



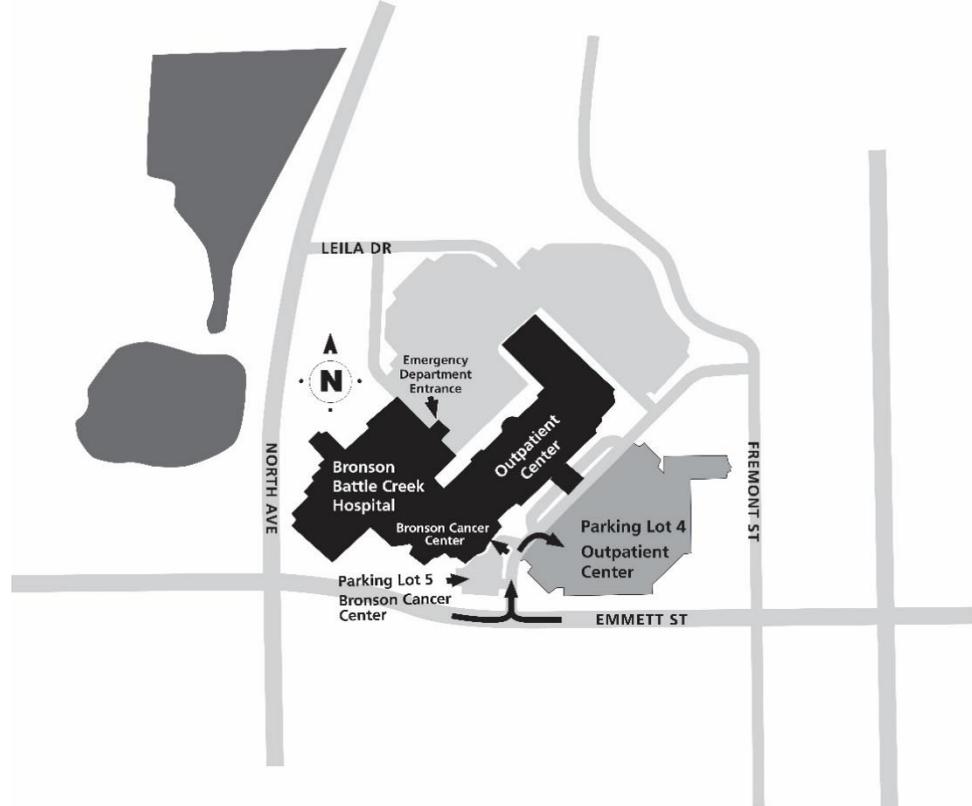
# **Chemotherapy and Immunotherapy Patient Guide**

# Bronson Cancer Center – Battle Creek

300 North Ave., Battle Creek, MI 49017

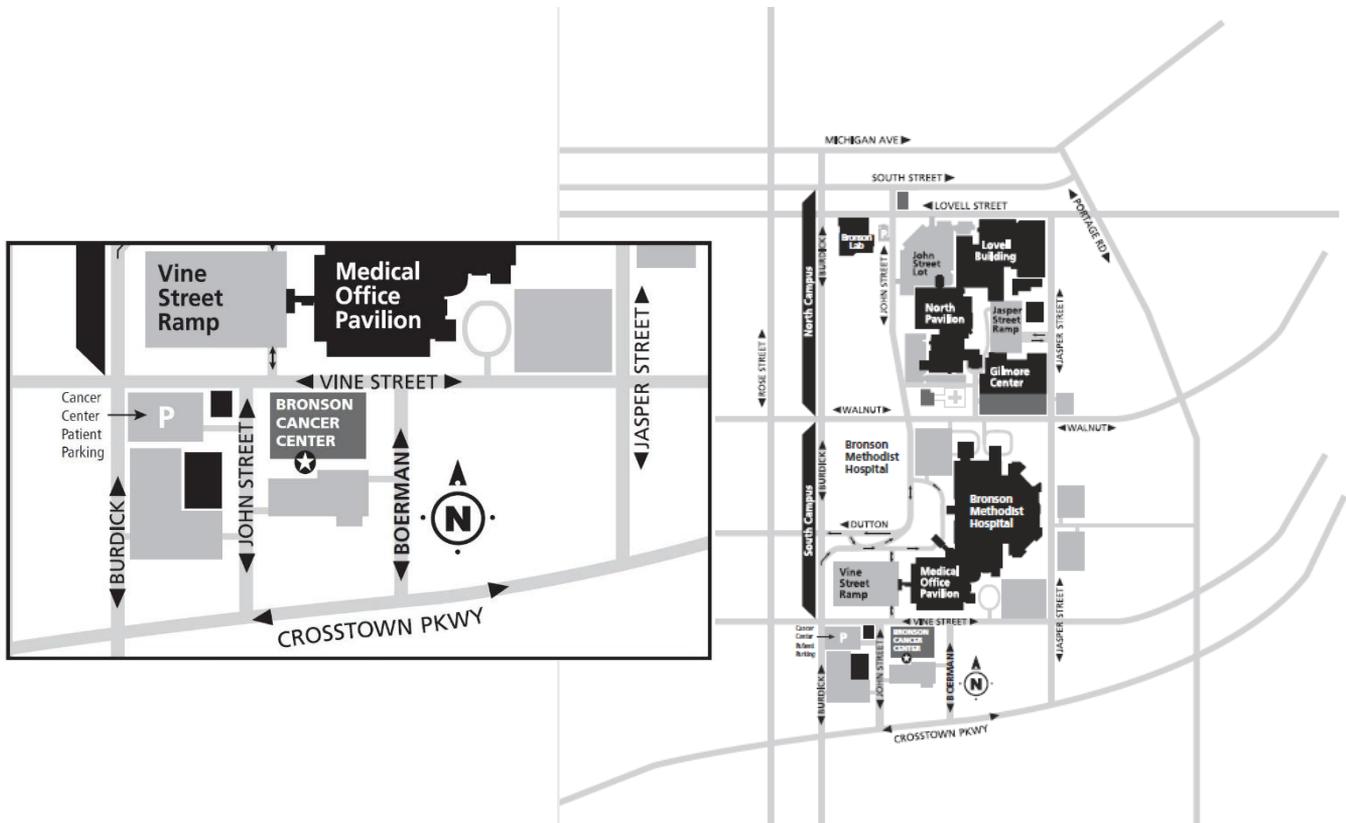
Medical Oncology 269-245-8660

Radiation Oncology 269-245-8056



# Bronson Cancer Center – Kalamazoo

805 John St., Kalamazoo, MI 49001      269-286-7170



# Table of Contents

Contact Information .....	6
Clinical Trials .....	8
Patient Care Services .....	9
Billing Information.....	9
Quality Care .....	10
Questions and Answers About Immunotherapy.....	10
Questions and Answers About Chemotherapy .....	11
How is Chemotherapy Used?.....	11
Why Side Effects Occur? .....	12
Blood Counts .....	13
What is neutropenia? .....	13
What is anemia?.....	16
What is Thrombocytopenia? .....	17
Scheduling of Transfusions .....	18
Nutrition.....	19
Getting Started.....	19
Nausea and Vomiting .....	23
Sore Mouth.....	26
Trouble Swallowing (Dysphagia) .....	29
Appetite and Weight Loss.....	30
Taste Changes .....	32
Skin Care and Eye Care.....	33
Nail Care .....	34
Eye Changes .....	35
Hair Loss .....	38
Constipation.....	40
Medicines .....	41
Diarrhea .....	42
Body Fluids – This applies to both oral & IV cancer medicine .....	45
Fatigue .....	45
Pain .....	47
Nerve Changes - Neuropathy .....	48
Urinary, Kidney and Bladder Changes .....	49

Sexual Health Information .....	50
Men and Sexuality .....	50
Women and Sexuality .....	51
Hot Flash Symptom Management .....	52
Fertility .....	54
Memory Changes or Chemo Brain .....	55
Safe Handling of Oral Cancer Medicines .....	57
Patient Education for Portacath or Port .....	59
Immunizations .....	62
Benefits of Physical Activity .....	64
Words to Know .....	67
Resources and the Internet .....	70

## Contact Information

### Regular Business Hours

The Bronson Cancer Centers in Battle Creek and Kalamazoo are open Monday through Friday, 8:00 am to 5:00 pm. You can call:

- Bronson Cancer Center - Battle Creek 269-245-8660
- Bronson Cancer Center – Kalamazoo 269-286-7170

### After Hours

Our answering service takes calls after hours and on weekends and holidays. Call us at:

- Bronson Cancer Center - Battle Creek 269-245-8660
- Bronson Cancer Center – Kalamazoo 269-286-7170

Tell the answering service your doctor's name and the reason for your call. The on-call doctor will then return your call as soon as possible.

### In Case of Emergency

In a life-threatening emergency, please call 911 or report to the nearest hospital emergency room.

### In Case of Severe Weather

In case of severe weather (snow, a tornado, etc.), listen to local news and radio stations for information about closings. We will also post information on our website at [www.bronsonhealth.com](http://www.bronsonhealth.com). We will attempt to call you and let you know if the Cancer Center is closed. You may also call:

- Bronson Cancer Center - Battle Creek 269-245-8660
- Bronson Cancer Center – Kalamazoo 269-286-7170

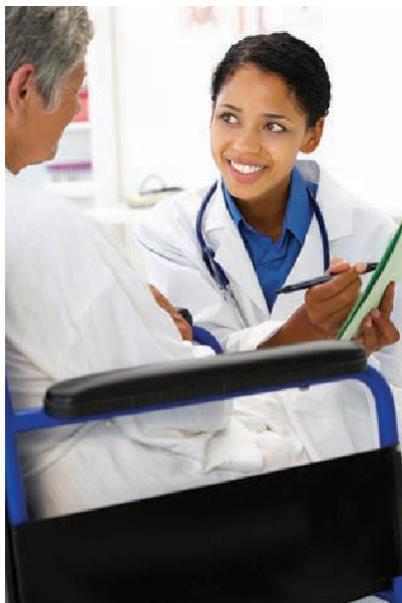
### When to Call Your Doctor

Call as early as possible in the morning so that we will have more resources to assist you. You may need to go to the emergency room if you call later in the day (after 4:00 pm).



**Please call us if you have any of the following:**

- Temperature 100.4°F or higher (you need your own thermometer).
- Chills with or without a temperature.
- Nausea and /or vomiting that cannot be controlled in 24 hours.
- Diarrhea that cannot be controlled in 24 hours using Imodium® AD, Kaopectate, or other over the counter products (or consult with your doctor).
- Constipation (no bowel movement in 2-3 days) or if you have severe abdominal pain.
- Unusual cough, shortness of breath or lung congestion.
- Any bleeding or excessive bruising.
- Pain or burning with urination.
- Mouth sores or sore throat.
- Sinus pressure, pain or congestion.
- If you have skin changes like a rash or a current rash worsens.
- Pain not controlled by current medicines.
- Any new or unusual symptom(s) that concerns you.
- Unsteady, dizzy or light-headed.



**Prescriptions**

- Please request all prescription refills at your office visit.
- When calling for prescription refills, we need 24-48 hours to refill prescriptions. So please call when you have about 7 days of medicine left.
- Call your pharmacy in 48-72 hours to see if your prescription has been filled.
- If you have not been seen recently, you may need an appointment to see your doctor before we can refill your prescription.
- If another doctor from a different office ordered the medicine before, you will need to call that doctor's office for a refill.
- Some pain and anxiety medicines are controlled substances. They are watched to make sure they are not over used. By Federal law, these medicines cannot be called in or mailed. You may be asked by your doctor to sign a controlled substance agreement.

## **Clinical Trials**

Clinical trials are research studies in which people volunteer to test new treatments or devices. Doctors use clinical trials to learn whether a new treatment works and is safe for people. Clinical trials are needed to determine the best way to treat serious diseases such as cancer.

### **Why Should You Participate in a Clinical Trial?**

Participating in a clinical trial can provide you access to new drugs before they are available to the general public. Participation may also contribute to providing improved treatment options for future patients. A clinical trial can be an important part of your treatment. While there is always a chance that a new treatment will prove to be less effective than hoped, there is also reason to believe that it will be as good as, or better than, current treatments.

### **What Kinds of Trials are Available?**

Treatment trials may involve a new cancer drug, new combinations of treatments, new approaches to surgery or radiation therapy, or new methods such as gene therapy.

Symptom management trials, also called Quality of Life, explore ways to improve comfort and quality of life for cancer patients.

### **How to Participate**

Ask your doctor if you may be able to be a part of a clinical trial managed by our experienced Clinical Research Trial Team.

## Patient Care Services

Bronson Cancer Centers provide teams to support you and your loved ones through this difficult time.

- **Social Work Services:** can help you to find resources to support your social, financial and emotional needs while you are getting care.

**Wellness Programming:** provides a variety of wellness programming for patients and caregivers. Updated program materials are located in the exam rooms, and on our website at [www.bronsonhealth.com/Cancer](http://www.bronsonhealth.com/Cancer).

