Hand, foot and mouth disease

Introduction

Hand, foot and mouth disease is a viral infection that can affect young children.

It doesn't usually pose a serious threat to a child's health, but it can be be an unpleasant condition, particularly if it affects younger children.

Typical symptoms of hand, foot and mouth disease include:

- cold-like symptoms, such as loss of appetite, cough and a moderately high temperature of around 38-39°C (100.4-102.2°F)
- a non-itchy red rash, made up of spots or small fluid-filled sacs (vesicles), which usually develops on the hands and feet, but may also occur on the knees, elbows, groin and buttocks; sometimes the rash can develop into painful blisters
- painful mouth ulcers

Read more about the symptoms of hand, foot and mouth disease.

When to see your GP

Hand, foot and mouth disease is a self-limiting condition, which means it will get better on its own without treatment. The symptoms will usually pass within seven days.

However, speak to your GP or call NHS 111 if you're unsure whether your child has hand, foot and mouth disease.

You should also contact your GP if your child isn’t drinking any fluid or their symptoms last longer than seven days.

Treating hand, foot and mouth disease

There is currently no cure for hand, foot and mouth disease, so treatment involves making your child feel as comfortable as possible while waiting for the infection to take its course.

Possible treatment options include:

- using paracetamol, ibuprofen and mouth gels to relieve the pain of mouth ulcers
- drinking plenty of fluids to help relieve a high temperature

Read more about treating hand, foot and mouth disease.

What causes it?

Hand, foot and mouth disease is caused by a group of viruses known as enteroviruses. The most common types of viruses that can cause the condition are:

- coxsackievirus A16, A6 or A10
- enterovirus 71

Enterovirus 71 carries a higher risk of causing serious complications (see below).

Read more about the causes of hand, foot and mouth disease.

How the infection spreads

A person with hand, foot and mouth disease is highly contagious until about a week after the symptoms begin. The infection can be spread if:

- **contaminated droplets are transferred from an infected person** – for example, if an infected person coughs or sneezes, the droplets can be inhaled by another person or can contaminate surfaces, leading to the spread of infection
- **fecal matter (stool) is transferred from an infected person** – for example, if an infected person doesn't wash their hands properly after going to the toilet and then contaminates food or surfaces (the viruses can live for up to four weeks in a person's stools)
- **you come into contact with the fluids of an infected person's blisters or saliva**

Because of the way the infection is spread, outbreaks of hand, foot and mouth disease can occur in places where groups of children need to have their nappies changed or use a potty, such as nurseries or childcare centres.

You should keep your child away from school or nursery while they are unwell. However, there's no need to wait until the last blister has gone before your child can return to school or nursery, providing they are otherwise well.

However, some schools and nurseries may reserve the right to refuse to take your child until the condition has cleared up completely.

It is rare, but possible, to get hand, foot and mouth disease more than once, although not during the same outbreak. As they get older, most children will develop immunity to the viruses that cause the condition.

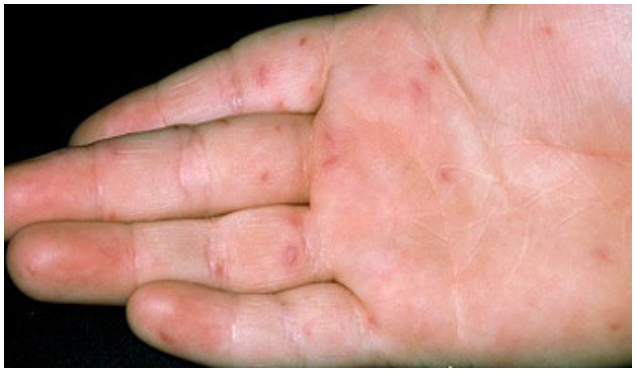
Complications

It's important to make sure that anyone with hand, foot and mouth disease keeps drinking fluids to avoid becoming dehydrated.

Dehydration can often occur because the mouth ulcers can make drinking fluids painful.

Life-threatening complications such as brain infections (encephalitis) have been reported during epidemics of hand, foot and mouth disease caused by the enterovirus 71. However, these complications are very rare and they have been limited to the Asia-Pacific region.

Read more about the complications of hand, foot and mouth disease.



Adults with hand, foot and mouth disease

Although hand, foot and mouth disease mainly affects children aged 10 or younger, adults can be affected.

Adults with the condition are also contagious and should stay away from the workplace until it has completely cleared up.

Hand, foot and mouth disease gets better on its own without treatment and complications are rare in adults. However, the symptoms can cause severe discomfort.

Is it the same as foot and mouth disease?

Hand, foot and mouth disease is **not** the same as foot and mouth disease, which affects cattle, sheep and pigs. The two infections are unrelated, and you cannot catch hand, foot and mouth disease from animals.

