



Hand-foot-and-mouth disease

Symptoms and causes

By Mayo Clinic Staff

Symptoms

Hand-foot-and-mouth disease may cause all of the following signs and symptoms or just some of them. They include:

- Fever
- Sore throat
- Feeling of being unwell (malaise)
- Painful, red, blister-like lesions on the tongue, gums and inside of the cheeks
- A red rash, without itching but sometimes with blistering, on the palms, soles and sometimes the buttocks
- Irritability in infants and toddlers
- Loss of appetite

The usual period from initial infection to the onset of signs and symptoms (incubation period) is three to six days. A fever is often the first sign of hand-foot-and-mouth disease, followed by a sore throat and sometimes a poor appetite and malaise.

One or two days after the fever begins, painful sores may develop in the front of the mouth or throat. A rash on the hands and feet and possibly on the buttocks can follow within one or two days.

Sores that develop in the back of the mouth and throat may suggest that your child is infected with a related viral illness called herpangina. Other distinguishing features of herpangina include a sudden high fever and in some instances, seizure. Sores that develop on the hands, feet or other parts of the body are very rare.

When to see a doctor

Hand-foot-and-mouth disease is usually a minor illness causing only a few days of fever

and relatively mild signs and symptoms. Contact your doctor if mouth sores or a sore throat keep your child from drinking fluids. And contact your doctor if after a few days, your child's signs and symptoms worsen.

Causes

The most common cause of hand-foot-and-mouth disease is infection with the coxsackievirus A16. The coxsackievirus belongs to a group of viruses called nonpolio enteroviruses. Other types of enteroviruses sometimes cause hand-foot-and-mouth disease.

Oral ingestion is the main source of coxsackievirus infection and hand-foot-and-mouth disease. The illness spreads by person-to-person contact with an infected person's:

- Nasal secretions or throat discharge
- Saliva
- Fluid from blisters
- Stool
- Respiratory droplets sprayed into the air after a cough or sneeze

Common in child care setting

Hand-foot-and-mouth disease is most common in children in child care settings because of frequent diaper changes and potty training, and because little children often put their hands in their mouths.

Although your child is most contagious with hand-foot-and-mouth disease during the first week of the illness, the virus can remain in his or her body for weeks after the signs and symptoms are gone. That means your child still can infect others.

Some people, particularly adults, can pass the virus without showing any signs or symptoms of the disease.

Outbreaks of the disease are more common in summer and autumn in the United States and other temperate climates. In tropical climates, outbreaks occur year-round.

Different from foot-and-mouth disease

Hand-foot-and-mouth disease isn't related to foot-and-mouth disease (sometimes called hoof-and-mouth disease), which is an infectious viral disease found in farm animals. You can't contract hand-foot-and-mouth disease from pets or other animals, and you can't transmit it to them.

Risk factors

Hand-foot-and-mouth disease primarily affects children younger than age 10, often those

under 5 years. Children in child care centers are especially susceptible to outbreaks of hand-foot-and-mouth disease because the infection spreads by person-to-person contact, and young children are the most susceptible.

Children usually develop immunity to hand-foot-and-mouth disease as they get older by building antibodies after exposure to the virus that causes the disease. However, it's possible for adolescents and adults to get the disease.

Complications

The most common complication of hand-foot-and-mouth disease is dehydration. The illness can cause sores in the mouth and throat, making swallowing painful and difficult.

Watch closely to make sure your child frequently sips fluid during the course of the illness. If dehydration is severe, intravenous (IV) fluids may be necessary.

Hand-foot-and-mouth disease is usually a minor illness causing only a few days of fever and relatively mild signs and symptoms. A rare and sometimes serious form of the coxsackievirus can involve the brain and cause other complications:

- **Viral meningitis.** This is a rare infection and inflammation of the membranes (meninges) and cerebrospinal fluid surrounding the brain and spinal cord.
- **Encephalitis.** This severe and potentially life-threatening disease involves brain inflammation caused by a virus. Encephalitis is rare.

Any use of this site constitutes your agreement to the Terms and Conditions and Privacy Policy linked below.

[Terms and Conditions](#)

[Privacy Policy](#)

[Notice of Privacy Practices](#)

[Notice of Nondiscrimination](#)

Mayo Clinic is a not-for-profit organization and proceeds from Web advertising help support our mission. Mayo Clinic does not endorse any of the third party products and services advertised.

[Advertising and sponsorship policy](#)

[Advertising and sponsorship opportunities](#)

A single copy of these materials may be reprinted for noncommercial personal use only. "Mayo," "Mayo Clinic," "MayoClinic.org," "Mayo Clinic Healthy Living," and the triple-shield Mayo Clinic logo are trademarks of Mayo Foundation for Medical Education and Research.

© 1998-2017 Mayo Foundation for Medical Education and Research (MFMER). All rights reserved.