



Information for Behavioral Health Providers in Primary Care

Cancer Treatment Information Sheet

Chemotherapy

The word chemotherapy was once used to mean any medicine used to treat any disease. Even taking an aspirin was described as chemotherapy. Today, chemotherapy, or "chemo" for short, most often means taking medicines, or drugs, to treat cancer. The patient might take these drugs before or after surgery, with radiation treatment, or they might take the medicines alone.

There are 3 possible goals for chemotherapy treatment:

- **Cure:** If possible, chemotherapy is used to cure the cancer, meaning that the tumor or cancer disappears and does not return. However, most doctors do not use the word "cure" except as a possibility or intention.
- **Control:** If a cure is not possible, the goal may be to control the disease - to shrink any tumors and to stop the cancer from growing and spreading. This can help someone with cancer feel better and hopefully live longer. In many cases, the cancer does not completely go away.
- **Palliation:** When the cancer is at an advanced stage, chemotherapy drugs may be used to relieve symptoms caused by the cancer. When the only goal of treatment is to improve the quality of life, it is called palliation.

How Is Chemo Given?

Most often, chemo is given into the patient's veins through an IV (intravenous) injection by specially trained oncology nurses. Less often, chemo is given as a shot at the doctor's office or clinic. Rarely, some chemo treatments are in pill or liquid form taken at home by the patient.

The patient may take chemo once a day, once a week, or even once a month, depending on the type of cancer and the chemo they are taking. How long they

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take chemo also depends on the type of cancer, how they respond to the drugs, and what length of time research has shown produces the best treatment results. Often, chemo treatment is a combination of drugs. This combination may change during the course of treatment if the initial drugs that were tried do not seem to be working.

Possible Side Effects of Chemo

Since chemo drugs are very strong, sometimes patients feel sick. The drugs work best on any cell that is quickly dividing, whether it's a cancer cell or not. Therefore, some of the normal, healthy cells in the body that divide quickly are also damaged, including:

- Body hair: Chemo can cause hair loss on the entire body
- Skin and mouth: Chemo can cause dry skin or sores in the mouth and throat
- Lining of the stomach and intestines : Chemo can lead to nausea, vomiting, and/or diarrhea
- Bone marrow: Chemo can cause fatigue, easy bruising and bleeding, and a higher risk of infection. Bone marrow is the thick, liquid inner part of some bones that produces the blood cells. It is often affected by chemo in these ways:
 - Red blood cells carry oxygen from the lungs to all parts of the body. During chemo treatment, the bone marrow may not be able to make enough red blood cells. Not having enough red blood cells is called anemia and can cause shortness of breath, weakness, pale skin, and tiredness (fatigue).
 - White blood cells fight infection. Chemo lowers the white blood cell count, which can lower the body's ability to fight infections. The patient's cancer care team may ask the patient to take steps to avoid infection, such as wearing a surgical mask in public, staying away from people with colds, not eating uncooked foods, and washing their hands thoroughly and often.
 - Platelets form blood clots that plug up any cuts or bruises. If the bone marrow cannot make enough platelets, the patient may bleed too much, even due to small cuts. If the patient's platelet count is very low, they will need to be very careful to avoid any cuts or bruises.

Changes in Thinking and Memory

Patients who have had chemotherapy and have some form of cognitive impairment often call this experience "chemo brain" or "chemo-fog." More recent research has suggested that chemicals produced by the body in response to invasive cancer

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(cytokines) may be partly responsible for these changes in brain function. There are also other possible factors such as surgical anesthesia, hormonal treatment, and medicines that are used to control symptoms. Some of the brain's activities that are affected are concentration, memory, comprehension (understanding), and reasoning. The changes that have been found in patients are subtle and may be hard to pin down, but the people who have problems are well aware of the differences in their thinking. Most cognitive changes are mild and manageable, but if a patient's cognitive problems interfere with their daily life, additional intervention is warranted.

Sexuality

Chemo can affect sexuality in both men and women. For men, erections and sexual desire often decrease just after a course of chemotherapy, but usually recover in a week or two. For women, some chemo treatments may trigger hot flashes and dryness of the vagina. Chemo can cause problems with fertility in both men and women, including early menopause in women.



