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## Disease Fact Sheet

## Hand, Foot, & Mouth Disease

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### What is Hand, Foot, & Mouth Disease (HFMD)?

HFMD is a common illness of infants and children. It is characterized by a fever, sores in the mouth, and a rash with blisters. HFMD usually begins with a mild fever, decreased appetite, sore throat, and generally “feeling ill”. One or two days after the fever begins, painful sores develop in the mouth. They begin as small red spots that blister, and then often become ulcers. They are usually located on the tongue, gums, and insides of cheeks. The skin rash develops over 1-2 days with flat, or raised, red spots, sometimes with blisters. The rash does not itch, and is usually located on the palms of the hands and the soles of the feet. It may also appear on the buttocks or genitals. A person with HFMD may only have the rash, or only have the mouth sores.

### Is HFMD the same as foot and mouth (or hoof and mouth) disease?

No. HFMD is a different disease from foot and mouth or hoof and mouth disease of cattle, sheep, and pigs. Although the names are similar, the two diseases are not related at all, and are caused by different viruses. People do not get foot and mouth (or hoof and mouth) disease, and animals do not get Hand, Foot, & Mouth Disease.

### What causes HFMD?

Several types of viruses cause HFMD. The most common cause is *Coxsackievirus A16*; occasionally, other strains of *Coxsackievirus A* or *Enterovirus 71* cause HFMD. The coxsackieviruses are members of a group of viruses called enteroviruses.

### Is HFMD serious?

Usually not. Nearly all people with HFMD recover without medical treatment. HFMD usually resolves in 7-10 days. Complications are uncommon. Rarely, the patient with *Coxsackievirus A16* infection may also develop aseptic (viral) meningitis, in which the patient has a fever, headache, stiff neck, and back pain, and may need to be hospitalized for a few days. Another cause of HFMD, enterovirus 71 (EV71), may also cause viral meningitis, and rarely more serious diseases. EV71 encephalitis can be fatal.

### Is it contagious?

Yes. HFMD is moderately contagious. Infection is spread from person-to-person by direct contact with mouth and nose secretions, saliva, fluid from blisters, or the stool from infected persons. A person is most contagious during the first week of the illness. HFMD is not transmitted to or from pets or other animals.

The viruses that cause HFMD can remain in the body for weeks after the person’s symptoms have gone away. This means that the infected person can still pass the infection to other people, even though they seem well. Also, some people who are infected and excreting the virus, including most adults, may have no symptoms at all.

### How soon will someone become ill after being infected?

The usual period of time from infection to the onset of symptoms (the incubation period) is 3-7 days. Fever is often the first symptom of HFMD.

## **Who is at risk for HFMD?**

HFMD occurs mainly in children under 10 years of age, but adolescents and adults may also be at risk. Everyone is at risk of infection with viruses that cause HFMD, but not everyone who is infected becomes ill. Infants, children, and adolescents are more likely to become ill from these viruses, because they are less likely than adults to be immune to them. Many adults have developed protective antibodies due to a prior exposure to the viruses. Infection results in immunity to the specific virus, but a second exposure to HFMD may occur following infection with a different member of the group of enteroviruses that cause the disease.

## **What are the risks to pregnant women exposed to HFMD?**

Because enteroviruses, including those that cause HFMD, are very common, pregnant women are frequently exposed to them. This is especially common in the summer and fall months. For all adults, including pregnant women, the risk of infection is higher for those who do not have antibodies from earlier exposures to the viruses. The risk is also higher for those who are exposed to young children, as they are the main spreaders of enteroviruses.

Most enterovirus infections during pregnancy cause mild or no illness in the mother. Currently there is no clear evidence that maternal enterovirus infection causes adverse pregnancy outcomes, such as miscarriage, still birth, or congenital defects. However, mothers infected shortly before delivery may pass the virus to the newborn. Babies born to mothers who have symptoms of enteroviral illness around the time of delivery are more likely to be infected. Most newborns infected with an enterovirus have mild illness, but in rare cases, they may develop an overwhelming infection of many organs, which could lead to death. The risk of this severe illness in newborns is higher during the first two weeks of life. It is important that people practice good hygiene to help lower the risk of infection during pregnancy and around the time of delivery.

## **Where and when does HFMD occur?**

Individual cases and outbreaks of HFMD occur worldwide. They occur most often in summer and early fall.

## **How is HFMD treated?**

No specific treatment is available for this, or other enterovirus infections. Symptomatic treatment is given to provide relief from fever, aches, and pain from the mouth ulcers.

## **Can HFMD be prevented?**

Preventive measures include:

- Frequent hand washing, especially after diaper changes and using the bathroom
- Cleaning dirty surfaces and soiled items including toys, first with soap and water, and then by disinfecting them with a solution of chlorine bleach (add 1 tablespoon of bleach to 4 cups of water)
- Avoiding close contact (kissing, hugging)
- Not sharing eating utensils or cups

## **How should HFMD be handled at school/child care?**

In the U.S., HFMD outbreaks occur most often in the summer and fall months. Exclusion from school, work, or child care is recommended if the ill person has blisters in their mouth and they drool, if they have weeping blisters/lesions on their hands, or if they are too ill to participate in usual activities.