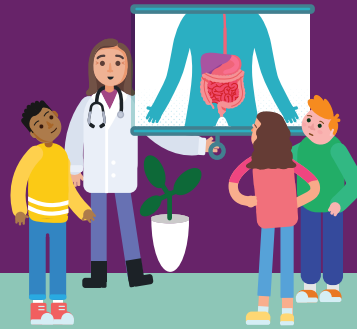


Digestive System for Kids



About This Pamphlet

The Gastrointestinal Society, a Canadian registered charity, made this booklet to help kids aged 8 to 12 years old learn about the digestive system. We worked with doctors that specialize in the digestive system (gastroenterologists) to make sure that the information is accurate. We hope you have fun learning about the digestive system.

Digestive System

What is the digestive system?

The digestive system, also called the digestive tract, is a set of organs that work together to turn the food we eat into energy and nutrients. We need energy and nutrients, such as carbohydrates, proteins, fats, vitamins, and minerals, to keep our bodies running.

What are all the parts of the digestive system?

The mouth, esophagus, stomach, small intestine, and large intestine, (consisting of the cecum, colon, rectum, and anus), are the main parts of the digestive system. These parts make up the path that food travels through your body when you eat. Other organs that help with digestion are the pancreas, liver, and gallbladder.

How does digestion work?

Mouth

Digestion begins in your mouth as soon as you take a bite of food! Your teeth tear and grind the food until it is small enough to swallow. Even your saliva plays a role. It has special proteins called enzymes that help digest food.

Esophagus

Once you swallow, the food moves into the esophagus. The muscles of the esophagus push the food into the stomach by contracting and relaxing in a wavelike pattern called peristalsis.

Stomach

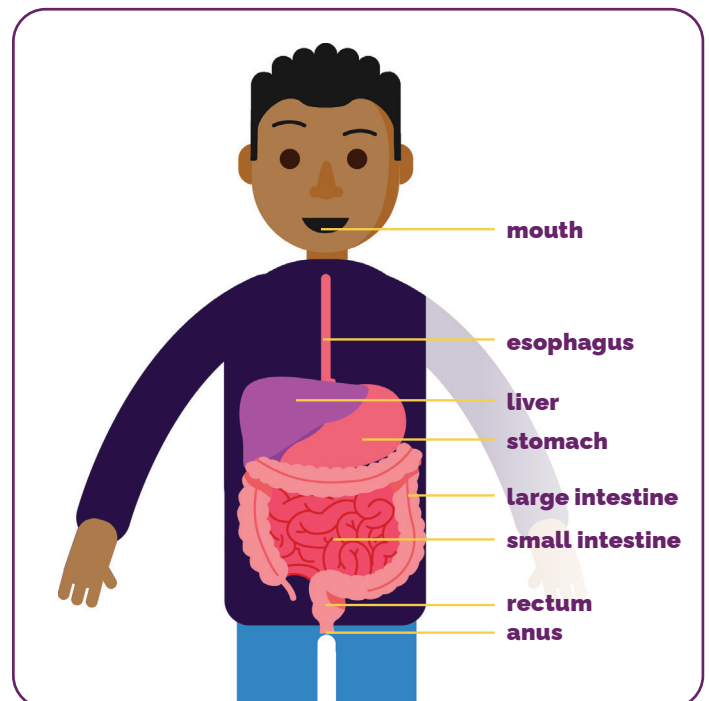
The stomach has powerful muscles that squeeze and crush food, even though you don't feel it happening. Here, food mixes with more enzymes and acid. It becomes a gross smoothie-like mixture that we call chyme.

Small Intestine

The stomach releases chyme into the small intestine where enzymes finish breaking down food into tiny particles called nutrients. Then, these nutrients enter your bloodstream so your body can use them to live, grow, and stay healthy.

Large Intestine

Next comes the large intestine, where you absorb more nutrients and lots of water. After that, you poop out anything left over!



How can I keep my digestive system healthy?

Drink water and eat foods that have fibre in them, such as vegetables, fruits, whole grains, and beans. This can help keep your digestive system healthy. But even some people who eat very healthy end up with digestive conditions. See page 12 to learn more.

Poop

What does normal poop look like?

Normal poops are brown, shaped like a log, and they are soft and don't hurt when they come out.

What is constipation?

Constipation is when your poops are too hard and dry. They can be small like rabbit pellets or wide and clog the toilet. Sometimes it takes a long time for you to go, with lots of straining and pushing, and it can make you feel sore and bloated, or less hungry than usual.

What is diarrhea?

Diarrhea is when your poops are mushy and watery. It usually makes you poop a lot, sometimes three or more times per day, and you might feel cramping pains in your tummy. It often comes on suddenly, so one minute you'll be feeling fine and the next you feel like running to the bathroom to make it in time.

