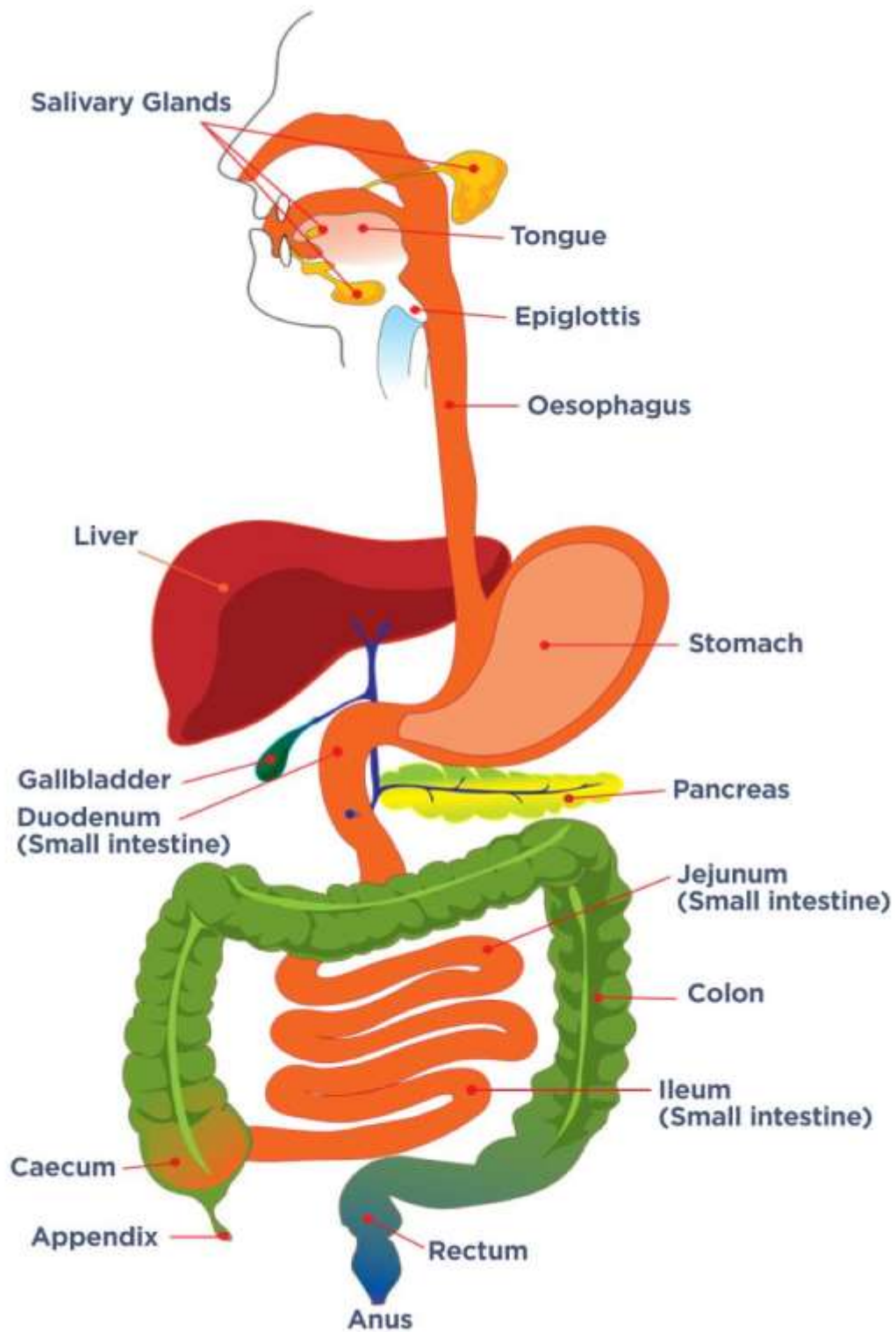


## THE DIGESTIVE SYSTEM



## Wind, burping, flatulence and bloating Information Leaflet

### **This factsheet is about wind, burping, flatulence and bloating**

Many people think that they have too much wind and flatulence, but in an otherwise healthy person, these events are absolutely nothing to worry about.

