

Food and water hygiene



Content Sections

- Overview
- Risk for travellers
- Before travel
- During travel
- After travel
- Resources

Key Messages

Contaminated food and water can transmit a number of different infectious diseases such as cholera, hepatitis A, travellers' diarrhoea and typhoid. Travellers' diarrhoea is particularly common in those visiting low-income countries.

It can be difficult to avoid contaminated food and water, but travellers can try and reduce their risk by following the steps below.

A factsheet on [travellers' diarrhoea](#) is available. This includes information on how travellers can manage the symptoms if they do get ill, it is sensible to be prepared.

Certain travellers need to take particular care as they are at increased risk from contaminated food and water including older travellers, those with a weak immune system, young children and those taking medication to reduce stomach acid.

Overview

Contaminated food and water can transmit a number of different infectious diseases, but the risk is higher in low income regions [1]. There is a wide range of infectious diseases that are transmitted by contaminated food and water. Many are caused by pathogens (bacteria, viruses or parasites) transmitted via the faecal-oral route (consumption of food and drinks contaminated with faeces).

Swallowing or inhaling contaminated water in inadequately treated swimming pools, hot tubs and spas can also transmit pathogens that can cause diarrhoea, vomiting, or infection of the ears, eyes, skin, or the respiratory system [2].

Vaccinations can prevent only a small number of these diseases (such as cholera, hepatitis A, polio and typhoid). Although contaminated food and water is difficult to avoid in areas with poor sanitation, it is sensible for travellers to try and reduce their risk by following the information below.

Risk for travellers

Standards of hygiene have improved in some areas with increasing economies and in improved tourism infrastructure [1]. The incidence rates of travellers' diarrhoea (TD) and other diseases transmitted by contaminated food and water have reduced as a result [1, 3]. However, TD remains a common illness affecting 20-60 percent of travellers from high-income countries, visiting low-income areas of the world [4, 5]. High-risk areas include most of Asia, the Middle East, Africa, and Latin America [Figure 1].

Figure 1: Map showing risk zones for TD

Source: [Health Protection Agency. Foreign travel-associated illness – a focus on travellers' diarrhoea. 2010 report \[5\]](#)

There are several determinants of risk for acquiring TD including: diet, gender, age, host genetics, destination, season of travel and choice of eating establishment [4, 7]. Of these, the destination country and choice of eating establishment are the most important determinants of risk [4].

The effects of diseases transmitted by contaminated food and water such as TD may be greater in the very young, the elderly and the frail. Those with special health needs, for example, travellers with immune suppression, inflammatory bowel disease, chronic kidney or heart disease and pregnant women should also take particular care to avoid contaminated food and water and be prepared to manage the symptoms of TD. Those with reduced acidity in the stomach are also at increased risk of contracting infections with acid-sensitive organisms such as *Salmonella* and *Campylobacter* [8-9].

Before travel

Travellers should seek information on the risks of contaminated food and water at their destination in advance of travel. The [Country Information pages](#) on our website show details of the vaccine preventable

risks where relevant. Ideally, travellers should see their healthcare provider at least 4-6 weeks before travel for advice on vaccinations (if appropriate) and food and water precautions. However, even if travelling at short notice, pre-travel advice is still important and worthwhile. Travellers should consider taking a diarrhoea treatment pack, further details can be found in our travellers' diarrhoea information sheet.

Pregnant women, those with very young infants and travellers with pre-existing medical conditions such as significant bowel disease or immune suppression should discuss the suitability of travel with their specialist or GP practice before booking the trip.

Travellers should consider obtaining other items to help reduce their risk from contaminated food and water. Alcohol gel can be helpful for hand hygiene where hand washing facilities are not available. Those who may not have access to safe water at their destination should consider taking appropriate equipment such a water filter or chemical treatments (see details in the 'during travel' section).

During travel

Travellers should wash their hands after visiting the toilet, changing nappies and before preparing or eating food. Alcohol gel is helpful when hand-washing facilities are not available.

It is difficult to eliminate the risk from contaminated food [1] but it is sensible for travellers to try and avoid higher risk food and drinks where possible.

Water and other drinks

Drinks served in unopened, factory produced cans or bottles with intact seals such as carbonated drinks, commercially prepared fruit drinks, water and pasteurised drinks generally can be considered safe. Drinks made with boiled water and served steaming hot are also generally safe such as tea and coffee.

In countries with poor sanitation, it is not advisable to drink tap water or use it to clean teeth, unless it has been treated. Ice should also be avoided. Water can be disinfected by bringing it to a rolling boil [10-11]. Although boiling is a reliable method of disinfection, it may not always be convenient.

Chemical treatments can be used to disinfect water. However, the effectiveness of these treatments can be reduced by low water temperatures and suspended matter in the water. Travellers should follow the instructions carefully to obtain the best results. Chlorine preparations are usually effective, but protozoan parasites such as *Cryptosporidium* and *Giardia* are not always inactivated by these agents [12]. Studies have shown chlorine dioxide to be more effective at inactivating parasites [13]. Using a water filter that has a filter size of 0.2 µm to 1.0 µm before using a chemical disinfectant is helpful as water filters can remove suspended matter and parasites if they are functioning correctly. Following an European Union (EU) directive, iodine is no longer sold or supplied for use in disinfecting drinking water.

Portable, battery-operated devices using UV light can be used to disinfect water. However, water must be free of particulate material before treating. This method may not be practical if large quantities of water need disinfecting.

Food

Recently prepared, thoroughly cooked food that is served piping hot, fruit that can be peeled by the traveller (such as bananas and oranges), and pasteurised dairy produce such as yoghurts, milk and

cheese are good options for travellers.

Certain foods are prone to contamination and where possible should be avoided:

Salads

Uncooked fruit and vegetables (unless washed and/or peeled by the traveller)

Fresh or cooked food that has been left uncovered in warm environments, exposed to flies, such as buffets.

Unpasteurised dairy products, like milk, cheese, ice cream and yoghurt.

Raw or undercooked meat, fish or shellfish.

Food from street traders unless thoroughly cooked in front of the traveller and served hot on clean crockery.

See our travellers' diarrhoea factsheet for details on the management of [travellers' diarrhoea](#).

After travel

Travellers returning with diarrhoea should seek medical care if symptoms do not improve within three days. They should seek medical care immediately if they have a fever of 38°C or more, blood and/or mucous in the stool or other worrying symptoms such as altered mental status, severe abdominal pain, jaundice or rash.

Medical advice should be sought earlier for the elderly, children and other vulnerable travellers if they are not tolerating fluids or are showing signs of dehydration.

An algorithm for the investigation and management of diarrhoeal illness in returned travellers can be found in Health Information for Overseas Travel [14].

Resources

[CDC: Keeping your hands clean on a cruise.](#)

[NHS Choices: Food Poisoning.](#)

[NHS Choices: Norovirus.](#)

[Travellers' diarrhoea](#)

[World Health Organization: Food Safety Fact Sheet](#)

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