What is poop made of?

About 75% of your poop is water! The other 25% is a mixture of dead and living bacteria, undigested parts of foods (such as corn), and other things made in the intestines and liver, such as mucus and bile (a dark green to yellowish-brown fluid).



Why does poop stink?

The bacteria in our digestive system and poop make all sorts of smelly compounds, and these can be different depending on what you eat. So, you might find that your poop smells especially bad after some meals! Bits of food that didn't get digested, especially fats and proteins, can also smell terrible after going through your digestive system.



Why do we fart?

Passing gas, or farting, is normal. Most people fart many times every day. If you swallow air, it must come out somewhere. If you don't burp, it will come out the other end as farts. You also make gas in your intestine. The bacteria that live there eat leftovers from the food you eat, digest it, and make gas that gathers in your intestine until you fart. This type of gas is usually extra stinky, but normal.

Why does it hurt when I poop?

While most people have poops that hurt now and then, your poop should generally not be painful. If it is, make sure you talk to your parents, because you might need to go to the doctor. The most common causes of pain are constipation and diarrhea. If you eat spicy foods, the spices can irritate your digestive system, causing pain in your gut and when you poop. Some kids might have pain when they poop because they have diarrhea or constipation from a chronic condition, such as irritable bowel syndrome, celiac disease, Crohn's disease, or ulcerative colitis.

What colours can poop be?

Brown

Most poop is brown, this is the normal, healthy colour!



Black

Your poop can be black if you eat a lot of blueberries, black licorice, or food with lots of colouring. Some medicines can also make it black, especially iron supplements and Pepto-Bismol®. But black poop can sometimes be a sign that you are bleeding in your intestines, so it is super important to tell your parents if your poop is black.



Red

Foods with red colouring, including artificial colours like in candy and natural colours like in beets and tomatoes, can make your poop red. Red streaks can mean blood, which you might see if you have constipation, Crohn's disease, or ulcerative colitis. Make sure to tell your parents if it looks like there is blood in your poop.



Orange

Your poop can be orange if you eat a lot of certain vegetables, such as carrots, sweet potato, squash, some leafy greens, and some herbs.



Yellow

Bright yellow poop that is very watery might mean you have a type of infection called giardiasis. If your poop is pale yellow or grey, your liver or gallbladder might not be working properly. It is very important to tell your parents if your poop is one of these colours.



Green

Your poop might be green if you eat a lot of green vegetables or green-coloured foods, or if you take iron pills. It might also be green if you have diarrhea.



Blue

Eating lots of blue foods or drinks can even make your poop look kind of blue!



Microbiome

What are microbes?

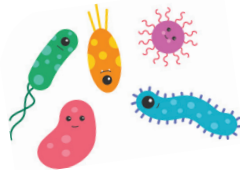
Every plant and animal, including humans, is covered in creatures so small that you can only see them with a microscope. We call them microorganisms or microbes. Some microbes include bacteria, viruses, and fungi. They live all over our skin and in our digestive systems.

What is the microbiome?

If we want to talk about all the microbes in one place, such as in a person's digestive system, we call that a microbiome. Each person has a unique microbiome, but yours might be similar to your family and people who eat the same kinds of foods as you. Some of the microbes in your microbiome are good and help keep you healthy, while others can make you sick if there are too many. There are many types of microbes, including bacteria, viruses, and fungi. However, most of the focus revolves around bacteria, and making sure that we have a good balance of microbes in the gut.

How do I make sure there are more good bacteria than bad ones in my gut?

One of the best ways to keep the good bacteria in your gut happy is to feed them! Eat lots of food with dietary fibre. Your body can't digest dietary fibre alone, but good bacteria can and love to eat fibre when it reaches your large intestine. Foods like vegetables, fruit, whole grains, and beans are sources of fibre that help good bacteria multiply. Eating too much junk or processed foods, like candy, pop, chips, and fried food, can mess up the balance of microbes in your gut.



Allergies and Intolerances

Why am I not allowed to bring foods like peanut butter to school?

Some kids have serious food allergies, and even being near those foods can cause them to have problems breathing.

What is a food allergy?

If someone has a food allergy, their body reacts to the food like it is a foreign invader. The immune system starts fighting, and ends up hurting the person's body instead.

They Can Make Kids Very Sick

Food allergies are very serious and can cause a severe reaction called anaphylactic shock. If a kid is allergic to a food, eating it can make them feel sick, dizzy, and they might feel like throwing up. Sometimes, it can give them diarrhea or hives. They might also find it hard to breathe, or their throat or tongue can swell. An EpiPen® can help a kid who is experiencing anaphylactic shock, but they still need to go to the hospital.