Symptoms of hand, foot and mouth disease

The symptoms of hand, foot and mouth disease usually develop between three and five days after initial exposure to the infection. This is known as the incubation period.

Early symptoms of hand, foot and mouth disease include:

- a high temperature (fever) – usually around 38-39°C (100.4-102.2°F)
- loss of appetite
- cough
- abdominal pain
- sore throat

Occasionally, hand, foot and mouth disease can cause vomiting, particularly if it is caused by the enterovirus 71 strain.

These early symptoms can last 12-48 hours.

Mouth ulcers

After one or two days, red spots develop inside the mouth, particularly around the tongue, gums and inside of the cheeks.

At first, the sores are about the size of a small button. They then rapidly develop into larger yellow-grey mouth ulcers surrounded by a red ring of tissue. You would normally expect to see 5-10 ulcers in the mouth.

The ulcers can be very painful and can make eating, drinking and swallowing difficult, which may cause a young child to dribble excessively.

The ulcers should pass within five to seven days.

Skin rash

Soon after the mouth ulcers appear, you will probably notice small red spots on your child's skin.

The most common places for the spots to develop are on the fingers, palms of the hand, soles of the feet and occasionally the buttocks and groin.

The spots are around 2-5mm in size, with a darkish-grey centre and a "rugby-ball" shape.

These are usually painless and non-itchy, although they can turn into small blisters, which are sometimes painful and tender. It is important not to burst any blisters, as this can spread the infection.

The skin rash and any blisters can last up to 10 days.

When to seek medical advice

Most cases of hand, foot and mouth disease do not require medical attention as the symptoms will pass within seven days, without the need for treatment.

However, if you're unsure whether your child does have hand, foot and mouth disease, you can contact your GP or NHS 111 for advice.

You should also contact your GP if:

- your child is unable or unwilling to drink any fluids
- your child is showing signs of dehydration, including not passing as much urine as normal
- your child's symptoms have not improved or worsen after seven days
- your child has additional symptoms, such as a change in mental state, seizures (fits) and changes in personality and behaviour

Causes of hand, foot and mouth disease

Hand, foot and mouth disease is caused by different types of enterovirus all belonging to a group called enterovirus A. The most common types are coxsackievirus A16, A6, A10 and enterovirus 71.

It is believed the virus first spreads to tissue inside the mouth, near the tonsils, and down to the digestive system.

The virus can then spread into nearby lymph nodes (glands) and then throughout the body, via the blood. The immune system (the body's defence against infection) controls the virus before it can spread to vital organs, such as the brain.

How it spreads

The viruses that cause hand, foot and mouth disease can be spread in two different ways:

- respiratory droplets – in almost the same way as a common cold
- surface or contact contamination with fecal matter (stool)

People usually become infected by picking up the virus on their hands from contaminated objects, then placing their hands near their mouth or nose. It is also possible to breathe in the virus if it is suspended in the air.

The viruses are unable to spread in this way once a person's symptoms have passed.

However, the viruses also occur in large amounts in the stools of an infected person, and can stay for up to four weeks after the symptoms have gone.

You can also become infected with hand, foot and mouth disease if you make contact with fluid from the blisters or saliva of someone who is infected.

The Asian epidemics

All of the most recent mass outbreaks of hand, foot and mouth disease cases have:

- been caused by the enterovirus 71
- occurred in East and South Asian countries, such as China, Taiwan, Malaysia and Vietnam

Diagnosing hand, foot and mouth disease

A number of viruses can cause sores and ulcers to develop in the mouth – not just those responsible for hand, foot and mouth disease.

However, your GP should be able to distinguish hand, foot and mouth disease from other viral infections by:

- the age of the affected person – hand, foot and mouth disease is most common in children under the age of 10
- the pattern of symptoms – symptoms begin with a high temperature and a sore throat; ulcers then develop in your child's mouth, followed by a spotty rash on their hands and feet
- the appearance of sores – these are smaller than chickenpox sores and usually have a distinctive colour, size and shape

Hand, foot and mouth disease can be confirmed (or ruled out) by taking a swab of the affected skin, throat or rectum and checking it for infection. For children, a stool sample may be used instead.

Treating hand, foot and mouth disease

There is no specific treatment for hand, foot and mouth disease. The condition usually clears up by itself after 7-10 days.

It is caused by a viral infection, meaning it cannot be treated with antibiotics. Antiviral medications are also ineffective in treating hand, foot and mouth disease.

You can help ease your child's symptoms by:

- encouraging them to rest and to drink plenty of fluids (water or milk are ideal; avoid anything acidic like cola or orange juice)
- offering them soft foods such as mashed potatoes and soups, as eating and swallowing will be uncomfortable
- using medication to relieve symptoms

Medication

Over-the-counter painkillers, such as paracetamol and ibuprofen, can help ease a sore throat and high temperature. For pregnant women, paracetamol is preferred to ibuprofen. Aspirin should not be given to children under the age of 16.

