



Gas in the Digestive Tract

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Definition & Facts

What is gas?

A gas is a substance that has no fixed size or shape. When inside a closed container, a gas will expand to fill the container. An example of gas is the air you breathe.

The gas inside your [digestive tract](#) is made of air and other gases. Gas typically leaves your digestive tract through your mouth when you [belch](#)—or burp—or through your [anus](#) when you pass gas. Having gas and some [gas symptoms](#) is normal. Many people are bothered by gas symptoms once in a while.

However, some people have repeated gas symptoms that bother them often or affect their daily activities. People may have problems with gas symptoms because they

- have excess gas in the digestive tract
- feel more severe gas symptoms, even when a normal amount of gas is in the digestive tract

How common is gas?

Everyone has gas in the digestive tract, and many people have problems with gas symptoms. For example, research suggests that 16% to 31% of people experience bloating—a feeling of swelling or fullness in the [abdomen](#).¹ In a large U.S. survey, about 20% of participants said they experienced bloating in the past week.²

Who is more likely to have problems with gas symptoms?

Some people are more likely to have problems with gas symptoms if they have certain [health conditions](#). People who [swallow more air](#) or eat more of [certain foods](#) may also have more gas symptoms.

References

[1] Lacy BE, Cangemi D, Vazquez-Roque M. Management of chronic abdominal distension and bloating. *Clinical Gastroenterology and Hepatology*. 2021;19(2):219–231.e1. doi: 10.1016/j.cgh.2020.03.056

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Symptoms & Causes

In this section:

- [What are the symptoms of gas?](#)
- [When should I talk with a doctor about my gas symptoms?](#)
- [What causes gas?](#)
- [What health conditions can cause problems with gas symptoms?](#)

What are the symptoms of gas?

Gas symptoms vary from person to person. Common symptoms of gas in the [digestive tract](#) include [belching](#), [bloating](#) and distention, and passing gas. Having some gas symptoms is normal, especially during or after meals.

Gas symptoms may be a problem if they occur often, bother you, or affect your daily activities.

Belching

Belching, or burping, is a release of gas from your [stomach](#) through your mouth. People typically belch up to 30 times a day.³

Some people may feel they belch more often than normal. In some cases, people belch a lot because they [swallow too much air](#) and release the air before it enters the stomach.

Bloating and distention

Bloating is a feeling of fullness or swelling in your [abdomen](#), or belly. If your abdomen becomes larger than usual, doctors call this distention. Only about half of people with bloating also have distention.^{4,5} Some people may also feel abdominal discomfort or pain when they have bloating or distention.

Passing gas

Studies suggest that people pass gas through the [anus](#) an average of 8 to 14 times a day.⁶ However, some people may pass gas more often. Experts consider passing gas up to 25 times a day to be normal.^{6,7}

Excess gas in the digestive tract that leads to passing gas is called flatulence. The gas that passes is called flatus. People who have problems with flatulence may feel they pass too much gas or that the flatus has an unpleasant odor. The odor may be due to sulfur in the flatus.

When should I talk with a doctor about my gas symptoms?

You should talk with your doctor if

- gas symptoms bother you
- your symptoms change suddenly
- you have other symptoms—such as abdominal pain, [constipation](#), [diarrhea](#), or weight loss—along with gas symptoms



You should talk with your doctor if gas symptoms bother you.

What causes gas?

Gas normally enters your digestive tract when you swallow air and when [bacteria](#) in your [large intestine](#) break down undigested [carbohydrates](#). You may have more gas symptoms if you swallow more air or consume more of certain foods and drinks.

Swallowed air

Everyone swallows a small amount of air when eating and drinking. Swallowed air that doesn't leave your stomach when you belch may move into your intestines and pass through your anus.

Swallowing more air may lead to more gas and gas symptoms. You swallow more air when you

- chew gum or suck on hard candy
- drink carbonated, or fizzy, drinks
- eat or drink too fast
- smoke
- wear loose-fitting dentures

Bacteria in your large intestine

Your large intestine contains a large number of bacteria and some [fungi](#) and [viruses](#) that make up the gut [microbiome](#)—the microbes in your [digestive tract](#) that help with digestion. Bacteria in the large intestine help break down carbohydrates and create gas in the process.

Certain [foods and drinks](#) contain types of carbohydrates—sugars, starches, and [fiber](#)—that your stomach and [small intestine](#) don't fully digest. Undigested carbohydrates will pass to your large intestine, where bacteria break them down and create gas. You may have more gas symptoms if you consume more carbohydrates that your stomach and small intestine don't fully digest.

What health conditions can cause problems with gas symptoms?

Some health conditions can cause you to have more gas than usual or have more gas symptoms.