- **Spiritual Care:** can assist with coordinating spiritual care to meet your needs.
- **Volunteer Services:** Our volunteers are screened, trained, and monitored facilitating a variety of services for patients and caregivers.
- **Registered Dietitians (RD):** You have access to a registered dietitian. A registered dietitian has special training in food, nutrition, biochemistry, and physiology. Ask your doctor for a referral.
- **Survivorship:** At the end of your treatment, you can meet with someone to help you with your transition after treatment. They will help you to adjust to life after cancer treatment.
- **Nurse Navigators:** A team of nurses who will help guide you through the process of cancer care.
- **Genetic Counselors:** A team of counselors who can help you understand the role genetics play in the risk of developing cancer.
- **Advanced Illness Management:** The palliative care clinic at Bronson Cancer Centers focuses on improving the quality of life for our cancer patients and their caregivers. The staff help patients and families manage their symptoms and provide psychological and emotional support. They can assist with decision-making and help with coordinating the care from your doctors and community resources.



## Billing Information

Bronson Cancer Centers are dedicated to the well-being of all of our patients. You are worried about your health. With any health problem also comes the stress of dealing with rising medical bills and confusing insurance matters. Financial navigators are compassionate and caring financial counselors who are on-site to assist you with any insurance, billing or financial concerns.

Contact a financial counselor at:

- Battle Creek 269-245-5229
- Kalamazoo 269-286-7170

## Quality Care

We are committed to making your experience at Bronson as positive as possible. If you have concern about your care or service that you cannot resolve with your care team, or if you have suggestions for improved services, please call Patient Relations at (269) 341-8959.

## Questions and Answers about Immunotherapy



### **What is Immunotherapy? Also Known as Biotherapy or Targeted Therapy**

Immunotherapy is a treatment that uses the body's own natural defenses to attack cancer cells.

### **How Does Immunotherapy Work?**

Immunotherapy drugs work with your immune system to find and attack cancer cells. These medicines can also restore and improve your immune system.

### **What Does Immunotherapy Do?**

The goal of immunotherapy is to slow down the growth and spread of cancer cells.

### **Why Side Effects Occur?**

Side effects can occur from an overactive immune system. The drug turns on your body's immune system to work harder. Therefore, the immune system can attack healthy cells as well, which can cause the side effects.

It is important to be aware of the possible side effects and call your doctor or nurse at the first sign of a problem. Even if you don't think it's serious or are unsure if it's related to the immunotherapy.

If you receive medical care at an emergency room or other place not familiar with your cancer treatment, be sure to tell the health care team there that you are receiving immunotherapy. If possible, provide the name of the specific drug(s). Keep this information written on a paper and stored in your wallet. It can be helpful in case you need it quickly. Talk with your cancer care team about which details of your treatment you should carry with you.

Getting care for side effects after immunotherapy treatment ends is important. Many side effects will go away when treatment ends, but some effects can last after the treatment period and other effects may occur months or years later. Your doctor or nurse can help you manage long-term side effects.

## Questions and Answers about Chemotherapy

### What is Chemotherapy?

Chemotherapy (also called chemo) is a type of cancer treatment that uses drugs to destroy cancer cells.

### How Does Chemotherapy Work?

Chemotherapy works by stopping or slowing the growth of cancer cells, which grow and divide quickly. But it can also harm healthy cells that divide quickly, such as those that line your mouth and intestines or allow your hair to grow. Damage to healthy cells may cause side effects. Often, side effects get better or go away after chemotherapy is over.

### What Does Chemotherapy Do?

Depending on your type of cancer and how advanced it is, chemotherapy can:

- **Cure cancer** - when chemotherapy destroys cancer cells to the point that your doctor can no longer detect them in your body and they will not grow back. The chemotherapy treatment is an attempt to cure but is not a guarantee.
- **Ease cancer symptoms** (also called palliative treatment) - when chemotherapy keeps cancer from spreading, slows its growth, shrinks or destroys cancer cells that have spread to other parts of your body. Chemotherapy may be used to shrink a tumor that is causing pain or pressure.

### How is Chemotherapy Used?

Sometimes, chemotherapy is used as the only cancer treatment. But more often, you will get chemotherapy along with surgery, radiation therapy or biological therapy.

Chemotherapy can:

- Make a tumor smaller before surgery or radiation therapy. This is called neoadjuvant chemotherapy.
- Destroy cancer cells that may remain after surgery or radiation therapy. This is called adjuvant chemotherapy.
- Help radiation therapy and biological therapy work better.
- Destroy cancer cells that have come back (recurrent cancer) or spread to other parts of your body (metastatic cancer).

## **Why Side Effects Occur?**

Short-term side effects occur because many chemotherapy drugs act on normal cells as well as cancer cells. Fast-growing cells are the most affected. This includes cells that grow hair, skin, the digestive tract and blood. Chemotherapy can also affect certain other cells, such as those in the nervous system and organs (such as heart, kidneys, liver and lungs). They may also impact fertility. Some chemotherapy drugs may have long-term effects. For example, another cancer could occur at a later time as a result of taking chemotherapy. If you have any questions regarding this matter, please ask your doctor or nurse.

## **The Treatment Cycle**

Chemotherapy is given in cycles. First, you have a treatment. Then time is set aside for the body to build healthy cells before the next treatment. During this resting time, the body goes through different phases as it mends. One phase is the “nadir period.” During the nadir period, certain blood cells decrease in number. Your doctor or nurse will help you learn what to expect during this phase of your cycle. These treatment and rest periods will repeat through your chemotherapy or immunotherapy.

## **Risks and Complications**

There are some risks with chemotherapy. The benefits usually outweigh the risks. The following are possible long-term side effects of chemotherapy:

- Organ damage (such as to the heart, kidneys, liver or lungs)
- Lasting nerve damage
- Another cancer, which may occur at a later time
- Infertility

## Blood Counts

What is a CBC? It is a lab test called a complete blood count. What are you looking for when drawing my CBC?



- White Blood Cell (WBC): helps fight infection.
- Neutrophils: the “soldiers” that fight infections. They eat or gobble up the bacteria in your body.
- Absolute Neutrophil Count (ANC): measure of the number of infection-fighting white blood cells in your blood. An ANC above 1,000 is wanted to help you fight infection.
- Red Blood Cell (RBC): carry oxygen to and remove waste products from the body’s tissue. These cells also contain hemoglobin.
- Hemoglobin (HGB): gives red blood cells their color. Hemoglobin carries oxygen from the lungs to the tissues.
- Hematocrit (HCT): the percentage of red blood cells in relation to your total blood volume.
- Platelets: help to stop bleeding by clotting the blood.

## What is neutropenia?

Neutropenia is when your ANC is less than 1,000. You are at greater risk to get an infection. If your ANC is at this level, you need to be careful to avoid infection. If you do get an infection, tell your doctor or nurse right away.

If your ANC is less than 500 you are severely neutropenic. This puts you at the greatest risk for infection. Sometimes the normal bacteria in your body can cause an infection. Do not take any medicine to reduce a fever without checking with your doctor. This may hide the infection and it can get worse. Signs and symptoms of infection that you should be looking for:

- Fever (100.4° or higher)
- Shaking chills (even if no fever)
- Flushed skin, sweating
- Frequent urination or burning when urinating, cloudy or bloody urine.
- Redness, tenderness, swelling, drainage, odor or pain anywhere on the body.
- General feeling of tiredness or flu-like symptoms (sore throat, sneezing, runny nose, coughing, nausea or vomiting, diarrhea, shortness of breath, chest discomfort, sores in your mouth).

## What should I do if I have one or more of these symptoms?

You must contact your doctor right away.

## How can I help prevent infections?

- Washing your hands often is very important. Make sure to wash your hands before eating, and after using the toilet, blowing your nose, coughing, or sneezing. You may also use hand sanitizer or wipes.
- Check your temperature once a day when you are neutropenic and call your doctor right away if your temperature is 100.4° or higher.
- Check for signs of infection such as the site of a central venous catheter or port, any tube or catheter site. Also check the mouth, groin and private areas for redness, warmth or open sores.
- Avoid having contact with crowds and people with illness or infection.
- Maintain good oral hygiene.
- Rinse teeth and gums with plain water after meals and at bedtime.
- Use a soft toothbrush. Floss only if ANC is greater than 500 and platelet count is greater than 50,000.
- Wear well-fitting dentures.
- Have dental work done only if you first consult your doctor.
- Use lubricant (such as A+D<sup>®</sup> Ointment or Vaseline<sup>®</sup>) on lips to prevent chapping.
- Be careful cleaning bird cages, cat litter boxes, pet excrement, and fish tanks. Wash or sanitize your hands after cleaning up after your pets.
- Be careful if you have manicures, pedicures or false nails applied. Make sure that supplies are clean. Watch for any signs of infection.
- Be careful in public hot tubs, Jacuzzis and swimming pools.
- If you cut or scrape your skin, clean the area right away with soap and warm water, and then apply a bandage.
- Keep hot foods hot and cold foods cold.
- Wash raw vegetables and fruits well before eating them.
- Do not eat raw or undercooked seafood, meat, poultry or eggs.
- Do not consume food or drinks that are moldy, spoiled, or past the freshness date.
- Do not drink unpasteurized milk or juice.



- Use clean kitchen utensils and cutting boards. Use separate cutting boards for meat, poultry and fish.
- Avoid using enemas, rectal thermometers, and suppositories. Women should not douche or use tampons or vaginal suppositories.
- To promote hygiene during sexual activity, avoid excess friction during intercourse by using a water-based lubricant. Avoid rectal intercourse. Use a birth control method recommended by your nurse or doctor.

### **Is there a treatment for neutropenia?**

- You may receive an injection after chemotherapy to help your body make more white blood cells and neutrophils.

**Note:** The most common side effect of this treatment is achiness in the bones or muscles. A small percentage of patients may have achiness from mild to severe. If you have this side effect, it can usually be relieved with a non-aspirin pain reliever, such as acetaminophen. Please let your nurse or doctor know if you are having severe achiness that is not relieved by pain medicine.

- You may be directed to take Loratadine to reduce your achiness.
- You may be given antibiotics if you develop an infection.

**What is anemia?**

Anemia is when you do not have enough red blood cells to carry the oxygen your body needs. Your hemoglobin and hematocrit levels will be below normal.

**What are the signs and symptoms of anemia I should be looking for?**

- Feeling weak or tired
- Dizziness
- Shortness of breath
- Heart palpitations (racing heartbeat)
- Pounding in your head
- Ringing in your ears

**What should I do if I have one or more of these symptoms?**

You must contact your doctor right away.

**How can I help lessen or prevent some of the symptoms?**

- Rest often during the day by taking short naps (1 hour or less)
- Sleep enough at night (at least 8 hours)
- Rest between activities
- Eat a balanced diet
- Get up slowly from a sitting or reclining position, this will lessen the dizziness
- Accept help from others

**Is there a treatment for anemia?**

- You may need blood transfusions if your hemoglobin or hematocrit are too low and your symptoms are severe.
- You may receive an injection on a regular schedule to help your body make red blood cells.

## What is Thrombocytopenia?

Thrombocytopenia is when you do not have enough platelets. Platelets are cells that make your blood clot when you bleed. Chemotherapy can lower the number of platelets because it affects your bone marrow's ability to make them.

## What are the signs/symptoms of thrombocytopenia?

- Bruising easily
- Tiny, pinpoint-sized red or purple spots on your skin (petechiae)
- Nose bleeds
- Bleeding gums
- Prolonged bleeding from a cut
- Black or bloody stool
- Brown or red urine
- Increased vaginal bleeding
- Headaches or vision changes

## How can I help lessen or prevent some of the symptoms?



- Avoid over-the-counter aspirin, aspirin containing medicine or NSAIDs (i.e. ibuprofen, naproxen). These medicines prevent platelets from working as they should.
- Use a soft toothbrush. If your gums bleed during brushing, talk to your nurse about other options. Do not floss if platelets are less than 50,000.
- Use an electric shaver rather than a razor.
- When you blow your nose, do it gently.
- If you do start bleeding, apply gentle but firm pressure until the bleeding stops.
- Avoid using enemas, rectal thermometers, and suppositories. Women should not douche or use vaginal tampons or vaginal suppositories.
- Avoid constipation or straining during a bowel movement.
- Avoid wearing tight-fitting clothing including shirts with elastic bands at the waist or on the arms.
- Wear shoes or slippers on your feet whenever walking.
- Avoid cutting with sharp knives or working with sharp blades.
- Avoid contact sports such as football and hockey.
- Speak with your doctor about sexual intercourse. If your platelet count is too low, you should not have sexual intercourse. If you have sexual intercourse, use water-based lubricants as needed.

### **When should I call my nurse or doctor?**

- If you have bleeding from a procedure or incision site, or blood in your urine or stool, or uncontrolled nosebleed or bleeding gums.
- If you have headaches, extreme drowsiness (unrelated to medicine), confusion, or falls.
- If you notice new petechiae or bruises.

### **Is there a treatment for thrombocytopenia?**

- You may need platelet transfusions if your platelet count is too low or your symptoms are severe.

