

Chapter 7. Medical Oncology

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Medical oncology is the study and treatment of cancer using chemotherapy and hormone therapy. A medical oncologist is an internal medicine doctor with special training in cancer treatment. Many medical oncologists are also specialists in hematology (study of the blood).

Their responsibilities may include:

- Managing the care of cancer patients needing chemotherapy and hormones;
- Referring patients to and consulting with other physicians and health care providers for additional tests or procedures; and
- Referring patients to community resources and clinical trials as appropriate.

Chemotherapy

Chemotherapy (“chemo”) treats cancer using different chemicals (medications), which are also known as:

- Anti-cancer drugs
- Anti-neoplastic agents
- Chemo drugs
- Biotherapy

Many different drugs are used to treat prostate cancer. The most common include:

- Estramustine
- Vinblastine (Velban)
- VP-16 (Etoposide)
- Paclitaxel (Taxol)
- Docetaxel (Taxotere)
- Mitoxantrone
- Doxorubicin (Adriamycin)
- Cyclophosphamide (Cytosan)

Usually given in combination, these drugs target cancer cells that are growing or dividing. They can also affect normal, healthy cells.

How Chemotherapy Drugs Work

Chemotherapy drugs work actively against rapidly dividing cells in the body, both cancer cells and normal cells, such as:

- Bone marrow, which produces red and white blood cells and platelets;
- Hair follicles; and
- The lining of the mouth, throat, stomach, intestines and rectum.

Chemotherapy drugs are not selective. They cannot tell the difference between cancer cells and healthy cells, and they may destroy both. Fortunately, normal cells recover and cancer cells die. While the normal cells are recovering, you may experience some side effects. Most of these side effects can be prevented or lessened with drugs and other treatments.

How Chemotherapy Drugs are Given

Chemotherapy drugs are usually given intravenously (through a vein) or orally (by mouth) and travel throughout the body. They may be given before surgery (neoadjuvant therapy) or after surgery (adjuvant therapy) to treat prostate cancer. They are used if the cancer has spread (metastasized) to other areas of the body such as the bones, lungs or distant lymph nodes.

Adjuvant therapy: Given after surgery if lymph nodes are involved, if there are other indications that the cancer is aggressive or if the cancer has a chance to recur.

Chemotherapy is given in cycles, which include alternating treatment periods and rest periods. This gives normal cells a chance to recover, but does not give cancer cells enough time to multiply. Each treatment may take a few hours depending on the type of drugs used and the length of time it takes to administer each drug. Treatments may be repeated every one to four weeks for three to six months, or longer depending on your treatment plan.

Side Effects

Chemotherapy side effects can range from minor to life-threatening conditions depending on the drug used, the dosage and a person's overall health. Medical professionals must tell you about all the potential side effects of any treatment they prescribe before you give your consent.

The majority of side effects involve damage to the bone marrow, hair follicles, and the lining of the mouth, throat, stomach, intestines and rectum. Damaged bone marrow (known as bone marrow depression or myelosuppression) reduces the production of white blood cells, platelets and red blood cells.

- White blood cells are the “soldiers” of the body. When there are too few white blood cells (neutropenia), your immune system may not be able to fight infection as well as it does normally.
- Platelets help blood clot when you get a cut or there is a leak in a blood vessel. If your platelet count is low (thrombocytopenia), you may have clotting and/or bleeding problems.
- Red blood cells deliver oxygen to the body and carry away carbon dioxide from the tissues. A low red blood cell count (anemia) may make you feel weak and tired.

Other common chemotherapy side effects include nausea and vomiting, diarrhea and mucositis (sore mouth and throat). These side effects are discussed in detail later in this section.

Different people have different reactions to the same chemotherapy. If you undergo chemotherapy, you will not know how you will react or what side effects you will experience until a few days after your first chemotherapy session. Listen to your body, pay attention to what you are feeling and always report these symptoms to your doctor or nurse. Your initial experience will help you prepare for and cope better with future chemotherapy sessions.

