Hand, Foot, Mouth Disease

Fact Sheet

What is hand, foot, and mouth disease? Hand, foot, and mouth disease (HFMD) is a common viral illness of infants and children. It is characterized by fever, sores in the mouth, and a rash with blisters.

It begins with a mild fever, poor appetite, malaise ("feeling sick"), and frequently a sore throat. One or 2 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 inside of the cheeks. The skin rash develops over 1 to 2 days with flat or raised red spots, some with blisters. The rash does not itch, and it is usually located on the palms of the hands and soles of the feet. It may also appear on the buttocks. A person with HFMD may have only the rash or the mouth ulcers.

Is HFMD the same as foot-and-mouth disease? No. HFMD is often confused with foot-and-mouth disease of cattle, sheep, and swine. Although the names are similar, the two diseases are not related at all and are caused by different viruses.

Is HFMD contagious? Yes, HFMD is moderately contagious. Infection is spread from person to person by direct contact with nose and throat discharges, saliva, fluid from blisters, or the stool of 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.

How soon will someone become ill after getting infected? The usual period from infection to onset of symptoms ("incubation period") is 3 to 7 days. Fever is often the first symptom of HFMD.

Who is at risk for HFMD? HFMD occurs mainly in children under 10 years old, but may also occur in adults too. Everyone is at risk of infection, but not everyone who is infected becomes ill. Infants, children, and adolescents are more likely to be susceptible to infection and illness from these viruses, because they are less likely than adults to have antibodies and be immune from previous exposures to them. Infection results in immunity to the specific virus, but a second episode may occur following infection with a different member of the enterovirus group.

What are the risks to pregnant women exposed to children with HFMD? Because enteroviruses, including those causing HFMD, are very common, pregnant women are frequently exposed to them, especially during summer and fall months. As for any other adults, the risk of infection is higher for pregnant women who do not have antibodies from earlier exposures to these viruses, and who are exposed to young children - the primary spreaders of enteroviruses.

Most enterovirus infections during pregnancy cause mild or no illness in the mother. Although the available information is limited, currently there is no clear evidence that maternal enteroviral infection causes adverse outcomes of pregnancy such as abortion, stillbirth, 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, including liver and heart, and die from the infection. The risk of this severe illness in newborns is higher during the first two weeks of life.

**When and where does HFMD occur?** Individual cases and outbreaks of HFMD occur worldwide, more frequently in summer and early autumn.

**How is HFMD diagnosed?** HFMD is one of many infections that result in mouth sores. Another common cause is oral herpesvirus infection, which produces an inflammation of the mouth and gums (sometimes called stomatitis). Usually, the physician can distinguish between HFMD and other causes of mouth sores based on the age of the patient, the pattern of symptoms reported by the patient or parent, and the appearance of the rash and sores on examination.

**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, or pain from the mouth ulcers.

**Can HFMD be prevented?** Specific prevention for HFMD is not available, but the risk of infection can be lowered by good hygienic practices. Preventive measures include frequent handwashing, especially after diaper changes, cleaning of contaminated surfaces and soiled items first with soap and water, and then disinfecting them by diluted solution of chlorine-containing bleach (made by mixing approximately ¼ cup of bleach with 1 gallon of water. Avoidance of close contact (kissing, hugging, sharing utensils, etc.) with children with HFMD may also help to reduce of the risk of infection to caregivers.