Radiation Therapy

What Is Radiation And How Does It Work?

Radiation is energy that is carried by waves or a stream of particles. It can change the genes (DNA) and some of the molecules of a cell. These genes control how cells in the body grow and divide. Radiation therapy attacks and damages cancer cells that are dividing. Some types of radiation treatment have more energy than others. The higher the energy, the more deeply the radiation can penetrate the tissues. The way a certain type of radiation behaves is important in planning radiation treatments. The radiation oncologist (a doctor specially trained to treat cancer patients with radiation) selects the type and energy of radiation that is most suitable for each patient's cancer.

There are 3 possible goals for radiation treatment:

- **To cure or shrink early stage cancer:** Radiation may be used by itself to make the cancer shrink or disappear completely. For other cancers, it may be used before surgery to shrink the tumor or after surgery to prevent the cancer from coming back. It may also be used along with chemotherapy in some cases.
- **To stop cancer from recurring (coming back) in another area:** If a type of cancer is known to spread to a certain area, doctors often assume that a few

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cancer cells may have already spread there. That area may be treated to keep these cells from growing into tumors. For example, people with some types of lung cancer may receive preventive radiation to the head because this type of cancer often spreads to the brain.

- **To treat symptoms for advanced cancer:** Some cancers may spread too far to be cured. But this does not mean they can't be treated to make the person feel better. Radiation may help to relieve symptoms such as pain, trouble swallowing or breathing, or bowel problems that can be caused by advanced cancer.

Possible Side Effects of Radiation Therapy

Fatigue

Fatigue is the most common effect of radiation but the exact cause is unknown. The tumor may cause the immune system to make substances that lead to fatigue. Fatigue may also be caused by anemia (low red blood cell count), poor nutrition, pain, pain medicines, medicines such as steroids or chemotherapy, depression, and stress. There is no single treatment for fatigue, but if a biological cause can be found it should be addressed by a medical provider. Light or moderate exercise with frequent rest breaks may be included in a program to reduce fatigue.

Skin

After the first 2 weeks of radiation treatment, patients may notice a faint redness of the skin that becomes more tender and sensitive over time. Dryness and peeling may occur later, including darkening of the skin. Moisturizing the skin with aloe vera, lanolin, or vitamin E may help. The patient should avoid perfumes, deodorants, skin lotions that contain alcohol or perfume, or powders unless approved by their doctor. The patient should stay out of the sun as much as possible. After about a month of treatment, some people getting radiation may experience some extreme peeling and weeping (moist) areas. If extreme peeling and weeping happens, the patient's doctor should be notified.

Mouth and Throat

Mucositis (inflammation inside the mouth) is a temporary side effect that may happen when radiation is given to the head and neck area. It usually improves within a few weeks after treatments are completed. Dry mouth and a loss of taste can result from radiation damage to salivary glands and taste buds. If the mouth becomes sore, the patient may be given medicine to numb the mouth or help the pain.

Brain

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Radiation therapy to large areas of the brain can sometimes result in significant changes in brain function that can lead to memory loss, lower sexual desire, or poor tolerance for cold weather. Nausea, unsteadiness, and changes in vision may also be noticed. Usually these symptoms are minor compared to those caused by a brain tumor, but they can be bothersome.

Digestive Tract

Radiation to the chest and abdomen may result in a swollen and inflamed esophagus (swallowing tube), stomach, or intestine, which can cause nausea, vomiting, or diarrhea. Antacids, sometimes combined with a numbing medicine such as lidocaine, may be helpful in relieving pain from an inflamed esophagus. Nausea and vomiting can also be treated with medicines. If it is severe, some patients may need intravenous fluids to avoid or treat dehydration. Diarrhea can be treated with medicines and by avoiding spicy, fried, or high fiber foods.

Reproductive Organs

Sexual impact of radiation therapy in women: Pelvic radiation may have significant impact on a woman's body. Radiation to the pelvic area can cause the vagina to be tender and inflamed during and for a few weeks after treatment. The scarring that normally occurs after pelvic radiation could shorten or narrow the vagina so much that a woman may not be able to have sex comfortably. If the vagina is being radiated, sex may be uncomfortable due to sore spots or inflamed tissues. Women should follow their doctor's guidelines about sex during radiation therapy.

