

## Definition

Although the subject of gas is not one that most of us talk about, the truth is that all of us have gas in our intestinal tract and must get rid of it in some way.

**Flatulence** (the passage of gas through the rectum) and belching are normal and necessary functions that allow the body to rid itself of gas. Occasionally, gas collects in some portion of the digestive tract, a situation that can lead to pain and bloating.

Also, some people seem to be more sensitive to normal amounts of gas in their digestive tracts. Although gas is not usually a sign of a problem, persistent and troublesome symptoms may mean that something is wrong. If you have any doubts, check with your doctor.

## What Causes Gas?

The most common source of gas is swallowed air. Each time we swallow, small amounts of air enter the stomach. This gas in the stomach may accumulate to be belched out, or it may pass into the small intestine where part of it is absorbed. The rest travels into the colon to be passed out through the rectum.

Gas also can occur for any of the following reasons:

- Some people swallow air frequently because they have post-nasal drip or chew gum
- Rapid eating or poorly fitting dentures also may cause too much air to be swallowed.

## What Causes Repetitive Belching?

Some people experience repetitive belching. Usually, this occurs after a person has unconsciously swallowed air. The air stays briefly in the esophagus and then is belched back out. This habit can be broken if the person becomes aware of the air swallowing.

## Do Any Foods Cause Gas?

The foods we eat can be a factor in the production of gas. Some foods - like cauliflower, brussel sprouts, dried beans, broccoli, cabbage, and bran - are not completely digested in the small intestine. When the indigested pieces of food reach the colon, they are fermented by the bacteria that live in the colon. This **fermentation** often results in gas.

In recent years, the popular media has been full of claims about the benefit of eating a diet high in fiber.

While fiber seems to have a useful role in good nutrition and health, greatly increasing your fiber intake too rapidly can result in some distressing side effects. Increasing your fiber intake - that is, eating more whole grain cereals and breads, fresh fruits and vegetables, or more whole bra - can leave you feeling full or bloated. It helps to adjust slowly to any dietary change. While it is adapting itself to handling an increase in fiber, your digestive system may well produce more gas and you may experience some unpleasant symptoms.

Being lactose deficient is another frequent cause of excess gas. Lactase, an enzyme normally found in the small intestine, is responsible for digesting lactose, the sugar found in milk and other dairy products. When lactose passes undigested into the colon, bacteria ferment the sugar, causing gas.

If lactase deficiency is suspected of causing gas, your doctor probably will tell you to eliminate dairy foods from your diet so your symptoms can be evaluated.

Lactase deficiency is common. With the exception of people of northern European heritage, most adults experience some trouble digesting milk and other dairy products.

## Are There Any Other Sources of Gas?

Scientists are studying another possible source of intestinal gas. When stomach acid enters the duodenum - the uppermost part of the small intestine - it is neutralized by bicarbonate. Carbon dioxide is released during this process. Most of the gas is absorbed into the blood. The role of the remaining carbon dioxide is unclear, but some scientists think it may play a role in producing gaseous symptoms.

## How Much Gas Does the Body Produce?

The amount of gas produced by the body varies considerably from person to person. Most people produce somewhere between 400 and 2,400 cc of flatus each day.

Nitrogen is the principal component of flatus, and it comes from the air we swallow. When indigested pieces of food - such as bran or lactose - enter the colon, bacteria ferment the particles, producing carbon dioxide and hydrogen and other gases, usually in a small amount.

Methane is produced by only one-third of the population. Its production does not seem to be affected by diet. All the major components of flatus are odorless. The characteristic "unpleasant" odor of flatus is the result of **trace gases** such as hydrogen sulfide.

## Can Gas Cause Abdominal Pain and Distention?

Some people experience upper abdominal pressure and pain after eating. Usually, this can be relieved by belching.

Some people deliberately swallow more air to make themselves belch. Such a practice is not recommended, however. It only adds to the amount of gas already in the stomach without reducing the discomfort.

Gas can collect anywhere in the colon. When gas accumulates on the right side to the colon, the pain can be similar to that caused by gallbladder disease. Gas in the upper-left portion of the colon can result in a condition called splenic flexure syndrome. The pain associated with this condition can spread to the left side of the chest and be confused with heart disease.

The bloating that occurs after eating is also thought to be caused by gas. However, studies fail to show any connection between the symptoms and the total amount of gas in the abdomen.

