

## The most important things to remember when you have been diagnosed with cancer:

1. Write your questions down. Don't think that any question is too "dumb" to ask, or that you need to ask the same question again and again. Your doctor and nurse (usually specialists in cancer care or "oncology") want you to be "informed", to understand your disease and your treatment.

2. Always bring a family member or friend with you to your doctor's visits and treatments with the oncology nurse. They can make sure that you remember to ask your questions, and they can help to remember and understand the answers. You can bring a tape recorder to record your doctor or nurse's answers.

3. Take care of yourself. Get enough sleep, and try to organize your life to decrease the stress and demands you face every day. Ask your family and friends for help with your children, with your household duties, and with your work responsibilities.

4. Ask your doctor or nurse for the name of a social worker or counselor who works with cancer patients a lot. It often times helps to talk with a professional person about the family, financial, insurance issues and work related stresses that you are concerned about. They can refer you to resources that can help you, or they can do some counseling with you and your family.

5. Ask your nurse for advice about your diet while you are on treatment. Certain treatments can make eating difficult. There are things you and your family can do to help you with your nutrition.

6. Getting cancer treatments, visiting the doctor, having tests performed, can all be very stressful. There is a lot of waiting, and procedures can be uncomfortable. You can bring a tape recorder or CD player. Listen to music or books on tape that you enjoy. Some

people like to write or draw during these frequent waiting periods. Bring plenty of water, juices and snacks to help you get through these long stretches. Wear comfortable clothing and shoes.

Some people learn how to do focused relaxation exercises. There are specialists who can teach you how to do self-relaxation exercises so you can tolerate the sometimes-uncomfortable treatments you may experience. Ask the social worker for some recommendations.

7. If you don't like how things are going, if they are not what you expected, or if you don't understand what is being done and why, speak up. Talk with your doctors or nurses. They are very experienced in working with patients with your type of disease and treatment. They want to help you do your very best. They will do their best to answer your questions, to change your medications if necessary, and to make you more comfortable.

8. Finally, be hopeful. You have a great "team" looking out for you. Work WITH them. Take care of yourself. Keep your appointments. Communicate with your doctors and nurses so they understand how you are doing, and what needs to be done to help you do better. Communicate with your family and friends.

**You WILL get through this treatment.**



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### What are common side effects and what can I do?

Each chemotherapy drug and drug combinations have different side effects. It depends on which drugs you will be getting the dosage of the drugs, and the combination of the drugs.

Often times your blood counts will be lowered for a week or so. This starts about a week or 10 days after your chemotherapy has started.

You are more vulnerable to infection because your white blood cell count is lower. White blood cells help your body to fight infection.

You might feel tired and have less energy. This is because your red blood cell count is lower and red blood cells carry oxygen to your tissues. You might also bruise more easily. This is because your platelet count is lower, and platelets help with clotting so you won't bleed.

Another frequent side effect can be nausea. Your oncology nurse will help prevent nausea by giving you medicine to prevent or control the nausea before it happens. If the medicine doesn't work as well as you'd like it to, call your oncology nurse. He or she may be able to have the doctor order you a different anti-nausea medication.

There are many other side effects. Your nurse should go over the side effects with you so you will understand what to expect, how to prevent or treat these side effects.

### What is a clinical trial and how do I get more information about that?

A clinical trial is where a patient with a certain diagnosis might be eligible to receive a new chemotherapy or other treatment for their disease. We learn what are the best treatments for patients based on the results of these clinical trials. You can ask your doctor about the availability of clinical trials, and weigh the potential benefits against the benefits of known treatments. Another resource is the National Cancer Institute in Bethesda, Maryland.

Learning about your cancer, cancer treatments and managing side effects can be overwhelming. A cancer diagnosis affects not only the person with cancer physically, but emotionally and psychologically as well. It also affects the entire family. Write down your questions when you visit your doctor or nurse. There are support groups and counselors that specialize in working with patients with cancer. Ask your doctor or nurse for a referral if you need someone to talk to about your concerns.

AACSN would like to specially acknowledge Nadine Nakazawa, BS, RN, OCN, and member of the Oncology Nursing Society for her contribution.



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**CHEMOTHERAPY**

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### **What is chemotherapy?**

Chemotherapy is medicine that kills rapidly growing cells during a certain period of the "cell cycle." Nearly all cells in the body go through a "cycle" or stages as they grow and divide. "Chemotherapy" targets certain cancer cells because they usually grow more rapidly than normal tissue. Cancer cells seem to be more vulnerable to the effects of cancer chemotherapy compared to healthy tissues.

Chemotherapy can be given in pill form, but most commonly is given by an IV (intravenous).

### **Why is chemotherapy given?**

Chemotherapy may be selected to treat certain cancers if that drug or combination of drugs is known to be effective in killing or controlling that type of cancer. Not all cancers are affected by chemotherapy, and not all chemotherapy drugs affect all cancers. Your doctor will tell you which type of treatment or combination of treatments will work best for your type of cancer.