Hormone Therapy

Hormone Blockade

As part of your therapy for prostate cancer, it may be recommended that you undergo treatment referred to as “hormone therapy,” “androgen blockade” or “hormonal blockade.” These phrases refer to attempts to temporarily stop your body from producing the hormone testosterone. Testosterone, the male sex hormone, is produced by the testicles and acts much like a food source for prostate cancer. By stopping the production of testosterone, or by blocking the uptake of testosterone by cancer cells, prostate cancer can be halted for a period of time. This blockade can lead to a drop in PSA levels, shrinkage of the size of your prostate and a slowing of the growth of prostate cancer cells throughout the body.

What Patients Typically Receive Hormone Blockade?

For patients with newly diagnosed prostate cancer, hormonal therapy may or may not be recommended, depending on the extent of the cancer (metastatic versus non-metastatic), the grade of the cancer (high Gleason score versus low) or size of the prostate (large versus normal or small). Not all patients require hormonal therapy. The main reasons for using early hormone therapy are the following:

- Patients with intermediate-risk or high-risk localized cancer, who will be undergoing primary radiation treatment, are frequently treated with hormone therapy for several months before and during their radiation treatments, and may be kept on the therapy for a year or more after completing the radiation.
- Patients with very large prostates (greater than 50 cc in size) who are going to undergo either permanent seed implants or external radiation, may be treated with several months of hormone therapy to shrink the gland, decreasing the target size and thereby reducing the risk to nearby normal organs.
- Patients with metastatic bone disease at diagnosis, to stop the progression of the disease.
- Patients who have chosen not to undergo radiation or surgery for their disease.

What is the Duration of the Blockade?

If hormonal therapy is recommended, it can be given in multiple ways. First of all, the duration of treatment is decided upon – short course (three to four months) or long course (six months to three years) when being used in conjunction with primary radiation. If a person’s disease has recurred after primary surgery or radiation, it may be given in a continuous fashion for as long as it continues to work (“continuous hormone therapy”) or for shorter periods such as eight months to one year, followed by a break, until the PSA level starts to rise again at which time it is resumed (“intermittent hormone therapy”). For patients with cancer that has already spread to bones, the hormone therapy may be used for years or as long as it continues to work.

How is Blockage Done?

The hormone therapy can have several different components, including injections and pills. The patient may be treated with shots alone, pills alone, or shots and pills together. The injections are drugs called LH-RH agonists, and they act by telling the pituitary gland to stop sending instructions to the testicles to make testosterone. The most commonly injected drugs used are Lupron, Zoladex or

Trelstar. They come in forms that are injected underneath the skin of the abdomen or into the muscles of the buttocks. These injections can last for one, three or four months, and some forms can be inserted into the skin of the arm that last for a full year. These injections are the main form of hormone blockade.

For the first three or four days after an injection of one of these medicines, the testosterone level can actually rise, so if there is concern about possible cancer in the bones, a pill that is taken orally, called an anti-androgen (usually Casodex or Flutamide) may be started a few days before the first injection. These pills prevent the testosterone from getting into the cancer cells. These pills may be continued for the full duration of the injections, for just a short period at the start of the injections, or in some cases instead of the injections. A third medicine, called finasteride (Proscar) is also used sometimes in what is known as triple blockade.

What are the Common Side Effects of Hormone Blockade?

The hormone therapy decreases the effect of testosterone in the body, which results in several side effects. Hot flashes, or brief periods of a flushing warmth that lead to sweating, may occur at random times during the day or night. These are not dangerous, but are irritating and may occur rarely or rather frequently. They are similar to the flushes experienced by women during menopause. There are some treatments that can reduce the intensity of the flashes and can be discussed with your physician. Gradual reduction in sexual desire occurs while the testosterone level is low, and the ability to attain an erection is often diminished or lost. Weight gain can become a problem, and it is recommended that exercise level be increased and the diet watched while on this therapy. Many men notice loss of energy. When these drugs are discontinued, the testosterone levels will return to normal within one to six months, and these side effects will diminish.