IBS and other functional GI disorders

[Functional gastrointestinal \(GI\) disorders](#) such as [irritable bowel syndrome \(IBS\)](#), functional abdominal bloating and distention, functional constipation, and functional [dyspepsia](#) may cause problems with gas symptoms.

Functional GI disorders are related to problems with how your brain and your gut work together. These problems can cause you to feel more bloating or abdominal pain or can affect how gas moves through your [intestines](#).

Problems digesting carbohydrates

People who have problems digesting certain carbohydrates may experience digestive symptoms—such as bloating, abdominal pain, and diarrhea—after they consume certain foods or drinks. Problems digesting carbohydrates include

- [lactose intolerance](#), in which people have digestive symptoms after consuming foods or drinks that contain [lactose](#)


- dietary fructose intolerance, in which people have digestive symptoms after consuming foods or drinks that contain [fructose](#)

Small intestinal bacterial overgrowth

Small intestinal bacterial overgrowth is an increase in the number of bacteria or a change in the type of bacteria in your small intestine. These bacteria can produce extra gas and may also cause diarrhea and weight loss. Small intestinal bacterial overgrowth is most often a complication of other health conditions.

Other digestive diseases and conditions

A number of other digestive diseases and conditions may lead to more gas or gas symptoms, including

- [celiac disease](#)
- constipation
- [gastroesophageal reflux disease](#)
- [gastroparesis](#)
- [intestinal pseudo-obstruction](#)
- obstruction or blockage of the digestive tract, which may be caused by conditions such as colorectal, ovarian, or stomach [cancer](#) [NIH](#) 

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Diagnosis

How do doctors diagnose the cause of problems with gas symptoms?

Doctors may diagnose the causes of excess gas or increased gas symptoms with a medical history and physical exam. In some cases, doctors may order medical tests.

Medical history



Your doctor may ask you to keep a diary of the foods and drinks you consume and when your gas symptoms occur.

For a medical history, your doctor will ask about

- your symptoms
- your diet and eating and drinking habits
- prescription and over-the-counter medicines and supplements you take
- current and past medical conditions

Your doctor may ask you to keep a diary of the foods and drinks you consume and when your gas symptoms occur. Your diary may show specific foods and drinks that are causing gas. Reviewing your diary may also help your doctor find out if you have excess gas or are more sensitive to normal amounts of gas.

Physical exam

During a physical exam, a doctor typically

- checks for swelling or enlargement of your [abdomen](#), also called distention
- listens to sounds within your abdomen using a stethoscope
- taps on your abdomen to check for tenderness and pain, or to listen for tympany, a drum-like sound, which is a sign of gas in the digestive tract

A physical exam may include a [digital rectal exam](#).

What tests do doctors use to diagnose the cause of problems with gas symptoms?

Doctors may order medical tests such as [blood tests](#) ^{NIH}, [stool tests](#), or [x-rays](#) to check for signs of health problems. If your doctor suspects that a specific [health condition](#) could be

causing your gas symptoms, he or she may recommend additional tests.


Treatment

How can I reduce or prevent excess gas or gas symptoms?

To reduce or prevent excess gas or gas [symptoms](#), your doctor may recommend swallowing less air, changing your eating and drinking habits or diet, or taking medicines or supplements.

Swallowing less air

Swallowing less air may help ease gas symptoms, especially if you belch a lot. Your doctor may recommend you

- avoid chewing gum and sucking on hard candy
- avoid drinking fizzy drinks and drinking with a straw
- avoid talking while eating or drinking
- eat more slowly and, when you can, sit down to eat instead of eating on the run
- if you smoke, talk with your doctor about strategies that can help you [quit smoking](#) 
- if you wear dentures, check with your dentist to make sure they fit correctly



You may swallow less air if you avoid chewing gum, sucking on hard candy, or drinking fizzy drinks.

Changing your diet

To reduce gas, your doctor may suggest [changes to your eating and drinking habits or diet](#). For example, your doctor may recommend eating smaller, more frequent meals or consuming less of the foods and drinks that increase your gas symptoms. For example, some people have more gas symptoms after they consume

- cruciferous vegetables—a group that includes broccoli, cauliflower, collard greens, kale, and others—and legumes—a group that includes [beans, peas, and lentils](#) 

- foods or drinks that contain a lot of [fiber](#), [fructose](#), or [lactose](#)
- sugar-free candies, gums, or other products that contain sweeteners with names that end in “-ol”

Your doctor may also recommend changing what you eat and drink to treat certain health conditions that may cause gas symptoms—such as [celiac disease](#), [irritable bowel syndrome \(IBS\)](#), or [lactose intolerance](#).

Taking medicines or supplements

In some cases, doctors may recommend medicines or supplements to help reduce gas or gas symptoms. The medicines or supplements your doctor recommends will depend on which gas symptoms you have and whether a [health condition](#) is causing your gas symptoms.

