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# **Understanding Nausea and Vomiting**

- **Vomiting** is throwing up the food and liquid in your stomach. Nausea can lead to vomiting, and sometimes nausea and vomiting happen at the same time. But they can be totally separate problems, too.
- **Retching** is trying to vomit but nothing comes up from your stomach. This is also called gagging or dry heaves.

- [Types of nausea and vomiting in people with cancer](#)
- [What causes nausea and vomiting in people with cancer?](#)
- [Symptoms of nausea and vomiting](#)

## Types of nausea and vomiting in people with cancer

**Acute nausea and vomiting** happen minutes to hours after treatment is given. It usually goes away within a day.

**Delayed nausea and vomiting** start more than 24 hours after treatment and can last for a few days. This happens most often with certain types of chemotherapy, such as cisplatin, carboplatin, cyclophosphamide (Cytosan) or anthracyclines such as doxorubicin.

**Anticipatory nausea and vomiting** happen before a treatment begins. This happens when a person comes across sights, sounds, and smells that their brain connects with nausea and vomiting. This happens most often in people whose nausea and vomiting were not well controlled during prior treatments.

**Breakthrough nausea and vomiting** happen even though treatment has been given to try to prevent it. When this happens, you may need more or other medicines to control current symptoms. And your cancer care team probably will need to change the medicines they give you for future treatments.

**Refractory vomiting** is what happens when the medicines you're getting to prevent or control nausea and vomiting are not working. This means you may need more or different medicines to stop the nausea and/or vomiting.

## What causes nausea and vomiting in people with cancer?

Nausea and vomiting in people with cancer can be caused by many things, such as:

- Cancer treatment such as chemotherapy, radiation therapy, targeted drug therapy, or immunotherapy
- Cancer that affects the brain or abdomen (belly)
- Medicines used to help with side effects of cancer or treatment
- Medicines given for other health problems
- Bowel slowdown or blockage (obstruction)

[Constipation](#)<sup>1</sup>

Nausea and vomiting can affect a person's quality of life. It can cause distress and may make a person wonder if they can continue treatment. For most people, nausea and vomiting can be controlled with medicines and other treatments that don't include medicines. Talk with your doctor or cancer care team about what can be done to prevent and manage any nausea and vomiting your treatment might cause.

## Hyperlinks

1. [www.cancer.org/cancer/managing-cancer/side-effects/stool-or-urine-changes/constipation.html](http://www.cancer.org/cancer/managing-cancer/side-effects/stool-or-urine-changes/constipation.html)
2. [www.cancer.org/cancer/managing-cancer/side-effects/infections.html](http://www.cancer.org/cancer/managing-cancer/side-effects/infections.html)
3. [www.cancer.org/cancer/managing-cancer/side-effects/emotional-mood-changes/anxiety.html](http://www.cancer.org/cancer/managing-cancer/side-effects/emotional-mood-changes/anxiety.html)
4. [www.cancer.org/cancer/managing-cancer/side-effects/pain.html](http://www.cancer.org/cancer/managing-cancer/side-effects/pain.html)
5. [www.cancer.org/cancer/managing-cancer/side-effects/eating-problems/fluids-and-dehydration.html](http://www.cancer.org/cancer/managing-cancer/side-effects/eating-problems/fluids-and-dehydration.html)
6. [www.cancer.org/cancer/managing-cancer/side-effects/fatigue-weakness-sleep.html](http://www.cancer.org/cancer/managing-cancer/side-effects/fatigue-weakness-sleep.html)
7. [www.cancer.org/cancer/managing-cancer/side-effects/eating-problems/poor-appetite.html](http://www.cancer.org/cancer/managing-cancer/side-effects/eating-problems/poor-appetite.html)
8. [www.cancer.org/cancer/managing-cancer/side-effects/eating-problems/weight-changes.html](http://www.cancer.org/cancer/managing-cancer/side-effects/eating-problems/weight-changes.html)
9. [www.cancer.org/cancer/managing-cancer/side-effects/eating-problems/fluids-and-dehydration.html](http://www.cancer.org/cancer/managing-cancer/side-effects/eating-problems/fluids-and-dehydration.html)

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National Comprehensive Cancer Network (NCCN). Anti-

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## **Nausea and Vomiting Caused by Cancer Treatment**

have nausea and vomiting. Some of these are:

- The dose of the chemotherapy and other anti-cancer medicines you get (higher doses can be more likely to cause nausea and vomiting).
- How the medicines are given (chemo given through a vein may cause nausea and vomiting faster than when it's given by mouth).
- Having a tumor in the brain, liver, or gastrointestinal tract may increase the risk for nausea and vomiting.
- Taking other medicines (such as pain medicines) that may cause or make nausea or vomiting worse.
- Being constipated.
- Having an infection.

