

Gas and Bloating



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Gastrointestinal gas has been a topic of both comedy and concern throughout history.

Most gas gets into our upper GI tracts from swallowing it during eating and drinking. That's why we "burp" babies. We do not normally produce significant gas in our stomachs. An exception is bicarbonate type antacids. They neutralize stomach acid but produce carbon dioxide which accounts for the burp associated with their use. CO₂ formed during normal digestion is rapidly absorbed into the blood and exhaled via the lungs. Swallowed air, however, contains about 20% oxygen and 80% nitrogen. Unless these swallowed gases are belched back (eructation), the unabsorbable nitrogen passes through (and eventually out) the GI tract from below. Thus, aerophagia (the swallowing of excessive air) in response to acid ingestion, frequent gum chewing, or as a subconscious nervous habit can cause both belching and flatulence.

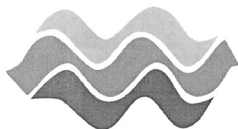
Curiously, despite two verbs used to describe upper GI gas passage (to burp and to belch), there is no similar verb in English for the act of passing flatus (rectal gas) except for the less than proper four letter word that also serves in English as a noun. Flatulence results from eating beans whose husks contain carbohydrates that we can't absorb in our small intestine. These are then processed by colonic bacteria which generate gases. The same mechanism of carbohydrate

malabsorption explains excessive gaseousness after consuming milk products in those with lactose intolerance. (OTC digestive supplements like Beano and Lactaid can be useful in these situations). Other common sources of gas with the same mechanism are onions, mushrooms and "sugar-free" products containing sorbitol or mannitol. The proteins that make bagel and pizza dough stretchy make bonds with carbohydrates that are more difficult to fully digest. Again, what we don't digest and absorb becomes a feast for those gas producing colonic bacteria, some of which can generate particularly noxious gases. Underlying malabsorptive disorders such as celiac disease should be considered. Although products containing simethicone break up bubbles in a test tube, they don't make gas disappear and have not been shown to be of benefit.

The sense of feeling "bloating" is usually interpreted as the sense that the GI tract contains too much gas. This is certainly correct in the case of intestinal obstruction or the gas forming conditions as described above. It is also, however, frequently misinterpreted, especially when no actual excessive gas is ever passed. Xrays done when these persons complain of excessive "gas" and bloating (even to the point of feeling and looking 6 months pregnant!) often show no excessive gas in their GI tract. In these patients, heightened awareness of pressure in the GI tract is often the result of intestinal muscle activity, not excessive gas. In these cases, there's too much "squeeze", not too much "gas". This is typically the case in Irritable Bowel Syndrome (IBS) although other conditions such as Inflammatory Bowel Disease (IBD), an abnormal bacterial flora, abnormal abdominal fluid, and even ovarian cancer need to be considered.

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