



Travellers' diarrhoea

Advice for travellers

December 2017

How common is travellers' diarrhoea?

Travellers' diarrhoea is the most common travel-related infection. Out of 100 million travellers visiting tropical and developing areas worldwide, 25%-50% acquire diarrhoea during their trips. Approximately one quarter of travellers with diarrhoea will have to alter their activities, while the majority of them will be incapacitated for less than 24 hours.

What is the risk for travellers?

The most important determinant of the risk for travellers' diarrhoea is travel destination. Destinations are generally divided into three categories according to the risk including:

Low-risk areas: the United States, Canada, Australia, New Zealand, Japan, and countries in Northern and Western Europe.

Intermediate-risk areas: Eastern Europe, South Africa and the Caribbean islands.

High-risk areas: Asia, the Middle East, Africa, Central and South America.

What causes travellers' diarrhoea?

Bacteria (such as *ETEC*, *Salmonella*, *Shigella*, *Campylobacter*) are the most common causes of travellers' diarrhoea, while parasites (such as *Giardia lamblia*) are the most common causes of diarrhoea in returning travellers. Viruses (such as norovirus, adenovirus, and rotavirus) can also cause travellers' diarrhoea. All these organisms are spread through eating/drinking contaminated food/water or through direct contact of the mouth with contaminated hands, cups, plates etc. Rarely, non infectious causes including changing dietary habits (e.g. fat meals, spicy food, and increased alcohol consumption), anxiety or jet-lag can cause travellers' diarrhoea.

What are the common symptoms of traveller's diarrhoea?

Travellers' diarrhoea is usually a mild self-limited illness. Most cases occur during the first two weeks of travel and last 2-5 days. Travellers' diarrhoea manifests with an acute onset with 3 or more loose, watery bowel motions within 24 hours. Occasionally

(~3% of the cases) the number of bowel motions may be 10 or more daily. Travellers' diarrhoea may be associated with fever, nausea or vomiting, abdominal cramps and weakness. The presence of blood in the stools is very rare.

Is there a vaccine licensed to prevent travellers' diarrhoea?

No licensed vaccines are available to prevent travellers' diarrhoea. The oral cholera vaccine Dukoral® may offer some protection against diarrhoea caused by one strain of *E. coli* (ETEC) but not for travellers' diarrhoea caused by other bacterial, parasitic or viral causes. Nevertheless Dukoral® is not licensed for this use and is not routinely advised for travellers. There are vaccines available for some specific organisms acquired through contaminated food or water such as *Salmonella Typhi*, hepatitis A virus, and *Vibrio cholerae*.

How can I prevent travellers' diarrhoea?

Food and water safety

Advice is provided at : http://www.keelpno.gr/el-gr/ταξιδιωτικήιατρική/γενικά_προληπτικάμέτραοδηγίεςσυγείας/Προληπτικά_μέτρα_κατά_την_κατανάλωση_τροφίμων_και_ποτών.

Antibiotics

Antibiotic prophylaxis (such as ciprofloxacin, norflaxacin, levofloxacin, ofloxacin, rifaximin) might be offered after medical assessment by the family physician for special groups of travellers e.g. travellers with underlying conditions including diabetes and inflammatory bowel disease, elderly people and adventurous travellers.

Non antibiotic prophylaxis

Bismuth subsalicylate is an effective (~60%) and safe agent for the prevention of travellers' diarrhea. However, bismuth subsalicylate causes blackening of the tongue and stool. It should not be used for more than 3 weeks and it should be avoided by those treated with salicylate (aspirin) preparations or warfarin, those with hypersensitivity to salicylates and children under 16 years of age.

Pre/Probiotics

Studies are ongoing with pre/probiotics and the prevention of travellers' diarrhoea, however further data is required in order to confirm their effectiveness and to support their recommendation. Some recent studies showed that the incidence and symptoms of traveller's diarrhoea are reduced when pre-biotic/B-GOS (galacto-oligosaccharide) is taken daily for 7 days prior to travel and for the duration of travel, as per manufacturer's recommendation. These products are environmentally friendly and without adverse effects, therefore they can be used by travellers along with food and water precautions.

What is the treatment of travelers' diarrhoea?

- The priority in treatment is preventing dehydration. Clear fluids such as oral rehydration solutions (purchased as packeted oral rehydration salts in pharmacies) should be drunk liberally even if diarrhea is accompanied by vomiting. If travellers cannot purchase packeted oral rehydration salts, they can prepare a solution by mixing six teaspoons of sugar and one teaspoon of salt in one liter of clean drinking or boiled water.
- Antibiotic treatment (ciprofloxacin, norflaxacin, levofloxacin, ofloxacin, rifaximin) is effective in reducing the duration of travellers' diarrhoea.
- Antimotility agents such as loperamide (Imodium) or diphenoxylate (Lomotil) provide symptomatic relief but they should not be used if symptoms last for more than 48 hours.
- Bismuth subsalicylate is an effective and safe agent for the treatment of travellers' diarrhea.
- Travellers can usually continue drinking and eating as normal, avoiding dairy products, alcohol, coffee, strong tea, spicy or fatty food.

Useful links

- Fit for travel. At : <http://www.fitfortravel.nhs.uk/advice/disease-prevention-advice/travellers-diarrhoea.aspx>
- Centers for Disease Control and Prevention (CDC). At : <https://wwwnc.cdc.gov/travel/yellowbook/2018/the-pre-travel-consultation/travelers-diarrhea>
- World Health Organization (WHO). At : <http://www.who.int/foodsafety/publications/travellers/en/>
- Sanders J, Riddle M, Taylor D, Ericsson C, Löscher T, Alberer M, Connor B, Shlim D. Section 5: Travelers' Diarrhea. In: Travel Medicine (Third Edition): Elsevier, pp 179-207.
- Hasle G, et al. Can a galacto-oligosaccharide reduce the risk of traveller's diarrhoea? A placebo-controlled, randomized, double-blind study. J Travel Med. 2017 Sep 1;24(5). doi: 10.1093/jtm/tax057.
- Drakoularakou A et al. A double-blind, placebo-controlled, randomized human study assessing the capacity of a novel galacto-oligosaccharide mixture in reducing travellers' diarrhoea. Eur J Clin Nutr. 2010 Feb;64(2):146-52. doi: 10.1038/ejcn.2009.120. Epub 2009 Sep 16.