



International Journal of Drug Formulation & Research

FLATULENCE: A CHRONIC GASTRIC UPSET IN TODAY'S HECTIC LIFESTYLE

Arun N. Borakhatariya, Vipul J. Jesani, Jignesh B. Patel, Divyang H. Shah, Yogesh R. Sathwara, Shailesh P. Zala and Dhrubo Jyoti Sen

Department of Pharmaceutical Chemistry, Shri Sarvajani Pharmacy College, Gujarat Technological University,
Arvind Baug, Mehsana-384001, Gujarat, India,

Abstract:

Flatulence is the expulsion through the rectum of a mixture of gases that are byproducts of the digestion process of mammals and other animals. The mixture of gases is known as **flatus** in medical speak, informally as a **fart**, or simply **gas**, and is expelled from the rectum in a process colloquially referred to as "passing gas", "breaking wind" or "farting". Flatus is brought to the rectum by the same [peristaltic](#) process which causes feces to descend from the large intestine. The noises commonly associated with flatulence are caused by the vibration of the anal sphincter, and occasionally by the closed buttocks

Keywords: flatus, peristalsis, bloating, symbiotic bacteria, dyspepsia, accumulation of gas, belching

Introduction

Flatulence is the emission of a mixture of gases called 'flatus' present in the intestine. This gas is produced by symbiotic bacteria and yeasts found in the gastrointestinal tract. Flatus is usually released under pressure through the anus which creates sound and is often accompanied by a foul odor. Flatulence, many a times causes discomfort and pain due to bloating, not to mention social embarrassment. Whether you like it or not flatulence is a condition that all of us experience at some point of time or the other. Flatulence can be a major source of embarrassment when it happens in social settings making for some really awkward situations. Flatulence is basically a digestive condition that occurs as a result of an excessive buildup of stomach and intestinal gas. Such an excessive buildup of gas causes a great deal of discomfort and a feeling of fullness and bloating, along with possible abdominal pain. The pressure that results from such a buildup of gas is naturally relieved through the passage of gas from the rectum—flatulence, or through the mouth with belching or burping. Severe flatulence and bloating after eating is therefore likely to have causes that

can be easily addressed. Flatulence is a completely natural phenomenon for all of us, but it can become problematic when excessive. This is therefore likely to be most of problem for individuals who suffer from digestive disorders like irritable bowel syndrome or lactose intolerance, as well as for individuals with unhealthy eating habits or irregular bowel movements. On an average it is believed that most humans pass gas at least fourteen times in a day, producing around one to three pints of gas daily. Flatulence itself is not a cause for worry at all. It does not pose any health risk at all, but it certainly poses a high risk of social embarrassment which is why flatulence treatment and natural remedies for flatulence are so sought after.

Excessive passage of gas or flatulence is often reason enough to seek medical treatment. It should be pointed out that in most cases of excessive flatulence it is important to identify possible underlying causes and treat them to eliminate the problem. As excessive flatulence causes would stem from digestive problems that are in most cases mild or easily treatable you could simply use diet modifications as the most powerful flatulence remedy to control the problem. Lifestyle changes may also be necessary and if the problem persists it could be because of a medical condition that requires additional medical treatment. Gas accumulation or buildup in the digestive system occurs in two ways. When we swallow any food or even water or our own saliva for that matter, we also ingest some amount of air. This mostly includes oxygen and nitrogen. This does contribute to a gradual buildup of gas. In addition to this gas is also released as part of the digestive process when food is broken down in the digestive system. Some of the gases released could include hydrogen, carbon dioxide and methane. If you're troubled by the problem of flatulence just keep in mind that this is a natural biological process, just like breathing for that matter and it affects absolutely everyone. Both men and women experience flatulence, but men tend experience flatulence a little more often than women. Age also holds no bars and the aged, children, toddlers and adults alike all experience flatulence. Flatulence may in fact more often than not go unnoticed as you may not even realize that you have passed gas because of the small quantities released and at most times the gas passed is odorless. Foul smelling flatulence in babies, children and adults alike are caused by the presence of trace elements of sulfur. This only tends to occur however if food has not been digested thoroughly and begins to decompose. Anyone suffering from constipation is therefore also likely to pass extremely foul smelling odor. Excessive flatulence odor and excessive gas can be controlled through dietary and lifestyle changes. It is important that you minimize your intake of, or avoid consuming foods that cause flatulence for any flatulence relief. Lifestyle habits such as meal timings, regular sleep timings and most importantly regular bowel movements

