

**IN THIS ISSUE: HAND, FOOT, AND MOUTH DISEASE**

**Hand, Foot, and Mouth Disease**

**Introduction**

Hand, foot, and mouth disease (HFMD) is a contagious viral infection most common in children younger than 5 years of age.<sup>1</sup> Person-to-person transmission is likely to increase as school is back in session and after-school activities have resumed. The virus can spread quickly in settings such as schools and childcare facilities.<sup>2</sup>

**Epidemiology**

Hand, foot, and mouth disease is caused by viruses from the Enterovirus family. These include:

- Coxsackievirus A16 - most common cause of HFMD in the United States.
- Coxsackievirus A6 – associated with more severe disease outcomes.
- Enterovirus 71 (EV-A71) – mainly linked with cases and outbreaks in East and Southeast Asia. Although rare, EV-A71 is associated with higher level of severity including encephalitis.<sup>2</sup>

HFMD is spread easily through person-to-person contact, contact with respiratory droplets containing viral particles, close contact with an infected person (e.g., hugging, kissing, sharing eating utensils), coming into contact with an infected person’s feces, or with a contaminated surface or object. In rare incidences, exposure may occur by swallowing water contaminated with viral particles that has not been properly treated with chlorine.<sup>2</sup>

Over a five-year period (2016-2021), Washoe County has seen 56 reported outbreaks of HFMD in local schools and childcare facilities. The number of outbreaks has decreased since COVID restrictions and exclusions were implemented.

**Prevention**

There is no vaccine approved in the United States to protect against the viruses that cause HFMD, therefore the best prevention techniques are as follows:<sup>3</sup>

- Wash hands with soap and water for at least 20 seconds
- Clean and disinfect commonly touched surfaces

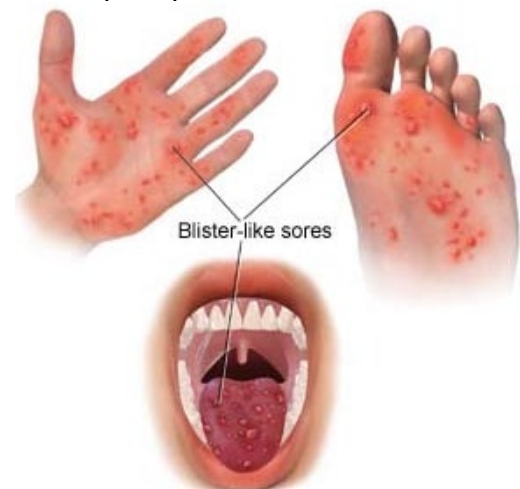
- Clean and disinfect shared items such as toys and doorknobs
- Avoid touching eyes, nose, and mouth with unwashed hands
- Avoid close contact (e.g., hugging or kissing) with anyone that is sick with HFMD
- Isolate persons with active symptoms
- Avoid touching blisters or scabs as they may contain viral particles<sup>4</sup>

The CDC recommends first washing contaminated objects with soap and water, then disinfecting with a solution of chlorine bleach or a cleaning product that contains bleach. Mixed bleach solutions should contain one tablespoon of bleach with four cups of water.<sup>5</sup> The Environmental Protection Agency also lists products containing ethyl alcohol as being effective against coxsackieviruses.<sup>6</sup>

**Signs & Symptoms**

People can experience fever and flu-like symptoms three to six days after being exposed. Clinical manifestations of HFMD usually include fever, mouth sores, and skin rash commonly seen on the hands, mouth, and/or feet.

**Figure 1: Hand, Foot, and Mouth Disease Rash**



Source: <https://www.drugs.com/cg/hand-foot-and-mouth-disease-inpatient-care.html>

Additional symptoms may include loss of appetite, sore throat, and generally feeling unwell. One to two days after the onset of fever, persons may experience herpangina, or painful mouth sores. These start as

small, red spots that eventually blister. Lastly, a skin rash develops on the palms of their hands and soles of their feet. Rash may also appear on the knees, buttocks, or genital areas. Rash manifests as flat, with red spots, and sometimes blistering may occur.<sup>4</sup> Symptoms can last between 7 to 10 days.

Most people recover from HFMD with little to no medical intervention. Complications are rare but can include dehydration, fingernail loss, toenail loss, viral (aseptic) meningitis, encephalitis, or paralysis. Pregnant women should contact their healthcare provider if they have been exposed to HFMD or if they are symptomatic. Medical history and stage of pregnancy can impact recovery.<sup>4</sup>

Parents should seek assistance from a healthcare provider under these circumstances<sup>8</sup>:

- If the child becomes dehydrated
- If symptoms do not improve after 10 days
- If the child is immunocompromised
- If symptoms are classified as severe
- If the child is younger than 6 months

## Diagnosis & Testing

Typically, providers diagnose HFMD through visual evaluation, however if testing is conducted, samples from the throat, blisters, or stool can be collected and sent to a laboratory to test for the virus.<sup>7</sup>

## Treatment

There is no specific treatment for HFMD; although, most people get better on their own within 7 to 10 days of onset of symptoms. It is advised to treat symptoms and to prevent dehydration from occurring. Mouth sores can be painful and make it difficult to swallow so ensure that the patient is drinking plenty of fluids. Over-the-counter pain medications can be used to relieve fevers and pain caused by sores. Never administer aspirin to a child.

## Reporting

While HFMD is not a reportable condition, if a school or childcare facility suspects an outbreak of HFMD, please report to the Washoe County Health District. **To report an outbreak, call 775-328-2447 or fax your report to the WCHD at 775-328-3764.**

## Acknowledgement

Thank you to all health care providers, infection control practitioners, laboratory staff, as well as schools and daycares for their reporting and collaboration to make this work possible.

## References

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