Belching: Is it Normal?

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Reading time: 5 minutes

According to the dictionary, to belch is "to bring forth wind noisily from the stomach." The interchangeable word "burp" does not appear in some dictionaries, but it seems to mean, "cause to belch" as one would burp a baby. Belching after a large meal is a physiologically normal, indeed a necessary venting of air from the stomach. In some societies it is a gesture of appreciation to the host. It has comic associations as with Sir Toby Belch in Shakespeare's *Twelfth Night,* and remains a source of mirth in some situations.

Nevertheless, for some people, belching is a serious and difficult matter. They are plagued by sudden attacks of belching which is both intrusive and embarrassing. Such individuals are often convinced that the gas or air that is belched originates in the "stomach," and that it is an indication of an underlying gas-producing disease. Fortunately, that is rarely the case. Indeed, all available evidence points to swallowed air as the source of the stomach gas and the perceived need to bring it up. This process is called *aerophagia.*

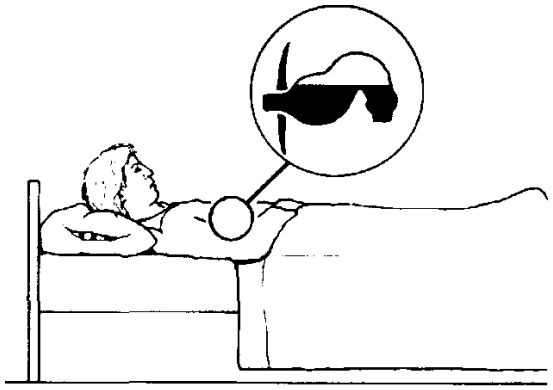
Aerophagia

Air swallowing is normal, although it contributes no discernible benefit. Newborns have no gas in their intestines until they draw their first breath. Subsequently air appears progressively down the gut. Normally, the esophagus contains some swallowed air. In a disorder called achalasia, where the valve at the lower end of the esophagus (gullet) cannot relax, the stomach contains no gas at all.

During inhalation, the pressure in the esophagus (gullet) falls, drawing in air. Deliberate inhalation against a closed glottis (willfully closed windpipe) draws even more air into the esophagus. The air may be forced out again as intraesophageal pressure increases with exhalation. Adolescents love to shock their elders with the resulting sounds. More practically, patients who have lost their larynx (voice box) because of cancer put this learnable skill to use in order to generate esophageal speech. Commonly, aerophagia is an unwanted habit in those who repeatedly burp, sometimes in response to a sense of abdominal bloating (but belching and abdominal bloating often occur independently).

When a person swallows saliva, about 5 ml of air is ingested, perhaps more with food. Nervous patients undergoing abdominal x-rays accumulate more intestinal gas than those who are relaxed. Other mechanisms include thumb sucking, gum chewing, rapid eating, and poor dentures. Stomach gas has the same composition as the atmosphere and the volume increases about 10% when heated by body temperature. Carbonated drinks and antacids reacting with hydrochloric acid produce carbon dioxide and traces may diffuse from the blood. However, the stomach usually rids itself promptly of gas. For example, air forced into the stomach during a stomach examination (endoscopy) often appears in the rectum within 15 minutes.

Almost all stomach gas is ingested in this way. Exceptions include bowel obstruction or a fistula (opening from the colon to the stomach as a result of disease). This directs colon gases into the stomach. Occasionally, paralysis of the stomach permits bacteria to grow and produce hydrogen.



Supine Position

When the stomach is distended by a meal, the stretched muscle results in a sense of satiety (feeling of fullness) or sometimes discomfort. A satisfying belch may ease this feeling. The ability to tolerate stomach distension varies, and some individuals seem unduly sensitive. If release of gas relieves the distended feeling, even transiently, a cycle of air swallowing and belching may be established. People with gastroenteritis, heartburn, or ulcers swallow more frequently, but the ensuing belch is probably a counter stimulus of no lasting benefit. The swallow-belch cycle may continue long after the original discomfort is forgotten.

Clinical Features

Venting gas is important, especially for people unable to do so. When the lower esophageal sphincter (LES) is reinforced by anti-reflux surgery, belching may be impossible. The patient's position may hinder a belch. Swallowed air is lighter than food and most reaches only the esophagus from where it is readily returned. However, bedridden patients such as those recovering from surgery may trap air in their stomachs, becoming very uncomfortable. In the supine position (lying

face upward) gastric contents seal the gastroesophageal junction so that air cannot escape. Relief is achieved through assumption of the prone position (lying face downward). Sometimes sleeping on the right side favors a therapeutic belch.

Repetitive belching is neither normal nor useful. While a patient may insist that his or her stomach is producing prodigious amounts of gas, in reality, air is repeatedly drawn into the esophagus and belched in the manner described above. A little may even reach the stomach. Some people can belch on command, and the inspiration against a closed glottis may be demonstrated to them. Others must examine themselves during an attack to gain insight. Most sufferers are relieved to have their air-swallowing habit pointed out, but some are incredulous. Quitting is often difficult. Repeated and intractable belching has been termed *eructio nervosa.*

Treatment

A physician should take a careful history and examine the belching patient's abdomen and mouth to be sure no other disease exists. Occasional belching, especially if it is after a meal is normal and requires no treatment beyond "Excuse me!" Those who feel they belch excessively should understand the relationship of belching to air swallowing as described above. They need to be reassured there is no underlying disease, and that there are no consequences beyond embarrassment. Eating slowly allows time for air to be moved along the intestine, or absorbed. Excessive chewing or sucking should be avoided by choosing food that is easily chewed.

Those repeated belchers can sometimes restrain their deliberate air swallowing when they understand how it occurs. Relaxation techniques may be of benefit. Some good results are reported with hypnosis, but there are no scientific studies to support any treatment.

Suggested Reading

1. Thompson WG. *The Ulcer Story: the authoritative guide to ulcers, dyspepsia and heartburn*. Perseus Books. Reading, Mass. 1996. Chapter 20.
2. Talley NJ, Stanghelfini V, Heading RC, et al. "Functional Gastroduodenal Disorders," Chapter 6 in Drossman DA, Corazziari E, Talley NJ, Thompson WG, Whitehead WE, editors. *The Functional Gastrointestinal Disorders.* Second Edition. McLean, VA: Degnon; 2000. Pages 328-330.

Dietary Tips to Help Reduce Problems with Gas

Gas Forming Foods

Carbonated beverages, beer, beans, broccoli, Brussels sprouts, cabbage, corn, pork, spicy foods, green peppers, and onions.

Gas Forming Actions

Chewing gum, smoking, talking while eating, and eating quickly can cause air swallowing which contributes to increased gas production. Skipping meals can also produce increased gaseousness; it is preferable to eat regularly scheduled meals.

To Help Bring Up Gas

Cinnamon, cloves, ginger, peppermint.

Odor Forming Food

Alcohol, asparagus, beans, cabbage, coffee, cucumbers, dairy products, eggs, fish, garlic, nuts, onions, prunes, radishes, and highly seasoned foods.

Odor Reducing Foods

Buttermilk, parsley, spinach, and yogurt.

About IFFGD

The International Foundation for Gastrointestinal Disorders (IFFGD) is a 501(c)(3) nonprofit education and research organization. We work to promote awareness, scientific advancement, and improved care for people affected by chronic digestive conditions. Our mission is to inform, assist, and support people affected by gastrointestinal disorders. Founded in 1991, we rely on donors to carry out our mission. Visit our website at: www.iffgd.org.

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