

Warning: The NCBI web site requires JavaScript to function. [more...](#)

Hand-foot-mouth disease

Coxsackievirus infection

Last reviewed: August 7, 2011.

Hand-foot-mouth disease is a relatively common infection viral infection that usually begins in the throat.

A similar infection is [herpangina](#).

Causes, incidence, and risk factors

Hand-foot-and-mouth disease (HFMD) is most commonly caused by coxsackievirus A16, a member of the enterovirus family.

The disease is not spread from pets, but it can be spread by person to person. You may catch it if you come into direct contact with nose and throat discharges, saliva, fluid from blisters, or the stools of an infected person. You are most contagious the first week you have the disease.

The time between infection and the development of symptoms is about 3 - 7 days.

The most important risk factor is age. The infection occurs most often in children under age 10, but can be seen in adolescents and occasionally adults. The outbreaks occur most often in the summer and early fall.

Symptoms

- [Fever](#)

- Headache
- Loss of appetite
- Rash with very small blisters on hands, feet, and diaper area; may be tender or painful if pressed
- Sore throat
- Ulcers in the throat (including tonsils), mouth, and tongue

Signs and tests

A history of recent illness and a physical examination, demonstrating the characteristic vesicles on the hands and feet, are usually sufficient to diagnose the disease.

Treatment

There is no specific treatment for the infection other than relief of symptoms.

Treatment with antibiotics does not work and is not recommended. Over-the-counter medicines, such as [acetaminophen](#) (Tylenol) or [ibuprofen](#) can be used to treat fever. [Aspirin](#) should not be used in viral illnesses in children under age 12 years.

Salt water mouth rinses (1/2 teaspoon of salt to 1 glass of warm water) may be soothing if the child is able to rinse without swallowing. Make sure your child gets plenty of fluids. Extra fluid is needed when a fever is present. The best fluids are cold milk products. Many children refuse juices and sodas because their acid content causes burning pain in the ulcers.

Expectations (prognosis)

Generally, complete recovery occurs in 5 to 7 days.

Complications

- Dehydration
- Febrile seizures

Calling your health care provider

Call your health care provider if there are signs of complications, such as pain in neck or arms and legs. Emergency symptoms include convulsions.

You should also call if:

- Medicine does not lower a high fever
- Signs of dehydration occur:
 - Dry skin and mucus membranes
- Weight loss
- Irritability
- Lethargy
- Decreased or dark urine

Prevention

Avoid contact with people with known illness. Practice strict hand washing if in contact with infected children.

References

1. Abzug MJ. Nonpolio enteroviruses. In: Kliegman RM, Behrman RE, Jenson HB, Stanton BF, eds. *Nelson Textbook of Pediatrics*. 19th ed. Philadelphia, Pa: Saunders Elsevier; 2011:chap 242.
2. Habif TP. Exanthems and drug eruptions. In: Habif TP, ed. *Clinical Dermatology*. 5th ed. St. Louis, Mo: Mosby Elsevier; 2009:chap 14.

Review Date: 8/7/2011.

Reviewed by: Linda J. Vorvick, MD, Medical Director, MEDEX Northwest Division of Physician Assistant Studies, University of Washington, School of Medicine. Also reviewed by David Zieve, MD, MHA, Medical Director, A.D.A.M., Inc.

Figures



Hand-foot-and-mouth disease causes ulcers on throat and tonsils, and a distinctive rash on palms and soles

Hand-foot-mouth disease

Hand-foot-and-mouth disease is a viral infection caused by Coxsackievirus that usually begins in the throat. Symptoms include; fever, sore throat, ulcers in the throat, headache, and a rash with blisters on the palms of the hands and soles of the feet.

Review Date: 11/13/2011.

Reviewed by: David C. Dugdale, III, MD, Professor of Medicine, Division of General Medicine, Department of Medicine, University of Washington School of Medicine. Also reviewed by David Zieve, MD, MHA, Medical Director, A.D.A.M., Inc.