Sexual impact of radiation therapy in men: Radiation therapy to the pelvis can cause problems with erections by damaging the arteries and nerves that supply the penis. The higher the dose of radiation and the wider the section of the pelvis irradiated, the greater the chance that an erection problem will develop. About a quarter to a third of men who receive radiation notice a change in their ability to have erections. This change most often develops slowly over the first year or so after radiation treatment. Men should speak to their doctor regarding treatment options for erectile function that persists after treatment.



Surgery

Types of Surgery Used for Cancer

Preventive Surgery

This type of surgery may be used if the patient has a pre-cancerous condition such as polyps in the colon. Sometimes preventive surgery is used to remove an entire organ when a person has an inherited condition that puts them at a much higher risk

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for having cancer some day. For example, some women with a strong family history of breast cancer are found to have a change (mutation) in their DNA in a breast cancer gene (BRCA1 or BRCA2). Because their risk of getting breast cancer is high, these women may want to consider mastectomy (breast removal before cancer is found).

Diagnostic Surgery

This type of surgery is used to get a tissue sample to tell whether or not cancer is present or to tell what type of cancer it is. The diagnosis of cancer is often made by looking at the cells under a microscope.

Staging Surgery

Staging surgery is done to find out how much cancer there is and how far it has spread. While the physical exam and the results of lab and imaging tests can help figure out the clinical stage of the cancer, the surgical stage is usually a more exact measure of how far the cancer has spread.

Curative Surgery

Curative surgery is done when a tumor appears to be confined to one area and it is likely that all of the tumor can be removed. Curative surgery can be the primary treatment of the cancer. It may be used alone or along with chemotherapy or radiation therapy, which can be given before or after the operation.

Palliative Surgery

This type of surgery is used to treat complications of advanced cancer. It is not intended to cure the cancer. Palliative surgery can also be used to correct a problem that is causing discomfort or disability. For example, some cancers in the abdomen may grow large enough to obstruct the intestine. This may require surgery to remove the blockage.

Recovery from surgery

Some problems after surgery are fairly common, but are not usually life-threatening. *Pain* is probably the most common side effect. Almost everyone has some level of pain after surgery. Some pain is normal, but it should not be allowed to delay your recovery. There are many ways of dealing with surgical pain. Medicines for pain range from aspirin and acetaminophen (Tylenol®) to stronger drugs, such as opioids like codeine and morphine. *Infection* at the site of the wound is another possible problem. Although doctors take great care to reduce this risk by cleaning the area and keeping the area around it sterile, infections do happen. Antibiotics, either as a pill or given through an IV, are able to treat most infections.

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Other problems are rare, but may be more serious, include:

- *Pneumonia*, especially in patients with reduced lung function, such as smokers.
- *Other infections* can develop within the body, especially if the digestive tract was opened during the operation. Doctors take great care to try to make sure this does not happen. But if it does, powerful antibiotics will be used to treat it.
- *Bleeding* can happen either internally or externally. It can occur if a blood vessel was not sealed off during surgery or if a wound opens up. Serious bleeding may cause the person to need another operation to find the source of the bleeding and stop it.
- *Blood clots* can form in the deep veins of the legs after surgery, especially if a person stays in bed for a long time. Such a clot could become a serious problem if it were to break loose and travel to another part of the body, such as a lung.
- *Slow recovery of other body functions*, such as movement in the intestines, can sometimes become serious problems, too. Getting out of bed and walking around as soon as possible after surgery can decrease this risk.

Long-term side effects depend on the type of procedure done. For example, people who are having colorectal cancer surgery may need a colostomy (an opening in the abdomen to which the end of the colon is attached). Men undergoing radical prostatectomy (removal of the prostate) are at risk for losing control of urination or becoming impotent. Your doctor should talk to you about all of these long-term outcomes before surgery.

This handout was adapted from the American Cancer Society. For more information, go to www.cancer.org.

These Information Sheets are designed to provide a brief overview of various medical conditions. Referring to the Information Sheets may help you communicate more effectively with other members of the Primary Care Team. The Information Sheets are by no means an exhaustive description of the disorders. If you need additional information, please engage in a more detailed search. Don't forget to consult with other members of the Primary Care Team. They are an invaluable source of information!