are also important. Some amount of physical activity is essential for the efficient functioning of your digestive system. Also make it a point to avoid controlling or delaying bowel movements. Treatment with such simple measures can help to control flatulence odor or excessive flatulence. In almost all cases of excessive flatulence the problem can be controlled with such home treatments. In cases of severe flatulence where such methods fail to reduce flatulence it would be advisable to seek a medical diagnosis as there could be some other underlying condition that contributes to the problem. Emission of a mixture of gases from the anus, which creates sound and is often accompanied by a foul odor, is called flatulence. Popularly known as farting, flatulence, apart from causing discomfort and pain because of bloating, also causes social embarrassment. The symbiotic bacteria and yeasts present in the gastrointestinal tract, causes the production of these gases, which is also called flatus. Excessive eating is also one of the prime reasons for such pressures to erupt. To know more about the causes and symptoms of flatulence, go through the lines that follow.¹

Causes of Flatulence

Presence of excessive amounts of bacteria in the intestines

Consumption of large amounts of fibrous foods

Consumption of products that contain malt extracts

Digestive disorders that affect the GI tract, such as gastroenteritis

Irritable bowel syndrome

Constipation

Food prepared under unhygienic conditions

Contaminated water

High-fat diet

Metabolic breakdown of sulfur-containing proteins and amino acids in the intestines

Fat mal-absorption

Swallowed air

Breakdown of undigested foods

Lactase deficiency

Dark beer and red wine

Starchy food, such as potato, corn, etc

Certain Medication/Drugs

Symptoms of Flatulence

A feeling of bloating and discomfort

Excessive expulsion of wind

Belching

Pain in the abdomen

Foul odor

Belching (also known as burping, ructus, or eructation) involves the release of gas from the digestive tract (mainly esophagus and stomach) through the mouth. It is usually accompanied with a typical sound and, at times, an odor. In most parts of the world, especially in formal situations, audible burping is considered impolite. Belching in front of people in public places tends to be received in a manner similar to flatulence.

Physiology

Belching is typically caused by swallowing air (aerophagia) when eating or drinking and subsequently expelling it, so in this case the expelled gas is mainly a mixture of nitrogen and oxygen. Burps can also be caused by drinking carbonated drinks such as beer, soft drinks, energy drinks or champagne, in which case the expelled gas is carbon dioxide from the drink itself. Common diabetes drugs metformin and Byetta can cause belching, especially at higher doses. This often resolves in a few weeks. Belching combined with other symptoms such as dyspepsia, nausea and heartburn may be a sign of an ulcer or hiatal hernia, and should be reviewed by a physician. The sound of burping is caused by the vibration of the upper esophageal sphincter as the gas passes through it. The current Guinness world record for the loudest burp is 107.1 dB, set by Paul Hunn in 2008. (This would be noticeably louder than a chainsaw at a distance of 1 metre.)

Infant burping

Babies are particularly subject to accumulation of gas in the stomach while feeding, and this can cause considerable agitation and/or discomfort unless the child is burped. The act of burping an infant involves placing the child in a position conducive to gas expulsion (for example holding the infant up to the adult's shoulder, with the infant's stomach resting on the adult's chest) and then lightly patting the lower back so that the child burps. Because burping can cause vomiting in infants, the "burp cloth" or "burp pad" is sometimes employed on the shoulder to protect the adult's clothing.

