



UNITED GASTROENTEROLOGISTS

Patient Education Sheet

DIARRHEA OVERVIEW

Diarrhea is defined as three or more loose or watery stools per day. Nearly everyone will have an episode of diarrhea at some point during their life, with the average adult experiencing it four times per year. Although most cases of diarrhea resolve within a few days without treatment, it's important to know when to seek help.

This topic review discusses the causes and treatments of sudden onset (acute) diarrhea in adults in developed countries. A discussion of acute diarrhea in developing countries and returning travelers is not included here. Diarrhea that lasts for more than 14 days (called chronic diarrhea) and acute diarrhea in children are discussed in separate topic reviews.

DIARRHEA CAUSES — Diarrhea can be caused by infections or a variety of other factors. The cause of diarrhea is not identified in most people, especially those who improve without treatment.

Diarrhea caused by infections usually results from eating or drinking contaminated food or water. Signs and symptoms of infection usually begin 12 hours to four days after exposure and resolve within three to seven days.

Diarrhea not related to an infection can occur as a side effect of antibiotics or other drugs, food allergies, gastrointestinal diseases such as inflammatory bowel disease, and other diseases. In addition, there are many less common causes of diarrhea. A summary of the various common causes of diarrhea is available in the table.

DIARRHEA SYMPTOMS — A person with diarrhea may be mildly to severely ill. A person who has mild illness may have a few loose bowel movements but otherwise feels well. By contrast, a person with severe diarrhea may have 20 or more bowel movements per day, happening up to every 20 or 30 minutes. In this situation, a significant amount of water and salts can be lost, seriously increasing the risk of dehydration. Diarrhea may be accompanied by fever (temperature greater than 100.4°F or 38°C), abdominal pain, or cramping.

DIARRHEA HOME CARE

Drink adequate fluids — If you have mild to moderate diarrhea, you can usually be treated at home by drinking extra fluids. The fluids should contain water, salt, and sugar. **The fluids used for sweat replacement (eg, Gatorade) are not optimal, although they may be sufficient for a person with diarrhea who is not dehydrated and is otherwise healthy. Diluted fruit juices and flavored soft drinks along with salted crackers and broths or soups may also be acceptable.**

One way to judge hydration is by looking at the color of your urine and monitoring how frequently you urinate. If you urinate infrequently or have urine that is dark yellow, you should drink more fluids. Normally, urine should be light yellow to nearly colorless. If you are well hydrated, you normally pass urine every three to five hours.

If you become dehydrated and are unable to take fluids by mouth, a rehydration solution can be given into a vein (intravenous fluids) in a healthcare provider's office or in the emergency department.

Diet — There is no particular food or group of foods that is best while you have diarrhea. However, adequate nutrition is important during an episode of acute diarrhea. If you do not have an appetite, you can drink only liquids for a short period of time. **Boiled starches and cereals (eg, potatoes, noodles, rice, wheat, and oats) with salt are recommended if you have watery diarrhea; crackers, bananas, soup, and boiled vegetables may also be eaten.**

A temporary type of lactose intolerance is common following diarrheal illness; this may last for several weeks to months. Thus, you may wish to temporarily avoid lactose-containing foods (eg, ice cream, milk and milk products).

Antidiarrheal medications — Medications to reduce diarrhea are available, and are safe if there is no fever (temperature greater than 100.4°F or 38°C) and the stools are not bloody. These medications do not cure the cause of the diarrhea, but help to reduce the frequency of bowel movements.

- **Loperamide** (Imodium®) is available without a prescription; the dose is two tablets (4 mg) initially, then 1 tablet (2 mg) after each unformed stool. No more than 16 mg is recommended per day or 1-2 tablets taken ½ hr before meals and at bedtime, usually start with just 1 tablet before meals and see how you do. Max 16 grams (8 pills) daily
- **Diphenoxylate** (Lomotil®) is a prescription medication used to treat diarrhea; its benefit is similar to **loperamide**, although it can be associated with more bothersome side effects.
- **Bismuth** subsalicylate (Pepto-Bismol®, Kaopectate®) has also been used for treatment of acute diarrhea, although it is not as effective as **loperamide**. Bismuth subsalicylate may be recommended in certain situations, such as if you have fever and bloody diarrhea. However, women who are pregnant should not take bismuth subsalicylate. The dose of bismuth subsalicylate is 30 mL or two tablets every 30 minutes for up to eight doses.

