

A Letter from your Digestive Tract



To My Owner,

You and I are so close; I hope that I can speak frankly without offending you. I know that sometimes I do offend with my gurgling noises, and belching at quiet times and, oh yes, the gas. But, when you chew gum, drink carbonated beverages, or eat too fast, you gulp air with each swallow. I can't help making some noise as I move the air along my length or release it upward in a noisy **belch**. And if you eat or drink too fast, I can't help getting **hiccups**. Please sit and relax while you dine. You will ease my task, and we'll both be happier.

Also, when someone offers you a new food, you gobble away, trusting me to do my job. I try. It would make my life easier, and yours less gassy, if you would start with small amounts of new foods, especially those high in fibre. The breakdown of fibre by bacteria produces gas, so introduce fibre-rich foods slowly. But please: if you do notice more **gas** than normal from a specific food, avoid it. IF the gas becomes excessive, check with a physician. The problem could be something simple-or serious.

When you eat or drink too much, it just burns me up. Overeating causes heartburn because the acidic juice from my stomach backs up into my esophagus. Acid poses no problem to my healthy stomach, whose walls are coated with thick mucus to protect them. But when my too-full stomach squeezes some of its contents back up into the esophagus, the acid burns its unprotected surface. Also, those tight jeans you wear constrict my stomach, squeezing the contents upward into the esophagus. Just leaning over or lying down after a meal may allow the acid to escape up the esophagus because the muscular sphincter separating the two spaces is much looser than other sphincters. And if we need to lose a few pounds, let's get at it- excess body fat can also squeeze my stomach, causing acid to back up. When heartburn is a problem, do me a favour: try to eat smaller meals; drink liquids an hour before or after, but not during meals; wear reasonably loose clothing; and relax after eating, but sit up (don't lie down).

Sometimes your food choices irritate me. Specifically, chemical irritants in foods, such as the "hot" component of chilli peppers, chemicals in coffee, fat, chocolate, carbonated soft drinks, and alcohol may worsen heartburn in some people. Avoid the ones that cause trouble. Above all, do not smoke. Smoking makes my heartburn worse- and you should hear your lungs bellyache about it.

By the way, I can tell you've been taking **heartburn medicines** again. You must have been watching those misleading TV commercials. You need to know that **antacids** are designed only to temporarily relieve pain caused by heartburn by neutralizing stomach acid for awhile. But when the antacids reduce my normal stomach acidity, I respond by producing more acid to restore the normal acid condition. Also, the ingredients in antacids can interfere with my ability to absorb nutrients. Please check with our doctor if heartburn occurs more than just occasionally and certainly before you decide that we need to take the heavily advertised acid reducers; these restrict my normal ability to produce acid so much that my job of digesting food becomes harder. They may also reduce our defence against certain infections.

Given a chance, my powerful acid can help fight bacterial infections from contaminated foods and other sources- some dangerous bacteria won't survive a bath in my caustic stomach juices. Acid reducing drugs may allow more bacteria to pass through. And even worse, self-prescribed heartburn medicine can mask the symptoms of ulcer, hernia, or the severe destructive form of chronic heartburn known as gastroesophageal reflux disease (GERD). This can be serious because, if not treated with



antibiotic drugs, the bacterium that causes stomach ulcer may also cause stomach cancer. A hernia can cause food to back up into the esophagus, so it can feel like heartburn, but many times hernias require corrective treatment by a physician. GERD can feel like heartburn, too, but requires the correct drug therapy to prevent respiratory problems, severe damage to tissues, or less likely, cancer.

When I'm suffering, you suffer, too. When constipation or diarrhea strikes, neither of us is having fun. Slow, hard, dry bowel movements can be painful, and failing to have a movement for too long brings on headaches and ill feelings. Worse, chronic constipation with fewer than three bowel movements each week has been associated with a more-than-doubled risk of colon cancer.

Laxatives may help in the short term, but they often contain stimulants that can cause side effects. Instead of relying on laxatives, listen carefully for my signal that it is time to defecate, and make time for it even if you are busy. The longer you ignore my signal, the more time the colon has to extract water from the feces, hardening them. Also, please choose foods that provide enough fibre. Fibre attracts water, creating softer, bulkier stools that stimulate my muscles to contract, pushing the contents along. Fibre helps my muscles to stay fit, too, making elimination easier. Be sure to drink enough water because dehydration causes the colon to absorb all the water it can get from the feces. And please make time to be physically active; exercise strengthens not just the muscles of your arms, legs and torso, but those of the colon, too.

