

# Chemotherapy- Induced Nausea and Vomiting

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# Chemotherapy-Induced Nausea and Vomiting

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*Doctors now have many ways to both prevent and ease nausea and vomiting resulting from chemotherapy.*

Chemotherapy is the use of medication to treat cancer by stopping the ability of cancer cells to grow and divide. It is usually given intravenously (into a vein through a needle) or via a pill or capsule.

Many of the chemotherapy drugs now in use became available in the last several years, with side effects that are less severe than those of older versions. However, people receiving any type of chemotherapy may still experience chemotherapy-induced nausea and vomiting (CINV).

It's important to tell a member of your health care team about your symptoms, even if what you're experiencing is just mild queasiness. That feeling in your stomach can be the first sign of CINV, which can be treated with various types of medication.

Even if you're feeling fine, be sure to follow your health care team's instructions on when to take your CINV medications. That's especially crucial if you are receiving chemotherapy in pill form, as you will need to take the chemotherapy and CINV medication in a certain order and at a certain time of day.

## Why Chemotherapy Can Cause Nausea and Vomiting

When chemotherapy enters the body, sensors in the digestive system and brain detect its presence and identify it as a foreign substance. In a complex series of signals from the brain to the mouth, stomach, intestines and bloodstream, chemotherapy stimulates the “vomiting center” in the brain. Several chemicals (including serotonin and substance P) are released, triggering the nausea and vomiting reflex.

Although chemotherapy is meant to destroy cancer cells as they divide and grow, it sometimes affects healthy tissues in the body, including those in the lining of the mouth, esophagus (food pipe) and stomach. Some anti-cancer drugs can harm or irritate these areas, leading to nausea and vomiting.

Some people experience CINV within the first 24 hours of receiving treatment (an acute reaction). Others don't feel symptoms the day chemotherapy is given but develop CINV during the following few days (a delayed reaction). Notify your health care team if you experience these symptoms, no matter when they occur.



# The Importance of Getting Help

Do not accept nausea and vomiting as “the norm,” as there are many medications available to relieve your symptoms. Seek help from your health care team, as nausea and vomiting can:

- Result in dehydration, which can be harmful to your health
- Reduce your quality of life and your ability to enjoy everyday activities
- Affect your outlook and mood
- Make it difficult to work or concentrate
- Potentially result in treatment delays

Your health care team wants to help. Contact them as soon as you experience any symptoms, no matter if they are mild or severe.



## Avoiding Dehydration

**Severe vomiting can cause dehydration, which can be a serious condition. Dehydration can lead to:**

- Dizziness
- Low blood pressure
- Muscle spasms and cramps
- Weight loss
- Mental confusion
- Damage to the heart, lungs or kidneys

Ask your health care team about things you can do to stay hydrated or correct dehydration, such as drinking plenty of water or other clear liquids, and taking a product such as Pedialyte. Available over-the-counter, Pedialyte contains the recommended balance of sugar and sodium (an electrolyte) to promote hydration. It is marketed for children, but adults can use it as well.

If dehydration becomes severe, your doctor may recommend that a saline solution (a mixture of salt and water) be administered intravenously until your body chemistry returns to normal.

# Medicines to Prevent CINV

Many treatments to prevent CINV have become available in recent years. Your doctor will decide which (if any) to prescribe, based on the type of chemotherapy you are receiving and the anticipated severity of potential symptoms. A combination of medications to prevent CINV is often more effective than one medication taken alone. Your age, gender and other health conditions may also be factors in your doctor's recommendation.

If you are receiving treatment in a clinic or hospital, you will usually receive CINV prevention medication intravenously. Some of these drugs are also available in pill or liquid form.

After chemotherapy, you may also be given CINV prevention treatments to take at home. It's important to understand how these medications should be taken. Some are designed to be taken regularly for several days, whether or not you are experiencing symptoms. Others are meant to be taken only when you feel nauseated. Be sure to contact a member of your health care team if you have any questions about when to take your medication.

## Corticosteroids

Corticosteroids, which are related to the natural hormone cortisol, are widely used to help prevent CINV. They have been used successfully for many years, especially to prevent delayed nausea and vomiting. Corticosteroids such as dexamethasone (Decadron, Hexadrol, others) are often combined with other nausea-prevention drugs for maximum benefit.

## Serotonin Antagonists

Serotonin antagonists are often used to prevent nausea and vomiting resulting from powerful chemotherapy drugs, such as cisplatin (Platinol, others) and cyclophosphamide (Cytoxan, Neosar, others). Serotonin antagonists stop serotonin (a substance occurring naturally in the brain) from sending a signal that causes vomiting. These medications are usually administered intravenously before chemotherapy begins.

