

# Medical Oncology

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Medical Oncology involves using medications to cure or control cancer. Since medications travel throughout the body, they are called “systemic treatments” as they treat the whole body (or whole body system). They can attack a cancer cell no matter where it is in the body. A medical oncologist prescribes and manages these medicines. Oftentimes, they also help coordinate care throughout a patient’s treatment course.

## Types of Systemic Therapy for Colon and Rectal Cancer

Your medical oncologist may use several types of medications to treat your cancer. Each type differs by how they affect the cancer cells’ ability to grow and divide. Since your doctor will prescribe the best treatment for you, and since they come in different forms, you may be given these medications orally (by mouth) or intravenously (by vein/IV). Not every systemic therapy is recommended for all patients. Some treatments may work better if your cancer has specific mutations while others will not work if that mutation is present. Your medical oncologist will discuss your treatment options with you.

The following describes three common types of systemic therapy. Your oncology team will inform you what type of therapy you are receiving.

Three common types of systemic therapy are described on the next pages. They are:

- Chemotherapy
- Targeted therapy (biotherapy)
- Immunotherapy



## How and when treatments are given

Systemic therapy (or medicine that treats the whole body system) is usually given intravenously (through a vein) or orally (by mouth) and travels throughout the body. It may be given before surgery or after surgery to treat your cancer.

- Neoadjuvant therapy: given prior to surgery to shrink large tumors and make surgery easier.
- Adjuvant therapy: given after surgery to decrease the likelihood of relapse or recurrence. It is typically given if the cancer is large or if it appears aggressive or involves lymph nodes.
- Ongoing therapy: given for metastatic disease. Systemic therapy may be used as a type of ongoing treatment.

Systemic therapy 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 three weeks, and may last four to six months or longer, depending on your treatment plan. For rectal cancer, systemic therapy is given at the same time as radiation.



## Chemotherapy

Chemotherapy (or “chemo”), is also called “Anti-cancer drugs” or “Anti-neoplastic agents”.

Chemotherapy drugs work best on rapidly dividing cells. Since cancer cells divide rapidly, they are particularly vulnerable.

*Some normal cells also divide rapidly, including:*

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

Fortunately normal cells have the ability to recover, while cancer cells do not. 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 supportive measures.

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

Most side effects involve suppression of the bone marrow, hair loss and temporary inflammation of the lining of the mouth, throat, stomach, intestines and rectum. Other common chemotherapy side effects include fatigue, nausea and vomiting, diarrhea, mucositis (sore mouth and throat) and neuropathy (numbness and tingling in hands and feet).

## Targeted Therapy

Targeted Therapy is also called “biotherapy”. The goal of targeted therapy is to more precisely identify and attack cancer cells. Targeted therapy research has helped identify specific differences between normal cells and cancer cells. Thus the therapy can directly “target” the cancer cell’s inner workings and not affect normal healthy cells. There are many different targets on cancer cells and many drugs that have been developed to attack them.

*Targeted drugs can work to:*

- Block or turn off chemical signals that tell the cancer cell to grow and divide
- Change proteins within the cancer cells so the cells die
- Stop making new blood vessels to feed the cancer cells
- Trigger your immune system to kill the cancer cells
- Carry toxins to the cancer cells to kill them, but not normal cells

*(Source: American Cancer Society website)*

Targeted therapy is sometimes used alone, but most often other cancer treatments are used with targeted therapy.

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

Common side effects of targeted cancer therapies are diarrhea, liver problems, skin problems and problems with bleeding or wound healing, immune reactions and swelling.

## Immunotherapy

Immunotherapy is a type of cancer treatment that boosts the body’s natural defenses (your immune system) to fight cancer. One way this can be achieved is to stimulate your own immune system to work harder or smarter to attack cancer cells. Another way is to give your immune system components, such as man-made immune system proteins.

*The main types of immunotherapy now being used to treat cancer include:*

**Monoclonal antibodies:** These are man-made versions of immune system proteins. Antibodies can be very useful in treating cancer because they can be designed to attack a very specific part of a cancer cell.

**Immune checkpoint inhibitors:** These drugs basically take the ‘brakes’ off the immune system, which helps it recognize and attack cancer cells.

**Cancer vaccines:** Vaccines are substances put into the body to start an immune response against certain diseases. We usually think of them as being given to healthy people to help prevent infections. But some vaccines can help prevent or treat cancer.

**Other, non-specific immunotherapies:** These treatments boost the immune system in a general way, but this can still help the immune system attack cancer cells.

*(Source: American Cancer Society website)*

Immunotherapy side effects may affect your lungs, intestines, thyroid or skin. It is extremely important to tell your team right away if you experience new onset of any symptoms, even if they seem minor. Common side effects with immunotherapy are fatigue and inflammation (which can be throughout the body including skin, lungs and colon). Immunotherapy side effects can range from minor to life-threatening conditions depending on the drug used, the dosage and the person’s overall health. Medical professionals must tell you about the potential side effects of any treatment they prescribe before you give your consent.

## Side Effects

There are common side effects that most people experience when they are receiving medication for cancer. Please talk to your medical team about any side effects you experience.

Most of the time, chemotherapy drugs cause immediate side effects whereas immunotherapy drugs have delayed side effects (sometimes up to 4-6 weeks). Immunotherapy side effects may affect your lungs, intestines, thyroid or skin. It is extremely important to tell your team right away if you experience new onset of any symptoms, even if they seem minor.

## Oral Anti-Cancer Treatments ("Oral Oncolytics")

IV medicines and oral medicines are equally important in the treatment of your cancer; your doctor will prescribe the treatment plan that will be most effective for your specific cancer.

When you are getting IV medications, your medical team is observing you and can ask you questions. Also, they assure that you have taken all of the medicine.