Your risk of nausea and vomiting may also be affected by personal differences, such as if you:

- Are female
- Are younger than 50 years of age
- Had morning sickness during pregnancy
- Are very anxious or nervous
- Have had motion sickness (nausea from motion during travel, like in a car)
- Tend to vomit when you are sick
- Are a non-drinker or light drinker (of alcohol)
- Had nausea and vomiting during cancer treatment in the past

## Radiation therapy

Nausea and vomiting can also be caused by [radiation therapy](#)<sup>5</sup>. The risk of having these side effects with radiation are related to:

**The part of the body being treated.** Nausea and vomiting happen more often when people get radiation to the abdomen (belly), liver, or brain. Nausea and vomiting also happen more often when people get radiation to their whole body (total body irradiation (TBI) to get ready for a [stem cell or bone marrow transplant](#)<sup>6</sup>.

**The dose of radiation and the treatment schedule.** The larger the dose of radiation, the higher the risk for nausea and vomiting. Radiation treatment is often given in smaller doses over a period of time to decrease this risk.

**If chemotherapy is given along with the radiation.** Getting radiation while also getting chemotherapy can increase the risk of nausea and vomiting.

## **Questions to ask about nausea and vomiting**

Ask your cancer care team:

Is my cancer treatment likely to cause nausea and vomiting?

Hesketh PJ et al. Antiemetics: ASCO guideline update. *Journal of Clinical Oncology*. 2020;38(24). Accessed at <https://ascopubs.org/doi/10.1200/JCO.20.01296> on March 11, 2024.

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## Medicines Used to Treat Nausea and Vomiting

It is important to control nausea and vomiting as much as possible. These symptoms can affect your daily life, and mental and physical health. Nausea and vomiting can cause cancer treatment delays and make it hard for you to continue treatment. Relieving these side effects can help you better deal with your treatments and keep them on schedule.

Many medicines are used to help prevent and control nausea and vomiting. Which ones you get will depend on how likely your treatment is to cause nausea and vomiting and how the medicines worked for you during past treatment.

- [Types of anti-nausea and vomiting medicines \(anti-emetics\)](#)
- [How are anti-emetics medicines given?](#)
- [Cost of anti-emetics](#)
- [How does my cancer care team know what anti-emetics to give to me?](#)



- [Treating nausea and vomiting caused by cancer medicines](#)
- [Treating nausea and vomiting caused by radiation therapy](#)

## Types of anti-nausea and vomiting medicines (anti-emetics)

There are different pathways in your body that can cause nausea and vomiting. Some of these pathways are in the brain while others are in the digestive tract (esophagus, stomach, and intestines). Which pathways are affected depends on the treatment you are getting. Anti-emetics help block these pathways.

Anti-emetic medicines are grouped by how they work in the body to prevent nausea and vomiting. Each group of medicines works in a different way. They are often combined to be most effective.

The following anti-emetics are the ones used most often to prevent and treat nausea and vomiting.

**Serotonin (5-HT<sub>3</sub>) antagonists** (examples include ondansetron, granisetron, dolasetron, and palonosetron)

- Work best when given on a schedule before and during chemo treatment.
- Don't make you sleepy but might cause headache and constipation.

**NK-1 receptor antagonists** (examples include aprepitant, rolapitant, fosaprepitant, and netupitant)

- Work best to prevent, not treat, nausea and vomiting.
- Most helpful in preventing delayed nausea and vomiting.

**Steroids** (Dexamethasone is the steroid used most often for nausea and vomiting).

- Most often given with other anti-emetic medicines to better prevent nausea and vomiting. Can cause indigestion so should be taken with food.
- Best taken in the morning as they can make it harder to go to sleep at night.
- Can cause hiccups and increase blood sugar. People with diabetes might need to watch their blood sugar more closely.

## Olanzapine

- Has been shown to be helpful with nausea and vomiting, especially when given with other anti-nausea and vomiting medicines.
- Can make you sleepy.

### **Benzodiazepines** (examples include lorazepam and alprazolam)

- Can help to manage nausea and vomiting by helping you feel calmer, more relaxed, and less anxious.
- Used most often for anticipatory or breakthrough nausea and vomiting.

### **Combination anti-nausea medicines**

- Include more than one type of anti-emetic in one dose.
- For example, you can get a combination of a serotonin (5-HT3) antagonist with a NK-1 receptor antagonist. This combination is meant to help with both acute and delayed nausea and vomiting.

