



## Treating Traveller's Diarrhea

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It has been suggested within the first two weeks of travelling to a tropical destination, 20% to 50% of tourists will develop traveller's diarrhea. February's **Bug of the Month** examines the causes and treatments of this infectious ailment.

With Canada covered under a blanket of snow, the minds of most Canadians are turning to vacations in warmer climates. In addition to sand, sun and surf, some destinations also provide such unforeseen adventures as traveller's diarrhea!

### What is traveller's diarrhea?

Traveller's diarrhea is a generic term used to describe the most common infectious ailment affecting travellers. It is defined as the passage of three or more unformed stools in conjunction with a short-lived episode of malaise, anorexia and abdominal cramps and is associated with watery diarrhea.

Traveller's diarrhea is self-limited and may be occasionally associated with the passage of mucous and, rarely, blood. Infrequently, nausea and vomiting may also occur.

The diarrhea can last up to five days, but typically stops in two to three days.

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### What causes traveller's diarrhea?

The most common cause of traveller's diarrhea is enterotoxigenic *Escherichia coli*. Other microorganisms that cause traveller's diarrhea include:

- *Shigella species*,
- *Salmonella species*,
- *Sampylobacter jejuni*,
- *Vibrio parahaemolyticus*rota,
- *Giardia lamblia*,
- *Entamoeba histolytica* and
- *Rota* and other viruses.

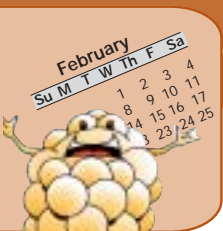
The pathogens responsible for traveller's diarrhea are usually acquired through consuming contaminated water. Despite exercising such cautions as not drinking the local water, some raw foods (lettuce, rinsed in local tap water) and ice (made from local drinking water) may make it difficult to avoid traveller's diarrhea.

Dietary modifications, including the consumption of local delicacies and excessive amounts of fruit and alcoholic beverages, may also be a cause of traveller's diarrhea.

### How can traveller's diarrhea be prevented?

The adage of, "If you can't boil it, open it, peel it or cook it—forget it!" holds true. The key to pre-

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venting traveller's diarrhea is to avoid contaminated food and water.

Bottled water (with unbroken seal), fruit that can be peeled, foods that are boiled or cooked and beverages that are boiled or bottled should pose a much lower risk than unprocessed foods.

For individuals staying at "world-class," all-inclusive resorts, adhering to this regimen may be easy to follow. However, if travel plans include back-packing, boiling water or water purifiers may be an option. Also, consultation with a local expert in travel medicine and discussions with a reputable camping and travel supply vendor may be warranted.

### What about prophylactic antibiotics?

Prophylactic antibiotics are not warranted and, in fact, may precipitate *Clostridium difficile* diarrhea. Therefore, they are not recommended unless the traveller is at very high-risk (underlying immune suppression, inflammatory bowel disease or achlorhydria) or when it is of vital importance the traveller remains well during the trip (i.e., a business person who has a limited duration of time and a busy itinerary).

However, this does not preclude safe travel practices, specifically, avoiding high-risk food and drink.

The orally administered traveller's diarrhea and cholera vaccine may be considered for prophylaxis. In a large study, it conferred between 67% to 86% protection against episodes of diarrhea caused by *E. coli*. In traveller's diarrhea, vaccine protection is limited and booster doses are required if risk persists beyond three months after the initial vaccination schedule of two doses taken one week apart (the last dose administered, ideally, one week prior to travel).

### What to tell patients...

- The general management approach to diarrhea includes:
1. Replace lost fluids either with commercially available oral rehydration solutions or flat, carbonated soft drinks.
  2. Avoid milk products; if the villi of the bowel are sufficiently damaged, lactases will be diminished or absent and a secondary diarrhea can ensue.
  3. Antiperistaltic agents may be helpful in mild to moderate cases, but must be avoided when the diarrhea is bloody.
  4. If diarrhea is bloody, seek medical attention immediately.
  5. Bismuth subsalicylate may provide symptomatic therapy; when taken in low doses, it may serve as prophylaxis.
  6. Antibiotics are not generally recommended for traveller's diarrhea unless the symptoms are significant.
  7. If the diarrhea is moderate to severe without fever or blood, an antibiotic (such as norfloxacin 500 mg, orally twice a day; ciprofloxacin, 500 mg, orally twice a day; or levofloxacin, 500 mg, orally once a day) may be sufficient for one to three days, combined with an antidiarrheal agent.
  8. If symptoms are more severe with associated fever and blood in the stool, an antibiotic, as outlined above, may be prudent for three to five days.

### Dealing with persistent diarrhea...

- Persistent diarrhea is defined as diarrhea lasting more than 14 days. If diarrhea persists:
- Obtain stool specimens for culture and ova and parasite analysis. Indicate on the laboratory requisition that the patient has travelled. One specimen per day on three separate days should be provided in appropriate containers for analysis for parasites (container with preservative) and bacteria (container without preservative) to optimize the yield of pathogen identification.
  - Consider an alternative diagnosis if, after a thorough search, a pathogen is not detected. An inflammatory bowel disease, celiac disease or, depending upon the age of the patient, a neoplasm are other considerations. If an antibiotic was taken, consider *Clostridium difficile* as a cause of the persistent diarrhea.

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