When a patient is kept on hormone therapy for longer periods (six months or longer), other side effects such as breast enlargement and tenderness (gynecomastia), weakening of the bones (osteoporosis), depression, worsening of arthritic pains, dry skin and decreased mental acuity can be seen. Each of these should be discussed with the physician administering the drugs, and some (depression and osteoporosis) may require treatment. Bone density scans may be performed to check for osteoporosis, and if severe enough, may require treatment with drugs called biphosphonates (such as Fosamax).

When the anti-androgen pills are used, there is a small risk of liver injury, so that blood tests should be monitored intermittently while taking these pills. These pills may also cause diarrhea or nausea.

Other Treatments

Biphosphonates

They are drugs given to men whose prostate cancer has spread to their bones. Pamidronate (Aredia) and Zoledronic acid (Zometa), the two most common biphosphonates, are given intravenously, generally every three to four weeks to strengthen the bones and relieve bone pain. They also help lower blood calcium levels that sometimes increase when cancer spreads to the bones. Too much calcium (hypercalcemia) can lead to changes in mental status, nausea, vomiting, constipation, bone fractures, kidney stones, and in severe cases, coma.

Side Effects and Self-Care Tips

Before undergoing chemotherapy, your medical oncologist will explain what to expect from your treatment, including possible side effects of the chemotherapy drugs.

The following information could help prevent or lessen any side effects you may experience. It will be trial and error to see which ones work best for you, or you might find something else that can help you deal with the side effects.

- Unless your doctor tells you differently, it is important to **drink extra fluids** while you are undergoing chemotherapy. Try to empty your bladder often.
- While you are undergoing treatment and after you stop treatment, **do not have any immunizations or vaccinations without your doctor's approval.**
- Regular doctor visits are very important. Your doctor needs to check your progress to make sure that the chemotherapy is working properly and to check for unwanted side effects. Your doctor will recommend a follow-up visit schedule for you.

Please let your doctor or nurse know if you:

- Are allergic to any medications, either prescription or non-prescription (those you can buy over the counter);
- Are taking any other prescription or nonprescription medications;
- Have any other medical problems, especially chicken pox (including recent exposure), herpes varicella zoster (shingles), infection, kidney disease, liver disease, nerve or muscle disease, heart problems or diabetes;
- Have a history of being treated with high dose X-rays (radiation therapy) or chemotherapy; or
- Are taking high doses of multivitamins or antioxidants (such as vitamin A, E or C) or any herbal therapies. **It is very important that your doctors and health care team know what herbs you are taking before you start treatment.**

Blood Cell Counts

Chemotherapy often causes your blood cell counts to drop and rise. Your doctor's office will give you routine progress reports on your blood cell counts.

White Blood Cells

White blood cells (WBC) are cells that defend the body against infection. If your WBC count is low (a condition known as neutropenia) due to chemotherapy, your risk of developing an infection may increase. An infection can occur anywhere in your body or be caused by organisms normally found in your body or the environment. A minor infection can become very serious, even life-threatening if it occurs when your WBC is very low. Occasionally, special medications are used to make your WBC return to normal more rapidly. Your doctor may delay your treatment or decrease the dose of your chemo drugs if your white blood cell count is low.

To Prevent Infection:

- Check your oral temperature whenever you feel you have a fever or have shaking chills.
- Wash your hands often during the day. Be sure to wash them well before eating, after using the bathroom or picking your nose (please try to refrain from this).