Antibiotics — Antibiotics are not needed in most cases of acute diarrhea, and they can actually worsen diarrhea or cause further complications if used inappropriately. Antibiotics may be recommended in certain situations, such as if you have the following signs or symptoms:

- Moderate to severe traveler's diarrhea
- More than eight loose stools per day, dehydration, symptoms that continue for more than one week, a weakened immune system, and in those who require hospitalization

However, the decision to use antibiotics must be made carefully after discussing the potential risks and benefits with a healthcare provider who is familiar with the situation.

Probiotics — Probiotics are single or combinations of good microorganisms that can be taken by mouth and may have beneficial effects on the intestines. Studies have found that some, but not all probiotics, can shorten symptoms in patients with some forms of diarrhea (eg, antibiotic-related and infectious diarrhea), but the benefit is modest. In one clinical trial, probiotics were useful in reducing the duration of infectious diarrhea by 17 to 30 hours when taken during the first 48 hours of a diarrheal illness.

Probiotics are available in drug and health food stores without a prescription. Although yogurt is commonly recommended as a source of probiotics, not all of the live cultures contained in yogurt survive well in the stomach, nor do they colonize the intestines efficiently. It may be reasonable to use probiotics, although their overall benefit is poorly understood and they can be expensive.

Preventing spread — Adults with diarrhea should be cautious to avoid spreading infection to family, friends, and co-workers. You are considered infectious for as long as diarrhea continues. Microorganisms causing diarrhea are spread from hand to mouth; hand washing, care with diapering, and staying out of work or school are a few ways to prevent infecting family and other contacts.

Hand washing — Hand washing is an effective way to prevent the spread of infection. Hands should ideally be wet with water and plain or antibacterial soap and rubbed together for 15 to 30 seconds. Pay special attention to the fingernails, between the fingers, and the wrists. Rinse the hands thoroughly and dry with a single use towel.

If a sink is not available, alcohol-based hand rubs are a good alternative for disinfecting hands. Clean the hands after changing a diaper, before and after preparing food and eating, after going to the bathroom, after handling garbage or dirty laundry, after touching animals or pets, and after blowing the nose or sneezing.

DIARRHEA PREVENTION

Food safety — The following precautions have been recommended **for all consumers** by the Food Safety and Inspection Services (www.fsis.usda.gov) and the Centers for Disease Control and Prevention.

- Do not drink raw (unpasteurized) milk or foods that contain unpasteurized milk.
- Wash raw fruits and vegetables thoroughly before eating.
- Keep the refrigerator temperature at 40°F (4.4°C) or lower; the freezer at 0°F (-17.8°C) or lower.
- Use precooked, perishable, or ready-to-eat food as soon as possible.
- Keep raw meat, fish, and poultry separate from other food.
- Wash hands, knives, and cutting boards after handling uncooked food, including produce and raw meat, fish, or poultry.
- Thoroughly cook raw food from animal sources to a safe internal temperature: ground beef 160°F (71°C); chicken 170°F (77°C); turkey 180°F (82°C); pork 145°F (63°C) with a three minute rest time.
- Seafood should be cooked thoroughly to minimize the risk of food poisoning. Eating raw fish (eg, sushi) poses a risk for a variety of parasitic worms (in addition to the risks associated with organisms carried by food handlers). Freezing kills some, although not all, harmful microorganisms. Raw fish that is labeled "sushi-grade" or "sashimi-grade" has been frozen.
- Cook chicken eggs thoroughly, until the yolk is firm.
- Refrigerate foods promptly. Never leave cooked foods at room temperature for more than two hours (one hour if the room temperature is above 90°F/32°C).

Food safety for pregnant women or those with a weakened immune system — The following additional recommendations apply to **pregnant women** and those who have a **weakened immune system**:

- Do not eat hot dogs, pâtés, luncheon meats, bologna, or other delicatessen meats unless they are reheated until steaming hot; avoid the use of microwave ovens since uneven cooking may occur.
- Avoid spilling fluids from raw meat and hot dog packages on other foods, utensils, and food preparation surfaces. In addition, wash hands after handling hot dogs, luncheon meats, delicatessen meats, and raw meat, chicken, turkey, or seafood or their juices.
- Do not eat pre-prepared salads, such as ham salad, chicken salad, egg salad, tuna salad, or seafood salad.
- Do not eat soft cheeses such as feta, Brie, and Camembert, blue-veined cheeses, or Mexican-style cheeses such as queso blanco, queso fresco, or Panela, unless they have a label that clearly states that the cheese is made from pasteurized milk.
- Do not eat refrigerated pates or meat spreads. Canned or shelf-stable products may be eaten.
- Do not eat refrigerated smoked seafood unless it has been cooked. Refrigerated smoked seafood, such as salmon, trout, whitefish, cod, tuna or mackerel, is most often labeled as "nova-style," "lox," "kippered," "smoked," or "jerky." The fish is found in the refrigerator section or sold at deli counters of grocery stores and delicatessens. Canned or shelf-stable smoked seafood may be eaten.