### **Scheduling of Transfusions**

If your doctor decides you need a blood or platelet transfusion, your nurse will set up an appointment.



## Nutrition

Nutrition is an important part of your treatment plan for cancer. It is important to eat well during your cancer treatment. Eating well helps you:

- feel better.
- keep up your strength and energy.
- keep up your weight.
- keep up your body's store of nutrients.
- tolerate treatment-related side effects.
- lower your risk of infection.
- heal and recover faster.

Cancer and cancer treatments can affect the way you eat and the way your body uses nutrients.

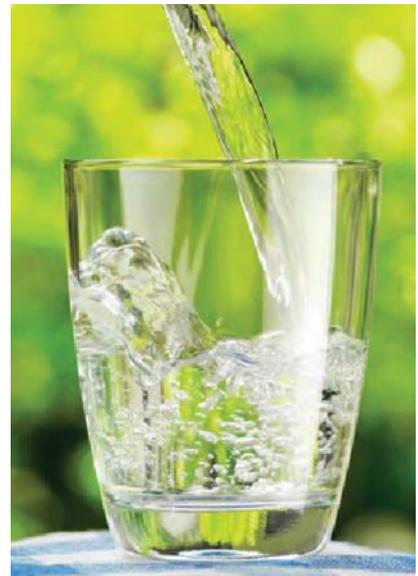
Side effects from treatment are possible but do not happen to everyone. It is important to be aware of side effects of treatment, how they affect your nutrition, and know how to manage them. This section provides you with information on maintaining good nutrition during your cancer treatment.

Dietitians are available if you would like help with your nutrition.

### Getting Started

It is important to eat a wide variety of foods so your body gets the nutrients it needs to support itself while fighting cancer. The nutrients your body needs are protein, carbohydrates, fat, water, vitamins and minerals.

- Protein is a source of calories for your body. Protein helps your tissues rebuild and repair and keeps your immune system working. Protein is found in meat, fish, poultry, eggs, dairy, nuts, seeds, beans, peas, lentils, tofu, tempeh and soy beans.
- Carbohydrates are a source of calories for your body. Carbohydrates give your body energy and help your organs work properly. Carbohydrates are found in milk, yogurt, starches, starchy vegetables, and fruit.
- Fat is a source of calories for your body. Fat insulates body tissues, helps your body absorb certain nutrients, and helps with the flavor of food. Fats are found in vegetable oils, butter, nuts and seeds, avocado, cream cheese and sour cream.



- Water and fluids prevent dehydration. Aim to drink eight, 8-ounce glasses of fluid per day. This can be anything that becomes liquid at room temperature. Some examples are water, juice, sports drinks, gelatin, popsicles and ice chips.
- Vitamins and minerals help the body grow and stay strong and help your body break down food for energy. The best way to make sure you are getting enough vitamins and minerals is to eat a wide variety of foods choosing from each food group. If you are not eating a balanced diet while you go through treatment, ask your doctor or dietitian if you should take a multivitamin. Always discuss vitamin, mineral, and herbal supplements with your healthcare team. Many supplements interfere with cancer treatment.

### **Tips for Eating During Treatment**

- Ask a family member or friend to help with making meals.
- Keep easy to prepare foods on hand for quick snacks during the day.
- Make meals ahead of time and freeze them to have on days when you are more tired.
- Try new foods. Taste changes during treatment might make some of your favorite foods taste different. Don't be afraid to try something you don't normally like since it might taste good to you now.
- Eat small meals and snacks often during the day.
- If you take any vitamin, mineral or herbal supplements, check with your healthcare team to make sure they are safe to take during treatment.

### **Feeding Tube**

Sometimes during treatment, it is not possible to eat or drink enough by mouth. When this happens, people get nutrition through a feeding tube. If you need a feeding tube, your healthcare team will set you up with the information and supplies you need.

<b>Meal Planning Tips to Increase Calories</b>	
<b>HIGH CALORIE ADDITION</b>	<b>WHERE TO ADD IT</b>
Avocado (healthy fat)	Sandwiches, salads, smoothies Make guacamole and use as dip
Beans and legumes (protein boost, added fiber)	To soups and puree for a smooth consistency To salads, casseroles, pasta and rice dishes
Butter or margarine (high fat)	To potatoes, vegetables, hot cereal, soups, bread, rice, eggs Melt and drizzle on popcorn Combine with seasoning and use on meats, hamburgers, or fish
Olive oil, canola oil (healthy fat)	Use it to stir fry, or drizzle over rice or pasta Add a tablespoon to tomato sauce
Cheese (protein boost, high fat)	Sprinkle on casseroles, soups, salads, omelets, and vegetables Add a slice on your sandwich or crackers
Coffee creamer (high fat)	To milkshakes or hot cereals
Commercial nutrition supplements (protein boost, added calories)	Use instant breakfast powder in milk drinks and desserts Mix with ice cream, milk, fruit and peanut butter for a high protein milkshake
Cottage cheese or ricotta cheese (protein boost, high fat)	To casseroles, spaghetti, noodles, and egg dishes To pancake or waffle batter
Cream cheese (high fat)	Spread on bagels and crackers or serve with fruit Roll into balls and coat with nuts, wheat germ and/or granola
Dried fruit (added calories, fiber boost)	To muffins, cookies, bread, or hot or cold cereal Use as part of trail mix
Eggs, any style (protein boost)	To hard-cooked eggs to salads or casseroles Use deviled egg filling for a sandwich spread
Fresh fruit or canned fruit (added calories, fiber boost)	To milkshakes and ice cream Use as a topping for puddings and custards Blend with a commercial nutrition supplement

<b>Meal Planning Tips to Increase Calories Continued</b>	
<b>HIGH CALORIE ADDITION</b>	<b>WHERE TO ADD IT</b>
Greek yogurt (protein boost)	Eat with fruit and granola, or use as a dip for fruit
Granola (added calories)	Use in cookie, muffin or bread batter Sprinkle on yogurt, ice cream, custard, or fruit Layer with fruit and bake To hot or cold cereals
Honey, jam, brown sugar (added calories)	To hot or cold cereal Use to sweeten coffee or tea To bread, crackers, cereal, milk drinks, and desserts
Ice cream (high fat)	Blend with milk and fruit Blend with a commercial nutrition supplement To a carbonated beverage
Milk or cream (high fat, protein boost)	Use in soups, sauces, egg dishes, batters, puddings and custards Mix with noodles, pasta, rice and mashed potatoes
Nuts and seeds (healthy fat, protein boost)	To cereal, casseroles, and salads; or make trail mix
Peanut butter (healthy fat, protein boost)	Spread on bagels, bread, cracker, fruit To smoothies, or eat by the spoonful
Powdered milk (protein boost)	To regular milk and other milk drinks Use in casseroles, meatloaf, batters, sauces, casseroles, omelets, mashed potatoes, puddings, and milk-based
Sour cream (high fat)	To cream soups, baked potatoes, macaroni and cheese, vegetables, stews and chili Mix with different seasonings and use as a dip for vegetables
Sweetened condensed milk (added calories)	To pies, puddings, milkshakes Mix 1-2 tablespoons with peanut butter and spread on toast

## **Nausea and Vomiting**

### **Nausea**

Nausea is a common side effect that can happen with chemotherapy treatment. Nausea is the feeling or urge to vomit (throw up). This can happen at different times after treatment. Anti-nausea medicines are often given at the Cancer Center along with your chemotherapy.

Mild nausea can be treated with medicines (antiemetic) that your doctor will prescribe to you before you start treatment. These can be taken at home to help control nausea. There are many different types of these medicines. It is important to let your nurse or doctor know if the medicine is not working for you.

### **Helpful Tips for Nausea:**

- Try eating bland, soft, or dry foods such as crackers or toast.
- Avoid strong odors including perfumes, foods, cleaning supplies.
- Avoid spicy, greasy or very sweet foods.
- Eat slower.
- Try eating 5 or 6 small meals and snacks, instead of 3 large meals.
- Avoid drinking large amounts with meals.
- Try not to eat your “favorite food” when you are nauseated. This could cause you to permanently dislike the food.
- Eat a light meal before your treatment.
- Have someone else make your food for you.
- Rest after meals. This allows time for digestion.
- Do not lie down flat for one hour after a meal or snack.
- Using distraction or relaxation has also been known to help.
- Try ginger or peppermint, tea and candies.
- Inhale ginger or peppermint essential oils using a diffuser.
- Take the anti-nausea medicine your doctor prescribed to you.

## **Vomiting**

The best way to avoid vomiting is by controlling nausea. If you do vomit, it is important to keep your body from becoming dehydrated.

- Do not eat or drink until you have vomiting under control.
- Once your vomiting is controlled, try drinking clear liquids, such as water, sports drink or broth.
- Begin with one teaspoon every 10 minutes, increase amount to one tablespoon every 20 minutes and finally try 2 tablespoons every 30 minutes.
- If you feel like you can eat food; begin with bland, low fat foods like crackers or toast.

When you vomit, you lose electrolytes, such as potassium and sodium. If you continue to vomit and do not replace these lost electrolytes, it becomes difficult for your body to function properly. Here are some suggestions of foods and drinks that are rich in electrolytes:

- Bananas
- Sports drinks
- Boiled or mashed potatoes
- Peaches or peach nectar
- Fat-free broth or bouillon
- Pedialyte<sup>®</sup> drink or popsicles
- Juice

### **Call Your Doctor or Nurse:**

- If you vomit more than 3 times in a day.
- If you are taking anti-nausea medicine and you are still nauseated or vomiting.
- If you are very weak or dizzy.
- If what you vomit looks like coffee grounds or is bloody.
- If you are losing weight from vomiting.
- If you have no appetite or are unable to eat or drink for 24 hours.

## **Clear Liquids**

This list may help if you have vomiting, diarrhea, urinary, kidney, or bladder changes.

- Soups:
  - Bouillon
  - Clear, fat-free broth
  - Consommé
- Drinks:
  - Clear apple juice
  - Fruit-flavored drinks
  - Fruit punch
  - Clear carbonated beverages
  - Fruit juice, such as cranberry or grape
  - Weak tea with no caffeine
  - Water
  - Sports drinks
- Sweets:
  - Honey
  - Jelly
  - Fruit ices made without fruit pieces or milk
  - Gelatin
  - Popsicles

## Sore Mouth

Chemotherapy drugs destroy the normal cells of your body, especially those normal cells that are produced at a rapid rate. For example, the cells lining your mouth and throat can be affected. Because of this, some anti-cancer drugs can cause sores in the mouth and throat. This is a condition called “stomatitis.” Treatment can also affect your gums and cause mouth tissues to become dry and irritated. This is temporary. Ask your doctor or nurse if there are medicines or supplements you can take to help manage the pain and speed up the healing process.

Stomatitis can often be prevented or lessened by using the following:

Mix 1/8 teaspoon salt and 1/4 teaspoon baking soda in 2 cups of warm water. Use a mouthful of this rinse four times per day especially after you eat. Do not swallow, just swish, gargle and spit. You may rinse with fresh water afterwards.

### Tips for Ways to Prevent and Manage Mouth Sores

- Clean your mouth and teeth gently with a soft toothbrush.
- Clean dentures and/or bridge after eating. Leave dentures out if experiencing any discomfort.
- Maintain good nutrition, including high protein and high calorie foods.
- Eat lukewarm or cold foods. When food is very hot it can be irritating.
- Try drinking through a straw.
- Drink large amounts of water or non-acidic juices (for example, apple or grape juice).
- Keep your mouth clean and brush your teeth or rinse mouth after eating.
- Apply lip moisturizer often.
- Eat soft or liquid foods.
- Blend or moisten foods that are dry or solid.

### Avoid

- Spicy, acidic, salty, crunchy, crusty or chewy foods.
- Alcohol, tobacco, carbonated beverages, and caffeine products.
- Mouthwash that contains alcohol.
- Spices that are irritating such as chili powder, cloves, curry, hot sauces, nutmeg, salsa, horseradish and pepper. Instead, choose things like basil, oregano, and thyme.

### **The Following Foods and Drinks May Be Easier to Eat**

- Applesauce
- Casseroles
- Cheeses
- Cooked cereal (like Cream of Wheat or oatmeal)
- Cottage cheese
- Custards and puddings
- Egg salad
- Eggs
- Gelatin
- Gravies
- Ice cream and milkshakes
- Liquid nutrition supplements (Boost<sup>®</sup>, Ensure<sup>®</sup>, etc.)
- Lukewarm soup (choose creamy soup for added calories)
- Mashed potatoes
- Pancakes
- Soft fruits (not acidic, like peaches, pears, bananas)
- Tuna or chicken salad
- Yogurt



### **Mouth Sores May Include**

- A burning feeling in the mouth.
- A red, shiny, sore lining on your mouth, gums, lips or throat.
- A swollen, inflamed tongue.
- White or yellow patches in the mouth.
- Sores in mouth or on lips.
- Pain or any sign of infection (i.e. tongue heavily coated).
- Difficulty eating, drinking and swallowing.
- Feelings of dryness, mild burning or pain, sensitivity to hot or cold foods.