Common Food Allergies

The most common food allergies are eggs (which are in things like scrambled eggs as well as lots of baked goods like cookies and cakes), milk (including cheese, yogurt, ice cream, and many snacks), wheat (used to make bread, crackers, cookies, pasta, and lots of other foods), soy (which is an ingredient in many foods, but especially tofu, vegetarian meats, and soy sauce), and peanuts (including peanut butter, peanuts in chocolate bars, and in other snacks). Peanuts can be especially dangerous for some people, and that's why a lot of schools don't let you bring peanut butter sandwiches.



Don't Share Food

Be careful sharing your food with kids who have a food allergy. Sometimes you might think your food is safe, but it could have small amounts of an allergen or be made in a factory or kitchen where it might touch the allergen. If you have a food allergy, avoid eating other kids' food unless you know it is allergen-free. Some products have images on the front that say they are peanut-free, for example.

What is a food intolerance?

A food intolerance usually means someone has difficulty digesting a certain type of food and is not the same as a food allergy. Eating a food your body is intolerant to might cause you to become gassy and bloated or have diarrhea or heartburn. The symptoms are often very unpleasant, but not dangerous. The most common type of food intolerance is lactose intolerance. Lactose is a type of sugar in milk, so kids with lactose intolerance usually can't drink milk or eat other dairy products like cheese, yogurt, and ice cream, but some might be able to eat small portions. Some kids have gluten intolerance. Gluten is in foods made with wheat, such as many types of bread, crackers, pasta, and cookies. If you know someone who is lactose or gluten intolerant, you should avoid sharing foods that contain these ingredients with them.

Diseases and Disorders

Why do some kids have to use the bathroom more often?

There are many reasons. Some kids might temporarily have to use the toilet more if they have a stomach flu. Others can have illnesses that make them have to use the washroom a lot. Some kids have Crohn's disease and ulcerative colitis, which are both types of inflammatory bowel disease. Others have irritable bowel syndrome or chronic constipation. Celiac disease is another cause of diarrhea. Some kids might have an illness in their stomach that makes them go to the bathroom more because they have to throw up, such as cyclic vomiting syndrome.

What is inflammatory bowel disease?

Inflammatory bowel disease, often called IBD, is a disease that causes someone's intestines to be inflamed. This can cause a lot of pain,

diarrhea, and other symptoms. Some people with IBD need to use the toilet as many as 20 times per day. Kids with IBD can go through times when they are very sick. We call that a flare. During a flare, they might not be able to go to school or visit with friends. They might even get sick enough to need to go to the hospital. Most kids with IBD need to take medications, and some might need to have surgery to make them feel better.

Types of IBD

Crohn's disease and ulcerative colitis are both types of IBD. Crohn's disease can cause inflammation in any part of the digestive system. But only the large intestine gets inflamed in ulcerative colitis. Kids with Crohn's disease might be smaller than other kids, because they can have trouble digesting food properly.

What is irritable bowel syndrome?

Irritable bowel syndrome, also called IBS, is a very common condition, and causes constipation, diarrhea, or both. Kids with IBS often have a lot of pain in their digestive system. They might feel painfully bloated, which means that they feel a lot of gas in their intestines.

What is GERD?

When some parts of the digestive system don't work properly, food can go from the stomach to the esophagus. This can hurt because the stomach has a protective coating, but the esophagus does not. We call this pain heartburn. When someone has heartburn a lot, we call it GERD, which stands for gastroesophageal reflux disease. GERD can also make kids burp a lot or feel like food is moving up their throat and even into their mouth.

What is eosinophilic esophagitis?

Eosinophilic esophagitis, or EoE, happens when a kid has too many white blood cells in their esophagus. This can make it difficult for them to swallow food or feel like food is getting stuck in their throat.

What is cyclic vomiting syndrome?

Cyclic vomiting syndrome is a condition that mostly affects kids. It causes them to feel very sick to their stomach and throw up. They can also have headaches and have trouble with bright lights and loud sounds. Some kids with cyclic vomiting syndrome are most likely to

feel sick when they are very stressed or excited. Eating certain foods can also cause them to feel sick.

What is celiac disease?

Celiac disease happens when someone has an immune system response after eating gluten. Gluten is found in food made from wheat, like bread, crackers, cereal, cookies, and lots of others. When kids with celiac disease eat even the tiniest crumb of food containing gluten, they can have painful diarrhea, bloating, vomiting, and other symptoms. If they have been eating a lot of gluten over a long time, it can stop their body from absorbing food properly. Avoiding gluten completely can allow their body to heal.

Parents: you can learn more about the topics mentioned in this pamphlet at www.badgut.org.

Want to learn more?

Watch our videos on the Digestive Tract for Kids at www.badgut.org/kids



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