

BLOATING

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Patients who complain of bloating usually mean an uncomfortable feeling of pressure in the abdomen, but a significant number of patients are also experiencing distension, which is a physical increase in the abdominal girth.

- Patients who experience bloating as the main problem, are generally frustrated by the inability of the Gastroenterology specialty, and any other doctors or specialists, to easily fix this problem.
- The sensation of bloating can be related to an abnormal production or volume of intestinal gas, but more commonly an abnormal amount of discomfort related to a normal amount of intestinal gas.
- Bloating is often minimal or absent in the morning, and progresses throughout the day, especially after meals, and often requires loosening of the clothes or even changing to looser clothes.
- Bloating which does not change over the course of the day, and bloating which is not relieved overnight, is often something quite different, and may indicate a buildup of fluid in the abdominal cavity, and may require different tests including abdominal and pelvic ultrasound. This is particularly important in women, since ovarian cancer can, on rare occasions, present with progressive bloating. This is relatively easy to detect and rule out with the appropriate tests, and you should ask your family physician to review this possibility if you feel that your bloating is atypical, or if your family history is positive for ovarian, breast or uterine cancer.
- Medical specialists have very little in the way of diagnostic tests that can identify whether the problem is production of gas or sensitivity to gas, or both. For that reason, we usually try and treat both problems, once certain diseases have been either excluded or addressed.
- Bloating is a classic symptom of IBS (irritable bowel syndrome) and nonulcer dyspepsia.
- Bloating is a common symptom related to constipation, in which case we need to improve the bowel transit and bowel emptying. The rest of this article refers to bloating which is persistent in the absence of significant constipation.

1) Abnormal production of gas:

This is most likely the result of incomplete digestion, or fermentation by bacteria. Incomplete digestion might be a small intestinal disease (eg celiac disease, or Crohn's disease), or a specific inability to digest certain components of a normal healthy diet (eg lactose intolerance, or FODMAP's - see below). The small intestine, in normal healthy people, does not have a significant amount of bacteria, but in abnormal situations there can be "small intestinal bacterial overgrowth" (see below). In the large intestine, everyone has a very large number of bacteria which can ferment or digest many dietary substances, especially those not absorbed or completely digested in the small intestine.

Obviously abnormal amounts of gas will be produced if a patient drinks excessive amounts of carbonated fluids, and if your problem is bloating, you should probably avoid all carbonated fluids. It is possible that artificial sweeteners and other chemicals, especially in "diet pop", and sugar-free chewing gum, could also exacerbate intestinal sensitivity, as these are designed not to be absorbed, so they go to the colon, and feed the colonic bacteria that make gas.

- The most common cause of incomplete digestion will be lactose intolerance, which means that because of genetic factors and age-related factors, you have either completely or partially lost your ability to digest dairy products. I recommend a two-week period off all dairy products (milk, yoghurt, icecream, and soft white cheeses including cottage and cream cheese – eggs are NOT dairy products) except hard cheeses, and careful attention to the amount of gas, bloating, and even diarrhea that can occur with lactose intolerance, and may be relieved by stopping their ingestion. After the two-week period, resume generous dairy products, and try and identify whether symptoms are significantly worse, again, in which case you have identified the problem. The solution is to use lactose-free products as much as possible, and supplemental lactose-digesting enzymes, including Lactaid and Lacteze. Small amounts of cream or milk in your coffee or tea should not be a problem, and some studies suggest even lactose-intolerant people can take up to 100-200 mls of milk a day without symptoms. There is great variability in people's tolerance.
- A second common cause of incomplete digestion will be celiac disease, which is a total inability to digest gluten, related to wheat, rye and barley, and this disease should be excluded by either intestinal biopsy or blood test or both. Celiac disease affects 1 to 2% of North Americans, and is certainly more common if there is a family history of proven celiac disease.
- A third common cause of incomplete digestion will be gluten sensitivity, different from celiac disease, and therefore now called non-celiac gluten sensitivity, and this is probably 10 to 20 times commoner than celiac disease. Therefore, even if celiac disease is reliably excluded, many patients will want to try a reduced-gluten, or gluten-free, diet, and some patients will feel dramatically less bloated and generally healthier. Naturopaths and other alternative practitioners will very frequently recommend a gluten-free diet, and some of them believe that most humans should not be digesting currently available wheat products. There is no scientific basis to this recommendation, and you need to experiment, yourself, to determine whether there is an objective response.
- A fourth cause of incomplete digestion relates to individual variations in a person's ability to digest certain short chain carbohydrates, which are essentially natural or artificial sweeteners (including fructose, sorbitol and xylitol), and other chemicals which occur in a variety of fruits and vegetables (including fruit-juice), as well as manufactured products like chewing gum and calorie-reduced foods. These are now known as FODMAPs. I recommend that people who have significant bloating need to explore, on the Internet, the FODMAPs diet, and attempt to reduce intake of foods and other things which are high in FODMAPs, and focus on increasing the intake of foods that are lower in FODMAPs. This can be complicated and may require the assistance of a registered dietician – ask your family doctor to refer you.