- Avoid people who have contagious illnesses, such as chicken pox or flu.
- Do not tear or cut your nail cuticles. Use cuticle cream and push them back.
- If you do cut or scratch your skin, clean the area at once with water and soap, and call your doctor if you show any sign of infection, such as swelling, redness, tenderness and/or fever.
- Brush your teeth with a *soft* toothbrush after meals or rinse your mouth after you eat.
- Lubricate your lips frequently and use lotions/creams on your skin to prevent dryness.
- Do not squeeze or scratch pimples or sores.
- Clean and cook all foods well. Do not add herbs and spices *after* the foods have been cooked.
- Avoid constipation. Ask your doctor for an order for stool softeners and/or laxatives if you experience problems. Avoid using enemas or suppositories unless instructed by your doctor.
- If irritation or hemorrhoids are a problem, ask your doctor for advice.
- Check with your doctor first before having elective dental work or surgery.
- Avoid cleaning pet litter boxes.
- Avoid diaper changes of children who have had recent immunizations.
- Always wear slippers or properly fitted shoes to protect your feet. Do not go barefoot.
- Use gloves while gardening or washing dishes.

Let your nurse or doctor know immediately if you have:

- A fever of 100.5 or greater, unless your doctor's office instructs you differently
- Chills with or without fever
- Sweating, especially at night
- Earaches
- A severe cough or sore throat
- Mouth sores or ulcers, cold sores or fever blisters
- Infected hangnail or skin around toenails, including any redness, tenderness and/or swelling
- Rashes or redness, swelling or sores on the skin
- Stomach pain, nausea and/or vomiting, unexplained loss of appetite
- Loose bowel movements or pain during bowel movement over 24 hours
- Irritation or sores around the rectal area
- A burning sensation when urinating, urinating frequently or difficulty starting urination

Platelets

Platelets are blood cells that help in clotting to prevent bleeding. If your platelet count is low, you may bleed or bruise more easily than usual.

To Prevent Bleeding:

- Do not give yourself an enema. Get an order for a stool softener and/or laxative if you are constipated.
- Do not take any medication, not even aspirin or aspirin-free pain relievers, without first checking with your doctor or nurse.
- Do not have any alcoholic drinks unless your doctor says that it is all right.
- Use cotton swabs, toothettes or a soft bristled toothbrush to clean your mouth. Do not floss.

- Clean your nose by blowing gently. Do not pick your nose.
- Be extra careful when using knives or other sharp objects.
- Use an electric razor when shaving.
- Be very careful not to burn yourself, especially when cooking. Use a padded glove when you reach into the oven.
- Avoid contact sports and other activities that might result in injury.
- Wear heavy gloves for digging in the garden or working near plants with thorns.

Red Blood Cells

Red Blood Cells carry oxygen to the tissues in your body. When the red blood cell count is low (a condition known as anemia), your body tissues do not get enough oxygen to do their work. Over time, you may become very tired physically and mentally.

To Help Anemia:

- Get plenty of rest; conserve your energy.
- Try sleeping more at night and taking a short nap during the day.
- Limit and prioritize your daily activities. Accept offers or ask family and friends to help you do your duties.
- Try to eat a balanced diet, even when you are tired.
- If you don't have help cooking your meals, use ready to eat foods. Double your recipes on days that you have energy to cook; place them in small containers and freeze them. You may want to contact "Meals on Wheels" about delivering food to you.
- Drink plenty of fluids.

Let your nurse or doctor know immediately if you:

- Bruise easily
- Have large areas of tiny pinpoint-sized red or purple spots on your skin
- Have unusual or prolonged bleeding, such as from the gums, nose or a cut in the skin
- Have blood in the urine, stool or sputum
- Have abdominal pain
- Have frequent headaches
- Have new visual problems
- Get dizzy or light-headed often
- Have headache or are unable to concentrate
- Tire easily
- Are getting weaker and unable to do everyday activities
- Have shortness of breath
- Have a pounding heart beat or your heart is beating fast
- Always feel cold no matter what you do to keep you warm
- Have pale skin

Nausea and Vomiting

Most of the chemo drugs used for prostate cancer can cause nausea and vomiting (N&V). The severity of this side effect depends on the type and dose of chemotherapy drugs used. If the chemotherapy drugs prescribed are known to cause moderate to severe N&V, your doctor may order anti-nausea or anti-emetic drugs before you start chemotherapy. You may also receive a prescription for anti-nausea medication to take for a few days whether or not you feel nauseous. Sometimes men experience N&V even before receiving chemotherapy. This type of N&V is

called “anticipatory N&V,” which is usually associated with anxiety. Other types of N&V include “acute” and “delayed.” Acute N&V means that the N&V occurs either during or within 24 hours of chemotherapy. This is becoming rare now because of new anti nausea and antiemetic drugs. Delayed N&V may occur two to three days after chemotherapy and may last for a few days.

