



# Nausea and vomiting

Yolanda Moroney  
Updated by Lynda Steyn  
Amayeza Info Services

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## Introduction

Nausea and vomiting are symptoms of many different conditions that occur in both children and adults. These symptoms are usually self-limiting but can be signs of a more serious disease.

## Overview

Nausea is an uneasiness of the stomach that accompanies the urge to vomit but does not necessarily lead to vomiting. Vomiting is the voluntary or involuntary expulsion of stomach contents through the mouth. Triggers that may result in vomiting can come from the stomach and intestines (infection, injury, and food irritation), the inner ear (dizziness and motion sickness), and the brain (head injury, brain infections, tumours and migraine headaches).

## Causes

The causes of nausea and vomiting are similar, and these symptoms can occur together or separately. The most common causes of nausea and vomiting include:

- Gastrointestinal causes – This can be the result of an irritation of the lining of the stomach.
- Early pregnancy – Morning sickness usually occurs during the first few months, but can last for the duration of the pregnancy.
- Intense pain – e.g. from an injury or an illness such as pancreatitis, gallstones or kidney stones.
- Side effects of chemotherapy or radiation therapy in cancer patients.

Gastrointestinal irritation may be caused by an infection from various viruses or bacteria which are present in food and cause food poisoning. A toxin released by *Staphylococcus aureus* is a common cause of food poisoning. Symptoms of food poisoning occur

within a few hours of eating contaminated food. Other causative organisms include bacteria such as Salmonella, Listeria and Shigella. Symptoms of food poisoning with Salmonella may take longer to appear because of the incubation time. Stomach flu (gastroenteritis) is associated with a viral infection. Nausea and vomiting may occur together in this condition.

Gastro-oesophageal reflux disease (GORD) causes the acid in the stomach to move up the oesophagus and may cause burning and nausea.

Alcohol is an irritant that causes damage to the lining of the gut, and excessive consumption can cause nausea.

Certain medications may irritate the gut. These include nonsteroidal anti-inflammatories such as aspirin and ibuprofen, certain antibiotics, and medications used for chemotherapy.

Some chronic gastrointestinal conditions are associated with nausea and vomiting. These conditions can present with other symptoms, such as diarrhoea or constipation and stomach ache. They include food intolerances, such as dairy protein and lactose intolerances, and coeliac disease.

Irritable bowel syndrome (IBS) may cause bloating, heartburn, fatigue, and cramping in addition to nausea and vomiting.

Crohn's disease is an inflammatory bowel disease. It is an autoimmune condition which causes inflammation, pain, and nausea and vomiting.

More serious conditions such as intestinal blockage and appendicitis may cause nausea and vomiting.

Neurological causes include:

- Stimuli affecting the inner ear such as motion sickness, labyrinthitis, and Meniere's syndrome
- Certain smells or sounds may trigger nausea and vomiting

Although vomiting is usually self-limiting, it can be a sign of more serious illnesses caused by neurological factors such as:

- Headaches, particularly migraine
- Illnesses caused by pressure on the brain. These include infections such as meningitis and encephalitis, tumours on the brain, and concussion.

**Dehydration** is the main concern associated with vomiting. Adults are less likely to become dehydrated because they can usually detect the symptoms such as increased thirst and dry lips or mouth. Young children have a greater risk of dehydration since they may be unable to communicate their symptoms of dehydration. Adults caring for sick children need to be aware of the visible signs of dehydration:

- Dry lips and mouth
- Sunken eyes
- Rapid breathing or pulse
- In infants, parents should look for decreased urination, and a sunken fontanelle

## Treatment

Nausea and vomiting are usually self-limiting. Treatment for these symptoms involves fluid replacement and medications to relieve nausea and vomiting.

## Home remedies

Drinking fluids is the mainstay of self-help nausea treatment. This helps correct electrolyte imbalance, which may stop vomiting, and prevents dehydration.

Treatment for vomiting includes drinking small sips of fluid at first, and gradually increasing the amount as symptoms improve. Clear liquids such as clear soup broth, tea, juice, and sports drinks are suitable. Ice cold liquids may be preferred if one is nauseous. Dairy products and greasy or fatty foods should be avoided, and the patient should rest. When fluids have been tolerated for 24 hours, soft and bland foods such as oatmeal, yoghurt, bananas, potatoes, pasta, and crackers may be slowly introduced. The amount and variety of food may be increased as tolerated. If symptoms return, a liquid diet should be resumed, and a doctor consulted.