Treatment is based on the extent of the mouth sores.

**Call Your Doctor if:**

- Rinsing with a solution of salt, baking soda and warm water does not start to heal the sores.
- Mouth sores are painful.
- You have a temperature of 100.4°F or higher.
- You have any of the following, which could indicate an infection:
  - Soft, white patches
  - Dry, brownish-yellow areas
  - Moist, creamy white areas
  - Painless, dry, yellow ulcers
  - Open areas on the lips or mouth

## **Trouble Swallowing (Dysphagia)**

Some types of cancer or treatment for cancer can cause swallowing problems. If you have trouble swallowing, treatment can sometimes make this worse. When people have trouble drinking or eating, they might avoid doing so. This can lead to weight loss and even dehydration. Make sure you tell your doctor, nurse or dietitian if you are having a hard time swallowing. Ask your doctor for medicine if you have pain when swallowing.

If you are coughing, gagging or choking when eating or drinking, always inform your doctor, nurse or dietitian. When food goes down the “wrong pipe” it is called aspiration. This can cause pneumonia. If this occurs, you will be referred to a speech therapist who will evaluate if it is safe for you to swallow. The speech therapist will determine the safest way for you to get nutrition.

### **Tips When it is Hard to Swallow**

- If you have seen a speech therapist, always follow their instructions for eating.
- Always sit up as straight as possible with your shoulders level while eating.
- If food gets stuck, for even a short time, stand up, stretch the top half of your body and walk around. It may help the food slip down into your stomach. Never lie down.
- If you have false teeth, make sure they are fitting properly.
- Stop eating three hours before you go to bed. If food gets stuck in your esophagus overnight, it can be very uncomfortable and sometimes painful.
- Cut up your food into small pieces. Take small bites and chew well before swallowing.
- Take sips of water with each bite of food.
- Make sure you have plenty of time to eat and you are not rushed.
- Moisten food well with sauces, gravies and syrups.
- Blend, chop or puree food in a food processor or blender.

## **Appetite and Weight Loss**

You may find it difficult to eat during treatment for a number of reasons. The side effects of treatment, fatigue or depression can cause a loss of appetite.

Although your appetite may not be normal, it is important to eat enough calories and protein to prevent weight loss during treatment. This is true even if you have been told to lose weight in the past. The weight lost during treatment is usually muscle mass instead of fat mass. Losing muscle mass during cancer treatment can affect your body's ability to tolerate the treatments, decrease your energy level and strength, and weaken your body's immune system. If you lose your appetite, it is important to think of nutrition as part of your treatment plan rather than simply eating for pleasure.



### **Tips for Eating with a Poor Appetite**

- Eat more on days when you feel well.
- Choose your favorite foods that are easy to prepare and serve.
- Eat five or six small meals per day.
- Set an alarm to go off every 1-2 hours as a reminder to eat.
- Eat when you are relaxed and in a pleasant environment.
- Ask your doctor, nurse or dietitian if liquid nutrition supplements (Boost<sup>®</sup>, Ensure<sup>®</sup>) would be helpful to you.
- Try mild to moderate exercise as you are able to stimulate your appetite.
- Make high calorie additions to your meals and snacks (see specific suggestions at the end of this section).
- Make beverages count (choose milk, juice, and shakes to have with meals).

## Foods & drinks that are high in calories or protein

This list may help if you do not feel like eating.

TYPE	EXAMPLES
Soups	Cream soups Soups with lentils, dried peas, or beans (such as pinto, black, red, or kidney)
Drinks	Instant breakfast drinks Milkshakes Smoothies Whole milk
Main meals and other foods	Beef Butter, margarine, or oil added to your food Cheese Chicken Cooked dried peas and beans (such as pinto, black, red, or kidney) Cottage cheese Cream cheese Croissants Deviled ham Eggs Fish Nuts, seeds, and wheat germ Peanut butter Sour cream
Sweets	Custards (soft or baked) Frozen yogurt Ice cream Muffins Pudding Yogurt (plain or vanilla)
Replacements and supplements	Instant breakfast drinks Liquid meal replacements

## Taste Changes

Different types of cancer treatments can affect the way foods taste or smell. Fortunately, these changes usually go away once treatment is over. In the meantime, it is important to find ways to make food taste better.

### Tips for Coping with Taste Changes



- Try using plastic flatware, glass cups and plates if you have a bitter or metallic taste while eating.
- Try sugar-free lemon drops, gum, or mints.
- Avoid canned foods; choose fresh or frozen instead.
- If you don't have a sore mouth or throat, try seasoning foods with tart flavors like lemon wedges, vinegars, citrus fruits, or pickled foods.
- Experiment with new seasoning such as onion, garlic, chili powder, basil, oregano, rosemary, tarragon, barbecue sauce, mustard, ketchup, or mint.
- Have a variety of foods available. It is common for foods to taste different from day to day, sometimes even hour to hour.
- Remember the FASS principle.
  - **F**at: acts as a vehicle to move flavors around your mouth. Add fat to food to enhance the flavor.
  - **A**cid: add acidic ingredients if things taste sweet.
  - **S**alt: add salt if things taste sweet.
  - **S**weet: add sweeteners if things taste bitter or salty.
- Keep your mouth clean.
- Try foods at different temperatures.
- Dry mouth can affect the way foods taste. Sip fluids often throughout the day.
- Try marinating meats to make them tender and to reduce the metallic taste.
- Sometimes red meat tastes strange. Don't forget that chicken, fish, eggs, dairy, nuts or nut butters and legumes are good sources of protein, too.
- Make smoothies and shakes.
- If smells are bothering you, cover beverages and drink them through a straw, choose foods that don't need to be cooked and avoid eating in rooms that are stuffy or too warm.

To learn more, refer to the resources and the internet section at the back of this book.

## Skin Care and Eye Care

Some chemotherapy and immunotherapy medicines are known to have side effects that affect the skin. Your skin may become very dry. It may become red and develop “acne-like” blemishes. These are due to the direct effect of the drug on the rapidly reproducing cells that form your skin. There are several things you can do to reduce these side effects:



1. **Cleansing** – Use a “soapless” skin cleanser, especially on your face and chest. This minimizes drying of the skin. Examples: Eucerin®, Cetaphil®, Neutrogena® and Vanicream™ skin cream products. Look for products that are fragrance-free and free of dyes (if possible).
2. **Creams and ointments versus lotions** – Creams and ointments are best because these will retain most of the moisture in your skin.
3. **Moisturizing Creams** – Moisturizing creams help rehydrate the skin. Examples: Eucerin, Cetaphil®, CeraVe®, Neutrogena® Norwegian Formula Hand Cream, Aveeno®, and Bag Balm®. Vanicream is another type of cream that is good for those who have sensitive skin. Look for products that are fragrance-free and free of dyes (if possible).
4. **Sunscreen** – Sun exposure may worsen skin reactions. Use sunscreen (minimal SPF 15) liberally, cover exposed areas and wear hats to limit exposure. Sunscreens that have the ingredient listed as titanium dioxide or zinc oxide are the best in protecting the skin. Another type of sunscreen that is very good for protection is Neutrogena with Helioplex and Aveeno with Active Barrier Complex. Wearing long sleeved shirts and pants can also be helpful. Use lip balm. Avoid tanning beds.
5. **Very thick moisturizers** – are used for the cracks on heels or in the fingertips; the best way to prevent or treat these is by using a very thick moisturizer, such as Desitin® or Desitin® Maximum Strength, Udderly Smooth® Extra Cream or A&D® Ointment is also effective. These need to be applied up to four times a day and at night. Ideally one would cover with socks or cotton gloves so the water in the skin is retained and the cracks are allowed to heal.
6. **Detergents** – Use fragrance-free detergents. Ones that say “free” or “clear” on the box, or those with a mild scent are best.
7. Shave less often.

8. Take showers or baths with warm water instead of hot water.
9. Dry your skin by patting it instead of rubbing the skin.

Other treatments may be prescribed by your physician for your skin condition, if needed. Some types of chemotherapy may cause your nails to become dark, turn yellow, or become brittle and cracked. Sometimes your nails will loosen and fall off, but new nails will grow back.

## **Nail Care**

- Keep your nails clean and cut short.
- Wear gloves when you wash the dishes, work in the garden or clean the house.
- Moisturize nails.
- Avoid use of artificial nails.
- Avoid manicures and pedicures if your nails are affected by treatments.
- Avoid tight fitting shoes.
- Do not cut or push cuticle back or bite your nails.
- Use dark nail polish to help hide any discoloration, but do not change your polish frequently because nail polish removers are harsh.



## **Some Chemotherapy May Cause More Severe Skin Reactions Called Hand-Foot Syndrome or Acne-like Rash**

- Hand-Foot Syndrome: Abnormal pain, swelling, redness in hands or feet.
- Avoid injury to hands and feet.
- Avoid tight fitting shoes and repetitive rubbing.
- Avoid pressure or prolonged heat to hands and feet.
- Wear cotton or leather gloves when using your hands for sports, hobbies or working. Wear thick cotton socks for walking.
- Do not walk barefoot; use soft slippers or shoes.
- Avoid standing for long periods of time.
- Use moleskin or Molefoam<sup>®</sup> padding for your feet when areas do rub against shoes.
- Apply moisturizer creams liberally and frequently to hands and feet.
- Acne-like rash: flat or raised reddened area that looks like pimples.
- It is important to moisturize rash (See section on skin care).
- This rash is more commonly located on the scalp, head, face, chest, and back.
- Drink plenty of fluids.
- Protect your skin from the sun. When outside, always use sunscreen (SPF 15 and higher), lip balm or wear long sleeved shirt, pants, and hat with a wide brim. (See section on skin care).
- Avoid tanning beds.

**Refer to pictures 1-10  
on the next two pages**

## **Eye Changes**

Your eyes may become more sensitive to light or sun while you are receiving chemotherapy or immunotherapy.

- Wear sunglasses to protect eyes whenever you are in bright light.
- Continue regular eye exams (inform your eye doctor what type of chemotherapy or immunotherapy you are taking).
- Overgrowth of eyelashes can be a side effect with certain medicines. Let your physician know if this is a problem. It can cause eyelid irritation and lead to infection.

**Call Your Doctor or Nurse if:**

- You develop a dry, itchy, red or painful rash.
- Nails become cracked, dark, or yellow or you see pus.
- Hands or feet have abnormal pain, swelling or redness.
- You experience excessive tearing or blurred vision.
- You experience vision changes.

**Acne-like Rashes from Certain Chemotherapy or Immunotherapy Medicines**



Picture 1 - Acne-like rash affecting the face.



Picture 2 - Acne-like rash affecting the back.



Picture 3 - Acne-like rash affecting the chest.



Picture 4 - Signs of an infected rash.

## Nail and Skin Changes Related to Certain Chemotherapy Medications



Picture 5 - Discoloration, brittle fingernail



Picture 6 -Hand-Foot Syndrome



Picture 7 - Hand-Foot Syndrome



Picture 8 - Infection of the toenail



Picture 9 - Infection of the fingernail



Picture 10 - Overgrowth of eyelashes

## Hair Loss

Hair loss is a common side effect of certain chemotherapy and immunotherapy drugs. These drugs can harm the cells that make hair. The loss is usually temporary. The loss of hair may include scalp, facial (including eyebrows), armpits, pubic and body hair. Radiation therapy to the head may cause temporary or permanent hair loss. Hair regrowth depends on the total amount of radiation given to the scalp.

Hair loss often starts about 2-3 weeks after chemotherapy begins. During this time your scalp may be more sensitive. With some chemotherapy medicines the hair can become thin and dry, but does not all fall out.

Most hair loss is temporary. Your hair will start to grow back in 2-3 months after your chemotherapy has stopped. The new hair may be curlier, straighter or even a different color.

Being gentle to your hair may help make your hair loss more gradual and improve hair regrowth.

### Gentle Tips – Before Hair Falls Out and During Hair Regrowth

- Wash your hair with a mild shampoo and pat dry with a towel.
- Use a soft-bristle brush or a wide tooth comb and avoid too much brushing or pulling of hair.
- Do not use hair dryers (or keep it on cool setting and at least 4 inches from head). Do not use electric rollers, straightening or curling iron.
- Avoid clips, elastic bands, hair sprays.
- Avoid coloring or other chemicals on the hair for two months after completing chemotherapy. If you choose to color your hair, the color may be different than expected.
- Use a cream rinse to help remove tangles.
- Sleep on a satin pillow.
- Some patients may choose to cut their hair short prior to the start of treatment.



### **Tips – After the Hair Falls Out**

- Protect your head from the sun. Use sunscreen or wear a hat when outside. Note: A silk scarf does not protect your head from the sun.
- Protect your head from the cold by wearing a hat or scarf.
- Wig caps can be worn under a wig to help keep the wig in place and it is not as hot.
- Sleep on a satin pillowcase or wear a soft scarf when sleeping.
- Wash your head with sensitive skin facial soap and moisturize.
- Massage your head routinely.