Protective and Preventive Measures

- Use anti-nausea medication prior to chemotherapy and continue through the entire anticipated duration of N&V. There are many available anti-nausea medications available over the counter or by prescription. Ask your doctor which ones would be good for you. Let your doctor know if the medications do not work for you.
- Rinse your mouth often to remove the acidic taste.
- Wear loose clothing.
- Practice behavioral therapies, such as relaxation techniques and hypnosis. Breathe deeply and slowly if you start to feel nauseous.

Environmental changes

- Choose a calm and reassuring area to rest, especially after meals.
- Minimize distinctive odors or sights, including perfumes, room deodorizers and disinfectants (strong smells can trigger nausea).

Dietary interventions

- Eat small, frequent meals. Eat light meals before chemotherapy. Eat before you get hungry. An empty stomach will make N&V worse.
- Suck on mints or sour candy during chemotherapy.
- Try ginger as a tea or eating fresh, pickled or candied ginger.
- Serve foods at room temperature or colder to minimize food odors.
- Avoid very sweet (cakes, cookies, candies), fried, fatty or spicy foods.
- Eat rice, bread, potatoes, hot cereals, puddings and other starchy foods.
- Get adequate fluid intake to prevent dehydration: clear liquids or broth, unsweetened fruit juices, or light-colored sodas that have lost their fizz, such as ginger ale.
- Sip beverages slowly between meals to avoid bloating.
- Inhale peppermint oil by placing one to two drops in a glass of water or on a gauze pad.
- Avoid reclining for at least one hour after a meal.
- If N&V occurs in the morning, eat dry foods like toast, crackers or pretzels before getting out of bed.

Other

- Continue to do things you enjoy.
- Walk (when allowed) at your own pace, for at least 30 minutes each day.
- Move slowly to avoid getting dizzy. For example, when you wake up, instead of getting out of bed quickly, sit on the side of the bed for a while before standing. If you still feel dizzy, talk to your physician or nurse about what you should do.
- If you experience shortness of breath, breathe through your nose and exhale slowly with your lips pursed.

Mucositis

Mucositis (stomatitis) refers to the inflammation and ulceration of the mucosa (lining) of the mouth. They are caused by the effects of chemo drugs on rapidly dividing mucosa cells found from the mouth to the anus and by damage to the bone marrow (myelosuppression), which

decreases blood cell production. Oral mucositis occurs within two to five days after chemotherapy and can last up to two weeks. You may not be able to prevent mucositis, but you can help prevent secondary infection in your mouth by keeping your mouth clean at all times.

Signs and Symptoms of Oral Mucositis

- Burning sensation
- Sensitivity to hot and cold foods
- Sensitivity to salty and spicy foods
- Intolerance of citrus fruits
- Mild redness (erythema) or swelling (edema)
- Sensation of dryness

Pain is generally not present in the early stages of mucositis. Bleeding may be present in severe mucositis and infection may set in.

Protective and Preventive Measures

- Treat dental problems before starting chemotherapy.
- If you wear dentures, use them only when eating.
- Stop smoking, as it will make your mouth drier and more irritated. Smoking may also make your treatment less effective.
- Check your mouth daily and tell your doctor if you have any of the above signs and symptoms.
- Keep your lips moist with lip balm or other moisturizers to prevent dryness and cracking.
- Keep your mouth clean and moist to prevent secondary infections. Use a soft toothbrush or sponge and rinse your mouth frequently with one teaspoon of salt or baking soda in a glass of water. Avoid commercial mouthwashes since their alcohol content can be irritating and drying.
- Avoid using lemon glycerine swabs to clean mouth because of their drying effect.
- Your doctor may prescribe some medications called “magic mouthwashes” or “GI cocktails” that temporarily relieve mouth pain. He or she may also recommend topical medicine that you apply directly to mouth sores, narcotics or other pain relievers.

