

UNIVERSITY STUDENT HEALTH SERVICES • Fact Sheet

TRAVELER'S DIARRHEA

WHAT IS IT?

Traveler's Diarrhea (TD) is the most common illness affecting travelers, occurring in 40-60% of individuals traveling internationally. It can result from consuming contaminated food or drink prepared at the travel destination. Most events are self-limited, lasting less than 5 days, but dehydration can be severe and pose a greater risk than the diarrheal illness itself. Fluid replacement is the primary form of treatment.

The risk of TD depends on your travel destination. The world can be roughly divided into 3 regions of risk:

- ❖ **Low-risk:** Northern & Western Europe, Australia, New Zealand, United States, Canada, Singapore, and Japan.
- ❖ **Moderate-risk:** Caribbean Islands, Eastern Europe, the Middle East, Central & East Asia (including Russia and China), and South Africa.
- ❖ **High-risk:** South & Southeast Asia (except Singapore & Japan), Africa (except South Africa), South & Central America, and Mexico.

WHAT CAUSES IT?

TD may be caused by bacteria, parasites, or viruses:

- ❖ **Bacteria** (such as *E. coli*, *Campylobacter*, *Salmonella*, and *Shigella*) are the dominant causes of TD. If untreated, bacterial TD lasts 3-7 days. *E. coli* and rotavirus co-infection occur frequently in Central America and Mexico.
- ❖ **Parasites** (such as *Giardia lamblia* and *Cryptosporidium*) are more common in wilderness and rural areas. A few locations (such as Nepal) have specific parasite risks. If left untreated, parasitic TD lasts weeks to months.
- ❖ **Rotaviruses and noroviruses** cause 65% of TD in Mexico, the Caribbean, and Guatemala. If left untreated, viral TD can last 2-3 weeks.

WHAT ARE THE SYMPTOMS?

Most symptoms begin abruptly within 4-14 hours of consuming contaminated foods or beverages.

- Common symptoms include abdominal cramping, rectal urgency, and loose or watery stools.
- Bloating, gassiness, fatigue, mild headache, body aches, and fever may also occur.
- Blood and significant amounts of mucus in the stool are less common.
- Vomiting or nausea may occur in about 15% of cases.

WHAT IS THE TREATMENT?

Treatment focuses on 3 different modalities. Fluid replacement to prevent dehydration is the primary form of treatment. Medications can be used to reduce symptoms, like cramping, diarrhea, nausea, and vomiting. Antibiotics are considered if symptoms are severe and a bacterial cause is suspected.

❖ Fluid Replacement

- The most important treatment of TD is fluid replacement. An oral rehydration solution (ORS) is the best first-line treatment because it contains a specific mixture of salt (sodium) and sugar (glucose) that is optimal for fluid replacement. Sports drinks do not provide equivalent electrolyte repletion.
- **For mild cases of TD**, fluid replacement does not have to be with an ORS. Individuals can alternate fluids containing salt (broths, soups) with fluids containing sugar (diluted fruit juice, non-caffeinated sodas). Fluid-rich foods like Jell-O, applesauce, sherbet, sorbet, popsicles, and cooked fruits may also help.
- **For severe cases of TD**, electrolytes and fluids should be replaced with an ORS.
 - Pedialyte is an ORS product available as a powder at grocery stores and pharmacies. ORS products can be purchased at REI Outfitters, Amazon, and in many pharmacies worldwide.
 - Mix the powdered salts in bottled water, and continue drinking until you are urinating regularly.

❖ Medications

- Antimotility agents can be used to decrease diarrhea symptoms. They do not treat the cause of TD.
 - Loperamide (Imodium, Diamode): take 4mg after the first loose stool and 2mg after each subsequent loose stool; maximum of 8 tablets (16mg) in 24 hours.
 - Do not use loperamide if you have bloody stools or a high fever!
 - Stop loperamide use if you have worsening abdominal pain or constipation.

❖ **Medications (continued)**

- Bismuth products are also used to decrease diarrhea symptoms, but they are generally not as effective as loperamide. Bismuth products are preferred in patients with fever and bloody diarrhea. Bismuth protects the lining of the bowel, promotes water absorption, and may also have antibacterial & antiviral properties.
 - Bismuth products in the US include Pepto-Bismol, Kaopectate, Bismatrol, and Maalox Total Relief. The Canadian formula of Kaopectate does not contain bismuth.
 - Adult dosing for TD treatment: take 2 tablets or 30ml (524mg total) every 30 minutes until the diarrhea is controlled; maximum of 8 doses (of 524mg each) in 24 hours.
 - Do not take bismuth with aspirin or if you are allergic to aspirin.
 - Do not take bismuth if you are pregnant.
- Anti-nausea and vomiting agents
 - Ondansetron (Zofran): take 4-8mg by mouth every 10-12 hours as needed.
 - Emetrol (phosphorated carbohydrate solution): take 1-2 tablespoons every 15 minutes as needed; maximum of 5 doses in 24 hours; for best results, do not drink fluids immediately before or after taking this medication.

❖ **Antibiotics**

- Antibiotics are reserved for the treatment of moderate to severe diarrhea. In these cases, the presumed cause is bacterial. Antibiotics will not treat TD caused by parasites or viruses.
- Antibiotic use for the prevention of TD is not recommended.

GENERAL TREATMENT OVERVIEW

- ❖ **For mild-moderate diarrhea** (fewer than 5 loose stools/day; no fever or blood in the stool):
 - Fluid replacement (with or without an ORS)
 - Antimotility agents (loperamide and/or bismuth)
- ❖ **For moderate-severe diarrhea** (5 or more loose stools/day plus cramping, fever, or blood in the stool):
 - Fluid replacement with an ORS
 - Antibiotic
 - Antimotility agents (loperamide and/or bismuth)
 - Experts recommend using antimotility agents only in conjunction with antibiotic use.
 - Do not use loperamide if you have bloody diarrhea!
- ❖ **Seek medical care if you have any of the following:**
 - Mucus or blood in the stool.
 - High fever.
 - Persistent or severe abdominal pain.
 - Dehydration (symptoms include lightheadedness, weakness, decreased urination, racing heart, muscle cramps, dry mouth).
 - Diarrhea or loose stools lasting 14 days or more.
 - Pain in the right lower abdomen, with or without fever, nausea, and loss of appetite (symptoms concerning for appendicitis).
 - Diarrhea accompanied by fever, rash, body aches, joint pain, or headache.

WHAT ARE WAYS TO PREVENT TD?

- Clean your hands before and after eating or drinking.
- Drink only bottled water, including when brushing your teeth.
- Keep your mouth closed while showering.
- Do not use ice cubes.
- Wash your food in bottled water.
- Fruit that you peel yourself is safer than other fruits. Wash your hands and the fruit first.
- Avoid foods or drinks prepared with raw sugar cane.
- Do not eat raw meats, raw seafood, or soft cheeses.
- Do not drink unpasteurized milk and dairy products, including ice cream.
- Eat food that is fully cooked and served hot. Avoid buffets.
- Avoid food from street vendors. Lack of refrigeration increases contamination risks.
- Do not swim in fresh standing water like ponds or streams.
- Consider taking bismuth (ie. Pepto-Bismol, Kaopectate) to prevent TD: take 2 tablets (524mg total) 4 times daily (with meals & at bedtime) for a maximum of 2-3 weeks.

RECOMMENDED WEBSITES: www.cdc.gov, www.mayoclinic.org