Hand, foot, and mouth disease on the soles

Hand, foot, and mouth disease is caused by a coxsackievirus. It produces mouth ulcers and small blisters (vesicles) on the hands and feet. The vesicles often have a reddish border with a white or lighter colored area in the center.

Review Date: 5/13/2011.

Reviewed by: Kevin Berman, MD, PhD, Atlanta Center for Dermatologic Disease, Atlanta, GA. Review provided by VeriMed Healthcare Network. Also reviewed by David Zieve, MD, MHA, Medical Director, A.D.A.M., Inc.



Hand, foot, and mouth disease on the hand

The typical skin lesion of hand, foot, and mouth disease includes small blisters (vesicles) with bright red (erythematous) borders. These are typically on the pads of the fingers and palms of the hands.

Review Date: 8/7/2011.

Reviewed by: Linda J. Vorvick, MD, Medical Director, MEDEX
Northwest Division of Physician Assistant Studies, University of
Washington, School of Medicine. Also reviewed by David Zieve, MD,
MHA, Medical Director, A.D.A.M., Inc.



Hand, foot, and mouth disease on the foot

The typical skin lesion of hand, foot, and mouth disease includes small blisters (vesicles) with bright red (erythematous) borders. These are typically on the pads of the fingers and palms of the hands, but can also be found on the sole of the foot, as in this picture.

Review Date: 8/7/2011.

Reviewed by: Linda J. Vorvick, MD, Medical Director, MEDEX
Northwest Division of Physician Assistant Studies, University of
Washington, School of Medicine. Also reviewed by David Zieve, MD,
MHA, Medical Director, A.D.A.M., Inc.



Hand, foot, and mouth disease - mouth

Hand, foot and mouth disease is a common childhood illness. The symptoms include small, painful blisters on the fingers, palms, toes and soles, and ulcers in the mouth. This photograph shows the small whitish to yellowish mouth ulcers with surrounding redness.

Review Date: 8/7/2011.

Reviewed by: Linda J. Vorvick, MD, Medical Director, MEDEX
Northwest Division of Physician Assistant Studies, University of
Washington, School of Medicine. Also reviewed by David Zieve, MD,
MHA, Medical Director, A.D.A.M., Inc.



Hand, foot, and mouth disease on the foot

Hand, foot and mouth disease is a common childhood illness. The symptoms include small, painful blisters on the fingers, palms, toes and soles; and ulcers in the mouth. This photograph shows the small blisters (vesicles) on the feet.

Review Date: 8/7/2011.

Reviewed by: Linda J. Vorvick, MD, Medical Director, MEDEX Northwest Division of Physician Assistant Studies, University of Washington, School of Medicine. Also reviewed by David Zieve, MD, MHA, Medical Director, A.D.A.M., Inc.



[A.D.A.M., Disclaimer](#)

A.D.A.M., Inc. is accredited by URAC, also known as the American Accreditation HealthCare Commission (<http://www.urac.org/>). URAC's accreditation program is an independent audit to verify that A.D.A.M. follows rigorous standards of quality and accountability. A.D.A.M. is among the first to achieve this important distinction for online health information and services. Learn more about A.D.A.M.'s editorial policy, editorial process and privacy policy. A.D.A.M. is also a founding member of Hi-Ethics and subscribes to the principles of the Health on the Net Foundation (<http://www.hon.ch/>).

The information provided herein should not be used during any medical emergency or for the diagnosis or treatment of any medical condition. A licensed medical professional should be consulted for diagnosis and treatment of any and all medical conditions. Call 911 for all medical emergencies. Links to other sites are provided for information only – they do not constitute endorsements of those other sites. © 1997-2011 A.D.A.M., Inc. Any duplication or distribution of the information contained herein is strictly prohibited.

[Copyright](#) © 2012, A.D.A.M., Inc.