Sometimes, the more commonly used anti-emetics don't control nausea and vomiting well. So, other medicines might be tried. These medicines might also be used for treatments that are less likely to cause nausea and vomiting. Examples include:

- Phenothiazines such as prochlorperazine and promethazine
- Metoclopramide
- Haloperidol
- Cannabinoids such as dronabinol, nabilone

Many anti-emetics have side effects. Many can make you sleepy and make it more likely that you will fall. Talk to your doctor or cancer care team about what side effects you might have from the anti-emetics.

### **How are anti-emetics medicines given?**

There are many ways to take anti-emetic medicines. Most often they are given through an IV (intravenously), by mouth as a pill or liquid, or as a tablet that dissolves under your tongue. Sometimes anti-emetics may also be given as a patch that sticks to your skin or as a suppository.

Your cancer care team will think about the following things when choosing the best way

to give you anti-emetics.

- How likely it is that your cancer treatment will cause nausea and vomiting
- How bad your nausea and/or vomiting is
- The easiest way for you to take the medicine
- What you prefer
- Whether you need a medicine that lasts for a longer period (such as for preventing nausea and vomiting) or a medicine that works quickly (such as for breakthrough pain).
- Your medical insurance coverage and cost of the medicine

If the medicines used first don't work, your doctor can switch you to another medicine or add a new one. Another option is to give the medicines in a different way (by a different route).

Taking pills by mouth is often the best, easiest, and cheapest way to prevent nausea and vomiting. But if you're already vomiting, or you can't swallow and keep things down, the medicine might need to be given another way, such as by a patch or into a vein.

Let your cancer care team know if you are still having nausea and vomiting even with an anti-emetic treatment. There are many options and other medicines or ways of giving them might work better for you. Don't let nausea and vomiting keep you from being able to eat and drink. There are many medicines that can be used to prevent and treat these side effects.

## **Cost of anti-emetics**

Medicines used to prevent and treat nausea and vomiting can be expensive. The cost to you will depend on:

- Whether you have prescription insurance and how much of the cost it covers
- Whether you are given a brand name or generic medicine (if available)
- How the anti-emetic is given (pill or liquid you swallow, by IV, or a patch on your skin)

You might need to get pre-approval from your health insurance or prescription plan before your anti-emetics will be covered. Ask your cancer care team about the cost of these medicines, what your options are, how many pills you might need during treatment, and what you might have to pay out of pocket.

## How does my cancer care team know what anti-emetics to give to me?

Cancer treatments are grouped by how likely they are to cause nausea or vomiting (emetogenic potential).

- High risk: 9 in 10 people will have nausea and vomiting
- Moderate risk: 3 to 9 in 10 people will have nausea and vomiting
- Low risk: 1 to 3 in 10 people will have nausea and vomiting
- Minimal risk: Less than 1 in 10 people will have nausea and vomiting

Treatment to prevent or manage nausea and vomiting is based on this risk. The goal is to prevent nausea and vomiting as much as possible. You will likely need to take more than one medicine to manage this symptom.

## Treating nausea and vomiting caused by cancer medicines

The anti-emetic medicine you get depends on how likely your treatment is to cause nausea and vomiting. No one medicine can prevent or control nausea and vomiting all the time. People often get



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# Managing Nausea and Vomiting at Home

Taking medicine is the main part of managing nausea and vomiting. But there are other things you can do that can help as well.

- [Eating and drinking when you have nausea](#)
- [Tips if you are vomiting](#)

- [Complementary and integrative treatments for nausea and vomiting](#)
- [Call your doctor or cancer care team if you](#)
- [Go to the emergency room or call 911 if you](#)

## Eating and drinking when you have nausea

You may not feel like eating or drinking when you have nausea and vomiting. But try to drink as much fluid as you can so that you don't get [dehydrated](#)<sup>1</sup>. And eat enough so that your stomach isn't too empty. Try the following:

- Sip liquids slowly throughout the day. Cold, clear liquids may be the easiest on your stomach. (Clear liquids are those you can see through, such as ginger ale, apple juice, broth, tea, etc.)
- Eat small snacks and meals several times a day. If your stomach is empty, your nausea might be worse.
- Eat bland foods that are easy on your stomach, such as crackers, toast, clear broth, plain yogurt, or sherbet.
- Eat something light like pretzels or crackers with medicines unless you have been told to take them on an empty stomach.
- Sour foods, such as sour candy, pickles, lemons, or lime might help with nausea.
- Eat foods when they are cool or at room temperature, so their smell isn't as strong.
- Try popsicles or gelatin.
- Suck on hard candy with pleasant smells, such as lemon drops or mints, to help get rid of bad tastes.
- Try small amounts of foods high in calories that are easy to eat (such as pudding, ice cream, sherbets, yogurt, and milkshakes).
- Avoid fried, spicy, or greasy foods.

