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## Review Article

## Travelers health: An emerging issue

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## ABSTRACT

Tourism in India is a large industry. International travel and commerce is here to stay and continue their global expansion. With increase in the travel trend, comes various health risks to the travelers. Children, pregnant women, older age group, people with pre-existing diseases, adventurers and sex travelers are particularly vulnerable. This is where travel medicine or emporiatrics come into light. It encompasses a wide variety of disciplines including epidemiology, infectious disease, public health, tropical medicine, high altitude physiology, travel related obstetrics, psychiatry, occupational medicine, military and migration medicine, and environmental health. In this article an attempt has been made to describe the various health risks to the travelers, their occurrence and how they can be prevented.

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## 1. Introduction

Tourism in India is a large industry. The World Travel and Tourism Council calculated that tourism generated \$121 billion or 6.4% of the nation's GDP in 2011. The GDP of the tourism sector has expanded 229% between 1990 and 2011. According to provisional statistics 6.29 million foreign tourists arrived in India in 2011, an increase of 8.9% from 5.78 million in 2010. This ranks India as the 38th country in the world in terms of foreign tourist arrivals. The most represented countries are the United States (16%) and the United Kingdom (12.6%). In 2011 Maharashtra, Tamil Nadu and Delhi were the most popular states for foreign tourists.<sup>1</sup> The Travel & Tourism Competitiveness Report 2013 ranked the price competitiveness of India's tourism sector 20th out of 139 countries. It mentions that India has quite good air transport

(ranked 39th), particularly given the country's stage of development, and reasonable ground transport infrastructure (ranked 43rd).<sup>2</sup>

International travel and commerce is here to stay and continue their global expansion. Awareness of the opportunity that it presents for the worldwide dissemination of infections both new and old, will minimise the threat.

Travel medicine or emporiatrics is the branch of medicine that deals with the prevention and management of health problems of international travelers. It encompasses a wide variety of disciplines including epidemiology, infectious disease, public health, tropical medicine, high altitude physiology, travel related obstetrics, psychiatry, occupational medicine, military and migration medicine, and environmental health.<sup>3</sup> Fig. 1 shows various aspects of travel medicine.

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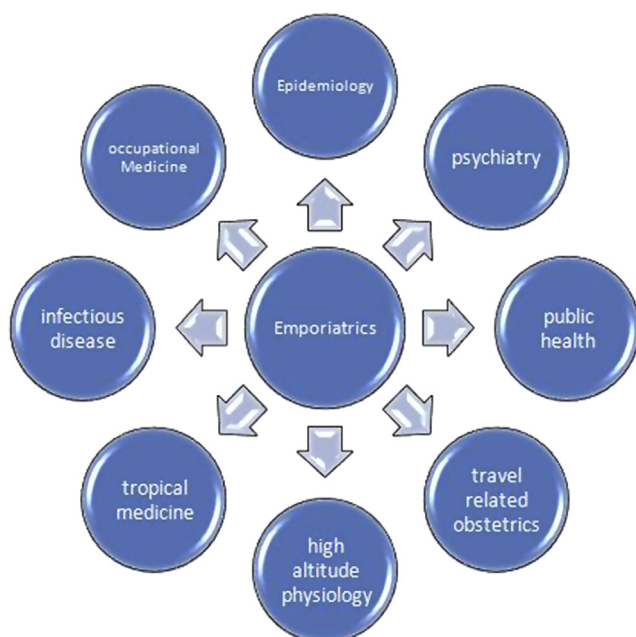


Fig. 1 – Shows various aspects of travel medicine.

## 2. Who is at risk?

The traveler is exposed to new cultural, psychological, physical, physiological, environmental and microbiological experiences and challenges. Some illnesses may be induced by travel itself such as motion sickness and upsets to the circadian rhythm. Unaccustomed exercise or the effects of altitude may exacerbate pre-existing cardiovascular or respiratory pathology.

Travelers at a higher risk of infection are<sup>4</sup>:

- Young children: Having a less exposed immune system and their notorious habits make children more vulnerable to health risks while traveling. Children particularly are at risk of both infections as well as injuries while traveling.
- Elderly: Older people have limited regenerative abilities and are more prone to disease and sickness.
- Pregnant women: Pregnancy leads to an altered immunity and, certain restrictions in medications and increased dietary needs make them prone to health risks.
- Pre-existing diseases: People with pre existing illnesses like diabetes, cardiovascular diseases, chronic airway diseases, psychiatric disturbances and disabilities have an increased health risk during travel.
- Immuno-compromised: People with compromised immunity states such as HIV have an increased risk of contracting infections.
- Adventurers or backpackers: this group of travelers are at a special risk to health posed due to hiking, adventure sports and travel to high altitudes and remote areas.
- Sex travelers: Travelers which get involved in casual sex with multiple partners for leisure are at a high risk for sexually transmitted diseases and HIV.

## 3. Aircraft cabin: can it spread diseases?

In aircraft, the air conditioning system takes in fresh air from outside, which is then heated by the engine and then cooled and piped into the cabin. Until recently, almost all aircrafts used 100% fresh air which is a costly affair and hence many airlines now recirculate 50% of the same air, while the rest 50% being fresh. There also have been recent concerns over possible transmission of tuberculosis, influenza and meningococcal pneumonia within aircrafts via the air-borne route.

## 4. Common travel related illnesses: how to prevent

### 4.1. Traveler's diarrhea

Travelers' diarrhea (TD) is the most common illness affecting travelers. Each year between 20% and 50% of international travelers, an estimated 10 million persons, develop diarrhea. The most important determinant of risk is the traveler's destination. High-risk destinations are the developing countries of Latin America, Africa, the Middle East and Asia. Persons at particular high-risk include young adults, immunosuppressed persons, persons with inflammatory-bowel disease or diabetes, and persons taking H-2 blockers or antacids. Infectious agents are the primary cause of TD. Bacterial enteropathogens cause approximately 80% of TD cases.<sup>5</sup> The most common causative agent isolated in countries surveyed has been enterotoxigenic *Escherichia coli* (ETEC). Travelers can minimize their risk for TD by avoiding foods or drinking beverages purchased from street vendors or other establishments where unhygienic conditions are present, avoiding eating raw or undercooked meat and seafood and avoiding raw fruits and vegetables. CDC does not recommend antimicrobial drugs to prevent TD. It is usually a self-limited disorder and often resolves without specific treatment; however, oral rehydration is often beneficial to replace lost fluids and electrolytes.<sup>6</sup>

### 4.2. Dengue fever

Dengue is endemic throughout the tropics and subtropics and is a leading cause of febrile illness among travelers returning from the Caribbean, South America, and South and Southeast Asia, according to an analysis of data collected by the Geo-Sentinel Surveillance Network. Dengue occurs in >100 countries worldwide, including Puerto Rico, the US Virgin Islands, and US-affiliated Pacific Islands. Currently, no vaccine is available, although several are in clinical trials; no chemoprophylaxis is available to prevent dengue. Travelers to dengue-endemic areas are at risk of getting dengue; risk increases with longer duration of travel and disease incidence in the travel destination (such as during dengue season and during epidemics). Travelers should be advised to avoid mosquito bites by taking the following preventive measures<sup>7</sup>:

- Select accommodations with well-screened windows and doors or air conditioning when possible. Aedes mosquitoes

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