



## Focus on hand, foot and mouth disease

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Hand, foot and mouth disease (HFMD) is a common viral illness that causes sores to form in the mouth, on the hands, feet, buttocks and occasionally, the genitals. It mostly affects infants and children younger than five years of age. However, all age groups, including adults, can get HFMD.

HFMD typically occurs during the summer and autumn months in South Africa but can occur at any time of the year. It is a highly contagious disease that can spread quickly from one child to another in day-care centres or crèches causing small outbreaks.

It is important to note that HFMD only occurs in humans and does not occur in animals. It is different to foot-and-mouth disease (also known as hoof-and-mouth disease) which affects animals such as cattle, goats, pigs or sheep.

### What causes HFMD?

HFMD is caused by a group of viruses that belong to the enterovirus family. Several enterovirus serotypes have been shown to cause HFMD. However, coxsackievirus A16 is the serotype most frequently associated with HFMD. Another virus belonging to the enterovirus family, namely enterovirus A71, is also a common cause of HFMD.

### How does HFMD spread?

A person with HFMD is most infectious during the first week of illness. However, in some cases the virus may be excreted in the stool for weeks or even months after the symptoms have cleared.

The viruses that cause HFMD are spread from person to person:

- Via direct contact or contact with droplets from the mouth or nose (such as nasal mucous, saliva or sputum) of an infected person.
- Through an infected person's faeces (faecal-oral route), for example, when someone touches faeces when changing the

nappy of a child with HFMD and then touches his/her nose, mouth or eyes.

- Via contact with the fluid that is found in the vesicles (blisters).

### What are the signs and symptoms of HFMD?

Signs and symptoms usually start three to five days (ranging from two to seven days) after a person has been infected.

The primary symptom of HFMD is rash that forms in the mouth and on the palms of the hands and soles of the feet. The rash can also appear on other areas of the body, for example, the wrists, elbows, ankles, knees, buttocks or genital areas. The rash may appear as small red spots, bumps or blisters and is usually painful.

Swallowing may be painful due to sores in the mouth. As a result, children with HFMD may drool more than usual and may not want to eat or drink anything, except for cold fluids.

Other signs and symptoms in children include fever, sore throat, loss of appetite or tiredness.



**Figure 1:** Hand, foot and mouth disease: rash on a child's foot. Adapted from the Centers for Disease Control and Prevention (CDC). Available from: <https://www.cdc.gov/hand-foot-mouth/index.html>.

## When should a child be referred to a doctor?

HFMD is usually a mild, self-limiting illness and symptoms typically clear within seven to 10 days. Infection is often mild and most children do not need to consult a doctor and may be treated at home. However, in some circumstances it may be necessary to consult a healthcare professional, for example, if the child:

- Has a weakened immune system.
- Is very young, particularly those who are younger than six months of age.
- Is dehydrated or not able to drink enough fluid to stay hydrated; for example, if a baby or young child has not had a wet nappy for four to six hours or an older child has not needed to urinate for six to eight hours.
- Seems to be getting worse.

In addition, children with severe illness, complications as well as those whose symptoms have not improved after 10 days should be referred.

Although rare, complications can occur in a small number of people with HFMD. Complications occur more commonly with enterovirus A71. For example, enterovirus A71 has been associated with neurological complications such as viral (aseptic) meningitis, brainstem encephalitis (swelling of the brain) or polio-like paralysis. It is therefore important that a child who develops a severe headache, a stiff neck or backpain during the course of his/her illness is referred to a medical professional for urgent assessment.

## How is HFMD treated?

There is no specific treatment for HFMD. In most cases HFMD goes away on its own and children may require no or minimal medical treatment. Blisters should be left to dry naturally and should not be pierced.

Antibiotics cannot be used in the treatment of HFMD, because HFMD is a viral infection and antibiotics are not effective against viruses.

Over-the-counter medication such as paracetamol or ibuprofen may be helpful to relief symptoms such as pain from the sores and fever. Due to the risk of Reye's syndrome, aspirin should not be given to children under 16 years of age.

### Topical oral analgesics

There are discrepancies regarding the use of topical oral therapies in the management of HFMD. Some authors suggest that topical analgesics (such as lidocaine oral gel, benzydamine sprays or mouth washes or choline salicylate oral gels) "may be considered although there is no evidence of efficacy".

Given the lack of evidence of benefit from clinical trials, as well as the difficulty of application in young children and potential side-effects (e.g. toxicity from systemic absorption), experts do not routinely recommend topical oral therapies containing lidocaine or other topical therapies to coat oral lesions and/or sooth pain in children with HFMD.

It is also important to note that some of the topical analgesic oral therapies may not be suitable for use in children, for example:

- Choline salicylate oral gel may precipitate Reye's syndrome and is therefore contraindicated in children under 16 years of age.
- Local anaesthetics such as lidocaine and benzocaine should not be used in children under two years of age.
- Mouthwashes may not be suitable for young children due to the risk of the solution being swallowed. Age restrictions vary and depend on the product used, for example, oral rinses containing benzydamine are not recommended in children under 12 years of age, while oral rinses containing benzydamine/chlorhexidine are not recommended for children under six years of age.

### Other supportive measures

Children with sores in the mouth may not want to eat or drink as swallowing may be painful. It is, however, important that children with HFMD are encouraged to stay hydrated and to drink enough liquids.

Lifestyle tips and home remedies:

- Provide frequent sips of drinks as this may help to prevent dehydration and may help with painful sores in the mouth.
- Cold foods, such as ice cream or popsicles may help to numb the pain.
- Soft foods, such as soup or mashed potato may be easier to swallow and do not require much chewing.
- Avoid:
  - Spicy foods
  - Salty foods
  - Acidic foods
  - Beverages such as soda or citrus fruit and fruit drinks. Milk-based fluids may be more tolerable than acidic beverages.
- Rinse mouth with warm salt water after meals and as needed throughout the day (provided that the child is able to rinse without swallowing).

### How is HFMD prevented?

There are no vaccines available to protect against HFMD. Measures that may help to prevent the spread of HFMD include:

- Regular handwashing with soap and water for at least 20 seconds.
- Cleaning and disinfecting surfaces and shared items such as stationery and toys that an infected child may have touched.
- Not sharing eating utensils such as cutlery or cups.
- Avoiding or minimising direct/close contact with someone who has HFMD, especially during the first week of illness when he/she is most infectious.

### Take home message

HFMD occurs worldwide and is most common among infants and children. There is no specific treatment for HFMD. Management is supportive and aimed at relieving discomfort, pain and fever. Infection is often mild and nearly all patients with HFMD will get better in seven to 10 days. However, some patients may require medical attention.

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