WHEN TO SEEK HELP FOR DIARRHEA — If your diarrhea is not severe, you do not always need to be seen by a doctor, especially if the diarrhea begins to improve within 48 hours. Self-care measures for this situation are discussed above

However, if you have one or more of the following signs or symptoms, you should be evaluated by a healthcare provider:

- Profuse watery diarrhea with signs of dehydration. Early features of dehydration include sluggishness, becoming tired easily, dry mouth and tongue, thirst, muscle cramps, dark-colored urine, urinating infrequently, and dizziness or lightheadedness after standing or sitting up. More severe features include abdominal pain, chest pain, confusion, or difficulty remaining alert.
- Many small stools containing blood and mucus
- Bloody or black diarrhea
- Temperature $\geq 38.5^{\circ}\text{C}$ (101.3°F)
- Passage of ≥ 6 unformed stools per 24 hours or illness that lasts more than 48 hours
- Severe abdominal pain/painful passage of stool

In addition, if you have persistent diarrhea following antibiotics, are older than 69 years, have other medical illness or a weakened immune system, you should also consult your healthcare provider.

SUMMARY

- Acute diarrhea is defined as three or more loose or watery stools per day.
- Diarrhea can be caused by infections or other factors. Sometimes, the cause of diarrhea is not known. Diarrhea caused by an infection usually begins 12 hours to four days after exposure and resolves within three to seven days.
- A person may have mild to severe diarrhea. Some people with diarrhea also have fever (temperature greater than 100.4°F or 38°C), abdominal pain, or cramping.
- People with mild diarrhea do not usually need to go to the doctor, especially if the diarrhea begins to improve within 48 hours. If you develop any of the following, you should call your doctor or nurse immediately:
 - Profuse watery diarrhea with sluggishness, becoming tired easily, dry mouth and tongue, thirst, muscle cramps, dark-colored urine, urinating infrequently, and dizziness or lightheadedness after standing or sitting up. More severe features include abdominal pain, chest pain, confusion, or difficulty remaining alert.
 - Passage of many small stools containing blood and mucus
 - Bloody or black diarrhea
 - Temperature $\geq 38.5^{\circ}\text{C}$ (101.3°F)
 - Passing 6 or more watery stools per 24 hours or illness that lasts more than 48 hours
 - Severe abdominal pain
- In addition, if you have persistent diarrhea after finishing antibiotics, are older than 69, or have other medical illness or a weakened immune system, you should also consult your doctor or nurse.
- The most important treatment for diarrhea is to drink fluids that contain water, salt, and sugar. Sports drinks (eg, Gatorade) may be acceptable if you are not dehydrated and are otherwise healthy. Diluted fruit juices and flavored soft drinks along with saltine crackers and broths or soups may also be acceptable.
- If you have dark yellow colored urine or do not pass urine frequently, you should drink more fluids. The urine should normally be light yellow to clear colored.
- Medications to reduce diarrhea are available without a prescription, and are safe if there is no fever (temperature greater than 100.4°F or 38°C) and the stools are not bloody. These medications do not cure the cause of the diarrhea, but help to reduce the frequency of bowel movements. Common medications include [loperamide](#) (Imodium®), [diphenoxylate](#) (Lomotil®), and [bismuth subsalicylate](#) (Pepto-Bismol® or Kaopectate®).
- If you do not have an appetite, you can drink only liquids for a short period of time. Boiled starches and cereals (eg, potatoes, noodles, rice, wheat, and oat) with salt are recommended if you have watery diarrhea; crackers, bananas, soup, and boiled vegetables may also be eaten.
- Antibiotics are not needed for most people with diarrhea.
- If you have diarrhea, be careful to avoid spreading the infection to family, friends, and co-workers. You are contagious for as long as diarrhea continues. Infections are usually spread from hand to mouth; hand washing, care with diapering, and staying out of work or school are a few ways to prevent infecting family and other contacts.

WHERE TO GET MORE INFORMATION — Your healthcare provider is the best source of information for questions and concerns related to your medical problem. For more information visit www.uptodate.com/patients



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