In respect of dehydration, it should be noted that in children beverages such as water, tea and fruit juice will not adequately replace fluid or electrolytes lost with vomiting. Even though adults and adolescents have a larger reserve than children, electrolyte imbalance and dehydration may still occur as fluid is lost through vomiting. If vomiting with diarrhoea persists for more than 24 hours, an oral rehydration solution should be used to prevent and treat dehydration, regardless of age.

Oral rehydration agents are available commercially and may be purchased over-the-counter (OTC) to treat nausea and vomiting. They are particularly suitable for children and should be used according to the instructions of the manufacturer.

If these are not available, a simple solution of half a teaspoon of salt and eight level teaspoons of sugar dissolved in one litre of boiled or safe drinking water may be used. If the patient is unable to tolerate fluids given by mouth, intravenous fluids may be required.

## Medications

Medications available OTC for the treatment of nausea include:

- Cyclizine HCl
- Doxylamine succinate
- Cinnarizine
- Invert sugar

## Call the doctor if

- Nausea lasts for more than a few days, or if there is the possibility of the patient being pregnant
- Adults have been vomiting for more than a day, or there are signs of dehydration
- There is concern about dehydration, or the inability to tolerate fluids in infants and children
- A known injury such as head injury, or infection has occurred which may be causing the vomiting
- The patient has underlying medical conditions
- Home treatment has not resulted in an improvement of the symptoms

**Immediate medical care** should be sought if any of the following occur with vomiting:

- Blood is present in the vomitus. This may be red or have the appearance of coffee grounds
- Stools appear to be black and tarry
- Lethargy, confusion, or decreased alertness occurs
- There is severe headache or stiff neck
- Severe abdominal pain with fever occurs

Medication	Examples	Use	Special points*
Cyclizine HCl Tablets (50 mg) Syrup (12 mg/ 5 ml) Suppositories (50 mg children, 100 mg adults)	Valoid® tablets, syrup, suppositories Medazine® tablets, syrup	Prevention and treatment of nausea and vomiting, including motion sickness	May cause central nervous system (CNS) disorders, such as drowsiness and dry mouth. Suppositories should not be used in children under 6 years of age.
Doxylamine succinate 10 mg tablets (in combination with dicyclomine and pyridoxine)	Asic® tablets	Management of nausea and vomiting associated with pregnancy	May cause CNS disorders, such as drowsiness and dry mouth.
Cinnarizine tablets (25 mg)	Stugeron® tablets	Prevention of motion sickness Control of nausea and vomiting associated with vestibular (inner ear) disorders	May cause CNS disorders, such as drowsiness and dry mouth. Tablets should be taken 2 hours before the start of the journey to prevent motion sickness.
Invert sugar syrup (3 g/5 ml)	Emex®	Relief of nausea in motion sickness and early pregnancy	Should not be taken for more than 1 hour (5 doses) without consulting a physician. Dose should not be diluted. Fluids should not be taken 15 minutes before or after dose to prevent dose dilution.

\*Always refer to the manufacturer's package insert for dosing and instructions for use.

Nausea may be managed by eating small meals throughout the day. Foods that are easy to digest should be selected and eaten slowly. If nausea is triggered by the smell of hot or warm food, eating cold foods may be helpful. The patient should rest with an elevated head after eating. Liquids should be drunk between meals rather than during meals.

Substances known to cause nausea, such as alcohol, should be avoided.

If nausea is experienced, the following may be helpful to prevent vomiting:

- drinking small amounts of clear, sweetened fluids, and
- resting in a warm environment either in a sitting position or propped up in a lying position.

Precautions should be taken to prevent motion sickness when travelling, and children should be seated in the car so that they face the front window.

### Conclusion

Usually nausea and vomiting resolve without treatment, but depending on the cause, may become severe. Oral rehydration

fluids may be used to prevent dehydration. Medical help should be sought if conservative measures do not relieve the symptoms.

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