### **How does chemotherapy work?**

Chemotherapy works by combining with parts of the inner workings of the cell (the DNA or RNA) and interrupting the cell's ability to properly divide into two new cells. If the cell can't divide normally, then it will eventually die.

### **When is it given?**

Chemotherapy affects many normal but rapidly growing tissues. Therefore chemotherapy is given in "cycles" or at certain periods of time. This time period in between when chemotherapy is given allows the normal tissues to "recover" or go back to a more normal state, before the next "cycle" is given.

This interval can vary depending on how the chemotherapy drugs affect the normal tissues.

### **Do you stay in the hospital or can you have therapy at home?**

Where the chemotherapy is given depends on which drugs you will receive, and how they will be given. If they are in pill form, you will probably take these at home. If the drugs are given by vein (IV), then it will probably be given in the doctor's office or in a clinic. Sometimes the chemotherapy is given while you are a patient in the hospital.

### **Can I go on vacation if I'm on chemotherapy?**

Talk to your doctor or oncology nurse about your vacation plans. Sometimes you can still travel while on a mild form of "chemo." However, sometimes the chemotherapy will cause you to be vulnerable to catching colds or other infections, and you may feel very tired. It may not be a good idea for you to travel. Your doctor or nurse can help you understand what the risks are for your disease and treatment.

### **Will I lose my hair and if so, will it grow back?**

Some chemotherapy drugs cause complete hair loss, some cause mild hair loss, and others may cause very little hair loss. Ask your oncology (cancer) nurse or your doctor as they will know which chemotherapy drugs you will be receiving.

Yes, your hair will eventually grow back, once you've completed the chemotherapy. It may grow back a different texture or color.

### **Will it affect my fertility (male and female)?**

Chemotherapy will affect rapidly growing cells, and your fertility may be affected. It usually depends on the specific chemotherapy drugs you will be receiving, and your age. Ask your doctor. However, if you are sexually active and in the age group where you could get pregnant, you must use a form of birth control even if your periods temporarily stop.

### **Do I stay away from people...can I get infections easily?**

It just takes some common sense. Avoid

crowds, and ask your family and friends to stay away if they have a cold or other infection. If you have a family with young children, just make sure everyone washes their hands after using the bathroom or if they blow their nose. You are more vulnerable to getting infections while you are on chemotherapy. Again, ask your doctor or oncology nurse as different chemotherapies can have different effects.

### **Can cancer run in the family?**

Yes. There are many causes of cancer, but for many cancers we do not know the cause. In some families, there can be a genetic tendency to get cancer or a certain type of cancer. If you are concerned about this, talk this over with your cancer doctor (oncologist). They can refer you and your family members to a specialist who can advise you as to your family risk for that cancer.

### **Did I do anything to cause my cancer?**

Sometimes we know that certain activities can lead to certain cancers. For example, it is well known that many lung cancers are caused by exposure to years of cigarette smoking. However, there are some types of lung cancer that are not caused by smoking. This is true for many cancers. Overexposure to the sun over many years can lead to certain types of skin cancer. There are other factors in the environment, in the foods that we eat or drink, in the air we breathe, that can make certain people at risk for certain types of cancers.

However, for many other cancers, we still do not know what triggers or causes that particular cancer in that particular person.

### **How is the chemotherapy given?**

Chemotherapy is given in different ways depending on the particular type of cancer that you have. Your oncology nurse will explain to you how the medication will be given to you. For example, it might be given through a needle or catheter placed in your vein. It might take a few minutes or several hours or days or weeks to be given.

### How does radiation work?

All cells, cancerous and healthy, grow and divide. But cancer cells grow and divide more rapidly than many of the normal cells around them. Radiation therapy uses special equipment to deliver high doses of radiation to cancerous tumors, killing or damaging them so they cannot grow, multiply, or spread. Although some normal cells may be affected by radiation, most appear to recover fully from the effects of the treatment. Unlike chemotherapy, which exposes the entire body to cancer-fighting chemicals, radiation therapy affects only the tumor and the surrounding area.

### How long does the treatment take?

External radiation therapy usually is given 5 days a week. Weekend rest breaks allow normal cells to recover. But the total dose of radiation and the number of treatments you need depends on:

- the size and location of your cancer
- the type of cancer
- your general health
- any other treatments you are receiving

For example, radiation therapy may last only 2 or 3 weeks when given mainly to relieve symptoms. Another schedule, known as split-course therapy, allows for several weeks off in the middle of treatments to allow the body time to recover while the cancer shrinks.

### What should I ask my doctor?

Understanding the goals of the treatment and your doctor's expectations will help you decide whether radiation therapy is best for you. Questions to ask your doctor might include the following:

- What is the purpose of radiation treatment for my type of cancer?
- Will it prevent or stop the spread of cancer?
- Will it destroy or shrink the tumor?
- If radiation therapy follows surgery, will it destroy any remaining cancer cells? Could radiation alone be used instead of surgery?
- What are the chances that radiation therapy will work?
- Are there other ways to achieve the same goals? What are other treatment options?
- How will the radiation directly affect the cancer and the area surrounding it?
- What side effects are likely to occur?
- Will any of these side effects affect my ability to function normally, for example my ability to eat or drink, exercise, work, etc.?
- Will side effects change my appearance?
- Will they be temporary or permanent? If temporary, how long will they last?