Nutritional Support for Mucositis

- The degree of diet change will depend on the severity and location of mucositis.
- Take small bites and chew slowly.
- Eat foods that require a minimum of chewing (i.e., food chopped or cut into small pieces, blenderized or pureed foods, casseroles and soups) and are easy to swallow, such as bananas, applesauce, mashed potatoes, custards, scrambled eggs, etc.
- Avoid eating citrus fruits, tomato products, spicy or salty foods, and dry and hard foods, especially those with rough surfaces.
- Add sauce or gravy or dip foods in beverages to make food softer and easier to swallow.
- Cold foods may be more soothing. Try ice cream, popsicles, Jell-O, cottage cheese, yogurt, pudding, etc.
- If you cannot eat solid foods because of severe mucositis, use nutritional supplements (such as canned liquid supplements or milkshakes).
- Drink plenty of fluids to keep your mouth moist. Avoid caffeinated coffee, tea and alcohol.

Diarrhea

Diarrhea is frequent bowel movements of soft, mushy or watery stools. It can be caused by the damage the chemotherapy drugs cause to the lining of the small bowel or by medications, foods, herbal supplements, or parasites from unwashed or uncooked foods.

Protective and Preventive Measures

- Tell your doctor or nurse if you have fever, excessive thirst, dizziness, palpitations, rectal spasms, abdominal cramps, watery stool, bloody stool or diarrhea that will not go away despite treatment.
- Eat foods that are lactose-free (lactose is the simple sugar found in milk and milk products), low-fat, and low-residue (foods that do not contain high fiber or roughage).
- Your physician may recommend a change in the medications you take.
- If your diarrhea is bad, do not eat or drink for a few hours to allow the gut to rest. When you feel better, try eating clear liquids, such as clear broth and beverages, then go to a bland diet such as the BRAT diet mentioned below.

Foods to Eat

- BRAT diet (bananas, rice, apple sauce or peeled apples, and toast without butter).
- Foods containing pectin (bananas, avocados, asparagus tips, beets).
- Foods high in sodium and potassium (minerals lost due to diarrhea), such as peeled apricots; bananas; peach and apricot nectar; broccoli; skinless baked, boiled or mashed potatoes; meat; saltwater fish; mushrooms; cottage cheese.
- Liquids: drink at least 8 glasses/100 ounces of liquid a day. Try peach nectar, bouillon and sports drinks, cranberry juice, grape juice, weak tepid tea, gelatin, non-carbonated drinks (or carbonated drinks that have lost their carbonation).
- Try adding nutmeg to foods to reduce over activity of the gut or small bowel.

Foods to Avoid

- Gluten (a wheat protein)
- Milk and milk products, except for:
 - Buttermilk and yogurt may be tolerable because the lactobacillus in buttermilk, and yogurt alters the lactose.
 - Processed cheese may be tolerable because the lactose is removed when the whey is separated from the cheese curd.
 - Milkshake supplements, such as Ensure, are lactose free and may be used.
- Stimulating or irritating foods (spicy foods, coffee, tea, chocolate, alcohol)
- High-fiber foods (prune and orange juice, nuts, whole grain, beans, popcorn, pickles, relishes, peas, cauliflower, broccoli, and cabbage because of they cause gas to form)
- Raw vegetables and the skins, seeds and stringy fibers of vegetables and unpeeled fruits
- High-fat foods

Drugs to Avoid

- Bulk laxatives (such as Metamucil) may enhance gastrointestinal activity and contribute to more severe diarrhea. However, some doctors may recommend a little bit of Metamucil to help form stools.
- Stool softeners or laxatives
- Herbs

Skin Care

- Prevent skin irritation or breakdown on your buttocks by applying A&D ointment or other products on your clean skin to prevent the stool from sticking.
- Proctitis is an inflammation of the rectum/anus. Symptoms include mucosy rectal discharge, rectal pain and rectal bleeding. If you develop proctitis, your doctor may order rectal cream, hemorrhoidal preparations with hydrocortisone, or the use of sitz baths.
- Keep your perineal area (area between your rectum and scrotum) clean and dry.

