CONDITION

Hand-foot-mouth disease

Hand-foot-mouth disease is a contagious viral infection that causes mouth sores and a blister-like rash, mainly in young children.

WHAT IT IS
Short-term contagious viral infection

BODY SYSTEM
Skin, mouth, and digestive system

MAIN SYMPTOMS
Fever, mouth sores, hand and foot rash

WHAT CAUSES IT
Infection with enteroviruses

HOW IT IS DIAGNOSED
Clinical examination; viral testing when needed

MAIN TREATMENT
Fluids, pain relief, and supportive care

CAN IT BE CURED?
Yes - immune system usually clears infection

IS IT AN EMERGENCY?
Sometimes, with severe dehydration or neurological symptoms

LONG-TERM OUTLOOK
Full recovery is usual within seven to ten days

Overview

Hand-foot-mouth disease is a common viral condition. It mainly affects babies and children younger than 5, but older children and adults can also catch it.

Despite the similar name, it is not related to foot-and-mouth disease in animals. People cannot catch hand-foot-mouth disease from cattle, sheep, or pigs.

The condition usually begins with a fever, sore throat, reduced appetite, or tiredness. Painful spots can then develop inside the mouth. A flat or blister-like rash often appears on the hands and feet. Some people also develop spots on the legs, arms, or buttocks.

Most infections are mild and clear within 7 to 10 days. The main short-term concern is dehydration because mouth sores can make drinking painful. Serious complications are

uncommon, but certain symptoms need urgent assessment.

Hand-foot-mouth disease spreads easily, especially in nurseries, schools, and households. Good handwashing and careful cleaning can reduce spread, although it is not always possible to prevent infection.

Symptoms

Symptoms usually begin about 3 to 6 days after contact with the virus. Not everyone has every symptom, and adults may have mild symptoms or none at all.

Early symptoms can include:

Small red spots may then appear inside the mouth. They can become painful blisters or shallow ulcers. These sores are often found on the tongue, gums, and inside of the cheeks.

A child with mouth sores may refuse food or drink, drool more than usual, or only want cold liquids. Babies may be unsettled during feeding.

The skin rash may be flat, raised, or blister-like. It is most often found on the palms, fingers, soles, and toes. It may also affect the knees, elbows, legs, arms, or buttocks. The rash is not usually very itchy, although it can feel sore.

Some enteroviruses cause a more widespread rash. Skin may peel as the rash heals. Fingernails or toenails occasionally develop lines or loosen several weeks later. This is usually temporary, and the nails normally grow back.

- Fever
- Sore throat
- Reduced appetite
- Tiredness or irritability
- Feeling generally unwell

Causes and risk factors

Hand-foot-mouth disease is caused by a group of viruses called enteroviruses. Coxsackieviruses are common causes. Enterovirus A71 can also cause the condition and has been linked with more serious complications in some outbreaks.

The virus is present in saliva, mucus from the nose and throat, fluid from blisters, and stool. It can spread through close personal contact, cough or sneeze droplets, shared objects, and

surfaces contaminated with stool. Diaper changing is a common opportunity for spread.

People are usually most contagious during the first week of illness. However, the virus can remain in stool for several weeks after symptoms have gone. Someone without obvious symptoms may also pass it on.

Young children have a higher risk because they may not yet have immunity to the viruses involved. Infection also spreads more easily where children have close contact, such as nurseries, preschools, schools, and family homes.

Having hand-foot-mouth disease once does not provide complete protection. Several different viruses can cause it, so a person can catch it again.

Diagnosis

A healthcare professional can usually identify hand-foot-mouth disease by examining the mouth sores and skin rash and asking how the symptoms developed. The location and appearance of the spots are often enough to make a clinical diagnosis.

Tests are not routinely needed. If symptoms are severe, unusual, or part of an outbreak, a throat swab, blister sample, or stool sample may be tested for enterovirus. A laboratory test called polymerase chain reaction, or PCR, can detect the virus's genetic material.

Other conditions can resemble hand-foot-mouth disease. These include chickenpox, cold sores, canker sores, insect bites, and other viral rashes. Medical assessment may be useful when the rash does not have the typical pattern or when the diagnosis is uncertain.

Treatment and management

There is no routine antiviral treatment for hand-foot-mouth disease. Antibiotics like amoxicillin or doxycycline do not treat it because antibiotics work against bacteria, not viruses. The immune system usually clears the infection on its own.

The main goals are to prevent dehydration and make the person more comfortable. Offer frequent drinks. Cool fluids, ice pops, and soft foods may be easier to manage when the mouth is sore. Acidic, salty, spicy, or very hot foods can irritate the ulcers.

Age-appropriate paracetamol, also called acetaminophen, or ibuprofen may help with fever and pain. Follow the product label and advice from a pharmacist or healthcare professional. Aspirin should not be given to children or teenagers with a viral illness because of the risk of a rare but serious condition called Reye syndrome.

Do not apply mouth-numbing gels or other medicines to a young child's mouth unless a healthcare professional has said the product is suitable. Some ingredients are unsafe for young children or can interfere with swallowing.