In animals

Many other mammals, such as cattle, dogs, and sheep also burp. In the case of ruminants, the gas expelled is actually methane produced as a byproduct of the animal's digestive process. Anaerobic organisms such as *Escherichia coli* (*E. coli*) and methanogenic archaea produce this effect. An average cow is thought to emit between 542 litres (if located in a barn) and 600 litres (if in a field) of methane per day through burping and exhalation, making commercially farmed cattle a major contributor to the greenhouse effect. 95% of this gas is emitted through belching. This has led scientists at the Commonwealth Scientific and Industrial Research Organisation of Perth, Australia, to develop an anti-methanogen vaccine to minimize methane in cattle burps.

One reason that domesticated cows burp so much is because they are often fed foods that their digestive systems do not process, such as corn and soy. Some farmers have reduced burping in their cows by feeding them alfalfa and flaxseed, which are closer to the grasses that they had eaten in the wild before they were domesticated. In some animals, a failure to burp successfully can be fatal. This is particularly common among domesticated ruminants that are allowed to gorge themselves on very rich spring clover or alfalfa. The condition, known as bloat, is basically a high pressure buildup of gastric gases and requires immediate veterinary treatment, usually the insertion of a flexible rubber hose down the esophagus—or in extreme cases the lancing of the animal's side with a trochar and cannula—to expel the buildup of gas. Some fish are also known to expel air from their gills; here the burp is produced by gas being expelled from the gas bladder.

Flatulence Symptoms, Causes, Remedy and Diet

Major Cause of Flatulence is Swallowed Air

Swallowed air, though this is a major cause of flatulence, it could still be a reason. Some people swallow air as a matter of habit, this condition is referred to as Aerophagia. While the oxygen present in the air thus inhaled is absorbed by the body, the nitrogen is expelled in flatus as it is poorly absorbed by the mucous lining.

Presence of excessive amounts of bacteria in the intestines.

Consumption of large amounts of fibrous foods.

Consumption of products that contain malt extracts.

Digestive disorders that affect the GI tract such as gastroenteritis.

Irritable bowel syndrome. Irregular bowel movements or constipation.

Food or water that may be prepared under unhygienic conditions.

A high-fat diet generates a huge amount of carbon dioxide, some of which is released as flatulence or gas.

Odorous flatulence is caused due to the metabolic breakdown of sulfur-containing proteins and amino acids in the intestines.

Persistent bloating and flatulence that is present consistently over a period may be an indication of a serious medical condition such as colorectal cancer. This may need deeper investigation and treatment.

Fat malabsorption could be another cause for flatulence. This problem produces loose and light-colored stools accompanied by gas.

Flatulence home remedies and natural cures, Questions and answers

Tested Methods for Treating Flatulence

Gas or flatulence can to a great extent be remedied at home using kitchen cures. Here are some of the tried and tested methods for treating the breaking wind problem:

Mix 1/2 tsp of dry ginger powder with a pinch of asafoetida and a pinch of rock salt in a cup of warm water. Drink this concoction to get relief from gas.

Mix 2 tsp of brandy with a cup of warm water and drink this before going to bed.

Chew on some fresh ginger slices that are soaked in lime juice after meals.

A drop of dill oil in a tsp of honey taken immediately after a meal should be of great help.

Dry grind 1 tsp of pepper, 1 tsp of dry ginger and 1 tsp of green cardamom seeds. Add 1/2 tsp of this mixture to water and drink after 1 hour after meal.

Chewing peppermint after a meal does a lot more than just freshening your breath. Peppermint contains menthol that soothes the digestive muscles. It helps in treating flatulence, bloating and abdominal pain that accompanies gas. Peppermint oil combined with caraway oil has been used since ages to treat abdominal discomfort caused by flatulence.