Antidiarrheals

There are many anti diarrhea medications that can be bought over the counter or with a doctor's prescription. If one medication does not work for you, let your doctor know.

Hair Loss (Alopecia)

Hair loss is temporary. It usually starts between 10 days to a few weeks after chemotherapy and will start to re-grow in about six to eight weeks after chemotherapy is completed. The degree of hair loss can be minimal, moderate or severe. It depends on the type of chemotherapy drug used and the dose and duration of the therapy. Damage to the hair root will result in complete baldness. Hair thinning results from damage to the hair shafts. Hair loss is not limited to the scalp. It can affect the eyebrows, eyelashes and other body hair.

Helpful Hints to Remember Before, During and After Hair Loss

- Remember that your hair will grow back.
- Be gentle with your hair. Use mild shampoo and a soft hairbrush.
- Avoid using hair dryers.
- Hair may fall out in clumps and can leave "patches" on your head. Some people choose to shave their heads to avoid the patchy look.
- Keep your scalp covered and use sunscreen to prevent sunburn. Use mild shampoo to clean the scalp and apply soothing emollients or lotions to prevent itchiness and dryness.
- When hair starts to return, it may have a different color or texture compared to your old hair. The new hair may be curly.
- Sometimes hair grows back unevenly, so many men choose to shave their heads at least once and others continue to use their head coverings until they have their first haircut.

Fatigue

Fatigue is loss of energy that persists despite adequate rest and sleep. The feeling is disproportionate to or unrelated to activity. It can be acute and less than a month or chronic, continuing beyond one month. You may experience fatigue only once in awhile or all the time. It can be mild, moderate or severe. Many things can cause fatigue, including:

- Anemia
- Cancer treatment
- Co-occurring medical conditions, such as high blood pressure (hypertension), diabetes or thyroid disorders
- Depression
- Electrolyte (chemical) imbalance
- Immobility or lack of exercise
- Infection/fever

- Insomnia or not sleeping well at night
- Pain
- Poor nutrition
- Stress
- Surgery

Protective and Preventive Measures

- Be assured that fatigue related to your cancer treatments does not necessarily indicate that your cancer is getting worse.
- Simplify your work or activities by breaking them down into smaller steps.
- Plan your activities for times when you have energy. Pace your activities and include rest breaks in your plan.
- Check first with your doctor about exercise.
- If it is OK with your doctor, exercise for several short periods rather than one long period. The duration of exercise is based on your normal level of activity. Walking at least half an hour a day is generally recommended, unless your doctor says otherwise.
- Practice energy conservation by alternating activities with short, frequent rests.
- Relaxation, meditation, biofeedback and massage therapy may help.
- Prioritize your activities by doing the things that are important or essential and decrease or eliminate activities that are not essential.
- Limit alcohol and caffeine intake.
- Eat a high-protein, high-calorie diet and maintain good hydration by drinking plenty of fluids.
- If you do not have help cooking your meals, use ready-to-eat foods. Double your recipes on days that you have energy to cook. Place them in small containers and freeze them. You may want to contact “Meals on Wheels” about delivering food to you.
- Try to establish good sleeping habits at night and only take short naps during the day.
- Keep room temperatures moderate, not too hot or cold.
- Tell your doctor if your energy level is preventing you from completing your activities of daily living (ADL) or activities that you normally enjoy.

Additional Side Effects

Chemotherapy and hormone therapy may cause, either temporarily or permanently, decreased libido (sex drive), impotence, mood changes and sleep problems. If you experience these or any other symptoms, talk with your doctor. The information in this section will help you plan and prepare for your treatment. However, it is not meant to replace the individual attention, advice, and treatment plan of your oncologist and medical team.