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## Traveler Information

# HAND, FOOT, AND MOUTH DISEASE

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## INTRODUCTION

Hand, foot, and mouth disease (HFMD) is a common viral illness caused by enteroviruses. It usually affects infants and children aged less than 5 years; less frequently, it can occur in adults.

HFMD is generally mild, causing fever and sore throat followed by rash and/or blisters on the hands and feet and in the mouth. HFMD due to the enterovirus EV71 can be more severe, with neurological complications.

## MODE OF TRANSMISSION

HFMD is spread from person to person by direct contact with infected saliva, respiratory secretions, feces, and fluid from blisters. Contaminated hands, surfaces, and objects are also infectious. The virus multiplies in the mucosal cells of the gastrointestinal tract before spreading to target organs, which may include the mouth and throat, skin, brain, meninges, spinal cord, and heart. Infected persons are most contagious during the first week of the illness.

## RISK AREAS

- Most reports of EV71 with neurological involvement have been from the Asia-Pacific region. Currently, there have been an increasing number of cases in China, Hong Kong, Japan, Singapore, and Vietnam.
- EV71 circulates at a lower level in Africa, Europe, the U.S., and Canada.
- Many outbreaks occur in nurseries and schools.
- The main seasonal peak is in May-June, with a smaller peak in October-December.

## RISK FACTORS

- In temperate regions outbreaks are more common in the warmer months.
- Young children are more susceptible.
- Infection is most commonly acquired where young children congregate, for example in nurseries, kindergartens, and schools.
- Risk factors for the development of neurological disease or HFMD are unknown.

## SYMPTOMS

Most cases are mild, with fever, sore mouth or throat, and blisters or rash in the mouth, on the palms of the hands, and on the soles of the feet. Less commonly, rash might appear on the knees, elbows, buttocks, and genitalia. Blisters in the mouth can be painful.

Neurologic disease in EV71 infections vary but can include muscle twitching, vomiting, and lack of muscle coordination. In some cases neck stiffness, loss of consciousness, shock, and respiratory distress can occur. Children who recover may be left with permanent neurological damage.

## PREVENTION

There is no vaccine but the following prevention measures should be considered.

- During an outbreak, nurseries and schools may be closed and public events involving children cancelled.
- In the event of a school outbreak due to EV71, resident expatriates may wish to keep their children out of school for a few days.
- Children with disease should be kept home for at least 3 days.
- Personal protection measures during an outbreak:
  - Wash hands with soap and water, especially before eating, after visiting the toilet, after touching potentially contaminated surfaces, and after changing a diaper. If soap is not available, use an alcohol-based hand cleaner 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.

## NEED FOR MEDICAL ASSISTANCE

Medical help should be sought urgently for any child with neurological symptoms of HFMD and for travelers who cannot swallow liquids and thus become dehydrated.

There is no specific treatment. For mild cases with mouth sores, the traveler can take over-the-counter pain relievers (aspirin should not be used in children) and use mouthwashes and sprays to numb mouth pain. Affected persons should also be instructed to drink plenty of liquids to stay hydrated.

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