A large robust literature supports the concept of FODMAPs, and even randomized controlled clinical trials suggest that this may be the most effective way to reduce symptoms of irritable bowel syndrome, which include bloating. FODMAP sensitivity may even be the mechanism of non-celiac gluten sensitivity.

In addition, there is increased awareness of food additives, and some of these may even be “enrichment” or added fiber of the type that may significantly exacerbate bloating, examples of the latter would include inulin (from chicory root) and oligofructose (from oat hull fiber) (which are also known as prebiotics).

I encourage you to explore the CDHF (Canadian Digestive Health Foundation) website, (there is a link to CDHF on our website, under self-help), and particularly look at a video entitled “Informing our patients-communicating the difference between marketing and medicine”:

link=(<https://www.youtube.com/watch?v=rF1HRwy34Qw>)

This is a very informative and fairly short (28 minutes) lecture by a dietitian, explaining a number of marketing strategies that directly affect our nutrition, and after talking about fruit and vegetable extracts or substitutes, includes a section on dietary fiber (from 5:56), and methods of “fiber- enrichment” that might directly affect intestinal function and symptoms, if a person was especially sensitive to gas and bloating. This could include fiber-enriched foods like pasta (Catelli Smart Pasta, Kraft Dinner Smart), Wonder Plus breads, Subway “brown” or whole-wheat breads, and even “healthy” granola, cereal bars, and fiber sources such as Benefiber (which could be mistakenly used instead of Metamucil/psyllium). As mentioned previously, you may need the help of a registered dietitian.

There are many other proposed causes of incomplete digestion, and this can include various bowel diseases, especially Crohn's disease, but also small bowel bacterial overgrowth. Unfortunately, we do not have good diagnostic tests for this condition, but we do know that some diseases, and some medications (especially drugs used to reduce acid) might increase the chances of bacteria growing in the small intestine, where there are normally very few bacteria. Unfortunately, while we would certainly like to consider antibiotics in some of these cases, all antibiotics on the Canadian market are absorbed, and therefore have other potential risks. You can read a lot on the Internet about the use of rifaximin, but in Canada, the use of this antibiotic is generally restricted to hepatic encephalopathy.

Contrary to many Internet sites, we do not think that bacterial overgrowth is common or absolutely certain when patients go on reflux medication, but occasionally we will try and treat

the situation on a short-term basis, if the bloating symptoms appear to be significant, or significantly worsened, after a course of acid suppression.

- Rather than prescribing antibiotics, many practitioners, including some medical doctors and many alternative or complementary practitioners, will recommend probiotics. Unfortunately, there is no good published evidence (and that means large long-term randomized controlled trials) to support probiotic therapy for irritable bowel syndrome, or bloating, but you could certainly try, and the two commonest probiotics currently available and seemingly reliable, would be Align and Tuzen. If you are lactose intolerant, you would need to try a probiotic in capsules rather than in yoghurt.

2) Abnormal sensitivity to intestinal gas:

Abnormal sensitivity, also known as visceral hypersensitivity (which includes hyperalgesia and allodynia), refers to a bodily function which is common in irritable bowel syndrome and non-ulcer dyspepsia, and essentially a key part of those diseases. It means that a normal bodily function, whether it be peristaltic waves, squeezing, stretching, or other contractions related to stomach and gut function, is experienced and is either uncomfortable or painful, whereas normal people who do not have these diseases would not experience discomfort or pain. This is called allodynia.