There are a number of gels, sprays and mouthwashes available for the treatment of mouth ulcers, although it is unclear how effective they actually are.

These include:

- **lidocaine gel** – which can be used in children of all ages
- **benzydamine mouth spray** – which can be used in children aged five and over
- **benzydamine mouth rinse** – which can be used in children aged 12 and over
- **choline salicylate gel** – which is only suitable for adults aged 16 and above and should not be used if you are pregnant or breastfeeding

Make sure you read the instructions that come with these types of medication as you can only use them a certain number of times over a course of a day.

An alternative method is to gargle with warm salty water – mix half a teaspoon of salt (2.5g) with a quarter of a litre (8 ounces) of water. It is important never to swallow the water, so this is not recommended for younger children.

If your child develops blisters, avoid piercing them as the fluid inside is infectious. The blisters should dry and then disappear within seven days.

Preventing the spread of infection

Hand, foot and mouth disease is very contagious. The best way to avoid catching and spreading is to avoid close contact with people who have the disease and to:

- always wash your hands after going to the toilet or handling nappies, and before preparing food
- encourage infected children to wash their hands regularly
- avoid sharing utensils with people who are infected.
- make sure work surfaces are clean
- clean any bedding or clothing that could have been contaminated with droplets of saliva, blister fluid or stools in a hot wash

Work, school and nursery

If your child has hand, foot and mouth disease, you should keep them away from school or nursery while they are feeling unwell.

They can usually return as soon as they feel better. There is no need to keep your child away from school or nursery until the last blister has healed, providing they are otherwise well.

However, this advice is only a recommendation. Individual nurseries and schools can refuse to take your child until their condition has completely cleared up.

The above advice also applies to adults with hand, foot and mouth disease who want to know when to return to work.

Complications of hand, foot and mouth disease

Hand, foot and mouth disease is usually a mild condition that clears up on its own without the need for treatment.

Complications are rare, but they could include those described below.

Dehydration

The sores that develop in your throat and mouth may make drinking and swallowing difficult, which can lead to dehydration. It is important for your child (or yourself) to drink plenty of fluids. Encourage your child to drink water and milk rather than acidic drinks like fruit juice.

It may be easier if you encourage your child to drink small amounts frequently rather than attempting to drink a large amount.

Contact your GP for advice if your child is unable or unwilling to drink any fluids, or if they are showing signs of dehydration, including:

- dry, wrinkled skin that sags slowly into position when pinched
- an inability to urinate, or not passing urine for eight hours
- irritability
- sunken eyes
- your child appears unusually tired and listless
- (in babies) a sunken soft spot (fontanelle) on their head

Mild cases of dehydration can be treated using rehydration solutions, which are available from most pharmacists.

More severe cases may require treatment in hospital.

Read more about dehydration.

Secondary infection

There is also a risk that the sores on the skin can become infected, especially if the sores are scratched.

Symptoms of skin infection include:

- pain, redness, swelling and a feeling of heat at the site of the infection
- a discharge of pus or liquid from the skin

Contact your GP if you think your child has a skin infection, as they may need to be treated with antibiotic cream or tablets.

Viral meningitis

In rare cases, hand, foot and mouth disease can lead to viral meningitis. Viral meningitis is an infection of the membranes that cover the brain and spinal cord (the meninges).

Viral meningitis is less severe than bacterial meningitis and does not pose a serious threat to health.

Most children will make a full recovery within two weeks.

Symptoms include:

- a high temperature (fever) of or above 38°C (100.4°F)
- drowsiness
- headache
- neck stiffness
- dislike of bright lights

There is no specific treatment for viral meningitis other than using painkillers to help relieve symptoms.

Read more about meningitis.

Encephalitis

The most serious, but rarest, complication of hand, foot and mouth disease is encephalitis – an infection that causes the brain tissue to swell and become inflamed.

It can cause brain damage and is potentially life threatening.

Early signs of encephalitis are flu-like symptoms, which can develop in a few hours or over a few days. Other symptoms include:

- being sick
- lethargy, drowsiness or confusion
- jerking of the limbs
- weakness or paralysis of the limbs
- dislike of bright lights
- other specific neurological symptoms

If you develop encephalitis, you will need to be admitted to hospital.

Most reported cases of encephalitis related to hand, foot and mouth disease have occurred during mass outbreaks of cases (epidemics) caused by enterovirus 71.

So far, these epidemics have only occurred in Asian countries, such as China and Taiwan.

Read more about encephalitis.

Pregnancy risk

There is limited evidence that catching hand, foot and mouth disease during the first three months of pregnancy could lead to a miscarriage, although this is very rare.

The risk is very small, but as a precaution, you may want to avoid close contact with people known to have an infection.

Pregnant women who catch it just before giving birth may pass it to their baby. However, babies born with the disease will usually only have mild symptoms.