Studies also show that in some people even normal quantities (30 to 200 cc) of gas in the intestine can cause spasms of the small or large bowel, especially after eating.

Avoiding excessive swallowing of air and eating small, leisurely meals can help prevent symptoms. Your doctor may prescribe medication to relax the muscles of the intestinal tract and relieve spasms.

A feeling of distention of the abdomen is also a common complaint. It often increases during the day and is most severe after the largest meal.

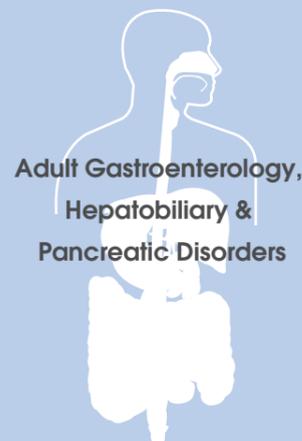
Distention occurs more often in women who have had one or more pregnancies or in individuals who have lost the "tone" of their **abdominal rectus muscles** due to age or disease.

If your abdomen is distended when you sit or stand, but is not when you are lying down, it is likely that the distention is related to muscular weakness rather than excess gas. A support garment or exercise to increase abdominal rectus muscle tone, such as situps, may relieve symptoms.

## "Nothing is Really Wrong With You.."

Very often your gases symptoms are not the result of a disease. If air swallowing, diet and lax abdominal rectus muscles are ruled out as the source of your problems, and your tests failed to reveal any abnormality, you may think (or may be told) "nothing is really wrong with you."

This does not mean that your symptoms are "all in your head."

Patient  
EducationDigestive Tract  
Gas

Rather, your problems may be the result of a functional disorder.

A functional disorder is one in which there are no signs of disease, and yet your intestinal tract sometimes does not seem to function properly. A functional disorder may cause discomfort, but it is not serious and does not lead to a serious disease.

Until recently, doctors did not know why functional problems happened. Recent research discoveries, however, suggest a possible explanation. The motion of the digestive tract seems to be governed by a delicate pattern of electrical impulses, in much the same way as muscles of the heart are governed.

Some researchers think that when these electrical impulses are disrupted, the contractions of the intestinal muscles become disorganized. This disorganization can result in a variety of symptoms, including pain, diarrhea, constipation, bloating, and a sensation that there is too much gas in the system.

When Do Gaseous Symptoms Require  
Medical Attention?

A persistent and troublesome increase in the frequency or severity of belching or flatulence should prompt you to seek medical attention. Your doctor may review your diet and eating habits and advise appropriate changes.

Nervous tension, which also can contribute to symptoms by increasing air swallowing, or by causing changes in dietary habits, might also be assessed. However, since gaseousness, abdominal bloating, painful cramps, or distention could be caused by abnormalities in the upper or lower gastrointestinal tract, your doctor may also recommend appropriate diagnostic tests.

## Do Over-the-Counter Drugs Relieve Gas?

Although many television advertisements insist that their products relieve gas, scientific studies do not support these claims. One drug that scientists had high expectations of - simethicone - has an antigas effect in test tubes. However, this drug does not seem to relieve symptoms of gas in most people.

Some people believe that antacids can be used to relieve gas pains. This is not the case. Antacids may be helpful for heartburn and peptic ulcers, but they do not relieve symptoms attributed to gas.

If you have trouble with gas, doctors recommend you rely on the guidelines outlined above. If these do not provide relief, see your doctor.

## Glossary

**Abdominal Rectus Muscles**

The two muscles that run on either side of the midline and are responsible for maintaining "tone".

**Bloating**

A feeling of fullness in the mid-abdominal region often occurring after meals.

**Distention**

A visible increase in the waistline often occurring after meals.

**Fermentation**

The process by which bacterial enzymes break down substances and release gas. In the colon, bacteria break down undigested food releasing hydrogen, carbon dioxide and other gases.

**Flatulence**

The passage of gas through the rectum; a normal occurrence but troublesome if the frequency, odor or volume is excessive.

**Lactase**

An enzyme produced by the small intestine and required for the digestion of milk and milk products.

**Lactose**

The principal sugar in milk. If lactase is insufficient, drinking milk can result in flatulence, painful cramps or diarrhea.

**Splenic Flexure Syndrome**

Gaseous distention in the left, upper portion of the colon leading to left, upper abdominal discomfort, which may radiate to the left chest and be confused with heart disease.

**Trace Gases**

Gases present in very small amounts.