease mucous production. The result can be eventual dryness and narrowing of the vaginal canal. It is important to keep the vaginal canal from narrowing for future examinations and for your comfort. Three weeks after radiation therapy, the vaginal area should be routinely stretched 2-3 times per week by sexual intercourse and/or use of a vaginal dilator. If you are not sexually active, use a vaginal dilator. Additional lubrication such as K-Y jelly or Surgilube (do not use petroleum products such as Vaseline) may promote comfort. Gentle douching once daily with a mild vinegar solution (2 tablespoons white vinegar to 1 quart warm water) may be indicated. Warm sitz baths using the same mild vinegar solution can be soothing to inflamed tissues, especially to external tissues such as the rectum and vaginal opening.

As a result of the treatment to the pelvis, you may temporarily lose your pubic hair, which may or may not completely regrow. Menstruation usually ceases completely by the end of therapy or within several months after treatment because the ovaries are very sensitive to the effects of radiation. Do not rely on radiation therapy as a means of birth control.

Rest

As your treatments progress, you may experience fatigue. You may require more sleep at night or need a nap after your treatment.

Nutrition

You must maintain an adequate and nutritious diet. Dieting with substantial weight loss is discouraged at this time. In order for normal cells to recuperate from the daily treatment, they require appropriate nutrients each day. You will be weighed regularly during radiation therapy to help insure that you are eating adequately.

Report these Symptoms to your Health Care Team

- Abnormal vaginal bleeding
- Yellow, foul-smelling discharge
- Fever of 100.5 F. degrees or above
- Pain unrelieved by medications
- Significant change in bowel patterns
- Change in urinary patterns
- Weight loss/eating problems
- Sexual concerns

After Radiation Therapy Care

- Continue with your skin care while significant skin reaction remains.
- Continue to use any prescribed topical medications or a moisturizer containing no perfumes or alcohol.
- Diarrhea may continue for some time after completion of the radiation. Continue using any anti-diarrhea medication until bowel action normalizes.
- Contact your health care team with any concerns or any questions.

STEROIDS

As part of your radiation therapy treatment, your physician may prescribe drugs called steroids such as Prednisone or Decadron (generic name is Dexamethasone). These drugs help decrease swelling in body tissues. Steroids may cause side effects, which vary from person to person. You will not experience all of them. The side effects are temporary and will gradually decrease after you stop the medication. Make sure to take this medication exactly as your doctor prescribes. Also ask your nurse for a medication handout about the type of steroid you will be taking.

Self-Care Measures:

1. Since steroids may irritate the lining of your stomach, take steroids with milk or

meals.

2. Avoid substances that will further irritate your stomach, such as:

- Highly spiced foods flavored with pepper, chili powder, curry, or cloves.
- Acidic foods such as citrus fruits and juices. These include oranges, grapefruits, lemons, limes, and tomatoes.
- Carbonated beverages, alcoholic beverages, and caffeine in coffee. These are very irritating and may cause discomfort.
- Tobacco.
- Drugs containing aspirin or other anti-inflammatory drugs should not be taken while you are on steroids, unless cleared by your physician, in advance.

3. Steroids may cause you to retain salt and fluids so that your weight increases. Weight gain caused by fluid retention will gradually decrease when you stop taking the medication. In the meantime, to minimize fluid retention, follow a low salt diet, if cleared by your physician.

- Do not add salt when cooking or eating.
- Avoid salty foods such as pork, ham, bacon, tomato juice, salted nuts, bouillon, canned soups, cheese, salted crackers, snack foods, seasoned salt, soy or Worcestershire sauce, catsup, canned meats or fish, corned beef, sausage, peanut butter, and foods labeled as having high sodium content.

4. If you notice increased swelling of your hands, feet, legs or face notify your physician

5. Steroids may cause you to lose potassium. If your physician tells you that your potassium is low, eat foods high in potassium such as: bananas, apricot or peach nectar, cantaloupe, dates, raisins, baked potatoes, salt-water fish, halibut, milk and chicken.

6. Steroids can cause an increase in appetite so don't be surprised if you gain weight.

To safely minimize weight gain:

- Try to maintain a nutritious well-balanced diet while avoiding simple sugars such as cakes, pies and candy. Eat foods containing natural sugar such as fresh fruits and vegetables.
- Do not try crash diets or diet pills. After your treatments are finished, you can talk with your physician about weight-loss.

7. You may notice emotional changes such as a feeling of "well-being," mood swings, depression, anxiety or even a great increase in energy with difficulty sleeping. These changes may be more noticeable while your medication dose is being increased or decreased. Emotional changes caused by the steroids should stop when you have been off steroids for several days.

8. Steroids can cause changes in your appearance. Your face may look swollen, your abdomen may get larger and you may develop acne. Although these changes are temporary, they can be emotionally upsetting. Talk with your health care team, family or friends if you need help dealing with your feelings.

