

## Monkeypox

# Mpox (monkeypox) and HIV

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## Key points

- Mpox is transmitted during close personal contact, including sex.
- A two-dose vaccine can prevent mpox.
- People with untreated HIV are at greater risk for severe mpox.

Mpox (monkeypox) is caused by a virus related to smallpox; both are members of the orthopox virus family. Mpox typically causes a rash with sores that can appear anywhere on the body. Sometimes the skin lesions are accompanied by flu-like symptoms and swollen lymph nodes.

Mpox is not a new disease. It was first discovered in laboratory monkeys in 1958, though in animals it's most common in rodents, such as rats. The first human case was identified in 1970 in the Democratic Republic of Congo. Before the current outbreak, mpox was mostly seen in central and west Africa. However, cases have occasionally been found elsewhere, mostly among travellers.

In May 2022, an outbreak of monkeypox – now renamed mpox – began in the UK and soon spread throughout Europe and North America. As of December 2022, more than 83,000 cases have been identified worldwide. While cases have declined dramatically from their peak in July and August, mpox still poses a risk for some people, such as those living with untreated HIV.

## Transmission

Traditionally, the monkeypox virus has been transmitted from animals to people – for example, via bites or handling wild game – and from person to person through close contact. However, the 2022 outbreak is strongly linked to sex, especially having sex with multiple partners.

Anyone can get mpox through close personal contact. However, most of those affected in this outbreak have been sexually active gay, bisexual and other men who have sex with men. Some cases in the current outbreak have also been linked to household contact. Mother-to-child transmission can occur during pregnancy, delivery or close contact after birth. Transmission via occupational exposure in healthcare settings is rare. There have been no outbreaks linked to schools or day care centres.

Transmission may happen via skin-to-skin contact, kissing and respiratory droplets (such as those from coughing) at close range. However, mpox is not airborne like the SARS-CoV-2 coronavirus that causes COVID-19. It is not clear whether mpox can be transmitted in semen or vaginal fluid, and there is debate about whether it should be called a sexually transmitted infection (STI).

Transmission may also happen through contact with clothing, bed linens, towels or surfaces that have come in contact with fluid from sores. However, this does not appear to be a major factor in the current outbreak.

## Symptoms

You can have mpox for up to three weeks before symptoms start. The illness usually lasts two to four weeks. However, people with compromised immunity – including those with advanced HIV – may experience more severe illness or be unwell for longer.

The virus often starts with flu-like symptoms, such as fever, fatigue, headache, and muscle aches, as well as swollen lymph nodes. Its characteristic feature is a rash that can appear on your face, genitals, the palms of your hands, the soles of your feet or elsewhere on your body. Some people, especially those who had receptive oral or anal sex, develop painful sores in their throat or rectum and proctitis (rectal inflammation). On the other hand, some people have only one or a few lesions and may not develop other symptoms.

The sores, which may be painful or itchy, typically start out as flat red spots and progress to firm, raised lesions. These lesions fill with highly infectious clear fluid and then pus (yellowish fluid). The lesions may look like those of common STIs, chickenpox or other skin conditions, which can make diagnosis difficult. Some people have tested positive for HIV, mpox, and other STIs at the same time. Experts recommend that those at risk for, or presenting with, symptoms of mpox should also be tested for HIV and other STIs and given information on HIV pre-exposure prophylaxis (PrEP).

While most people with mpox recover without treatment, the sores can leave scars, and people with more severe disease may develop complications. These include infection of the lesions by a bacteria, sepsis (blood infection), pneumonia, encephalitis (brain inflammation) and vision loss due to lesions in the eyes.

Severe outcomes are more common among children, pregnant women and immunocompromised people. People on antiretroviral therapy with well-controlled HIV do not appear to be at greater risk. However, those with untreated HIV, unsuppressed viral load or a low CD4 count may have worse outcomes.

There are two main monkeypox virus strains in Africa, one of which has a death rate of around 10% and the other around 1%. The milder form is circulating elsewhere in the world in this outbreak, and mortality is lower than previously reported in Africa.

## Prevention

To reduce the risk of transmission if you have mpox, cover your sores with clothing or bandages. Because the monkeypox virus may be transmitted through respiratory droplets during face-to-face contact, cover your coughs and sneezes; wearing a well-fitted mask can help prevent transmission to close contacts. Healthcare workers caring for people with mpox should use standard infection control precautions.

Don't share sex toys or personal items such as toothbrushes. Avoid sharing clothes, bed linens or towels, and wash them in hot water. Disinfect surfaces that come in contact with fluid from mpox sores. It is not yet known whether mpox is passed on in semen, but condoms may prevent transmission via contact with sores on the genitals or in the rectum.

People with sores or other mpox symptoms should avoid sex and other close contact, get tested, and seek medical care if symptoms are severe or prolonged. Those who think they might have been exposed to mpox should self-monitor for symptoms for three weeks.

## Vaccination

Because the viruses are related, smallpox vaccination can prevent mpox as well. Routine smallpox vaccination ended in the 1970s and 1980s when smallpox was no longer a public health threat, but this may be one reason for the recent rise in cases of mpox. Most people around age 50 or older in the UK were previously vaccinated against smallpox. Protection appears to be long-lasting, though immunity may slowly decline over time.

The UK and other countries have approved a safe, smallpox and mpox vaccine known as MVA-BN; brand names include *Imvanex* and *Jynneos*. It has been tested and shown to be safe for people living with HIV. An older live virus vaccine known as ACAM2000 can cause serious side effects, especially in people with compromised immunity or skin conditions, and it is not considered safe for people with HIV.

The original MVA-BN regimen consisted of two doses administered by subcutaneous injection four weeks apart. However, in an effort to stretch limited vaccine supplies, some countries adopted a dose-sparing intradermal method in which one-fifth of the original dose is administered under the top layer of skin. With either method, two doses are needed for full protection, which is reached around two weeks after the second dose.

Mpox can be contained through so-called ring vaccination, or targeted vaccination of close contacts of an infected person. Because the monkeypox virus has a long incubation period, the vaccine can be administered up to two weeks after exposure, though it works best if given within four days; this is known as post-exposure prophylaxis. For broader protection, people at risk, such as those with multiple sex partners, can receive the vaccine in advance; this is known as pre-exposure prophylaxis. Experts do not recommend vaccination for the general population.

## Treatment

People with mild or moderate mpox symptoms usually do not need treatment beyond supportive care, such as bed rest, keeping lesions clean and over-the-counter medications (to manage pain, fever and itches). Some people may need stronger pain management. For more severe cases, antiviral medications used to treat smallpox can also be used for mpox, including tecovirimat (*TPOXX*), cidofovir (*Vistide*) and brincidofovir (*Tembexa*). Vaccinia immune globulin (smallpox antibodies) is another option.

Tecovirimat has not been well studied in people living with HIV. However, it does not have known drug interactions with antiretrovirals that would limit its use in HIV-positive people on treatment or HIV-negative people on PrEP. Some experts recommend that people with HIV should be considered for earlier mpox treatment because they are prone to more severe disease. Starting and staying on effective antiretroviral therapy and maintaining an undetectable HIV viral load reduces the risk of adverse mpox outcomes.

While recovering, health officials advise that people with mpox should isolate for three weeks. Sex partners and household members are at the greatest risk. Mpox is infectious until the sores heal completely and scabs fall off. Many experts think transmission happens mainly when people are symptomatic, but research is ongoing.

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