### **What is wind made up of?**

Over 90% of wind in the gut is made up of five gases: nitrogen, oxygen, carbon dioxide, hydrogen and methane. The remaining 10% contains small amounts of other gases.

**Nitrogen, oxygen and carbon dioxide:** the nitrogen and oxygen comes from swallowed air whilst the carbon dioxide is produced by stomach acid mixing with bicarbonate in bile and pancreatic juices. When these gases move into the small intestine most of the oxygen and carbon dioxide are absorbed into the blood stream and the nitrogen is passed down the large bowel (colon). In other words, the vast majority of gut wind originates from swallowing or digestion, not from bacterial fermentation.

**Hydrogen, methane, carbon dioxide:** the small intestine is the place where the food we eat is digested and absorbed; the residues, such as dietary fibre and some carbohydrates, then pass through to the large bowel. The colon contains different kinds of bacteria which are essential to good health and which ferment material from the small intestine, producing large volumes of gasses such as hydrogen, methane, carbon dioxide. Most of these gases are absorbed into the blood stream and eventually excreted in the breath but the rest is passed as flatus.

### **What are the usual symptoms?**

Symptoms include:

- Burping (belching)
- Flatulence (farting)
- Rumbblings (noisy gut)
- Bloating

### **Why does wind, burping, flatulence and bloating occur?**

The reasons for wind, burping, flatulence and bloating fall broadly speaking into three categories, mechanical, dietary and other conditions.

#### **Burping (air eructation)**

Every time we swallow we take some air into the stomach. A burp is an involuntary expulsion of wind (gas) by the stomach when it becomes distended from an excess of swallowed air. Eating rapidly, which can occur when you eat hot foods, gulping food and drink, drinking a lot of liquid with meals, chewing gum, smoking or wearing loose dentures all promote air swallowing. Some people, when swallowing saliva to relieve heartburn, swallow air at the same time. Other people swallow air without noticing it, especially when they are tense. Fizzy drinks including beer cause belching because they release gas (carbon dioxide) into the stomach.

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### Chronic or repetitive burping (aerophagy)

In this case air is not swallowed into the stomach but sucked into the gullet and rapidly expelled. Repetitive belching like this can last for minutes at a time and is very embarrassing. The cure lies in realising the cause. Air cannot be sucked in when the jaws are separated, so repetitive belching can be temporarily controlled by firmly clenching something like a pencil between the teeth.

Some people develop air swallowing and belching in the hope of relieving chest or abdominal discomfort. In fact more air is swallowed than is belched, so worsening the situation.

### Rumblings/grumblings or noisy gut

Bowel noises or borborygmi are produced when vigorous movements of the gut shuffle the liquid and gas contents of the intestine backwards and forwards. They may be produced by hunger, by anxiety or fright and are very common in Irritable Bowel Syndrome (IBS). Loud borborygmi or rumblings result from contractions of the intestines caused by diseases such as Crohn's Disease or bowel obstruction. These conditions are associated with other symptoms such as severe abdominal pain and should be reported to your doctor.

### Flatus (fart)

A normal individual passes wind through the rectum on average 15 times per day (ranging between three and 40 times), depending on diet.

- **Loud wind:** loud wind is produced by powerful contractions of the bowel wall forcing gas through a narrow anus - the muscle at the bottom of the rectum that keeps the intestinal contents in their place. Measures to reduce flatus production may help to lessen symptoms.
- **Smelly wind:** this is caused by smelly chemicals like indoles, skatoles and hydrogen sulphide that are produced by bacterial fermentation in the colon. Garlic and onions, many spices and some herbs of the fennel family, particularly asafoetida, which are used in Indian cooking, produce smelly gasses. Beer, white wine and fruit juices give rise to smelly hydrogen sulphide in some people. Some of these smelly gases are absorbed into the blood stream and excreted in the breath as well. Reducing the intake of this food may relieve symptoms. Eating a lot of fatty food can cause smelly wind, and it is worth cutting down on fat if this is a particular problem.