9. Steroids may change the way your body uses sugars and other carbohydrates.

- Some people temporarily develop diabetes while on steroids. Avoid simple sugars like cakes, candy, etc. and include more complex carbohydrates such as fresh vegetables, rice, and other whole grains in your diet. If you develop greatly increased thirst, increased urination and fatigue, notify your physician.
- If you are diabetic, you might need to change your dose of insulin or pills while on steroids. Your physician will advise you if such a change is necessary.

10. Steroids may increase your chance of infection and delay healing of injuries.

- This happens mainly with high-dose or long-term treatment.
- Tell your doctor if you notice signs of infection (inflammation, redness, soreness or a temperature) or if cuts take longer than usual to heal.
- It is important to maintain good personal hygiene to prevent infection.

11. Steroids may also interfere with your sleep patterns.

Steroids must be discontinued gradually, over days or weeks. Your physician will explain how to do this when you no longer require the medication. Consult your health care team if you develop

- Digestive problems such as: heartburn, stomach pain, nausea or vomiting, bloody or dark 'tarry' stools.
- Increased thirst, urination and fatigue.
- Increased swelling of your feet, legs, hands or face.
- Signs or symptoms of infections.

Things to remember about steroid tablets

- Keep the tablets in a safe place where children cannot reach them, as steroids could harm them.
- If your doctor decides to stop the treatment, return any remaining tablets to the pharmacist. Do not flush them down the toilet or throw them away.
- If you are sick just after taking the tablet tell your doctor, as you may need to take another one.
- If you forget to take your tablet, do not take a double dose. Let your doctor or nurse know.

DECADRON TAPER

Decadron (also known by its generic name - dexamethasone) requires gradual taper to discontinue its use. It is important not to stop taking Decadron suddenly. The following is a schedule to taper Decadron. As there are many changes in daily dosage, we urge you to write out each day's dosage on a calendar.

For 2 mg dosages, 4 mg pills may be cut in half with a sharp knife, if needed.

4 mg	3 times a day	For 4 days
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4 mg	2 times a day	For 4 days
2 mg	3 times a day	For 4 days
2 mg	2 times a day	For 4 days
2 mg	1 time a day	For 4 days
2 mg	Every other day	For 8 days

Then stop taking Decadron.

Additional instructions:

- Continue antacid medication while taking Decadron.
- Take Decadron with meals.
- Report any increasing headaches, abdominal pain, insomnia (difficulty sleeping) or worsening neurologic symptoms while taking Decadron.
- Report any significant new abdominal pain or stools that become dark or tarry while taking Decadron.
- Report any fevers promptly (temperatures orally above 100.5 F).
- If you are a diabetic, special precautions may be necessary to monitor or control your blood sugar.

What do I do for a missed dose? If you take the drug once a day, take it as soon as you remember that day. If you do not remember until the next day, skip the missed dose and do not double up. If you take the drug twice or more daily, take the missed dose as soon as you remember that day. If you don't remember until the next morning, then double just that dose. If you are on alternate day treatment, take the dose whenever you remember and adjust your schedule to every other day afterwards.

Are there interactions with food or beverages? There are no known interactions with any foods or beverages. However, dexamethasone may cause retention of sodium (salt), so keep your sodium intake to a minimum. The drug may also result in excess urine secretion of potassium, so foods high in potassium are recommended. See the diet section for details. There are no known interactions with alcohol.

END OF TREATMENT INFO

Congratulations! You have finished your radiation therapy!

Radiation treatment-related side effects will gradually begin to improve at the conclusion of therapy. This process takes several weeks and requires a gradual transition.

If you have experienced radiation-related skin irritation, continue to use mild deodorant-free soap for bathing. If you have been using an ointment or cream, continue to use these same products until healing is completed. Skin irritation will gradually improve, but this may take several weeks.

The skin surface that has received radiation will be more sun sensitive. We recommend that you apply a sunblock to the skin surface if it is uncovered. You should use a PABA-free product with SPF 15 or greater.

If you have nausea and/or vomiting because of the radiation to the abdominal area, you can expect gradual improvement in the next several weeks. Diarrhea resulting from the radiation will also take several weeks to resolve. Continue to use your antidiarrhea medication on an “as-needed” basis.

Even though your radiation treatments are completed, you will need to maintain an adequate nutritional intake to optimize healing. If you have been using nutritional supplements, you should continue them until you are able to eat your usual diet again. If you have a sore throat or dry mouth, you will probably need to continue any medications you are currently using.

The fatigue that is commonly experienced during radiation should gradually improve over the next several weeks. You may need to rest periodically during the day if the fatigue is severe, but most people are able to continue their usual routine without difficulty.

A few patients need help managing pain if it continues after radiation therapy. Do not use a heating pad or warm compress to relieve pain in any area treated with radiation. Instead, talk to your doctor and describe the location and type of pain in as much detail as possible (cramping, aching, etc.). Try relaxation exercises to reduce your fear and anxiety since negative emotions can contribute to your discomfort.

You will see gradual progress over the next several weeks. Remember that just as it took several weeks for side effects to develop, it will also take several weeks for them to resolve. Your doctor will want to see you for a follow-up visit in about 4-6 weeks. You should schedule an appointment at the time of your last treatment.