Keep blisters clean and allow them to heal naturally. Avoid deliberately breaking them because the fluid can contain virus and damaged skin may become infected.

Rest is helpful while fever or discomfort is present. A person can gradually return to normal food and activity as they feel better.

Complications

Dehydration is the most common complication. Mouth pain may cause a baby or child to drink much less than usual. Signs include a dry mouth, fewer wet diapers or trips to the toilet, no tears when crying, sunken eyes, or unusual sleepiness.

A blister may occasionally develop a bacterial skin infection, especially if it has been scratched or broken. Increasing redness, warmth, swelling, pain, or pus should be assessed.

Temporary nail changes can occur several weeks after the infection. A nail may develop a groove, stop growing briefly, or separate from the nail bed. This can look concerning, but the nail usually grows back without treatment.

Rarely, enteroviruses can affect the brain or the tissues around it. This can cause viral meningitis or encephalitis. Meningitis means inflammation of the protective layers around the brain and spinal cord. Encephalitis means inflammation of the brain itself.

Serious heart, lung, or nervous system complications are uncommon. They have been reported more often with enterovirus A71 than with typical coxsackievirus infections.

Prevention

Hand-foot-mouth disease cannot always be prevented. People may spread the virus before symptoms are recognised and for some time after they recover. There is no widely available vaccine that protects against all the viruses that cause it.

To reduce the chance of spread:

Alcohol-based hand sanitiser can be useful when soap and water are unavailable, but handwashing is especially important after contact with stool.

Children should stay home while they have a fever, feel too unwell to participate, or have uncontrolled drooling from mouth sores. They do not usually need to remain away until every

spot has disappeared because the virus may continue to be present in stool for weeks. Follow the rules of the child's school, nursery, or local public health service.

- Wash hands with soap and water after diaper changes or toilet use
- Help young children wash their hands thoroughly
- Clean frequently touched toys, bathroom surfaces, and eating areas
- Avoid sharing cups, cutlery, towels, and toothbrushes
- Avoid kissing and close face-to-face contact while someone is unwell
- Cover coughs and sneezes and dispose of tissues promptly
- Wash soiled clothes and bedding using normal laundry methods

Living with it and what to expect

Most people recover fully within 7 to 10 days. Fever often settles first. Mouth sores and the skin rash may take several more days to heal.

Drinking may be more difficult than eating during the first few days. Frequent small amounts are often easier than a full cup or bottle. As mouth pain improves, normal eating usually returns.

The spots generally heal without scarring. Some areas may peel or remain discoloured for a short time. Nail changes can appear after the person otherwise seems completely well. New nail growth usually replaces the affected area over the following months.

Hand-foot-mouth disease does not normally become a long-term condition. It does not usually cause lasting weakness or skin problems. A second infection is possible because immunity to one enterovirus does not protect against every other type.

Adults often have a similar course, although some have no symptoms. When symptoms do occur, painful mouth ulcers and sore skin can still interfere with eating, walking, or work for several days.

When to get medical help

Arrange routine or same-day medical advice if:

Seek urgent medical help if there are signs of significant dehydration, such as very little or no urine, marked drowsiness, a very dry mouth, sunken eyes, or an inability to keep fluids down.

Get emergency help for trouble breathing, blue or grey lips, a seizure, loss of consciousness,

severe confusion, new weakness, or difficulty waking.

A severe headache with a stiff neck, repeated vomiting, sensitivity to light, unusual sleepiness, or rapidly worsening illness also needs urgent assessment. These symptoms can have several causes and do not automatically mean there is a serious complication, but they should not be managed at home without advice.

- Drinking is difficult because of mouth pain
- Wet diapers or urination are noticeably less frequent
- Fever lasts more than three days
- Symptoms are severe or are not improving after about 10 days
- Blisters develop increasing redness, swelling, pain, or pus
- The person has a weakened immune system
- A very young baby develops symptoms

Common questions

Is hand-foot-mouth disease the same as foot-and-mouth disease?

No. Foot-and-mouth disease affects animals such as cattle, sheep, and pigs. It is caused by a different virus and is not the human condition described here.

Can adults get hand-foot-mouth disease?

Yes. Adults can become infected, particularly through close contact with young children. Some adults have no symptoms, while others develop fever, mouth ulcers, and a hand or foot rash.

How long is hand-foot-mouth disease contagious?

It is usually most contagious during the first week. The virus may remain in stool for several weeks, even after the rash and mouth sores have healed. Careful handwashing should continue after recovery.

Can my child get hand-foot-mouth disease twice?

Yes. Different enteroviruses can cause the condition. Immunity after one infection may not protect against another type.

When can my child return to nursery or school?

A child can often return when the fever has gone, they feel well enough to take part, and drooling from mouth sores is controlled. Local nursery, school, or public health rules may differ.

Do the blisters leave scars?

Usually not. The spots and blisters normally heal without scarring. Temporary peeling, colour changes, or nail changes can occur as the skin recovers.

Sources

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- Centers for Disease Control and Prevention. Signs and Symptoms of Hand, Foot, and Mouth Disease
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