Flatulence: Home Remedies suggested by users

Avoid Foods Which Produce Gas when Consumed

No matter what course of treatment you choose even your doctor would advise you to avoid eating or to at least reduce your consumption of foods that contribute to the problem? The problem here is that this may also involve cutting back on some healthy foods like certain fruits or vegetables and whole grains and milk products. High fat foods may also need to be reduced as they can add to the problem of bloating and

abdominal discomfort. While carbohydrate rich foods can be a major cause for gas as compared to foods with a high protein or fat content, fatty and protein rich foods may at times be the main culprit. The cause can vary for different people so you will have to examine your own diet and make changes accordingly. Fatty foods and protein rich foods like red meats can be a problem as they put a lot more stress on the digestive system and take a lot longer to get digested completely. This means that there is a higher likelihood of bloating, discomfort and also less room for gases to move into the small intestine, leading to a buildup of gas. The amount of gas released from digesting specific foods can also vary from person to person unfortunately which is why it would be advisable to experiment with your diet. If flatulence is a major problem, a look at your diet is important. There are foods that inherently produce gas when consumed. You must take care to avoid such foods.²

These include foods such as beans, cabbage, Brussels sprouts, cauliflower, broccoli, yeast-containing foods such as breads and cheese.

Carbonated drinks produce gas too.

High carbohydrate content in oats and potatoes make them the culprits for gas.

Foods that produce negligible amounts of gas are rice, bananas, citrus, grapes, hard cheese, meat, eggs, peanut butter, non-carbonated beverages and yogurt made with live bacteria.

Eat Smaller Meals

Eating smaller meals is a good idea rather than consuming a large meal at a time.

Avoid meals containing a large amount of monounsaturated and essential fats.

Chewing the food slowly and steadily is important. Avoid swallowing or gulping down food. Properly masticated food is better digested.

Regular exercise such as walks keeps the intestinal muscles in ship shape. Regular bowel movements keep the levels of gas producing bacteria low resulting in less flatulence.

Yoga is believed to be extremely helpful in relieving a variety of digestive problems, flatulence included. There are in fact various poses that are meant specifically to address the problem of excessive gas, abdominal discomfort and bloating and flatulence. Yoga poses in fact include a posture known as the 'wind relieving pose'.

Composition of flatus

Nitrogen, the main constituent of air, is the primary gas released during flatulence, along with carbon

dioxide. The lesser component gases methane and hydrogen are flammable, and so flatus containing adequate amounts of these can be ignited. However, not all humans produce flatus that contains methane. For example, in one study of the feces of nine adults, only five of the samples contained archaea capable of producing methane. Similar results are found in samples of gas obtained from within the rectum. The gas released during a flatus event frequently has an unpleasant odor. For many years, this was thought to be due to skatole and indole, which are byproducts of the digestion of meat. However, gas chromatography testing in 1984 revealed that sulfur-containing compounds, such as methanethiol, hydrogen sulfide (rotten egg smell) and dimethyl sulfide, were also responsible for the smell. The incidence of odoriferous compounds in flatulence emissions increases from herbivores, such as cattle, through omnivores to carnivorous species. Such odor can also be caused by the presence of large numbers of microflora bacteria and/or the presence of feces in the rectum.³

The major components of the flatus, which are odorless, by percentage are:

Nitrogen: 20–90%

Hydrogen: 0–50%

Carbon dioxide: 10–30%

Oxygen: 0–10%

Methane: 0–10%

Physiology

Flatus is brought to the rectum by the same process which causes feces to descend from the large intestine (see peristaltic movement), and may cause a similar feeling of urgency and discomfort. Researchers investigating the role of sensory nerve endings in the anal canal did not find them to be essential for retaining fluids in the anus, and instead speculate that their role may be to distinguish between flatus and feces, thereby helping detect a need to defecate or to signal the end of defecation. The sound varies depending on the tightness of the sphincter muscle and velocity of the gas being propelled, as well as other factors, such as water and body fat. The auditory pitch (sound) of the flatulence outburst can also be affected by the anal embouchure. Among humans, flatulence occasionally happens accidentally, such as incidentally to coughing or sneezing or during orgasm; on other occasions, flatulence can be voluntarily elicited by tensing the rectum or "bearing down" on stomach or bowel muscles and subsequently relaxing the anal sphincter, resulting in the expulsion of flatus.