Hair loss can be one of the hardest side effects because it can impact your self-image. It is natural to be anxious about the change in your appearance. If a wig is an option, consider getting one before you begin chemotherapy. This will allow you to match your original hair color and style. Caps and scarves may also be a good option for you. Hair may fall out unevenly. Some people cut their hair short or shave their head prior to the start of chemotherapy.

Ask your nurse or social worker about a list of local wig providers, including free wigs and discounted wigs.

## Constipation

A bowel movement every one to two days is ideal. Constipation occurs when bowel movements become less frequent and stools are hard, dry and difficult to pass. This is a common symptom in people undergoing chemotherapy.

Constipation can be caused by diet, medicines (such as chemotherapy or pain medicines), activity changes, electrolytes imbalances, not drinking enough fluids or even some illness. Some common side effects of people experiencing constipation may be:

- Pain and cramping
- Swelling in the abdomen
- Loss of appetite
- Nausea or vomiting
- Unable to urinate
- Confusion

### Helpful Tips to Prevent Constipation

- Drink plenty of fluids each day - at least 8-10 eight ounce glasses of non- caffeinated fluid each day. Try water, prune juice, warm juices, decaffeinated teas, and hot lemonade.
- Try to eat around the same times each day.
- Drinking warm fluids helps with constipation.
- Increase the amount of fiber each day such as, fruits and vegetables (raw or cooked, include skins and peels), fruit paste, whole grain cereals, breads and crackers, beans, peas and popcorn. Add these slowly to your diet and be sure to increase your fluid intake to prevent bloating and gas.
- Add prunes or prune juice, dried apricots and other dried fruits and nuts to your diet.
- Do light to moderate physical activity. Talk to your doctor about how much and what type of exercise is right for you.
- Try constipation pudding: 1 T. All-Bran cereal, 1 T. applesauce, 1 T. prune juice. Let sit for about 30 minutes after mixing before eating. Take 3 T. daily with a large glass of water. It is best to take after breakfast or before bedtime.

## Medicines

If you experience constipation, some over the counter laxatives or stool softeners may help you have a bowel movement.

### Stool Softeners

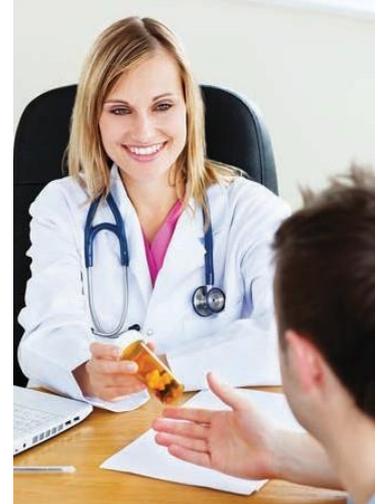
- Senokot<sup>®</sup> (Docusate and Senna)

### Laxatives

- Senokot-S<sup>®</sup> (Docusate Salts)
- MiraLAX<sup>®</sup> (Polyethylene Glycol 3350)
- Peri-Colace<sup>®</sup> (Docusate and Senna)

### Call Your Doctor or Nurse

- If you have not had a bowel movement for 2 days after taking stool softeners or laxatives.
- If you have severe abdominal pain.



### Laxative Protocol

The overall goal is to have a bowel movement every one to two days. Because responses vary, use the guidelines below to find what works best for you. If, at any time, the dose of your pain-relieving medicine is changed, you may also need to increase or decrease your daily dose of laxative. *See your doctor if you believe a change in laxative dose may be necessary.*

1. Take two Senokot-S tablets (a generic form is available at your pharmacy) at bedtime.
2. If you do not have a bowel movement in the morning, take two Senokot-S tablets after breakfast.
3. If you do not have a bowel movement by evening, take three Senokot-S tablets at bedtime.
4. If you have not had a bowel movement by the next morning, take three Senokot-S tablets after breakfast.
5. If there is no bowel movement within 2 days after starting this protocol, add oral Dulcolax after breakfast, while continuing to take three Senokot-S tablets in the morning and three Senokot-S tablets in the evening. Call your cancer nurse for further direction.

Once you start having bowel movements, use the two steps prior to the last step you took as your daily laxative protocol. For example, if you achieved a bowel movement after Step 4, use Step 2 and Step 3 (that is, two Senokot-S tablets in the morning and three Senokot tablets at bedtime) as your daily regimen.

Remember, constipation is a common side effect of many medicines. A daily bowel regimen helps to prevent this side effect.

## Call Your Doctor or Nurse

If you do not have a bowel movement within 4 days after beginning this protocol—your doctor can provide more instructions.

## Diarrhea

Chemotherapy destroys the cancerous cells and the normal cells of your body that are produced at a rapid rate. The cells lining your stomach and intestines divide at a rapid rate. As they are destroyed, you may develop diarrhea. The severity of diarrhea varies in people. The number of your bowel movements may increase. The stool consistency may range from very soft to liquid. Diarrhea caused by chemotherapy is temporary. The cells lining your stomach and intestines will regenerate.



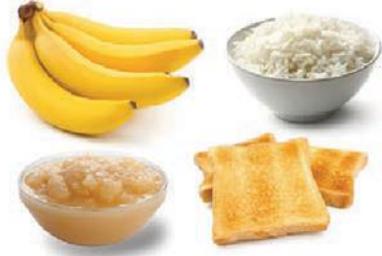
Diarrhea that happens after immunotherapy is managed differently. In immunotherapy, the lining of your stomach and intestines is irritated and you may have diarrhea. If you have more than 4 loose stools in a 24 hour period, call your cancer care team.

Radiation therapy directed to portions of the abdomen and pelvis containing portions of the bowel results in thinning of the mucous membrane lining of the inner wall of the bowel. This causes an increase in bowel motility and a decrease in absorption of fluids, resulting in more frequent and watery bowel movements or diarrhea. The following helpful tips are recommended to assist in the control of diarrhea.

### Helpful Tips for Diarrhea after Chemotherapy or Radiation Therapy

- Take Imodium<sup>®</sup> AD (Loperamide HCL 2mg tablets)
  - You can buy this medicine over the counter at your pharmacy. You should take 2 tablets (4mg) after your first loose stool and 1 tablet after any other loose stool for a maximum dose of 8 tablets in 24 hours. This medicine should not be taken when you have not had a bowel movement for 12 hours.
- Other medicines may be used. Please contact your doctor before starting.

## Nutrition Tips for Treating Diarrhea



- Drink plenty of fluid. Choose clear, mild, non-carbonated beverages. Room temperature liquids may be better tolerated. Clear broth, gelatin, sports drinks, and Pedialyte® are good choices for most people. Drink 1 cup of fluid after each loose stool. You may need to drink a little at a time, as often as you can.
- Eat small frequent meals and snacks.
- Avoid spicy, greasy, fried, or very sweet foods.
- Consume high-sodium foods and drinks such as broths, pretzels, crackers, and sports drinks.
- Avoid “sugar-free” products, including gum and mints. Sugar alcohols can make diarrhea worse.
- Consume high-potassium foods like fruit juices, sports drinks, potatoes, and bananas.
- Limit milk products to 2 cups per day. Yogurt and buttermilk are okay.
- Avoid gas-forming foods and drinks (carbonated drinks, gas-forming vegetables, and chewing gum). If you want carbonated beverages, leave them open for at least 10 minutes before consuming.
- Consume foods high in soluble fiber such as bananas, white rice, applesauce, white toast, canned peaches, and canned pears. Remember the “**BRAT**” diet (**B**ananas, **R**ice, **A**pplesauce and **T**oast).

## Low Fiber Diet

Follow this diet if you have diarrhea or loose stools. The diet consists of smooth and easily digested foods. It is low in roughage and omits all raw and cooked fibrous foods, as well as spicy and gas-forming foods.

	<b>Foods to Eat</b>	<b>Foods to Avoid</b>
<b>Beverages</b>	Carbonated beverages, coffee, tea, any strained fruit or vegetable juice	Unstrained juices, prune juice, alcohol, peach or pear nectar
<b>Bread</b>	White or rye bread, rolls or bagels. Soda crackers, biscuits, waffles, tortillas or pretzels	Bread, rolls, bagels or crackers made from whole wheat, bran or graham flour; graham crackers or popcorn
<b>Cereal</b>	Cream of Rice, Cream of Wheat, Malt-O-Meal, Farina, well-cooked oatmeal, ready-to-eat cereals made of corn or rice. White rice, white pasta, noodles, spaghetti made of refined white flour products. Grits (fine-ground), white bread	Any other cereals, wild or brown rice, pasta made with whole grain flour, barley, old fashioned rolled oats

	<b>Foods to Eat</b>	<b>Foods to Avoid</b>
<b>Desserts</b>	Custard, puddings, gelatin, plain cake, plain cookies, plain sherbet	Desserts made with any fruits not allowed, dry fruits, spices
<b>Eggs</b>	Eat as desired – must be well-cooked	
<b>Fats/Oils</b>	Butter, cream in moderation, margarine, mild mayonnaise, oils, cream cheese	Nuts, olives and all other fats, including cream sauces. When possible choose healthy oils & fats (canola & olive oil)
<b>Fruit</b>	Ripe bananas, cooked apples without skins, cooked apricots, peaches, pears, cherries, melon. Canned and well-cooked fruits. Juice without pulp	All raw fruits except for bananas. All cooked fruit with skins and/or seeds. Berries, plums, pineapple, prunes and raisins. Dried fruit or fruit pulp
<b>Grains</b>		Whole grains, breads or cereals made from whole grains
<b>Meats &amp; Proteins</b>	Any baked, broiled, boiled or roasted. Tender, ground, and well-cooked beef and poultry. Tofu, fish, eggs, smooth nut butters (peanut, soy, almond, or sunflower)	Fried meats, luncheon meats, hot dogs, bacon, sausage. Tough meat or meat with gristle. Fried fish. All types of beans, dried beans. Crunchy nut butters
<b>Milk &amp; Milk Products</b>	Limit to 2 servings per day. Milk: Skim, 2%, lactose-free or whole; soy milk, rice milk, or almond milk. Cottage cheese; mild cheese; yogurt or soy yogurt, plain or flavored with allowed fruits; sour cream, sherbet	Strong cheese; cheese spreads, yogurt containing seeds or skins of fruits. <b>If you are lactose intolerant:</b> Avoid milk and foods made with milk
<b>Nuts/Seeds</b>	None	Nuts. Seeds.
<b>Other</b>	Broth and strained soups made from allowed foods	
<b>Sweets</b>	Cream candies, hard candies, clear jelly, sugars	Any made with chocolate, nuts, coconut, marmalade, preserves, raisins, jam, caramels
<b>Vegetables</b>	Canned & well-cooked vegetables. Tender asparagus tips, beets, carrots, squash, mashed & white potatoes (no skin), mushrooms, tomato sauce, puree or paste (if tolerated). Vegetables without skins; vegetable juice	All raw vegetables. All other cooked vegetables. No cooked greens or spinach. No French fries or potato chips

### **Call Your Doctor or Nurse**

- If you are feeling dizzy.
- If you have a fever of 100.4° F (38° C) or higher.
- If you have diarrhea, urgency, severe stomach pain or cramps for more than a day.
- If you experience pain at the rectum or have bleeding around the rectum.
- If your stool is black, “tarry” or sticky.
- If you have more than 3 episodes of diarrhea even after taking Imodium AD.

### **Body Fluids – This applies to both oral & IV cancer medicine**

- Small amounts of cancer medicine are present in your body fluids or waste (urine, stool, semen, and vomit). If you are exposed to any of these body wastes, wash the area that was touched with soap and water right away.
- You may use the toilet as usual. Wash your hands well with soap and water after using the toilet. Wash your skin if urine, vomit or stool gets on other parts of your body.
- Others in your household may use the same toilet as long as all body fluids or waste (urine, stool, semen, and vomit) is flushed down the toilet.
- A condom must be used for 48-72 hours after taking your last cancer medicine. If the medicine is taken every day, then condoms must be used throughout your entire treatment. If you are participating in a clinical trial, please ask for the guidelines from the protocol nurse.
- Always wear gloves when disposing of urinal or commode waste and cleaning of equipment. Wash your skin right away if touched by urine, vomit or stool.

### **Fatigue**

Fatigue is one of the most common side effects from all forms of treatment and the healing process. It can be related to your physical healing, as well as your emotional wellbeing. It is extreme feelings of being tired, and can affect physical and mental health. It impacts daily interactions, tasks, and relationships. It can make you feel helpless and isolated. Chemotherapy can make you fatigued. Other things like anemia, depression, pain, certain medicines and trouble sleeping can also make you fatigued. Fatigue caused by chemotherapy can last for weeks or months after treatment is over.

### **Signs and Symptoms of Fatigue**

- Total lack of energy.
- Decreased ability to complete usual activities.
- Having trouble talking, walking and thinking.
- Finding it hard to making decisions.

## Tips that may help you regain control of fatigue:

### Eat and drink well

- Make healthy foods when you feel well. Freeze them to eat later.
- Eating helps you keep up your strength. Some people find it easier to eat 5 or 6 small meals instead of 3 big meals.
- Most people need to drink at least 8 cups of fluid a day.