When you are taking oral medications for your cancer at home, your medical team can't observe you and ensure that you taking all of your medicine. Your ability to take your medication at home, in the amount prescribed, can greatly impact how well the treatment works against your cancer.

It is very important that you communicate with your medical team about any problems you have, even if it is before your next visit.

*Some common problems you should report are:*

- If you are not able to swallow your oral medicine
- If you have any side effects, even if they seem minor
- If you are not able to eat, drink or nourish yourself
- If you are having trouble paying for the medication
- If you have not received your refill on time

## Vascular Access Devices

Most systemic cancer drugs and blood product transfusions are given intravenously every few weeks. Minimally, you will need blood tests before starting a cycle.

Because of the frequent use of the veins for testing and treatment, patients may benefit from placement of an IV vascular access device (VAD) to facilitate blood draws and intravenous infusions. VAD devices are small, flexible tubes (also known as catheters) that are inserted into a vein or blood vessel with the tip of the catheter in the large vein above the heart, called the superior vena cava (SVC). This is why VADs are sometimes referred to as “central venous access devices” or “central lines”.

### Ports

The most common is an implantable port (usually called a “port”) which consists of a catheter attached to a small reservoir. Port placement is done under local anesthesia by surgeons in an operating room or special procedure room. With a small incision on the skin of the upper chest, the port is placed completely under the skin with the catheter tip ending into the SVC (the large vein above the heart). There is no segment of catheter showing outside the skin; just a slight raised area of the skin due to the raised center of the port’s reservoir which is called the “septum”. The septum is made of a self-sealing rubber material where a special needle is inserted to deliver the medication into the blood stream. Initially, ports will need to be bandaged until the incision is completely healed. After that, a dressing is used when you are receiving any type of infusion. Ports need flushing before and after use and monthly when not in use. Ports are designed to stay in for longer periods of time.

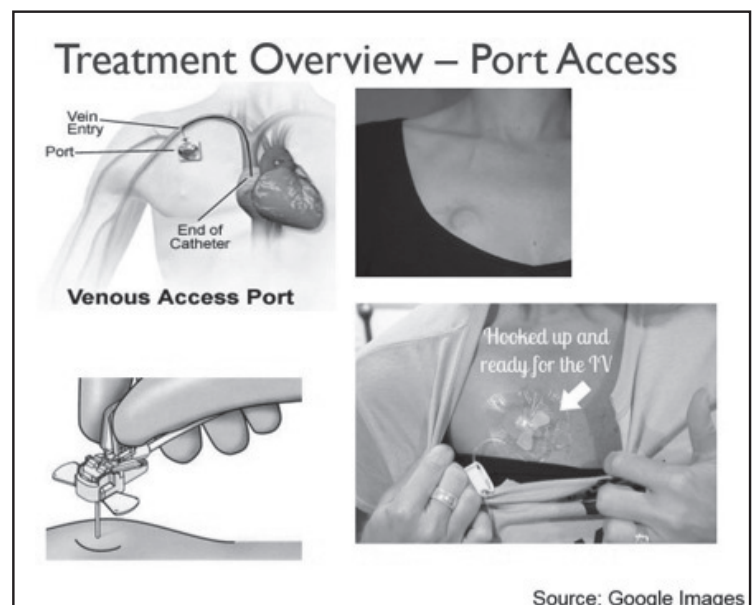
*If you need another kind of central line, your doctor will talk with you about it.*

## Safety and Maintenance of Your VAD

If you have a VAD that is external (i.e. PICC or central line), wash your hands before and after you touch it. Make sure you follow directions on clamping the catheter when it is not being used. All external VADs require special bandages or dressings to reduce the chance of infection. Your healthcare team will provide specific instructions on how to care for your catheter. Flushing or irrigation is necessary to keep the catheter free from blood clots. All types of VADs need flushing before and after each use and regularly when not in use.

*To help prevent or treat complications that can arise from having a VAD, it is important that you report the following symptoms or any unusual sensation that you are feeling immediately to your health care provider:*

- Shortness of breath, light headedness, fainting, or discomfort on your chest within hours after the catheter has been inserted.
- Swelling, redness, heat, pain or tenderness along the vein in the upper arm and around the VAD
- Swelling of the hand, arm or neck on the side of the catheter insertion
- Leaking of fluid or pain around the VAD with injection or infusion
- Fever, chills, back pain, general malaise



## Systemic Therapy Side Effects

People may have different reactions to the same systemic therapy treatments. If you undergo systemic therapy, you usually will not know how you will react or what side effects you will experience until a few days after your first infusion or starting oral medication. 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 treatments.

Before undergoing systemic therapy (i.e. chemotherapy, targeted therapy or immunotherapy), your medical oncologist will explain what to expect from your treatment, including possible side effects of the drugs.

If the systemic therapy you receive is known to cause certain side effects, your medical oncologist will prescribe medications to help prevent or lessen these symptoms. These medications are given/taken prophylactically - meaning they are given before you have any symptoms. Make sure you take these medications as directed.

Your medical oncologist may also order additional medications to take as needed, when you are having symptoms. It may take some experimenting to see what works best for you. It is important you communicate with your doctor and nurse if your side effects are not manageable.

### One of the Best Things You Can Do For Yourself During Cancer Treatment No Matter What Your Age.... ***“Get Up, Get Moving!”***

Please watch a four minute Oncology Nursing Society video at [ons.org/make-a-difference/quality-improvement/get-up-get-moving](https://ons.org/make-a-difference/quality-improvement/get-up-get-moving) about their campaign, “Get Up, Get Moving”.

One of the best things you can do for yourself to feel better before, during and after cancer treatment, is to move and be as active as possible. Moving can be anything from short, light walks to more intense exercise, depending on your level of ability and doctor’s recommendation.