Causes

Intestinal gas is composed of varying quantities of exogenous sources (air that is ingested through the nose and mouth) and endogenous sources (gas produced within the digestive tract). The exogenous gases are swallowed (aerophagia) when eating or drinking or increased swallowing during times of excessive salivation (as might occur when nauseated or as the result of gastroesophageal reflux disease). The endogenous gases are produced either as a by-product of digesting certain types of food, or of incomplete digestion. Anything that causes food to be incompletely digested by the stomach and/or small intestine may cause flatulence when the material arrives in the large intestine, due to fermentation by yeast or prokaryotes normally or abnormally present in the gastrointestinal tract. Flatulence-producing foods are typically high in certain polysaccharides, (especially oligosaccharides such as inulin). Those foods include beans, lentils, dairy products, onions, garlic, scallions, leeks, turnips, rutabagas, radishes, sweet potatoes, potatoes, cashews, Jerusalem artichokes, oats, wheat, and yeast in breads. Cauliflower, broccoli, cabbage, Brussels sprouts and other cruciferous vegetables that belong to the genus *Brassica* are commonly reputed to not only increase flatulence, but to increase the pungency of the flatus. In beans, endogenous gases seem to arise from complex oligosaccharides (carbohydrates) that are particularly resistant to digestion by mammals, but which are readily digestible by gut flora—microorganisms (methane-producing archaea; *Methanobrevibacter smithii*) that inhabit the digestive tract. These oligosaccharides pass through the upper intestine largely unchanged, and when they reach the lower intestine, bacteria feed on them, producing copious amounts of flatus. In the case of people who have lactose intolerance, intestinal bacteria feeding on lactose can give rise to excessive gas production when milk or lactose-containing substances have been consumed. Interest in the causes of flatulence was spurred by high-altitude flight and the space program; the low atmospheric pressure, confined conditions, and stresses peculiar to those endeavours were cause for concern. In the field of mountaineering, high altitude flatus expulsion was first noticed over two hundred years ago. Some infections, such as giardiasis, are also associated with flatulence.⁴

Remedies

Dietary

Certain spices have been reported to counteract the production of intestinal gas, most notably the closely related cumin, coriander, caraway and others such as ajwain, turmeric, asafoetida (Hing), epazote, and kombu kelp (a Japanese seaweed). Most starches, including potatoes, corn, noodles, and wheat, produce gas

as they are broken down in the large intestine. Rice is the only starch that does not cause gas. The amount of water-soluble oligosaccharide in beans that may contribute to production of intestinal gas is reputed to be reduced by a long period of soaking followed by boiling, but at a cost of also leaching out other water-soluble nutrients. Also, intestinal gas can be reduced by fermenting the beans, and making them less gas-inducing, and/or by cooking them in the liquor from a previous batch. Some legumes also stand up to prolonged cooking, which can help break down the oligosaccharides into simple sugars. On the other hand, fermented bean products such as miso are less likely to produce as much intestinal gas. Fermentative lactic acid bacteria such as *Lactobacillus casei* and *Lactobacillus plantarum* reduce flatulence in human intestinal tract. Probiotics (live yogurt, kefir, etc.) are reputed to reduce flatulence when used to restore balance to the normal intestinal flora. Live (bioactive) yogurt contains, among other lactic bacteria, *Lactobacillus acidophilus* which may be useful in reducing flatulence. *L. acidophilus* may make the intestinal environment more acidic, supporting a natural balance of the fermentative processes. *L. acidophilus* is available in supplements (some believe non-dairy is best). Prebiotics, which generally are non-digestible oligosaccharides, such as fructooligosaccharide, generally increase flatulence in a similar way as described for lactose intolerance. Often it may be helpful to ingest small quantities of acidic liquids with meals, such as lemon juice or vinegar, to stimulate the production of gastric hydrochloric acid. In turn, acid ingestion may increase normal gastric enzyme and acid production, facilitating normal digestion and perhaps limiting intestinal gas production. Ingestion of bromelain- or papain-containing supplements (such as raw pineapple or papaya, respectively,) may be helpful. Medicinal activated charcoal tablets have also been reported as effective in reducing both odor and quantity of flatus when taken immediately before food that is likely to cause flatulence later.