The serotonin antagonist palonosetron (Aloxi) continues to work for days after a single injection. It can prevent both acute and delayed CINV. Other serotonin antagonists include ondansetron (Zofran, others) and granisetron (Kytril), which are available in intravenous or tablet form.





## Neurokinin Antagonists

Aprepitant (Emend) targets the central nervous system's neurokinin receptor and blocks the actions of substance P, a peptide (small protein) that triggers nausea and vomiting reflexes. Aprepitant is typically given in combination with corticosteroids and serotonin antagonists. It is taken in capsule form before a chemotherapy session and for two days afterward.

A related medication, fosaprepitant dimeglumine, gives people receiving chemotherapy another option for preventing nausea and vomiting. It is delivered intravenously in combination with corticosteroids and serotonin antagonists and converted to aprepitant in the body.

A combination medicine consisting of the serotonin antagonist palonosetron and the neurokinin antagonist netupitant (Akynzeo) is available in intravenous or capsule form.

## Benzodiazepines

Benzodiazepines such as lorazepam (Ativan, others) and diazepam (Valium, others), do not stop nausea and vomiting directly, but they are sometime given along with other nausea prevention medicines when patients feel anxiety before starting chemotherapy.

## THC

THC, the active ingredient in marijuana, is found in medications approved by the U.S. Food and Drug Administration (FDA). Dronabinol (Marinol) is an anti-vomiting medication and nabilone (Cesamet) is designed to control CINV in people who have not been adequately helped by other anti-nausea medications. However, these medications are not part of the CINV prevention regimen and their benefit for use after other anti-nausea medications has not been established. There is ongoing research on medications that contain THC.



# Tips to Help with CINV

These tips can help prevent feelings of nausea after receiving chemotherapy:

- Be sure that you fully understand your health care team's instructions for taking your anti-nausea medicines and that you have a sufficient supply at all times.
- Talk to your doctor about any other medications you may be taking (including over-the-counter medicines and supplements), as they might contribute to your feeling of nausea. Your doctor may recommend changes or advise that you take special precautions.
- Ask your health care team about proper nutrition and how to avoid dehydration while you are receiving chemotherapy (see the Avoiding Dehydration sidebar).
- Eat and drink slowly, and try having four or five small meals throughout the day, rather than three larger meals.
- Avoid cooking or eating food with strong odors as well as overly sweet, greasy, fried or highly seasoned food. Highly caffeinated drinks should also be avoided.
- Keep a log of what you eat and drink and how you feel afterwards, as this will allow you to easily determine if certain foods and liquids lead to symptoms of nausea and vomiting.

Additionally, a registered dietitian can be a valuable resource for people who are coping with nausea and vomiting, as they can help you put together an eating plan that will meet your nutritional and hydration needs. A member of your health care team can refer you to a registered dietitian in your area.





## The Importance of Clinical Trials

**Clinical trials are the standard by which we measure the worth of new treatments and the quality of life of individuals as they receive those treatments. For this reason, doctors and researchers urge people with cancer to take part in clinical trials.**

Your doctor can guide you in making a decision about whether a clinical trial is right for you. Here are a few things that you should know:

- Often, people who take part in clinical trials gain access to and benefit from new treatments.
- Before you participate in a clinical trial, you will be fully informed as to the risks and benefits of the trial, including any possible side effects.
- Most clinical trials are designed to test a new treatment against a standard treatment to find out whether the new treatment has any added benefit.
- You can stop taking part in a clinical trial at any time for any reason.





# Communicating With Your Health Care Team

As you manage your cancer, it's important to remember that you are a consumer of health care. The best way to make decisions about health care is to educate yourself about your diagnosis and get to know the members of your health care team, including doctors, nurses, nurse practitioners, physician assistants, dietitians, social workers and patient navigators.

Here are some tips for improving communication with your health care team:

**Start a health care journal.** Having a health care journal or notebook will allow you to keep all of your health information in one place. You may want to write down the names and contact information of the members of your health care team, as well as any questions for your doctor.

**Prepare a list of questions.** Before your next medical appointment, write down your questions and concerns. Because your doctor may have limited time, ask your most important questions first and be as specific as possible.

**Bring someone with you to your appointments.** Even if you have a journal and a prepared list of questions or concerns, it's always helpful to have support when you go to your appointments. The person you bring may also think of questions to ask your doctor or remember details about your symptoms or treatment that you may have forgotten.

**Write down your doctor's answers.** Taking notes will help you remember your doctor's responses, advice and instructions. You can also ask the person who accompanies you to take notes for you, either in your journal or on a tablet or smartphone.