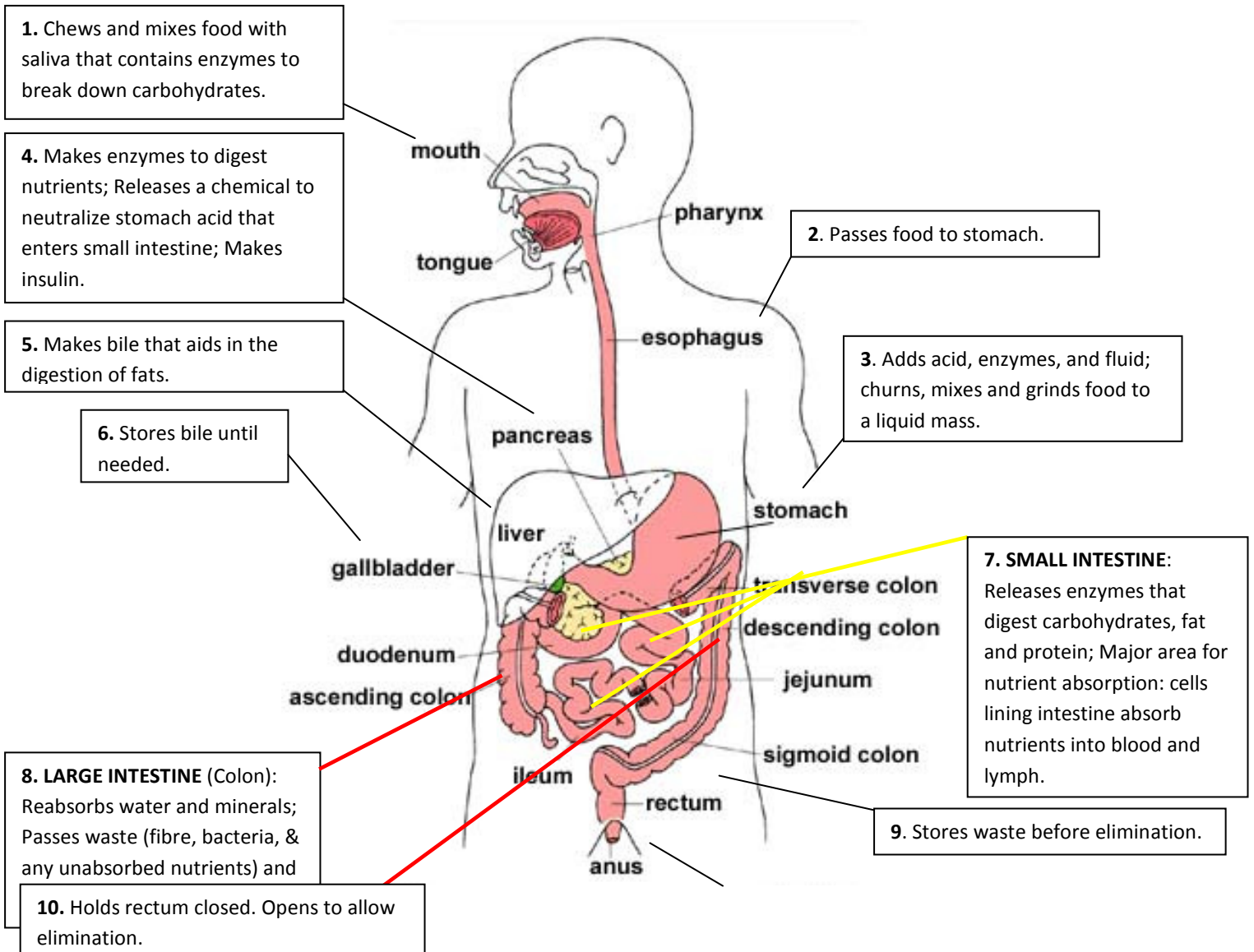
When I have the opposite problem, diarrhea, my system will rob you of water and salts. In diarrhea my intestinal contents have moved too quickly, drawing water and minerals from your tissues into the contents. When this happens, please rest awhile and drink fluids. To avoid diarrhea, try not to change my diet too drastically or quickly. I'm willing to work with you and learn to digest new foods, but if you suddenly change your diet, we're both in for it. I hate even to think of it, but one likely cause of diarrhea is dangerous food poisoning. Also, if diarrhea lasts longer than a day or two, or if it alternates with constipation, the cause could be irritable bowel syndrome, and you should go see a physician.

Thank you for listening. I know we'll both benefit from communicating like this because you and I are in this together for the long haul.

Yours always,

Your Digestive Tract

The Digestive Tract



Note: what is not shown on the diagram but is important in managing your weight is a component called the Omentum. The Omentum is located next to your stomach, and is a storage area for fat when too much food is consumed. It is also an area affected by how you handle stress which causes inflammation.

Food Allergy and Food Intolerances

A variety of foreign compounds enter the body when food is eaten. Some, such as germs, can be harmful while others, such as nutrients, are helpful. The job of the immune system is to decide which of these compounds are harmful and then to protect the body against them.