Pharmacological

Digestive enzyme supplements may significantly reduce the amount of flatulence caused by some components of foods not being digested by the body and thereby promoting the action of microbes in the small and large intestines. It has been suggested that alpha-galactosidase enzymes, which can digest certain complex sugars, are effective in reducing the volume and frequency of flatus. The enzymes alpha-galactosidase, lactase, amylase, lipase, protease, cellulase, glucoamylase, invertase, malt diastase, pectinase, and bromelain are available, either individually or in combination blends, in commercial products. The antibiotic rifaximin, often used to treat diarrhea caused by the microorganism *E. coli*, may reduce both the

production of intestinal gas and the frequency of flatus events. While not affecting the production of the gases themselves, surfactants (agents which lower surface tension) can reduce the disagreeable sensations associated with flatulence, by aiding the dissolution of the gases into liquid and solid fecal matter. ^[13] Preparations containing simethicone reportedly operate by promoting the coalescence of smaller bubbles into larger ones more easily passed from the body, either by burping or flatulence. Such preparations do not decrease the total amount of gas generated in or passed from the colon, but make the bubbles larger and thereby allowing them to be passed more easily. Odor from flatulence, caused by the intestinal bacteria called microflora in the bowel, can be treated by taking bismuth subgallate, available over-the-counter as Devrom. Bismuth subgallate is commonly used by individuals who have had ostomy surgery, bariatric surgery, fecal incontinence and irritable bowel syndrome.

Post-release

In 1998, Chester "Buck" Weimer of Pueblo, Colorado received a patent for the first undergarment that contained a replaceable charcoal filter. The undergarments are air-tight and provide a pocketed escape hole in which a charcoal filter can be inserted. In 2001 Mr Weimer received the Ig Nobel Prize for Biology for his invention. A similar product was released in 2002, but rather than an entire undergarment, consumers are able to purchase an insert similar to a pantiliner that contains activated charcoal. The inventors, Myra and Brian Conant of Mililani, Hawaii still claim on their website to have discovered the undergarment product in 2002 (eight years after Chester Weimer filed for a patent for his product), but state that their tests "concluded" that they should release an insert instead.

Health effects

As a normal body function, the action of flatulence is an important signal of bowel activity, and hence is often documented by nursing staff following surgical or other treatment of patients. However, symptoms of excessive flatulence *can* indicate the presence of irritable bowel syndrome or some other organic disease. In particular, the sudden occurrence of excessive flatulence together with the onset of new symptoms provides reason for seeking further medical examination. Flatulence is not poisonous; it is a natural component of various intestinal contents. However, discomfort may develop from the build-up of gas pressure if an attempt is made to refrain from releasing them. In theory, pathological distension of the bowel, leading to constipation, could result if a person holds in flatulence. Not all flatus is released from the body via the anus. When the partial pressure of any gas component of the intestinal lumen is higher than its partial

pressure in the blood, that component enters into the bloodstream of the intestinal wall by the process of diffusion. As the blood passes through the lungs, this gas can diffuse back out of the blood and be exhaled. If a person holds in flatus during daytime, it will often be released during sleep involuntarily when the body is relaxed. Some flatus can become trapped within the feces during its compaction and will exit the body, still contained within the fecal matter, during the process of defecation.

Toxicity

Most component have low or no toxicity with the exception of Carbon dioxide which "At about 8% it causes headache, sweating, dim vision, tremor and loss of consciousness after exposure for between five and ten minutes." and flatulence can contain up to 30% of it but only for a very short period (few seconds); also to consider is diffusion which is linked to proximity and inhalation quantity.