Other causes may include:

- **A high fibre diet:** this produces more wind than a low fibre diet or a low carbohydrate diet. It is possible to reduce flatus production, even on a high fibre diet, by avoiding the big gas producers which contain certain carbohydrates called oligosaccharides, which cannot be digested in the small intestine but are like food to bacteria in the colon. Cabbage, brussel sprouts, cauliflower, turnips, onions, garlic, leeks, lentils, pulses and some seeds such as fennel, sunflower and poppy all produce a lot of gas in the colon. Reducing the amount of foods in the diet will reduce flatus. Sometimes activated charcoal seems to reduce the amount (and smell) of flatus.
- **Lactose Intolerance:** some otherwise healthy people lack the enzyme necessary to digest lactose, the sugar in cows' milk. As a result the lactose is fermented in the colon bacteria with the production of large amounts of carbon dioxide and hydrogen which may cause gas as well as abdominal cramps. It occurs most commonly in people born in the Mediterranean area but can occur anywhere.

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Reducing milk intakes to a level at which symptoms are controlled can reduce the flatulence. Your doctor may carry out special tests to confirm the diagnosis.

- **Sorbitol:** a sweetener used in diabetic diets and present in jams, sweets and sugarless chewing gum, it is not digested in the small intestine and can give rise to flatus for the same reason as lactose.
- **Medical conditions:** such as Crohn's disease, coeliac disease and other disorders which interfere with small bowel absorption of nutrients cause excess flatus because of impaired digestion. These conditions are usually associated with symptoms such as abdominal pains, weight loss, anaemia and/or persistent diarrhoea with pale, smelly stools that tend to float in the toilet pan. These symptoms require medical investigation (see our leaflets on Crohn's Disease, Coeliac Disease and Irritable Bowel Syndrome).
- **Antibiotics:** although they kill off the bacteria that can cause the fermentation, they quickly re-establish themselves. They also produce more flatus in most people.
- **Acid reflux or stomach ulcers:** excessive burping can be a sign of too much acid being produced in the stomach. This could be because of over indulgence or because of another condition such as acid reflux (see our leaflet on Heartburn and Reflux) or a stomach ulcer.

### Bloating

Abdominal bloating is a common complaint that is often blamed on excess gas in the bowel and is often associated with abdominal distension so that clothing has to be loosened. This is usually due to relaxation of the abdominal muscles in an unconscious way to relieve discomfort. The distension usually disappears on lying flat or on contracting the abdominal muscles. Bloating may also be caused by rich, fatty meals which delay stomach emptying.

A high fibre diet can cause bloating in some people, but in others may relieve it. The fibre absorbs water in the gut and gently distends it, which can help to prevent the uncoordinated contractions that are partly responsible for bloating. Some people find that activated charcoal or de-foaming agents (containing simethicone) are helpful. Avoiding gassy drinks may help.

### What treatment is available for wind, burping, flatulence and bloating?

Treatment revolves around diet or lifestyle changes and changes to eating and drinking habits as outlined above. Probiotics do help some people but there is no research to back this up.

### How do I know if my wind, burping, flatulence and bloating are normal?

The average person breaks wind up to 40 times a day. Anything less than this is normal. Often people believe that they have excessive flatus is because an embarrassing incident like a loud or smelly fart in public has led to the belief that something is wrong. However, if these events are severe, ongoing, troublesome or if you are worried about them you should discuss your concerns with your doctor.

In addition, if you develop burping associated with chest discomfort, especially discomfort associated with exertion, or if you have difficulties in swallowing you should seek medical advice.

If bloating is persistent or associated with weight loss, abdominal pain or diarrhoea you should see your doctor as it can be a symptoms of more serious bowel conditions.

## Wind, burping, flatulence and bloating Information Leaflet

### What to ask your doctor?

- Is my wind, burping, flatulence and bloating normal?
- Do I need investigations for other conditions such as lactose intolerance or IBS?
- Do I need investigation for reflux or other gastric conditions?

*For more information about research in this area please contact Guts UK Charity on*

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