Doctors may recommend

- over-the-counter medicines
- prescription medicines to treat certain health conditions you may have that cause gas symptoms, such as IBS or [small intestinal bacterial overgrowth](#)
- supplements or other products to reduce gas symptoms, such as [lactase products](#) for lactose intolerance

For safety reasons, talk with your doctor before using supplements, probiotics, or any [complementary or alternative medicines](#) [NIH](#) or medical practices.

Eating, Diet, & Nutrition

Can changing my eating and drinking habits or diet reduce gas or gas symptoms?

If you have problems with [gas symptoms](#), your doctor may recommend changing your eating and drinking habits or diet. People with certain [health conditions](#) may need to follow a special diet. Your doctor may refer you to a [registered dietitian](#) to help create a healthy eating plan. Check on the cost of a dietitian’s services and whether your health insurance may pay for some or all of these services.

Changing your eating and drinking habits

Your doctor may suggest changing your eating and drinking habits to reduce gas symptoms. For example, doctors may recommend


- avoiding or limiting how often you chew gum, suck on hard candy, drink fizzy drinks, and drink with a straw
- avoiding talking while eating or drinking

- eating slowly and, when possible, sitting down to eat instead of eating on the run
- eating smaller, more frequent meals instead of larger meals

Changing your diet

Some people have more gas symptoms when they consume certain [carbohydrates](#) that the [stomach](#) and [small intestine](#) don't fully [digest](#). When these carbohydrates reach the [large intestine](#), [bacteria](#) break them down and create gas in the process.

Examples of foods and drinks containing carbohydrates that may lead to excess gas include

- certain fruits—including apples, peaches, and pears—and fruit juices
- vegetables, especially cruciferous vegetables—a group that includes broccoli, cauliflower, collard greens, kale, and others—and legumes—a group that includes [beans, peas, and lentils](#) 
- dairy products, such as milk, ice cream, and yogurt
- whole grains, such as whole wheat
- drinks that contain high-[fructose](#) corn syrup, such as fruit juices, soft drinks, sports drinks, and energy drinks
- candy, gum, or other products that contain sweeteners ending in “-ol,” such as sorbitol, mannitol, xylitol, erythritol, and maltitol

Some people have more gas symptoms when they consume too much [fiber](#). Others may have more gas symptoms when they eat high-[fat](#) foods, which can increase [bloating](#).

Talk with your doctor about your diet. Your doctor may ask you to keep a diary of what you eat and drink and your gas symptoms. The diary can help your doctor or dietitian figure out whether certain foods and drinks could be causing your gas symptoms.

Following a special diet to help treat health conditions

If you are diagnosed with a health condition that could be causing your gas symptoms, your doctor or dietitian may recommend a special diet. For example, health care professionals may recommend

- following a [gluten](#)-free diet to treat [celiac disease](#).
- reducing the amount of [lactose](#) in your diet to manage symptoms of [lactose intolerance](#).
- reducing the amount of fructose, especially high-fructose corn syrup, in your diet to manage symptoms of dietary fructose intolerance.
- trying a [low FODMAP](#) diet for a few weeks to see if it helps with symptoms of [irritable bowel syndrome](#). FODMAPs are carbohydrates that are hard to digest.

Talk with your doctor or dietitian about a healthy eating plan that may help with your gas symptoms.



Talk with your doctor or dietitian about a healthy eating plan that may help with gas symptoms.

Clinical Trials

The NIDDK conducts and supports clinical trials in many diseases and conditions, including digestive diseases. The trials look to find new ways to prevent, detect, or treat disease and improve quality of life.

What are clinical trials for gas in the digestive tract?

Clinical trials—and other types of [clinical studies](#) [NIH](#)—are part of medical research and involve people like you. When you volunteer to take part in a clinical study, you help doctors and researchers learn more about disease and improve health care for people in the future.

Researchers are studying many aspects of gas in the digestive tract, including

- new or improved treatments for gas symptoms
- improving the diagnosis and treatment of health conditions that may increase gas symptoms, such as irritable bowel syndrome and small intestinal bacterial overgrowth


[Find out if clinical studies are right for you](#) [NIH](#).

Watch a video of NIDDK Director Dr. Griffin P. Rodgers explaining the importance of participating in clinical trials.

Why Should I Join a Clinical Trial?



What clinical trials for gas in the digestive tract are looking for participants?

You can find clinical studies on gas in the digestive tract at www.ClinicalTrials.gov [NIH](#) . In addition to searching for federally funded studies, you can expand or narrow your search to include clinical studies from industry, universities, and individuals; however, the National Institutes of Health does not review these studies and cannot ensure they are safe. Always talk with your health care provider before you participate in a clinical study.

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