

Minimising flatulence

ROBYN NAGEL MB BS, FRACP

How do you deal with the patient who presents complaining of excessive flatulence? Here, Dr Nagel outlines her approach to this difficult management problem.

Remember

- There is a wide variation in the amount of flatus passed by normal individuals. On average, an adult passes 500 to 2000 mL of gas daily. This gas is passed in 50 ml to 200 mL aliquots, 10 to 20 times daily. Most patients who complain of excessive flatulence are passing quantities of flatus within the normal range.
- Anxiety and irregular bowel habit often contribute to a perception of increased flatulence and/or abdominal bloating and pain. Pathological flatulence needs to be distinguished from physiological wind.
- If excessive flatulence is accompanied by 'alarm' symptoms such as a change in bowel habit, loss of weight, abdominal pain or change in continence then organic pathology is more likely to be found. Lactase deficiency and coeliac disease are common 'windy' conditions in our community.
- The presenting problem may not be that quantities of flatus are excessive but rather that the smell is offensive or that the passage of flatus cannot be controlled. One in 10 people in the community aged over 40 years suffer incontinence of faeces and/or flatus. This presentation may be an opportunity for the patient to discuss malodour or incontinence.



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Background

- Colonic gas is composed almost entirely of five odourless gases: oxygen, nitrogen, carbon dioxide, hydrogen and methane. Carbon dioxide and hydrogen are primarily derived from the bacterial fermentation of sugars, starches and dietary fibre. Specific bacteria may convert the hydrogen into methane or hydrogen sulphide (which is malodorous).
- Bacteria comprise over half the solid mass of our faeces and most species in our gut are currently unclassified. Every person develops a unique and stable pattern of bacterial flora during childhood. Important factors presumed to contribute to this bacterial signature pattern are early diet and environment. About half of the human population is colonised by 'methane-producing' bacteria and the other half by 'sulfate-reducing' bacteria.
- Any process that delivers a large quantity of bacterial nutrients to the colon will produce more flatulence. This includes causes of small bowel malabsorption such as coeliac disease, lactase deficiency, pancreatic malabsorption, giardiasis and orlistat therapy, or ingestion of dietary components that are poorly absorbed in the small bowel. Examples of the latter include:
 - dietary fibre
 - sorbitol (used as an artificial sweetener and a humectant food additive and also found as a natural ingredient in some fruits)

Dr Nagel is a Gastroenterologist in private practice, St Vincent's Hospital, Toowoomba, Qld.

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- lactulose (used as a stool softener and also in liver failure)
- resistant (that is, nondigestible) starches or other oligo-saccharides (contained in pulses and brassica vegetables).

Other processes or drugs that speed small bowel emptying, slow colonic emptying or alter the bacterial flora, such as bacterial overgrowth and antibiotic therapy, will contribute to increased gas production.

- Offensive odour in flatus is due to the presence of small amounts of hydrogen sulfide, methyl sulfide, short chain fatty acids and protein derivatives. A diet high in sulfur (that is, a large intake of, for example, eggs and other high protein foods, sodium metabisulfite preservative or cabbage) promotes the growth of sulfate-reducing bacteria. Highly spiced foods, onions and garlic contain trace amounts of other malodorous compounds.

Assessment and management

- Flatulence associated with alarm symptoms warrants consideration of full investigation with upper and lower endoscopy. Biopsies should be taken from the second part of the duodenum to check for the presence of coeliac disease and disaccharidase deficiency. Faecal specimens should be examined for *Giardia lamblia*. A small bowel series and abdominal CT scan may be required. Flatulence associated with bloating and abdominal pain will often be found, after investigation, to be due to irritable bowel syndrome.
- Excessive flatulence alone is a difficult symptom to manage and is usually a benign condition. Check the patient's medication, past surgical history and coeliac antibodies, and suggest a two-week trial of a low lactose diet. Hydrogen breath tests are a noninvasive way of assessing lactase deficiency. Oral simethicone (DeGas Capsules, Gasbusters, Medefoam-2) and activated charcoal (Charcocaps, Charcotabs, Nature's Own Charcoal 200 mg) may reduce gas production. A course of oral antibiotics (doxycycline) may be useful if there is any possibility that bacterial overgrowth is present. Probiotics (such as VSL#3) will change the bacterial gut flora for the time of administration only and the effects on flatulence are unpredictable.
- For the windy patient who is distressed despite reassurance and explanation, dietary manipulation may be useful and could be discussed. A diet low in fibre, fat, green leafy vegetables, legumes and fruit and fruit juices will decrease gas production but is not recommended for general good health. It should be noted particularly that a low dietary intake of brassica vegetables is associated with an increased incidence of bowel cancer. A diet low in fat, fruits and cereal fibres may be an acceptable compromise for a limited time. MT

DECLARATION OF INTEREST: None.