

University of Delaware Student Health Services

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Traveler's Diarrhea (TD)

Traveler's Diarrhea is extremely common, striking 30-70 percent or more of travelers to developing countries. The best evidence is that nearly all cases are caused by infectious agents such as viruses, bacteria, and protozoa. The two most common symptoms are loose stools and abdominal cramping. Nausea and vomiting, bloating, malaise and fever also occur. **Blood or mucous in the stool or a high fever require medical attention.**

- TD usually strikes quickly, typically during the first week of your trip, but can occur upon return home. Most cases last 3-4 days untreated and 90% resolve within a week.
- According to the CDC, the risk of acquiring TD is highest when you travel to developing countries in Latin America, Africa, the Middle East and Asia. Intermediate risk destinations include countries in Southern Europe and several Caribbean islands.

TREATMENT:

- Pepto Bismol® brand or generic equivalent will help with symptomatic relief of cramping and frequent stools. The tablet form travels better than the liquid. The treatment is 2 tablets 4 times a day.
- Imodium AD® (or generic) will reduce the passage and duration of loose stools but can be very constipating and use should be limited to 48 hours in a row. Do not use if fever or blood in stools.

HYDRATION:

- Hydration is essential to managing diarrhea regardless of the cause. It may seem as if everything you take in is immediately coming out again, but you must keep drinking. Stick with clear, bottled, flavored fluids (carbonated or boiled – so you don't catch another virus or bacteria). Sports drinks are helpful if you can get them. Guideline: **Drink enough fluid so light colored urine every 3-4 hours.** Taking a sports drink in powdered form with you allows you to get salt and electrolytes in any country.
- There's no reason to eat if you don't feel like it. If you are hungry, eat bland foods such as salted crackers and bread (some people use the BRAT diet—Bananas, Rice, Applesauce and Toast). **Avoid** dairy products, spicy or greasy food. Remember that eating may trigger diarrhea so make sure there's a bathroom nearby.

CAUSES OF TRAVELER'S DIARRHEA:

TD is spread through food contaminated with human waste and water. The infection can also be spread by way of dirty hands (yours or others). Other potential sources include: contaminated recreational water, sewage-polluted water (e.g., sea, lake or rivers) and eating fish or shellfish caught in these waters.

- The risk of contamination occurring is highest in places without adequate sanitation facilities.
- Warmer climates increase the chance of food spoiling and in places where electricity is unreliable resulting in frequent breakdown of walk-in coolers and refrigerators.
- High risk foods include raw and undercooked meats, seafood, raw fruits and vegetables. Tap water, ice and unpasteurized milk and dairy products such as cheese may be associated with increased risk of TD.
- Where you eat also seems to matter: highest risk: street vendors: lowest risk: food prepared in private homes.
- Select foods carefully. If you are traveling in an area where sanitation may be inadequate, avoid raw food, salads, uncooked vegetables, unpasteurized milk and milk products such as cheese.
- Food that is steaming hot (above 140 degrees Fahrenheit) is safe but must **not** be allowed to sit at room temperature for extended periods before consumption. Peeled fruits, especially those containing Vitamin C (ascorbic acid) are safe as long as you do the peeling. Make sure to wash your hands after peeling and before eating. Dry foods such as bread are safe, as are foods with high sugar content. A useful phrase to remember: "Cook it, peel it, boil it, or forget it".

CAUSES OF TRAVELER'S DIARRHEA: (Con't)

- Water that has been adequately chlorinated will kill most bacteria and viruses but not all potential pathogens. Check with your local contacts about the purity of the tap water in your destination. Safe beverages include those made with boiled water (such as coffee and tea), canned or bottled carbonated beverages, especially those with flavorings such as soft drinks (carbonation makes the drink acidic, which kills bacteria and other organisms); and beer and wine.
- Drinking directly from the can or bottle is ok as long as you clean and dry the outside of the container first.
- Non-carbonated bottled water may be contaminated—again, check with your local contacts to see what bottled water, if any, is safe. Say “no” to ice cubes because freezing does not kill these organisms—and make sure not to brush your teeth with contaminated water.
- Wash your hands frequently with soap and water—but remember that the person who prepared your lunch may not extend you the same courtesy.

PREVENTION:

- Pepto Bismol® two tablets four times a day for three weeks **maximum** can prevent TD. One of the side effects can be a ‘black tongue’. Tongue brushing is recommended to avoid “black tongue”. Stool may also turn black.
- Avoid taking Pepto-Bismol ® with aspirin, non-steroidal’s, ibuprofen, anticoagulants or if history of aspirin allergy, kidney insufficiency or gout.

TYPHOID:

- Typhoid fever is a systemic infection caused by the gram-negative bacillus *Salmonella typhi*. *The following are modes of transmission of typhoidal salmonella:*
 - Oral transmission via food or beverages handled by an often asymptomatic individual—a carrier—who chronically sheds the bacteria through stool or, less commonly, urine.
 - Hand-to-mouth transmission after using a contaminated toilet and neglecting hand hygiene
 - Oral transmission via sewage-contaminated water or shellfish (especially in the developing world).

Paratyphi is more commonly transmitted in food from street vendors. It is believed that some such foods provide a friendly environment for the microbe.

Paratyphi is more common among newcomers to urban areas, probably because they tend to be immunologically naïve to it. Also, travelers get little or no protection against *paratyphi* from the current typhoid vaccines, all of which target *typhi*.

- Typhoid fever begins 7-14 days after ingestion of the organism. The fever pattern is stepwise, characterized by a rising temperature over the course of each day that drops by the subsequent morning. The peaks and troughs rise progressively over time.
- Symptoms during the first week include fever, abdominal pain and tenderness, constipation. Then frontal headache, a dry cough, and sometimes confusion. After 7 to 10 days, the fever reaches a peak, rose spots may appear, and diarrhea begins.
- Treatment is with antibiotics. If appropriate treatment is initiated within the first few days of full-blown illness, the disease begins to remit after about 2 days and the patient’s condition markedly improves within 4-5 days. Any delay in treatment increases the likelihood of complications and recovery time.
- Typhoid is predominantly a disease of countries with poor sanitation and poor standards of personal and food hygiene.
- Vaccination is available against typhoid in injectable and oral forms, but it must be remembered that the vaccines are only 80% effective
- Travelers should still adhere to food, water, and personal hygiene advice.