Food Allergy: results when the immune system decides that a protein in a particular food is harmful, and begins an attack when that food enters the body. According to Health Canada, food allergies affect as many as 6% of young children and 3% to 4% of adults.

Food Intolerance: does not involve the body's immune system. Unlike food allergies, where a small amount of food can cause a reaction, it generally takes a more normal sized portion to produce symptoms of food intolerance. While the symptoms of food intolerance vary and can be mistaken for those of a food allergy, food intolerances are more likely to originate in the gastrointestinal system and are usually caused by an inability to digest or absorb certain foods, or components of those foods.

Food intolerances can be caused by different things:

Enzyme deficiencies: this is when your intestine lacks the necessary enzymes to metabolize a specific food like milk or grains or beans. The food then remains undigested, and bacteria can build up. This can result in pain and gas. For example, intolerance to dairy products is one of the most common food intolerances. Known as lactose intolerance, it occurs in people who lack an enzyme called lactase, which is needed to digest lactose (a sugar in milk.) Symptoms of lactose intolerance may include abdominal pain and bloating, diarrhea and flatulence. A close second is an allergy to the protein gluten found in wheat.



GI Disorders: Problems like irritable bowel syndrome, which causes gut-related symptoms such as diarrhea and abdominal pain, are caused by sensitive nerves and result in inflammation in the intestinal walls (this can lead to poor absorption of nutrients).

Psychological responses: food aversions can also develop if you have had a bad experience with a particular food in the past. For example, you ate something and then came down with the flu, or you ate a bad shrimp dinner.

→ There are also a number of extreme GI problems that could be caused from infections, parasites and lethal allergic reactions to food. The main thing to realize is that we all may have varying degrees of intolerance to foods in ways that we may not notice. It is time to start listening and recognizing how your gut feels after you eat. Do certain foods cause you pain, a bubbling feeling, gas, cramps or diarrhea? If they do, you may want to decrease their presence in your diet. You want to be eating foods that pass through you easily and that provide you with nutrients. You should be going to the bathroom at least once a day, but ideally, if you are regular, you will be going after every big meal. If you are often constipated or have diarrhea, it may be time to take a good look at the foods and chemicals you are putting in your body.

Celiac Disease and the Gluten Free Diet



What is Celiac Disease (CD)?

CD is defined as a permanent inability to tolerate a protein called gluten in the diet. With this medical condition, the villi on the surface of the small intestine are damaged when gluten is ingested.

- CD affects approximately 1 in 133 Canadians
- The symptoms appear to be unspecific and vary greatly from person to person
- Most common symptoms include: Anemia, chronic diarrhea, cramps, fatty stools, bloating, weight loss, and fatigue.
- The only treatment for CD is a strict gluten-free diet for life.



What is Gluten? Gluten is the ingredient in wheat that plays a role in leavening, forming the dough structure, and holding baked products together. Gluten is the general name for storage proteins called prolamins in various cereal grains. Prolamins are the proteins that can cause problems for some gluten sensitive individuals. Prolamins have specific names for each cereal grain, gliadin in wheat, secalin in rye, hordein in barley, and avenin in oats.

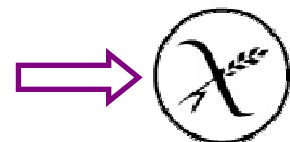
What is the Gluten Free (GF) Diet? The GF Diet eliminates the consumption of gluten to help treat Celiac Disease. High gluten foods such as wheat, rye, triticale, barley, and any foods that use any part of these grains are not consumed.

Gluten-Free Foods: Many foods are naturally gluten-free including plain meats, fish, poultry, nuts, seeds, eggs, legumes, milk, yogurt, cheese, fruits, vegetables and alternative grains and their flours.

- With increasing numbers of people diagnosed with CD, there is a rapidly growing gluten-free specialty food market in North America that offers a wide variety of products such as pizza, pastas, cereal, crackers, soups, sauces, snack foods, and ready-to-eat baked goods.
- These foods are available in health food and grocery stores and directly from gluten-free vendors. In Canada, there is a specific regulation for the term “gluten-free” and Health Canada randomly monitors products with a gluten-free claim by testing for gluten to ensure the products are safe. *This is only true for Canadian products, so be sure to read the labels!
- There are many sources of hidden gluten therefore if you, or someone you love, suffers from a gluten allergy, be sure to read the ingredients list on all food that will be consumed.

| Sources of Hidden Gluten | |
|--|----------------------|
| Rice or corn cereals | Baking powder |
| Baked beans | Seasonings |
| Imitation seafood | Candy |
| Dry roasted or flavoured nuts | Soy sauce |
| Hot dogs, luncheon meats, hamburger patties | Sauces and gravies |
| Canned soups, soup mixes/bases/cubes | Worcestershire sauce |
| Salad dressings | Communion wafers |
| Herbal teas, instant teas, flavoured coffees | Modified food starch |
| Soy, rice or nut beverages | Maltodextrin |
| Potato or tortilla chips | Dextrin |

When shopping always read labels because items must be totally free from gluten. Use the trademark for 'gluten free' to guide you.