When deciding what to eat, choose the foods that sound good to you. Your body may handle them better. And **stay away from your favorite foods** so you don't link them with feeling sick after you finish treatment.

You might find eating and drinking easier if you:

- Avoid strong food and drink smells. Ask someone else to prepare cooked food for you.
- Eat in a cool, well-ventilated space without smells that bother you.
- Try to rest quietly while sitting upright for at least an hour after each meal.

- Plan to eat when it is best for you. Some people do better if they eat a snack before treatment. Other people feel better if they don't eat for a while before treatment.

## **Tips if you are vomiting**

- If you are in bed, lie on your side so that you won't inhale the vomit.
- Take [anti-emetics](#) at the first hint of nausea to try and prevent vomiting.
- While waiting for your nausea medicine to work, relax and take slow, deep breaths.
- Distract yourself with soft music, a favorite TV program, or the company of others.
- Ask if your medicines can be given in a form that you can handle best, such as dissolving tablets or suppositories.



Studies have found that some integrative methods can be helpful for nausea and vomiting. These include:

### **Relaxation techniques**

[Relaxation techniques](#)<sup>3</sup> such as meditation (focusing the mind), breathing exercises, or progressive muscle relaxation (tensing and relaxing the muscles) can help decrease nausea and vomiting.

Biofeedback is sometimes used to support relaxation techniques for nausea and vomiting. It uses devices to look for signs of stress to help you focus on relaxation.

### **Guided imagery**

[Guided imagery](#)<sup>4</sup> helps people imagine that they are in a place that's relaxing for them. Imagining what you would feel, hear, see, and taste in the pleasant place, might help you mentally block the feelings of nausea and vomiting.

### **Acupuncture**

Acupuncture is a traditional Chinese method in which very thin needles are put into the skin at certain points of the body. Some people have reported that acupuncture helped with their nausea. But research studies have not shown a clear benefit.

Acupuncture should only be done by a licensed, certified acupuncturist. Ask your cancer care team if it is safe for you to get acupuncture. Also ask for ideas about where to get acupuncture if you want to pursue it.

### **Other complementary and integrative methods**

There are other methods that some reports say might help manage nausea and vomiting. However, research hasn't shown that they clearly help. These include:

#### **Ginger**

There are studies looking at whether ginger can help with nausea and vomiting. But the results are hard to use because it is not clear how much is needed and the best way to take it. If you are using or would like to use ginger, be sure to talk to your doctor or cancer care team as there can be side effects.

## **Hypnosis**

Hypnosis creates a state of intense attention, willingness, and readiness to accept an idea. Working with a trained specialist might help you to control how your brain and body respond to the feeling of nausea so that it bothers you less.

## **Acupressure**

Based on acupuncture, acupressure uses pressure rather than needles on certain points on the body. Acupressure on certain points on the body has helped some people with nausea. But studies haven't found it to work as well as acupuncture.

## **Aromatherapy with peppermint oil**

Some people find using aromatherapy with peppermint oil helpful in lowering their nausea and vomiting from cancer treatment. The oil can be inhaled, rubbed on the skin, or put on a cold cloth that is placed on the head. Research does not state what strength should be used and how often.

## **Music therapy**

Music therapists are trained to use music to help people with symptoms, such as nausea and vomiting. A few studies seem to show that, when used with standard treatment, music therapy can help to reduce nausea and vomiting from chemo.

## **Call your doctor or cancer care team if you**

- Might have inhaled some of your vomit
- Have been vomiting for 2-3 days
- Can't take medicines
- Your anti-nausea medicines aren't working
- Cannot take in more than 4 cups of liquid or ice chips in a day or haven't eaten for more than 2 days
- Lose 2 or more pounds in 1 to 2 days (This means you are losing water quickly and might be getting dehydrated.)
- Have dark yellow urine or don't urinate as often or as much as usual

## **Go to the emergency room or call 911 if you**

- Vomit blood or material that looks like coffee grounds
- Become weak, dizzy, or confused

## Hyperlinks

1. [www.cancer.org/cancer/managing-cancer/side-effects/eating-problems/fluids-and-dehydration.html](http://www.cancer.org/cancer/managing-cancer/side-effects/eating-problems/fluids-and-dehydration.html)
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### Written by

The American Cancer Society medical and editorial content team  
(<https://www.cancer.org/cancer/acs-medical-content-and-news-staff.html>)

Our team is made up of doctors and oncology certified nurses with deep knowledge of cancer care as well as editors and translators with extensive experience in medical writing.

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