### Take time to rest

- Listen to your body, rest when you feel tired.
- Try to take short naps or breaks instead of one long break during the day.
- Make a bedtime routine. Bathing or listening to music before you go to sleep may help you relax.
- Sleep at least 8 hours every night.

### Be as active as you can

- Try to be active every day. Even 15-20 minutes can help give you energy.
- Try easier or shorter versions of activities you enjoy.
- Pace yourself.
- Ask a social worker about wellness program options.

### Make a plan

- Do less, let others help you. (ex: grocery shopping, laundry, mowing the lawn)
- Do activities that are most important first.
- Take time off from work or work fewer hours.



### Call Your Doctor or Nurse

- If you have been too tired to get out of bed for the past 24 hours.
- If you feel confused or cannot think clearly.
- If you suddenly feel an increase or worsening of fatigue.
- If you become dizzy.
- If you fall and hurt yourself.
- If you feel a loss of balance when walking or when getting out of bed or a chair.
- If you have trouble waking up.
- If you have a problem catching your breath.
- If you become depressed.

## Pain

Side effects from the chemotherapy treatments may cause pain in the body such as nerve pain, bone pain, muscle pain, headache, stomach pain, or mouth sores. The cancer itself may cause pain as well.

It is very important to let your doctor or nurse know if you have pain. There are many ways to manage this side effect.

### Helpful Tips to Manage Your Pain

- Talk to your doctor or nurse about your pain at each office visit.
- Know that pain is a message that your body needs help.
- Keep track of your pain by writing down a description of the pain you are experiencing such as:
  - Where and when the pain occurs.
  - How long the pain lasts.
  - What makes the pain worse?
  - Whether anything, such as heat, ice or medicine, eases the pain.
  - How long your pain-relieving technique works and how much relief it provides.
  - Any side effects you experience when taking pain medicine.
  - How the pain is affecting your quality of life – for example, is it keeping you from sleeping, eating, walking, working or exercising?
  - Use the pain scale of 0-10 to describe how strong the pain is:



- If a pain medicine is not working, let your doctor know.
- Try non-medical pain management techniques such as relaxation exercises, yoga and meditation.

## **Nerve Changes - Neuropathy**

Some chemotherapy can cause nerve problems. You may have a numb, tingling, burning or weak feeling in different parts of your body. It often begins in your hands or feet and is called “peripheral neuropathy.” Other things that can affect these nerves are diabetes, medicine for other issues, nutritional imbalances and alcohol usage.

### **Symptoms Include:**

#### **Movement Problems**

- Numbness
- Weak, achy, sore muscles
- Loss of balance or falling
- Pain with walking
- Trouble holding or picking items up
- Trouble with buttoning your clothes
- Shaking or trembling
- Difficulty lifting foot off gas pedal or climbing stairs.
- Weakness
- Sensation of wearing gloves.

#### **Pain**

- Tingling (pins and needles)
- Burning
- Cold

#### **Hearing Problems**

- Trouble or changes in hearing.

#### **Stomach Problems**

- Constipation or abdominal pain.

These changes often start slowly and worsen as treatment continues. Once chemotherapy is stopped, these changes may lessen slowly over time but some cases may not disappear. Tell your doctor if you have any of the above symptoms.

### **Tips for Managing Nerve Changes**

#### **Prevent falls**

- Remove rugs.
- Put up rails on walls or in bathroom.
- Put non-slip bathmats in shower or tub.
- Wear sturdy shoes.
- Use a cane or walker.
- Be careful when handling knives, scissors and other sharp or dangerous objects.

#### **Protect your hands and feet**

- Use hot pads in the kitchen.
- Wear gloves when working outside.

- Wear shoes inside and outside of house.
- Check your feet for cuts every day.
- Before you bathe, ask someone to make sure the water in the bath or shower is not too hot.

#### **Ask for help**

- Ask for help with things such as buttoning clothes, using the computer, opening jars, or holding a pen.
- Slow down and give yourself more time to do things.

## Urinary, Kidney and Bladder Changes

Chemotherapy can irritate the bladder or cause damage to the bladder or kidneys. Some chemotherapy treatments require a blood test prior to your treatment to check how well your bladder and kidneys are working.

There are some chemotherapy medicines that will cause your urine to change color for a short time after receiving the medicine. It may be orange, red, green or dark yellow depending on the medicine. The medicine can give your urine a strong medicine-like odor. Your care team will tell you if the drugs you are taking may have these effects.

Some kidney and bladder problems will go away after you finish chemotherapy. Other problems can last for the rest of your life.

### Tips to Manage Urinary Problems

- Drink plenty of fluids (such as water, juice, broth, ice cream, soup, popsicles, and jello).
- Limit drinks that contain caffeine (such as coffee, black tea, cola products).
- Avoid alcohol drinks.

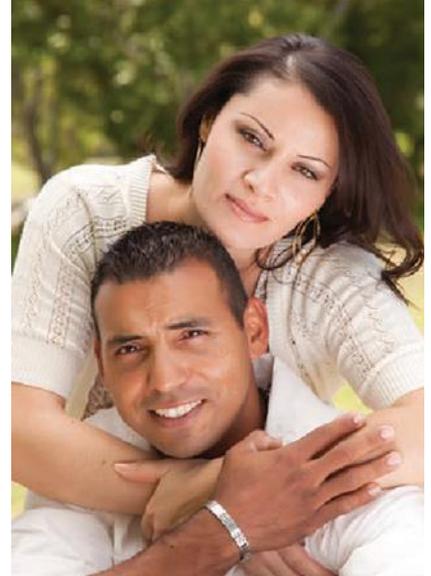


### Call Your Doctor or Nurse If You Have:

- Pain or burning with urination.
- Frequent urination.
- Reddish or blood in urine.
- Fever.
- Difficult urination.
- A feeling you must urinate right away.
- Chills.

## Sexual Health Information

Sexual health is defined as sexual function, intimacy and relationships. Many aspects of your health are impacted by treatment such as hormonal balance, mental health and physical side effects. Some can be short term, some can last longer. It’s important to talk to your healthcare team regarding changes, concerns and struggles with your sexual health. There may be ways your healthcare team can help you cope with side effects.



- Safe sex practices are always needed.
- A condom should be used to help prevent spread of infection. It can also reduce your partner’s exposure to chemotherapy agents found in body fluids.
- A condom must be used for 48-72 hours after having received IV chemotherapy. A condom should always be used while taking oral chemotherapy. If you are participating in a clinical trial, please ask for the guidelines from the protocol nurse.
- If you have been told that your white blood cells are low or your platelets are low, then sexual intercourse should be avoided during this time.

## Men and Sexuality

Chemotherapy can damage sperm and cause birth defects. To make sure your partner does not get pregnant, use a condom. Your partner may also need to use birth control. Always use a condom when you have sex, because some chemotherapy may be in your semen.

<b>SEXUAL PROBLEMS YOU MAY HAVE</b>	<b>WAYS TO RELIEVE SYMPTOMS</b>
<b>It may be difficult to get or keep an erection</b>	Talk with your doctor, there are medicines that may be helpful.
<b>You may not be able to have an orgasm</b>	Talk with your doctor, there are medicines that may be helpful.
<b>You may feel too tired or stressed to have sex</b>	Look for other ways to express affection, such as kissing, cuddling or other shared activities.

## Women and Sexuality

All women who have not gone through menopause should use a form of birth control. Do not get pregnant during treatment because it can harm an unborn baby. You may need to delay pregnancy for a while after treatment. Check with your doctor.

<b>SEXUAL PROBLEMS YOU MAY HAVE</b>	<b>WAYS TO RELIEVE SYMPTOMS</b>
<b>Dryness or itchy feeling in the vagina</b>	<ul style="list-style-type: none"> <li>• Wear cotton underwear.</li> <li>• Do not wear tight pants or shorts.</li> <li>• Use water based vaginal lubricant when having sex.</li> <li>• If sex is painful because of dryness, use a vaginal moisturizer (found near the feminine products in the stores).</li> </ul>
<b>Hot flashes</b>	<ul style="list-style-type: none"> <li>• Dress in layers, with an extra sweater that you may take off.</li> <li>• Be active, do some form of exercise.</li> <li>• Reduce stress, try meditation, or other ways to relax.</li> <li>• Talk with your doctor. There are medicines that may be helpful.</li> </ul>
<b>Infections in the vagina or bladder</b>	<ul style="list-style-type: none"> <li>• Replens<sup>®</sup> is a vaginal moisturizer product that can be used 3 or 4 times per week. It will keep the vagina moist. It may also prevent yeast infections.</li> <li>• Report symptoms of bladder infection to your doctor, such as pain with urination, difficulties with urination, frequent urination, fever.</li> </ul>
<b>Periods that are not regular or no period</b>	<ul style="list-style-type: none"> <li>• Your menstrual periods may become irregular or stop during treatment. They may – or may not – come back after chemo. In some women, they come back, but menopause may start at a younger age than expected.</li> </ul>
<b>Stress, fatigue, or little interest in sex</b>	<ul style="list-style-type: none"> <li>• Look for other ways to express affection, such as kissing, cuddling or other shared activities.</li> </ul>

## **Coping with Sexuality Changes**

Talk about your feelings and concerns with your partner. It may also be helpful to talk with someone else. This may be your doctor, nurse, social worker or clergy member.

For additional information, the following agencies may be contacted:

**American Cancer Society** 1-800-ACS-2345. [www.cancer.org](http://www.cancer.org)

**Planned Parenthood Organization** 1-800-230-7526. [www.plannedparenthood.org](http://www.plannedparenthood.org)

**United Ostomy Association Inc.** 1-800-826-0826. [www.uoaa.org](http://www.uoaa.org)

**Fertile Hope** 1-866-965-7205. [www.fertilehope.org](http://www.fertilehope.org)

**Sexuality Information and Education Council of the United States** 1-212-819-9770. [www.siecus.org](http://www.siecus.org)

## **Hot Flash Symptom Management**

Hot flashes are common during treatment. For many, these improve after the first three to six months. If you smoke, you may suffer more severe hot flashes.

### **Beat the heat naturally**

Hot flashes have a lot to do with the low levels of estrogen in your body. Other factors can affect your temperature control. The best way to beat a hot flash is naturally.

### **Avoid triggers**

The first step you can take is identifying the things that trigger your hot flashes. Keep a record of when they occur. Note what you were eating or doing or how you were feeling at the time. Many people find that stress is one of the top triggers. Was that hot flash random? Were you feeling under pressure at the time? Was it a full day of pressure without a break?

Solution: Ease the pressure. Give yourself more time to plan your work, to rehearse your presentation, to deliver your assignments and to arrive where you're going. Give yourself a chance to relax and cool off. And plan your schedule so you avoid meetings or decision making when you're most likely to be in a sweat.

Other hot flash triggers you may want to avoid:

- alcohol
- caffeine
- diet pills
- spicy food
- hot food
- hot tubs
- hot beds
- hot rooms
- hot weather
- smoking

## Hot flash survival tips

- Dress in layers, so you can peel off one layer after another as you get warmer.
- Don't wear synthetics or silk. You may want to wear cotton, linen or rayon.
- Avoid turtlenecks. Stick to open-neck shirts.
- Keep ice water at hand that you can sip to cool down your insides.
- Where possible, lower the thermostat. Use an air conditioner or a ceiling fan. You can also get relief using a hand-held battery-operated fan or the foldable kind you flutter in front of your face. You can find paper fans for about a dollar.
- Wear cotton pajamas or a nightgown. If you perspire a lot at night, your nightclothes are easier to change than the sheets.
- Use cotton sheets instead of synthetics.
- Take a cool shower before bed.
- Arrive at meetings early so that you can get the coolest seat.
- Use your freezer. Some people have found opening the freezer and sticking their head in when a hot flash hits to be helpful.

## Lifestyle changes to ease hot flashes

### Exercise

Increasing your level of activity (for example, taking the stairs instead of the elevator) can reduce hot flashes. Exercise also increases endorphin levels. This increases your threshold for discomfort.

### Relaxation and stress reduction

It isn't unusual to have trouble dealing with stress, especially if you've undergone treatment for cancer. You may find that one of the following techniques will help decrease the effects of stress on your body:

- relaxation exercises
- visualization
- yoga
- breathing exercises
- massage
- biofeedback techniques
- meditation
- hypnosis

### Changing your diet

Over time, a low-fat diet helps some people with hot flashes. Losing excess weight helps. Losing too much weight, or being too thin, can worsen symptoms. As you consider other food changes, keep in mind that natural doesn't mean harmless. Please talk to your doctor before you try herbal remedies, vitamins or soy preparations.

### Vitamins

Some people find that taking vitamin E every day (range 400–1000 units) helps. You should not take more than 1,000 units a day without talking to your doctor.

### Relieving hot flashes with medicines

If you have tried these lifestyle, nutritional, and alternative medicine recommendations, and they have not helped, you can talk to your doctor for other treatment options.

