

Dengue

Traveler Summary

Key Points

- Dengue fever, a viral infection occurring in tropical and subtropical countries of the Americas, Asia, the Caribbean, the Indian Ocean islands, and the South Pacific, is acquired through the bite of day-biting mosquitoes.
- Risk is increased for travelers going to populated urban areas of affected countries.
- Symptoms include high fever, rash, severe headache, and muscle, joint, and back pain, some of which overlap with COVID-19 and other tropical illnesses (e.g., malaria, Zika, and chikungunya).
- Consequences of infection include bleeding, shock, and death in a small percentage of patients and severe chronic fatigue lasting weeks to months in many others.
- Prevention includes wearing long sleeves and long pants as well as observing daytime personal protective measures against mosquito bites.
- No vaccine (for travelers) or preventive drugs are available.

Introduction

Dengue is a viral infection that occurs in certain countries of the Americas, Asia, the Caribbean, the Indian Ocean islands, and the South Pacific and is acquired through the bite of mosquitoes carrying the dengue virus. Dengue is the most common cause of fever in travelers returning from the Caribbean, Latin America, and Southeast Asia. Cocirculation of COVID-19 with dengue has resulted in coinfection with the risk of missed or delayed diagnosis, inappropriate treatment, and increased disease severity and fatality.

Risk Areas

Dengue infection is common in most tropical and subtropical countries of the Americas, Asia, the Caribbean, the Indian Ocean islands, and the South Pacific, mainly due to the broad geographic distribution of the infected mosquitoes. Recently, dengue infections have emerged in Angola, Kenya, Tanzania, and several countries in West Africa. The incidence of dengue is usually higher during warm and humid seasons in affected areas; local health authorities are usually aware of periods of increasing dengue activity.

Transmission

Dengue virus is transmitted through the bite of infected mosquitoes. These mosquitoes may be found indoors in close contact with humans. These mosquitoes will interrupt their feeding at the slightest movement but return quickly to feed on the same or a different human host in the same location.

Unlike malaria-transmitting mosquitoes, dengue-transmitting mosquitoes are daytime feeders with 2 peak times of biting activity: 2 to 3 hours after dawn and mid-to-late afternoon. This pattern, however, changes to an all-day activity when the mosquitoes are indoors or during overcast days.

Risk Factors

Risk exists for persons in affected areas who have not been previously exposed to the dengue virus. The risk is higher for those staying in inappropriately screened facilities (e.g., places with nearby stagnant water, such as discarded tires, flowerpots, and blocked rain gutters, which may host mosquito larvae). Risk is increased for travelers going to populated urban and residential areas in affected countries because the mosquito vectors can thrive in urban areas and indoors.

Symptoms

Symptoms most commonly appear 2 to 5 days following exposure (uncommonly, more than 7 days and, rarely, up to 14 days after exposure) and include sudden onset of high-grade fever, rashes, severe muscle, abdominal, joint, and lower back pain, severe pain behind the bony socket of the eye, nausea, vomiting, and generalized weakness. Fever that occurs more than 14

days after last exposure is not due to dengue. Mild bleeding from the nose, mouth, or under the skin (seen as bruising) may also occur.

Dengue has symptoms in common with chikungunya and Zika virus infections, which usually coexist in the same areas because they are all transmitted by the same mosquitoes. Dengue and COVID-19 also have overlapping symptoms, including fever, headache, muscle pain, and joint pain.

Consequences of Infection

Dengue infection can lead to severe fatigue (lasting for weeks or months) and, uncommonly, significant blood loss and organ (kidney, liver, brain) damage.

Need for Medical Assistance

Travelers who develop symptoms of dengue infection should seek immediate medical attention because a febrile illness in the tropics can include several serious diseases (e.g., malaria) or diseases with significant consequences (e.g., Zika and chikungunya infections). Travelers with persistent fever should avoid using aspirin and other nonsteroidal anti-inflammatory drugs (because they prevent formation of blood clots).

Prevention

Nonvaccine

Personal protective measures are the main prevention strategy. Mosquitoes that transmit dengue (*Aedes* spp.) can bite throughout the day but have peak biting activity during early morning and late afternoon and evening. Travelers should be especially vigilant in applying repellent during peak biting activity times. Treat outer clothing, boots, tents, and sleeping bag liners with permethrin (or other pyrethroid) when traveling in an area of very high-risk for dengue. Additionally, containers with stagnant water can serve as breeding sites for mosquitoes and should be removed from the proximity of human habitation whenever possible. See *Insect Precautions*.

No dengue vaccine is available for travelers living in nonaffected areas who will be visiting or living in affected areas. However, a dengue vaccine (Dengvaxia) is approved for persons aged 9-45 years who were previously infected with dengue virus and are residing in certain dengue-endemic countries (age 9-16 years in dengue-endemic US territories).