

Traveler's Diarrhea



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KEYWORDS

• Travel • Diarrhea • Risk factors • Epidemiology • Antibiotic prophylaxis • Probiotics

KEY POINTS

- Traveler's diarrhea (TD) is the most common travel-related illness.
- Pretravel consultation is an opportunity to provide the traveler with education and therapeutic options to decrease the incidence and impact of TD.
- Early self-treatment of TD is effective, although its use must be balanced by consideration of medication side effects, acquisition of antimicrobial-resistant organisms through disturbance of gut flora, and potential for *Clostridium difficile* infection.
- Postinfectious sequelae of TD may result in presentation for care weeks or months after return from travel.

INTRODUCTION

More than 68 million Americans traveled abroad in 2014,¹ and the annual number of international tourist arrivals worldwide has reached more than 1 billion.² In data collected by GeoSentinel, a global surveillance network of international travelers, acute diarrhea was the most common among travel-related diagnostic groupings.³ In this article, the epidemiology, cause, and strategies to prevent and treat traveler's diarrhea (TD) are reviewed.

Definition, Incidence, and Risk Factors

TD is defined as the passage of 3 or more unformed stools per day with 1 or more associated enteric symptom, such as abdominal pain or cramps, occurring in a traveler after arrival, usually in a resource-limited destination.⁴

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Recent studies have shown that approximately 25% of travelers develop TD in the first 2 weeks abroad, with the highest rates occurring in travel to Africa and South, Central, and West Asia.^{5,6} Factors that influence the incidence of TD vary based on the study design and location (**Table 1**).^{5–7}

Cause

TD is predominantly a fecal-orally transmitted disease and can be caused by bacterial, viral, or protozoal pathogens, with helminths being uncommon. Many of the causes for TD (**Table 2**) are similar to those causing acute diarrhea in young children of low- and middle-income countries.⁸ The frequency of each pathogen varies by geographic location, and the cause may be unknown in 40% to 50% of cases despite microbiologic evaluation,^{9,10} although with increasing use of multiplex molecular testing,¹¹ this will likely change. Globally, enterotoxigenic *Escherichia coli* (ETEC) and enteroaggregative *E coli* (EAEC) are the most common bacterial pathogens,⁹ with the exception of Southeast Asia, where *Campylobacter* is more common, a high proportion of which are fluoroquinolone resistant.^{9,12} Norovirus and rotavirus are the most common viral causes of TD. Of the protozoa, *Giardia duodenalis* and *Entamoeba histolytica* are the main pathogens considered, depending on the region of travel. In some instances, TD may be due to more than one pathogen.

Impact on the Traveler

The median duration of TD is 3 days, and symptoms are usually mild, with approximately 4 bowel movements per day.¹³ Unfortunately, TD can lead to significant limitation of activity. This incapacity typically lasts for 1 to 2 days,¹⁴ resulting in loss of vacation or business days,⁶ although data from one posttravel survey suggest that the majority with TD do not need to alter their planned programs.¹⁵ Approximately 10% of travelers with TD seek medical care, and up to 3% of them require hospitalization.^{14,16}

PRETRAVEL PREPARATION

The goals of pretravel consultation are to identify travelers at increased risk of travel-related illness and provide counseling, vaccinations, and medications for prophylaxis or self-treatment. Application of these principles at a pretravel consultation may decrease the incidence of TD.

Prevention

Impact of food and water hygiene measures

Given that most cases of TD are caused by ingestion of contaminated food and water, it is thought that counseling on food and water hygiene measures reduces the risk of TD. However, there is little evidence that such precautions decrease the incidence of

Host-related factors	Country of origin (higher incidence if the traveler is from a highly industrialized country) Age (higher incidence in young adults 15–30)
Travel-related factors	Destination (higher incidence in travel to Africa and South, Central, and West Asia) Duration of stay (incidence increases until day 12 or day 14)

Data from Refs.^{5–7}

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