What is the chance that the cancer will spread or come back if I do not have radiation therapy?

AACSN would like to give special acknowledgment to Clara Choi, MD, Ph.D. and Radiation Oncologist for her contribution.



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## **RADIATION THERAPY**

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## What is radiation Therapy?

Radiation therapy uses a stream of high-energy particles or waves, such as x-rays, gamma rays, electrons, or protons to destroy or damage cancer cells. Other names for radiation therapy include radiotherapy, x-ray therapy, cobalt therapy, and irradiation.

Radiation therapy is one of the most common treatments for cancer and is used in more than half of all cancer cases. It is the primary treatment for some types of cancer, such as certain non-melanoma skin cancers, head and neck cancers, early-stage Hodgkin's disease and non-Hodgkin's lymphomas. Cancers of the lung, breast, cervix, prostate, testes, bladder, thyroid, and brain are also treated with radiation therapy. For some patients, radiation therapy may be the only treatment they receive.

Radiation can be administered in several ways: In external beam radiotherapy, radiation beams are delivered using a machine called a linear accelerator. External beam is the most common type of radiotherapy. Internal radiotherapy (called brachytherapy) is administered using a radiation source implanted into the site of the tumor. These sources may be implanted permanently (e.g. permanent seeds used in prostate cancer therapy), or temporarily. Radiosurgery (frame-based, Gamma Knife, or Cyberknife) is performed using high doses of radiation and delivers focused radiation to the tumor. Contrary to their names, no "knife" is used.

Thousands of people become free of cancer after receiving radiation treatments alone or in combination with surgery, chemotherapy, or immune therapy (biologic therapy). For example, doctors can use radiation before surgery to shrink a tumor so that it can be removed more easily or after surgery to stop the growth of any cancer cells that remain. Radiation therapy given during surgery is called intraoperative radiation.

## What happens during each treatment?

External radiation treatments are painless. The experience is just like having a regular x-ray taken. The treatment takes only a few minutes; but each session can last 15 to 30 minutes because of the time it takes to set up the equipment and place you in the correct position.

Depending on the treatment area, you may need to undress, so it is wise to wear clothes that are easy to take on and off. You will lie on a treatment table positioned under the radiation machine. The radiation therapist may put special shields (or blocks) between the machine and other parts of your body to help protect normal tissues and organs. Although radiation does not distinguish between tumor cells and healthy cells, healthy tissue usually recovers with little or no permanent damage. Nevertheless, you should remain still during the treatment.

Once you are in the correct position, the radiation therapists will go into a nearby room to turn on the machine and watch you on a TV monitor. You will be able to talk with the therapists over an intercom. X-rays may be taken during treatments to confirm accuracy.

The radiation therapy machine will make clicking and whirring noises and sometimes sound like a vacuum cleaner as it moves to aim at the treatment area from different angles. The radiation therapist controls the movement and constantly checks to be sure it is working properly. If you are concerned about anything that happens in the treatment room, ask your therapist to explain. If you feel ill or uncomfortable during the treatment, tell your therapist at once. The machine can be stopped at any time.

## Will I be radioactive?

No. Even though the effects of radiation are powerful, you will not become permanently radioactive. External radiation therapy affects targeted cells only for a moment. With internal

radiation therapy, your body may emit a small amount of radiation for a short time. If the source of radiation is contained in a closed implant, the radioactive material cannot escape, but precautions are taken anyway and may include hospitalization and limitation of visitors. Pregnant women, whose unborn babies are vulnerable to the smallest doses of radiation, are not allowed to visit.

Patients who are given radioactive substances such as iodine, phosphorus, or strontium by mouth or into a vein will be instructed on precautions to take until their bodies no longer contain enough radioactivity to be hazardous to others. Be sure to discuss any safety concerns you have and precautions you need to take with your radiation oncologist, nurse, or the radiation safety officer at your treatment facility.

## What side effects can I expect?

Most side effects that occur during radiation therapy are not serious and usually disappear soon after treatment ends. The extent of the possible side effects depends on your general health, your treatment dose, and the area of your body that is being treated. The most common side effect is fatigue. Specific side effects within the area being treated may include reddening and itching of the skin. Ask your physician about the potential side effects of your particular treatment because side effects vary depending on what part of your body is being treated. For example, if you are receiving radiation to your breast for breast cancer, you will not experience any nausea, vomiting, diarrhea, or hair loss. There are many ways to reduce the discomfort of side effects, so be sure to ask your physician.

Many patients have minimal side effects. They are able to work, manage a household, and enjoy leisure activities as usual during their treatment. Other patients find that they need more rest and therefore cannot do as much. Your energy level should return to normal after treatment ends.