Society and culture

In many cultures, human flatulence in public is regarded as embarrassing but, depending on context, can also be considered humorous. People will often strain to hold in the passing of gas when in polite company, or position themselves to conceal the noise and scent. In other cultures, it may be no more embarrassing than coughing. While the act of passing flatus in said cultures is generally considered to be an unfortunate occurrence in public settings, flatulence may, in casual circumstances and especially among children, be used as either a humorous supplement to a joke ("pull my finger"), or as a comic activity in and of itself. The social acceptability of flatulence-based humor in entertainment and the mass media varies over the course of time and between cultures. The humorous insult "I fart in your general direction" from the comedy film Monty Python and the Holy Grail has been reprinted on several posters, t-shirts, and hats. In January 2011, the Malawi Minister of Justice, George Chaponda, said that Air Foulng Legislation would make public farting illegal in his country. The media had a field day with punning headlines when they reported the story. Later, the minister withdrew his statement. In 2008, a farting application for the iPhone raked in nearly \$10,000 in one day. There are 6 different farting applications for the Palm Pre.

Environmental impact

The flatulence of cows is only a small portion of cows' methane release. Cows also *burp* methane, due to the physiology of their digestive systems. Flatulence is often blamed as a significant source of greenhouse gases, owing to the erroneous belief that the methane released by livestock is in the flatus. While livestock account for around 20% of global methane emissions, 90–95% of that is released by exhaling or burping.

Only 1–2% of global methane emissions come from livestock flatus. Since New Zealand produces large amounts of agricultural product it is in the unique position of having high methane emissions from livestock compared to other greenhouse gas sources. The New Zealand government is a signatory to the Kyoto Protocol and therefore attempts are being made to reduce greenhouse emissions. To achieve this agricultural emissions research levy was proposed, which promptly became known as a "fart tax" or "flatulence tax". It encountered opposition from farmers, farming lobby groups and opposition politicians. In Fresno, California, a system to harvest methane by-product from dairy cattle and convert it to usable bio-gas is being used, in a partnership with Pacific Gas & Electric (PG&E) and BioEnergy Solutions, in which BioEnergy Solutions sells the methane harvested from cows to PG&E, who then converts the methane to usable bio-gas, which is very similar to natural gas. In June 2009 Paul McCartney and other celebrities launched a "Meat Free Monday" campaign in order to reduce greenhouse gas emissions from the world's livestock.

Natural Treatments of Gas, Flatulence, and Bloating

Gas, flatulence, and bloating can be uncomfortable and embarrassing. Fortunately, there are some natural remedies that can help. Before trying any natural remedy, however, it's important to consult a qualified health care provider to rule out other causes.

Swallowed Air

Some people habitually swallow air, called aerophagia. They're usually unaware they do this, and the cause is often anxiety-related.

The gas swallowed is composed mainly of oxygen and nitrogen. Most of the oxygen is absorbed by the mucous lining of the gut or is used up by colon bacteria, with very little ending up in flatulence. Nitrogen, on the other hand, is poorly absorbed by the mucous lining and most of the swallowed nitrogen ends up in flatulence.

Treatment Strategies

1. Becoming aware that air is being swallowed can help. People become conscious of their breathing patterns.
2. Relaxation techniques may help to reduce anxiety.
3. Avoid lying down after eating. Gas from the stomach passes into the intestines more readily in this position.

Poorly Absorbed Carbohydrates

Hydrogen and carbon dioxide are produced by colon bacteria in the presence of poorly absorbed carbohydrates. If flatulence is accompanied by diarrhea and weight loss, it may indicate a malabsorption disorder such as lactose intolerance or pancreatic insufficiency, and should be evaluated by your primary health care provider. More common is excess flatulence after eating large amounts of poorly absorbed carbohydrates such as beans or foods to which you have food sensitivity. Common food sensitivities include milk and wheat products.⁵

Treatment Strategies

1. Chew food carefully. Carbohydrate digestion begins in the mouth. Any work your teeth don't do, your stomach will have to do later.
2. An alternative practitioner may suggest elimination and challenge diet. This is a diagnostic diet to help uncover food sensitivities and intolerances.
3. Consult your primary care provider to rule out malabsorption disorder if you are also experiencing weight loss and diarrhea.