## Fertility

Fertility, the ability to conceive children, can be impacted by treatment. These effects can be either temporary or permanent. Pregnancy is still possible while on treatment (chemotherapy, radiation, hormone treatment, and after surgery) but can be extremely dangerous. Birth control needs to be used.

Infertility means that you cannot start a pregnancy. The risk of infertility from cancer treatments depends on many things including:

- The type of chemotherapy.
- The dose and duration of chemotherapy.
- Your age at the time of treatment.
- Your pre-treatment fertility status.



Female fertility can be affected by cancer treatments.

- Surgical removal of the uterus or ovaries.
- Chemotherapy or radiation therapy can affect the eggs, hormone levels or the function of the ovaries, uterus or cervix.

Male fertility can be affected by cancer treatments.

- Surgical removal of the testicles.
- Chemotherapy or radiation therapy can damage the sperm, lower the sperm count or affect the quality of the sperm.
- Treatment may damage the sperm transport system and prevent sperm from leaving the body.

There are ways to preserve fertility before starting chemotherapy. Prior to starting your cancer treatments, talk with your doctor or nurse about options.

**To learn more, refer to the resource and the internet section at the back of this book.**

## Memory Changes or Chemo Brain

Many people who have gone through chemotherapy notice some changes in their memory or thinking process.

### What is causing these changes?

These changes may be caused by stress, medicine or the cancer and cancer treatment.

### What are chemo brain symptoms?

- Forgetting things you usually have no trouble recalling (memory lapses).
- Trouble concentrating (can't focus on task at hand).
- Trouble remembering details like names, dates and larger events.
- Trouble multitasking, unable to complete more than one task at a time.
- Taking longer to finish things (disorganized, slower thinking and processing).
- Trouble remembering common words.

### Tips for managing memory changes.

#### Plan your day:

- Do things that need the most thinking at the time of day when you feel best.
- Set up and follow routines.
- Get extra rest and sleep.
- Don't multitask, focus on one task at a time.

#### Tactics to help your memory:

- Write down or record things you want to remember.
- Write down important dates and information on the calendar or daily planner.
- Use a pill box or calendar to help keep track of your medicines.
- Exercise your brain by taking a class or do word puzzles.
- Exercising your body can help your memory.
- Track your memory problems by keeping a diary when you have the most symptoms.

**Ask for help:**

- Ask a friend or family member for extra help when you need it.
- If you are very confused, have someone stay with you. Don't stay home alone.

**Tell others:**

- Tell family, friends, and your health care team. You are not crazy. You just have a side effect that you have to learn to manage. Even though this is not a change that is easy to see, like hair loss or skin changes, your family and friends may have noticed some things. They may even have some helpful suggestions. For instance, your partner may notice that when you are rushed, you have more trouble finding things.

**Talk with your doctor or cancer care team if:**

- Symptoms are causing trouble at work or in your daily activities.
- At your office visit, write down questions, bring a med list and a family or friend with you to help remember what was discussed.



## Safe Handling of Oral Cancer Medicines (Chemotherapy or Immunotherapy)

Oral cancer medicines are taken by mouth in the form of capsules, tablets or liquid. These tips will help you know how to safely take your oral cancer medicines. This information will also help your caregiver avoid exposure to body fluids or waste (urine, stool, semen, and vomit) while assisting in your care. It is important to understand that oral cancer medicines are very potent and need to be handled carefully.



### How to Take Your Medicine

- Wash your hands before and after handling the medicine.
- Swallow each tablet or capsule whole. Do not crush, cut or chew them. If you are not able to swallow the pill, talk to your doctor about other ways to take your medicine.
- If you miss a dose, see your medicine instruction sheet. Do not double the dose.
- If you are in a clinical trial, be sure to follow the special instructions you have been given.
- If you are instructed to dissolve the oral cancer medicine in liquid, do this in a paper or plastic cup that can be thrown away.
- If you become sick and are unable to keep the pill down, call your cancer doctor.
- Call your doctor if you miss two or more doses of your oral cancer medicines.

### Storage

- Most oral cancer medicines are stored at room temperature, away from heat and moisture.
- Do not store your oral cancer medicines in the bathroom. Check medicine labels to see if special storage or handling is needed, such as refrigeration or protection from light.
- Keep the medicine in its original container, in a safe place away from other family medicines. All medicines need to be kept out of the reach of children and pets
- Oral cancer medicines should be in a separate medicine pill box from other medicines. You will need two separate boxes. One for your regular medicines and one for your oral cancer medicine.

### Handling Oral Cancer Medicines

- Whenever possible, the patient should take the oral medicine themselves. If someone else helps you with your medicine, they also need to follow the steps below:
  - Wash hands with soap and water.
  - Put on medical gloves to avoid touching the medicine. You do not need to wear gloves if you are getting your own medicine.

- Do not let women who are pregnant or who may get pregnant touch the tablets without wearing medical gloves.
- Carefully remove the medicine from its package and put in a small disposable cup. Do not lay the medicine on the counter or table.
- Take the medicine right away with water.
- Throw the cup and gloves in the household trash. Do not use them again.
- Wash hands with soap and water.
- Do not touch or handle crushed or broken tablets.

**Call your doctor if:**

- If you feel you are having side effects from your cancer medicines or have any questions or concerns.

**Disposal of Medicine**

Normally you will not have extra medicine, but if you do, follow these steps for disposal.

- Read the materials given to you about how to handle and discard any extra medicine. Some oral cancer medicines must be returned to the specialty pharmacy. If you do not need to do this, then:
  - Do NOT flush your medicine down the drain or toilet. Instead, “Wrap and Trash” the medicine by wrapping with duct tape and then wrapping in two plastic bags before putting in the trash.
  - Another method of disposal is to take the medicine out of its original container, mix with kitty litter or used coffee grounds and then place in a can or zipper bag. Now it can be thrown away.



You may also contact your public health department to see if they have a drug disposal program or contact the Michigan Department of Environmental Quality at (517) 285-5637 or [www.michigan.gov/deqwaste](http://www.michigan.gov/deqwaste).

*This information was adapted from the Third Edition of the Chemotherapy and Biotherapy Guidelines and Recommendations for Practice, Appendix 3 Safe Management of Chemotherapy in the Home, by the Oncology Nursing Society, the University of Michigan HomeMed Medication Patient Guide, Michigan Department of Public Health Medical Waste Regulatory Program.*

## Patient Education for Portacath or Port

### Why do I need a port?

- A port eliminates the need to find an arm vein every time you get your chemotherapy. This stops the prodding in your arm and risk of “blowing” your vein.
- Some types of chemotherapy are uncomfortable when injected into a vein so the port avoids this discomfort.
- Some types of chemotherapy can only be given through a port because they are dangerous to give through a vein.

### What is a port?

- A port is a small device that is surgically placed under the skin, usually in the upper chest area.
- It has two basic parts: a round basin and a small tube-like catheter.
  1. The basin is the area that you can sometimes see under the skin like a small bump, smaller than the size of a quarter.
  2. The catheter is a tube that is connected to the basin and ends in a large vein in the chest.



## How is a port placed?

- Your port will be placed in an outpatient procedure that lasts about an hour.
- The port is placed under the skin usually between your collarbone and breast by either a surgeon or an interventional radiologist.
- The port is put in your chest under local anesthesia. This means you will not be put completely to sleep. The local anesthesia will numb your skin so that you will feel pressure but no sharp pain.

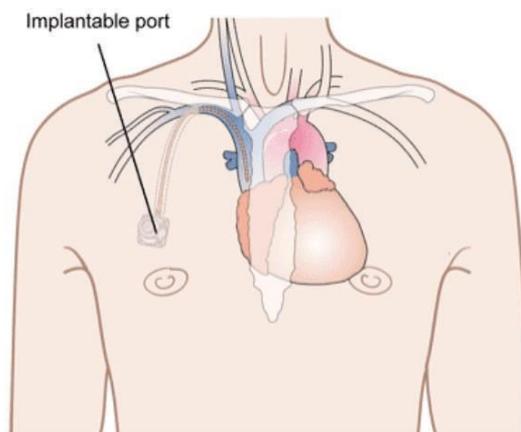
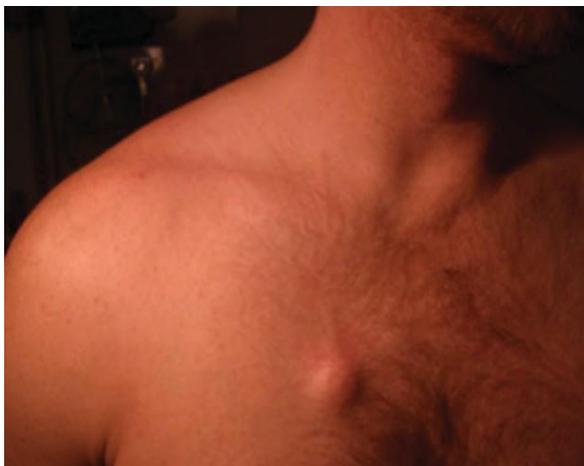


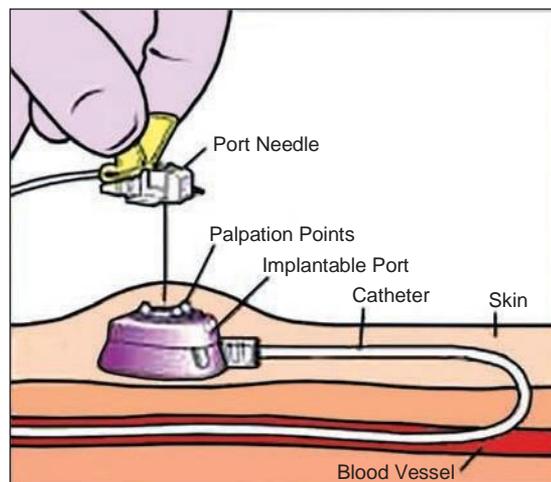
Diagram showing an implantable port

## What do I do to get ready to have my port placed?

- You need to let your doctor know what medicines you are on. This is very important if you are on blood thinners such as aspirin, Coumadin® or Plavix®.
- The night before your procedure, you cannot have anything to eat or drink after midnight.

## How are medicines and fluids delivered through the port?

- To access your implanted port, the nurse will insert a special needle through your skin. You will probably feel a pricking sensation. A local anesthetic cream is available if accessing is too uncomfortable for you.
- EMLA cream (Lidocaine/Prilocaine) is **NOT REQUIRED** in order for a port to be accessed. It is used at the patient request for comfort issues. Apply a dime size amount of cream to the top of the port 30-60 minutes prior to your appointment. Do not rub cream into the port site. Cover the site with plastic wrap (Press 'n Seal Saran Wrap works well).
- The medicine or fluids flow through the needle, into the portal chamber and through the catheter directly into the bloodstream.



### **How do I care for my port after it is placed?**

- Do not get the incision site wet for five days after insertion.
- You may shower within the first five days as long as the incision is covered. Press'n Seal® plastic wrap works well.
- Don't pick or scratch the Dermabond glue or Steri-Strips. They will come off on their own.
- After your incisions heal, the skin over your implanted port doesn't need any special care. You can wash it as you normally would.

### **Can blood tests be drawn through my port?**

- Your blood test will be drawn in the lab using your arm. If the phlebotomist has difficulty getting blood in this manner, future labs may be drawn through your port.

### **How do I care for my port when chemotherapy is finished?**

- You will need to have your port accessed and flushed by a nurse every 6-8 weeks to make sure it continues to work properly. Appointments will be made for port flushes once your chemotherapy is finished. If you do not see a PORT FLUSH appointment on your schedule, please ask an infusion scheduler to add one.

## Immunizations

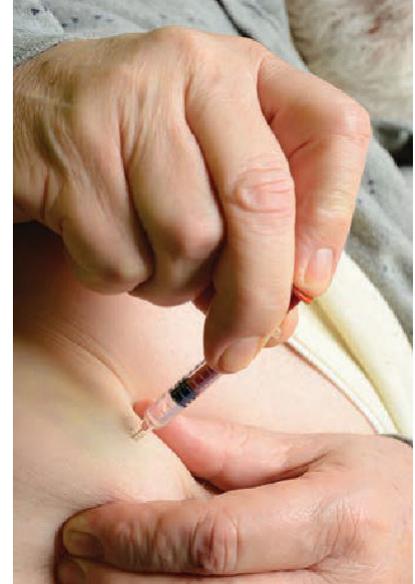
Patients with weakened immune systems can safely receive vaccinations that are inactivated (killed). Patients cannot receive vaccinations that are live. You need to check with your cancer doctor before getting vaccines.

### Influenza injection (flu)

All patients and the people who live with or care for the patient need to get a flu shot every year. People with cancer should not receive the nasal spray vaccine. The flu shot is made up of inactivated (killed) viruses. The nasal spray is made up of the live viruses. The flu shot is safer for those with a weakened immune system.

### Pneumococcal Injection

It is recommended for patients 19-65 years of age who have a condition that increases their risk of pneumococcal pneumonia. This would include all persons with cancer.



### Zoster Injection (Shingles)

This is a live vaccine. It is **not** recommended for patients who have an immune system that has been weakened. This would include patients who are on chemotherapy or high dose steroids.