A second part of this condition is an increased pain experience from uncomfortable or painful gastrointestinal functions, so that although the normal person would experience discomfort, the patient with irritable bowel syndrome or non-ulcer dyspepsia will experience more severe pain. This is visceral hyperalgesia.

The causes of visceral hypersensitivity are unknown, but can include abnormalities of the nerve fibers in the gut, abnormal or excessive function of the nerve fibres in the spinal cord, and abnormalities or amplification in the central nervous system (the brain), related to conditions of anxiety, distress, or sometimes a past history of abuse, or other adverse life events.

Visceral hypersensitivity can also develop in some patients, sometimes related to gastrointestinal infections such as food poisoning, and is more likely after a severe attack, especially in some patients who have pre-existing anxiety, or irritable bowel syndrome or both. We do not yet understand how to diagnose the situation accurately, since the bowel will have returned completely to normal at colonoscopy and other tests, but the pain and bowel dysfunction can continue, even for one to two years, or indefinitely (postinfectious irritable bowel syndrome). Infection, even after it is gone, (and other factors in IBS) can also affect motility, and therefore how the stomach, small intestine or colon handles things, by peristalsis and other previously normal motor functions.

Treatment of visceral hypersensitivity includes reassurance, explanation, avoidance of invasive or repeated tests, and regulation of disturbed bowel function, involving the use of fiber for conditions of both constipation and diarrhea. We often recommend Metamucil/psyllium, but it is important to notice that the dose should be small and only gradually increased, starting with 1 teaspoon once daily, and rarely going beyond a tablespoon (3 teaspoons) daily. Unfortunately, the fiber supplementation, whether it be with diet or Metamucil/psyllium, can increase the production of gas, in some patients, and therefore

cause worsened symptoms of bloating or distension. If Metamucil/psyllium is taken without adequate liquids, some patients will experience worsening of constipation, however with adequate liquids, Metamucil/psyllium can improve both diarrhea and constipation.

Some patients cannot tolerate the texture of psyllium, and occasionally will try Benefiber, but unfortunately this is pure inulin, which is a FODMAP, and can significantly worsen bloating and gas. A good alternative to psyllium would be guar gum, which is sold as an expensive agent Fibre 4, but also can be much cheaper at a bulk barn type store.

Finally, some patients with visceral hypersensitivity benefit from medication, and these drugs can include medications to reduce bowel spasm, such as Buscopan and Dicetel, but the strongest evidence is for the group of drugs called tricyclic antidepressants, taken in a much lower dose than was ever used for treatment of depression, and this appears to work on the abnormal firing of fibers at the spinal cord level. These drugs may also work in the central nervous system level, in the brain, and can improve the quality of sleep, so that while a side effect can be drowsiness, this will usually wear off. A significant benefit of this treatment is improved quality of sleep, which helps to deal with chronic pain and discomfort, both in the abdomen and also elsewhere.

A third cause for increased sensitivity to intestinal gas may be obesity or recent weight gain. It is obvious that there is only so much space in the abdominal cavity, and any reduction in weight may allow increased tolerance to the intestinal gas which develops.

Good luck with your journey of exploration concerning bloating. Everybody is different, and as you can tell, there are many potential causes or exacerbating reasons for bloating to be worse or even unbearable.

In the absence of any detectable abnormality (ie all conventional medical diagnostic tests are normal) we are often left with a diagnosis of "functional bloating", which is closely related or even overlaps with "nonulcer dyspepsia" and "irritable bowel syndrome". These terms may help you to explore the Internet. See the document on our website called "functional bloating".

Unfortunately, we do not have much else to offer, and once we have excluded serious diseases like celiac disease, Crohn's disease, and colon cancer, many patients may wish to explore what we call alternative, complementary, or "integrative" practitioners, and sometimes these people can help you feel better. We do not agree, however, with the frequency with which they recommend the gluten-free diet, and also the frequency with which they will diagnose yeast or Candida overgrowth. Even if they do stool or other tests showing evidence of Candida overgrowth, we are not able to prescribe drugs such as fluconazole for this condition, due to cost and potential side effects, and because yeast or candida is a common component of normal stool in upto 25-50% of healthy people.