

# Enteroviruses

## Traveler Summary

### Key Points

- | Enteroviruses are a common cause of viral infections (e.g., hand, foot, and mouth disease) worldwide, acquired through direct contact with secretions from infected persons and contaminated surfaces.
- | Risk is high for travelers going to destinations with ongoing transmission, such as the Far East and Asia-Pacific regions. Young children are more susceptible, especially when they congregate in places such as nurseries and schools.
- | Symptoms are mild and include fever, sore mouth or throat, rash or painful blisters in the mouth, and rash on the palms and soles.
- | Consequences of infection rarely occur but can include nervous system complications, neck stiffness, loss of consciousness, shock, or respiratory distress.
- | Prevention includes observing good respiratory hygiene (cough and sneeze etiquette), frequent, thorough handwashing, and social distancing control measures.
- | No vaccine or preventive drugs are available.

### Introduction

Enteroviruses are the primary cause of enteroviral infections worldwide, resulting in symptoms such as fever, sore mouth or throat, rashes, or blisters. Among international travelers and expatriates, hand, foot, and mouth disease (HFMD) is the most commonly acquired enteroviral disease, with annual outbreaks (sometimes with serious consequences) occurring in the Far East and Asia-Pacific regions.

### Risk Areas

HFMD is common in the Asia-Pacific region, including Cambodia, China, Hong Kong, Japan, Korea, Malaysia, Singapore, South Korea, Taiwan, Thailand, and Vietnam, where significant risk exists throughout the year, with seasonal peaks that vary by country. Additionally, cyclical outbreaks (every 2-3 years) that cause school closings and significant hospitalizations also occur. In temperate regions, many enterovirus outbreaks are more common in the summer and autumn. In the U.S., enteroviruses commonly cause HFMD, viral meningitis, and severe respiratory illness associated with paralysis.

### Transmission

Enteroviruses are predominantly transmitted person to person via inhalation of aerosolized respiratory droplets (e.g., by coughing or sneezing), direct contact with saliva, feces, or fluid from blisters from an infected person, or contact with contaminated surfaces and objects. Infected persons are most contagious during the first week of the illness.

### Risk Factors

Risk is highest for persons (especially young children) in endemic areas who congregate in settings such as nurseries, kindergartens, and schools.

### Symptoms

Symptoms most commonly appear about 3 to 7 days following exposure and include fever, sore mouth or throat (which may progress to rash or painful blisters in the mouth), and rash on the palms and soles. Less commonly, rash may appear on the knees, elbows, buttocks, and genitalia.

### Consequences of Infection

Serious illness rarely occurs, but complications of HFMD may include nervous system complications (e.g., muscle twitching, vomiting, and lack of muscle coordination). In some cases, neck stiffness, loss of consciousness, shock, or respiratory distress

can occur. Children who recover from complicated HFMD may be left with permanent damage to their nervous systems.

## Need for Medical Assistance

For mild cases with mouth sores, over-the-counter pain relievers (aspirin should not be given to children) and mouthwashes and sprays can be used to numb mouth pain. Affected persons should also drink plenty of liquids to stay hydrated.

Travelers who develop symptoms of complicated HFMD (especially involving the nervous system) should seek urgent medical attention. No specific treatment exists.

## Prevention

### Nonvaccine

Observe good respiratory hygiene (cough and sneeze etiquette) and frequent, thorough handwashing with soap and water, especially after using the bathroom, changing diapers, and before preparing or eating food. If soap is not available, use an alcohol-based hand cleanser containing at least 60% alcohol. Disinfect dirty surfaces and soiled items with bleach.

Avoid close contact (kissing, hugging, sharing eating utensils or cups) with persons who have HFMD.

Control measures in school settings include:

- | Social distancing measures.
- | Keeping children out of school for a few days in the event of a community outbreak.
- | Keeping children with symptoms of disease at home for at least 3 days.
- | Closure of all nurseries and schools in the community.

Large outbreaks may require the cancellation of public events involving children.

EV-71 vaccines are available in China for use in young children but are not recommended for travelers.

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