## Vaccinations of Caregivers or Persons with Weakened Immune Systems

Can patients be in contact with other people who recently had a live virus vaccine (i.e. grandchildren)?

### Here are the recommendations:

**Flu shots:** Recommend the family member receive the injection versus the nasal vaccine. If a child has received the nasal vaccine and the child is not sneezing or coughing, there is no need for special precautions.

**Measles:** cannot spread the virus from the vaccine.

**Mumps:** cannot spread the virus from the vaccine.

**Pneumococcal injection:** cannot spread the virus from the vaccine.

**Rubella:** cannot spread the virus from the vaccine.

**Smallpox:** cover the injection site and use good hand washing. You should not be around the injection site. Do not help with any dressing changes of the injection site.

**Varicella (Chicken Pox):** Do not need to stay away from the person receiving the injection unless they develop a rash. It can then be spread to others. The patient must stay away from this person until the rash is gone.

**Zoster (Shingles injection):** Do not need to stay away from the person receiving the injection unless they develop a rash. It can then spread to others. The patient must stay away from this person until the rash is gone.

## Benefits of Physical Activity

Don't forget the importance of physical activity during treatment. Regular physical activity during your cancer treatment can help fight fatigue, help preserve and rebuild muscle and bone mass, reduce stress and anxiety, fight depression, and lessen constipation.

Aim for 30 minutes of moderate physical activity 5 days per week. If this seems like too much, start with smaller goals and work up to 30 minutes 5 days per week.

Remember, something is always better than nothing! Talk with your doctor before beginning a new exercise routine.

Do not exercise if you have a fever or if you are unable to eat or drink.



### Emotional Wellness: Taking Care of Yourself

Treatment can impact not only your overall health, but your lifestyle and routine. It can disrupt your daily schedules and responsibilities, changing the dynamics of your family and support system.

#### For Patients:

- It is important to take care of yourself while undergoing treatment. Your body needs extra care during this time.
- Get plenty of rest.
- Eat a well-balanced diet. Your body needs to build strength to heal. Our dietitians can help you.
- Accept help. Your caregivers are there to support you. Consider tasks they can help with that will let you rest, make them feel helpful and not impact your independence. Have one point person to take charge.
- Plan activities for when you are feeling well.
- Try to think positively.
- Exercise if you can. Simple exercises such as 20 minutes a day of walking, swimming or riding a bike will help you feel better about yourself. It can improve sleep, your appetite and help you get rid of tension.
- Relaxation techniques including breathing, yoga, massage therapy and meditation can help reduce fear and anxiety.
- Remember you are normal. Serious illness can be consuming. While it adds a new perspective to your life, it is one portion of your life. Try to continue to enjoy the things you did before your illness, and that includes laughter and fun.

- Set social limits. It can be overwhelming to have your support system worry about your health. Utilize your caregivers and supports by setting limits on visits, scheduling times to give updates on social media, etc.
- Spiritual support can be helpful when facing a serious illness.
- Social workers at the Cancer Center are trained in a variety of supportive counseling techniques. They know about resources in your community. They can help you find support that works for you.
- There are many support groups and mentoring programs in the community. Sharing your experience with someone in a similar situation may be helpful. Talk with the social workers to find what may work for you.
- Ask questions - your healthcare team is here to help you. Use them as a resource.

**Talk to your healthcare team if you have feelings of extreme sadness, worry, anxiety, depression and fear that are changing how you function on a daily basis. Your doctor may discuss a medicine to help you through this challenging time. The social work team may assist with finding support to help you cope.**



## For Caregivers and Loved Ones:

- It's hard to watch someone you love get cancer treatment. You must also take care of yourself to stay healthy.
- Consider what your loved one (the patient) would find supportive. It may be different than what you would want if you were in their position. Talk with your loved one about what they think may be helpful.
- Schedule time to do your own self-care including hobbies, exercise, meditation and socializing.
- Assign tasks to other supportive persons. Your loved one may be overwhelmed. They may need help updating family and friends, preparing healthy meals, setting limits and scheduling social time.
- Take notes - many of the visits can be overwhelming for both of you.
- Find your own support. Your experience is different than your loved one's experience. Having separate support to talk through your emotions and feelings is important to the health of your relationship.
- Remember, you are normal. Serious illness can be consuming. While it impacts your life, it is one portion of your life. Try to continue to enjoy the things you did before your illness, and that includes laughter and fun.
- Spiritual support can be helpful.
- Social workers at the Cancer Center are trained in a variety of supportive counseling techniques. They know about resources in your community. They will help you with finding support that works for you.
- Ask questions - you are part of the healthcare team and an advocate.



## Words to Know

**Adjuvant Therapy:** Anticancer drugs or hormones given after surgery or radiation to help prevent cancer from coming back.

**Anemia:** Not enough red blood cells to carry the oxygen your body needs.

**Alopecia:** Hair loss.

**ANC:** Absolute neutrophil count. Immature white cells that help fight infection.

**Antibiotic:** Medicine used to fight germs or bacteria that cause infection.

**Antiemetic:** A medicine that prevents or controls nausea and vomiting.

**Biological Therapy:** The use of drugs to stimulate body's own immune system to attack cancer cells.

**Bone Marrow:** The inner, spongy tissue of bones where white blood cells, red blood cells and platelets are made.

**Cancer:** A group of diseases where abnormal cells grow out of control.

**CBC:** Complete blood count. Used to determine number of white blood cells, red blood cells, and platelets.

**Chemotherapy:** Treatment with drugs that kill cancer.

**Chemo-brain:** Changes in memory or thinking processes due to chemotherapy treatment.

**Clinical Trials or Research Studies:** Type of research study that tests how well new medical approaches work in people. These studies test new methods of screening, prevention, diagnosis, or treatment of a disease.

**Constipation:** When bowel movements become less frequent and stools are hard, dry, and difficult to pass.

**Cycle:** Number of days in one treatment schedule.

**Diarrhea:** Frequent bowel movements that may be soft, loose, or watery.

**Dehydration:** Condition caused by the loss of too much water from the body and not replacing it.

**Dysphagia:** Difficulty swallowing.

**Electrolytes:** Substances in the body that help move nutrients into cells and flush waste out of cells. Helps keep brain, heart, nerves, and muscles functioning properly.

**Electrolyte Imbalance:** Too many or too few electrolytes.

**Fatigue:** Unusual tiredness that does not go away by resting or a good night sleep.

**Hand-Foot Syndrome:** Abnormal pain, swelling, redness in hands or feet due to some chemotherapy drugs.

**Hormonal Therapy:** The use of medicines to either increase or decrease hormones in the body to stimulate a response to fight cancer.

**Hospice:** A program that provides support and care for terminally ill persons and their families by addressing their physical, social, emotional, and spiritual needs.

**Immune System:** The body's defense system against bacterial, viral, and fungal infections.

**Immunotherapy:** Using the body's own defenses to attack cancer cells.

**Impotence:** Not being able to get or keep an erection.

**Incontinence:** Not able to control the flow of urine from the bladder.

**Infection:** Attack of a bacteria, virus, or fungus that are not normally present within the body and can make you sick.

**Infertility:** For women, it means you may not be able to get pregnant. For men, it means that you may not be able to get a woman pregnant.

**Inflammation:** Redness, swelling, pain, or feeling of heat in an area of the body, often due to infection, injury, or irritation.

**Injection:** Using a syringe and needle to push fluids or drugs into the body; often called a "shot".

**Intraperitoneal:** Within the peritoneal cavity, also called IP.

**Intravenous:** Within a blood vessel, also called IV.

**Long-term Side Effects:** Problems with chemotherapy that do not go away.

**Malignant:** Means cancerous or having cancer.

**Metastasis:** The spread of cancer from one part of the body to another.

**Mucositis or Stomatitis:** Inflammation or sores of the lining of the mouth and GI tract.

**Nadir:** Phase in the treatment cycle when white blood cells, red blood cells and platelet counts are at their lowest.

**Neoadjuvant Chemotherapy:** Chemotherapy given before surgery or radiation to shrink the tumor.

**Nausea:** Feeling queasy or sick to your stomach.

**Neutropenia:** Lower than normal white blood cell count that could lead to infection.

**Pain:** Discomfort caused by illness or injury.

**Palliative Care:** Care given to improve the quality of life of patients with serious or life-threatening diseases.

**Palliative Treatment:** Treatment to relieve, rather than cure, symptoms caused by cancer.

**Peripheral Neuropathy:** Numbness, tingling, or burning of hands and feet.

**Peritoneal Cavity:** The space within the abdomen that contains the intestines, stomach, liver, ovaries, and other organs.

**Platelet:** A type of blood cell that helps prevent bleeding by clotting the blood.

**Pump:** A device that is used to deliver a precise amount of a drug at a specific rate.

**Recurrence:** Cancer that returns after not being detected for a period of time.

**Red Blood Cell:** Blood cells supplying oxygen and iron throughout the body.

**Side Effect:** A problem that occurs when treatment affects healthy tissues or organs.

**Thrombocytopenia:** A decrease in the number of platelets in the blood that may result in easy bruising and extreme bleeding from wounds. May cause bleeding in mucous membranes and other tissues.

**VAD:** Vascular Access Device - Catheter or port that are surgically placed in a large vein and stay in for long periods of time. Used to give IV medicines, blood products or fluids.

**Vomiting:** When you throw up.

**White Blood Cell:** Blood cells that fight infection.

## Resources and the Internet

The Internet is a wealth of information, however not all of it is correct. We recommend patients and loved ones use caution when using the internet as an educational tool. We have reliable educational materials at the Cancer Center. The clinical team has a large variety of tools and websites that provide evidence based reliable information. A partial list is provided below.

### Ways to Learn More

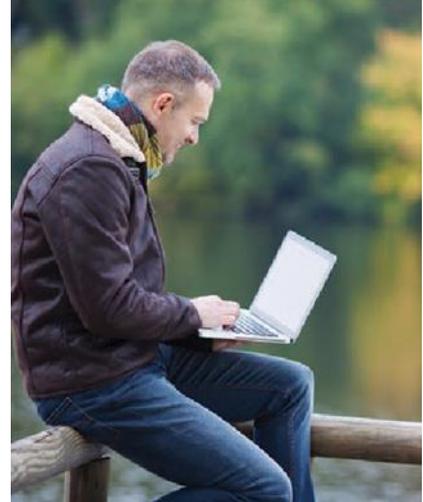
#### National Cancer Institute (NCI)

Find out more from these free NCI services. Call: 1-800-4-CANCER (1-800-422-6237)

Visit: <http://www.cancer.gov>

Chat: <http://www.cancer.gov/livehelp>

E-mail: [cancergovstaff@mail.nih.gov](mailto:cancergovstaff@mail.nih.gov)



#### American Cancer Society

Offers a variety of services to patients and their families. It also supports research, provides printed materials, and conducts educational programs. Call: 1-800-ACS-2345 (1-800-227-2345)

Visit: <http://www.cancer.org>

#### American Institute for Cancer Research (AICR)

Offers free nutritional education on topics such as cancer and soy, nutritional benefits, suggestions for healthy lifestyle, recipes and more. Visit: <http://www.aicr.org>

#### Cancer Support Community

Dedicated to providing support, education, and hope to people affected by cancer.

Call: 1-888-793-9355 or 202-659-9709

Visit: <http://www.cancersupportcommunity.org>

E-mail: [help@cancersupportcommunity.org](mailto:help@cancersupportcommunity.org)

**CancerCare, Inc.**

Offers free support, information, financial assistance, and practical help to people with cancer and their loved ones.

Call: 1-800-813-HOPE (1-800-813-4673)

Visit: <http://www.cancercare.org>

E-mail: [info@cancercare.org](mailto:info@cancercare.org)

**Fertile Hope**

A LIVESTRONG initiative dedicated to providing reproductive information, support, and hope to cancer patients and survivors whose medical treatments present the risk of infertility.

Call: 1-855-220-7777

Visit: <http://www.fertilehope.org>

**The Fertility Center**

5659 Stadium Drive

Kalamazoo, Michigan 49009

Call: 1-269-324-5100

Visit: [www.fertilitycentermi.com](http://www.fertilitycentermi.com)

**Livestrong Foundation**

Advocacy, education, and support for cancer patients regarding navigating the system, financial resources, fertility, transitions, and more. Also, educational information on healthy lifestyle, fitness during and after cancer care, free weight loss tools such as food tracking, education on survivorship and more.

Call: 1-855-220-7777

Visit: <http://www.livestrong.com>

**Medline Plus**

Information about health topics, drugs and supplements. This website has language translation links.

Visit: <http://www.nlm.nih.gov/medlineplus/cancer.html>

**National Oral Health Information Clearinghouse**

A service of the National Institute of Dental and Craniofacial Research that provides oral health information for special care patients.

Call: 1-866-232-4528

Visit: <http://www.nidcr.nih.gov>

E-mail: [nidcrinfo@mail.nih.gov](mailto:nidcrinfo@mail.nih.gov)