Digestive Health - Anti-Inflammatory Worksheet



| Top 13 foods that have anti-inflammatory properties | |
|--|---------------------------|
| 1 | |
| 2 | |
| 3 | |
| 4 | |
| 5 | |
| 6 | |
| 7 | |
| 8 | |
| 9 | |
| 10 | |
| 11 | |
| 12 | |
| 13 | |
| **** | Probiotics and Prebiotics |



About Prebiotics

Prebiotics are a very specific type of food. While many of the food ingredients we consume are digested immediately, prebiotics are a healthy non-digestible food ingredient. Furthermore, prebiotics are heat resistant, which keep them intact during the baking process and allow them to be incorporated into every day food choices. By consuming a non-digestible ingredient, it allows for growth of [bio-cultures](#) by reaching the intestine unaffected by the digestion process. This can provide good digestive health. The positive effects prebiotics have by reaching the intestine in an unaltered form is known as the prebiotic effect.

Prebiotic Effect

A prebiotic effect occurs when there is an increase in the activity of [healthy bacteria](#) in the human intestine. The prebiotics stimulate the growth of [healthy bacteria](#) such as [bifidobacteria](#) and [lactobacilli](#) in the gut and increase resistance to invading [pathogens](#). This effect is induced by consuming [functional foods](#) that contain prebiotics. These foods induces [metabolic activity](#), leading to health improvements. [Healthy bacteria](#) in the intestine can combat unwanted bacteria, providing a number of [health benefits](#).

Difference Between Prebiotics and [Probiotics](#)

Prebiotics are a [dietary fibre](#) that trigger the growth of bacteria having favourable effects on the [intestinal flora](#). [Probiotics](#), however, are live micro-organisms contained in the food we eat. They remain intact throughout the digestive process, and deliver [healthy bacteria](#) directly to the large intestine. Since [probiotics](#) do not stimulate [metabolic activity](#) they provide a different set of benefits than prebiotics. Both sets of benefits are valuable for our health wellness, and can act symbiotically to provide numerous [health benefits](#). In fact, the benefits of consuming both prebiotics and [probiotics](#) are so strong that [synbiotic](#) products (products in which both a [probiotic](#) and a prebiotic are combined) are being developed as [functional foods](#).

Source of Prebiotics

The most common type of prebiotic is from the soluble [dietary fibre inulin](#). [Inulin](#) is common in many plants containing [fructan](#). Furthermore, many of these plants are frequently eaten as vegetables - asparagus, garlic, leek, onion, artichoke – and are an excellent source of [inulin](#). However, as the need for [functional foods](#) rises, prebiotics are being added to many every day food choices such as cereals, biscuits, breads, table spreads, drinks, and yoghurts.

Adding Prebiotics to Every Day Food Choices

If all consumers met their dietary requirements, and ate 5-8 servings of fruits and vegetables per day, then their [dietary fibre](#) needs would be met. However, the vast majority of the population does not meet these requirements by consuming fruits and vegetables alone. [Functional foods](#) increase consumer choice by adding prebiotics to every day food items. By continuing to eat and drink common foods, but choosing functional alternatives (i.e. Bread containing prebiotics) dietary requirements can be met, without significant changes to food preferences.

About Probiotics

Probiotics are friendly bacteria that support the [intestinal flora](#). Increasing the amount of [healthy bacteria](#) in the digestive system prevents the growth of harmful bacteria. Though probiotics are naturally found in the stomach and bowels, natural sources can also be found in fermented foods, such as yogurt. Consuming probiotics can be important for maintaining a high ratio of good bacteria to bad bacteria in the [intestinal flora](#). Maintaining this balance can promote good digestion, boost immune function, and increase resistance to infection.

Sources of Probiotics

Probiotics, unlike [prebiotics](#), cannot survive heat from the baking process. For this reason they are not found in baked goods like bread, bagels, and cakes. Instead, probiotics are found in certain [functional foods](#) such as yogurt and milk beverages. Here the bacteria can remain “live” and provide significant benefits to the digestive system.

Dietary Requirements

In the case of probiotics, regular consumption is an important factor in taking advantage of the benefits of this food ingredient. Daily servings of probiotics are required for some [lactobacilli](#) and [bifidobacteria](#) cultures to remain in the gastro-intestinal tract. If probiotics are excluded from the diet, these beneficial cultures disappear almost immediately. At least one serving of probiotic [functional foods](#) per day is recommended to maintain the positive effects of probiotics.

Source: Prebiotic Canada - www.prebiotic.ca