Gas and Flatulence after High-Fat Meals

Eating a high-fat meal can generate a large amount of carbon dioxide, some of which is released as gas. That's because carbon dioxide is produced in the small intestine when bicarbonate is released to neutralize stomach acid and fat during meals.

Treatment Strategies

1. Eat smaller, more frequent meals instead of three large meals.
2. Avoid high-fat meals.
3. Consult your primary care provider to rule out the possibility of fat malabsorption. Signs of fat malabsorption include loose and light-colored stools.

Odorous Flatulence and Gas

Gas that has a strong odor usually results from the metabolism of sulfur-containing proteins and amino acids in the intestines.

Treatment Strategies

Chew meat and other protein foods carefully. Avoid excessive protein in your diet.
Taking activated charcoal tablets can help to remove the odor.

Table-1

GI tract	Upper GI tract	Nausea/Vomiting, Heartburn, Dysphagia (Oropharyngeal, Esophageal) Halitosis
	Lower GI tract	<i>gas</i> : Flatulence · Abdominal distension · Bloating · Belching · Tympanites <i>stool</i> : Fecal incontinence (Encopresis) · Rectal tenesmus <i>blood</i> : Fecal occult blood Diarrhea, Football sign
Accessory	Hepatosplenomegaly/Hepatomegaly Jaundice	
Abdominopelvic cavity	Ascites	

Eating Foods that Produce Gas

Certain foods are inherently gas-producing. Gas-producing foods include beans, cabbage, onions, Brussels sprouts, cauliflower, broccoli, fluffy wheat products such as bread, apples, peaches, pears, prunes, corn, oats, potatoes, milk, ice cream, and soft cheese. Foods that produce minimal gas include rice, bananas, citrus, grapes, hard cheese, meat, eggs, peanut butter, non-carbonated beverages, and yogurt made with live bacteria.

Other Conditions

When someone has persisting bloating and flatulence, lab tests and x-rays are first conducted to exclude the presence of medical disease. Colorectal cancer often presents with the symptoms of abdomen discomfort and bloating. Celiac disease and inflammatory bowel disease may have similar symptoms. It's important to remember that gas and bloating are vague symptoms that can be associated with many medical diseases, so consultation with your primary care provider should always be the first step.⁶

Diagnostic tests that may be performed include:

Abdominal CT scan

Abdominal ultrasound

Barium enema x-ray

Barium swallow x-ray

Blood studies such as CBC or blood differential

Sigmoidoscopy

Upper endoscopy (EGD)

Conclusion: Fast going lifestyle possess hectic daily routine with lack of regular dietary food habit causes gastric trouble with stomach upset results flatulence.

References

Miller TL; Wolin MJ, de Macario EC, Macario AJ (1982). "Isolation of Methanobrevibacter smithii from human faeces". *Appl Environ Microbiol* 43 (1): 227–32.

Ganiats TG; Norcross WA, Halverson AL, Burford PA, Palinkas LA (1994). "Does Beano prevent gas? A double-blind crossover study of oral alpha-galactosidase to treat dietary oligosaccharide intolerance". *J Fam Pract* 39 (5): 441–5.

Di Stefano M; Strocchi A, Malservisi S, Veneto G, Ferrieri A, Corazza GR (2000). "Non-absorbable antibiotics for managing intestinal gas production and gas-related symptoms". *Aliment Pharmacol Ther* 14 (8): 1001–8.

Brecević L, Bosan-Kilibarda I, Strajnar F (1994). "Mechanism of antifoaming action of simethicone". *J Appl Toxicol* 14 (3): 207–11.

Bailey J. (2009) FPIN's Clinical Inquiries: Effective management of flatulence. *Am Fam Physician* 79: 1098-1100.

Ohge H, Levitt MD. (2006) Intestinal gas. In: Feldman M, Friedman LS, Brandt LJ, eds. *Sleisenger & Fordtran's Gastrointestinal and Liver Disease*. 8th ed. Philadelphia, Pa: Saunders Elsevier; chap 10.