**Record your visit if your doctor allows it.** Recording the conversation with your doctor gives you a chance to hear specific information again or share it with family members or friends.

**Incorporate other health care professionals into your team.** Your medical oncologist is an essential member of your health care team, but there are other health care professionals who can help you manage your diagnosis and treatment:

- Your primary care physician should be kept updated about your cancer treatment and any test results.
- Your local pharmacist is a great source of knowledge about the medications you are taking. Have all of your prescriptions filled at the same pharmacy to avoid the possibility of harmful drug interactions.
- Make sure your oncologist knows of any other medical conditions you have or any pain you are experiencing so that they can consult with your primary care physician or specialist as needed.

Remember, there is no such thing as over-communication.

# CancerCare's Free Support Services and Programs

**It can be very difficult to receive a diagnosis of cancer, and adjusting to the necessary changes in your life can be challenging.**

CancerCare can help. We are a national nonprofit organization providing free, professional services to anyone affected by cancer. Our licensed oncology social workers can provide support and education, help in navigating the complicated health care system and offer information on support groups and other resources.

To learn more about how CancerCare helps, call us at 800-813-HOPE (4673) or visit [www.cancercare.org](http://www.cancercare.org).

You will likely also build your own personal support network composed of family and friends. In doing so, it's best to take some time to think about the people in your life and how they are best suited to help. Match the task to their strengths—ask a family member who loves to shop to pick up something for you at the store, or ask a friend who's a good listener to come over for a chat.



## Frequently Asked Questions

### **Q: Are there other types of drugs not related to my chemotherapy treatment that can cause nausea and vomiting?**

A: There are a number of drugs that can cause nausea and vomiting, including bronchial dilators, pain medications and some antibiotics. The cancer itself can also cause these symptoms. It's important for you to keep track of the severity of your symptoms and when they begin and end, and to share that information with your health care team. The pattern will help them determine the best treatment approach for your individual circumstances.

### **Q: My insurance company won't cover the anti-nausea medication my doctor prescribed. What can I do?**

A: Insurance coverage can differ significantly, depending on the company and your specific plan. It could be that your plan will cover one formulation of the prescribed medication but not another (e.g. will cover an injection but not the oral form of a medication). Talk to a benefits specialist at your insurance company about what your plan does cover and share that information with your health care team, so that the best decision about your treatment can be made.

### **Q: Can ginger tea help my nausea?**

A: There is limited data on whether ginger can help prevent nausea in patients receiving chemotherapy. It's likely safe for you to drink ginger tea, but check with your health care team to make sure there's no medical reason why you should avoid ginger. If you get the go-ahead to add ginger tea to your diet, it's important to continue to take your prescribed medication(s).

### **Q: Is acupuncture an effective treatment for CINV?**

A: There have been a number of studies on acupuncture used for the treatment of CINV, with inconclusive results. Talk to your doctor before deciding to try acupuncture, to make sure they think it's a good approach in your specific situation. Consider acupuncture (or acupressure, which uses firm pressure and massage instead of hair-thin needles) as a complement to, not a replacement for, the medication or medications your doctor has prescribed.

### **Q: Can meditation or other relaxation methods help control my nausea and vomiting?**

A: Any healthy technique that reduces stress may be helpful as a complement to any treatments your doctor may prescribe. Such techniques include meditation, yoga, deep breathing exercises and listening to music.



# Notes

# Resources

- CancerCare®**  
800-813-HOPE (800-813-4673)  
[www.cancercares.org](http://www.cancercares.org)

**American Cancer Society**  
800-227-2345  
[www.cancer.org](http://www.cancer.org)

**Cancer.Net**  
888-651-3038  
[www.cancer.net](http://www.cancer.net)

**Cancer Support Community**  
888-793-9355  
[www.cancersupportcommunity.org](http://www.cancersupportcommunity.org)

**National Cancer Institute**  
800-422-6237  
[www.cancer.gov](http://www.cancer.gov)
- National Comprehensive Cancer Network**  
215-690-0300  
[www.nccn.org](http://www.nccn.org)

**National Library of Medicine**  
888-346-3656  
[www.nlm.nih.gov](http://www.nlm.nih.gov)

**Medicine Assistance Tool**  
[www.medicineassistancetool.org](http://www.medicineassistancetool.org)
- CLINICAL TRIALS WEBSITES**
- EmergingMed**  
[www.emergingmed.com](http://www.emergingmed.com)
- National Cancer Institute**  
[www.cancer.gov](http://www.cancer.gov)

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