

Mpox: Key Facts on Causes, Symptoms, Transmission, and Treatment

Authored by

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Abstract

Mpox (Monkeypox) is an emerging infectious disease caused by the monkeypox virus. This bulletin provides an overview of the causative agent, transmission routes, clinical manifestations, diagnostic challenges, and current therapeutic approaches. The rapid evolution of the virus, particularly the emergence and fast spread of new clades with high disease severity and mortality rates, underscores the need for sustained global surveillance and coordinated public health interventions.

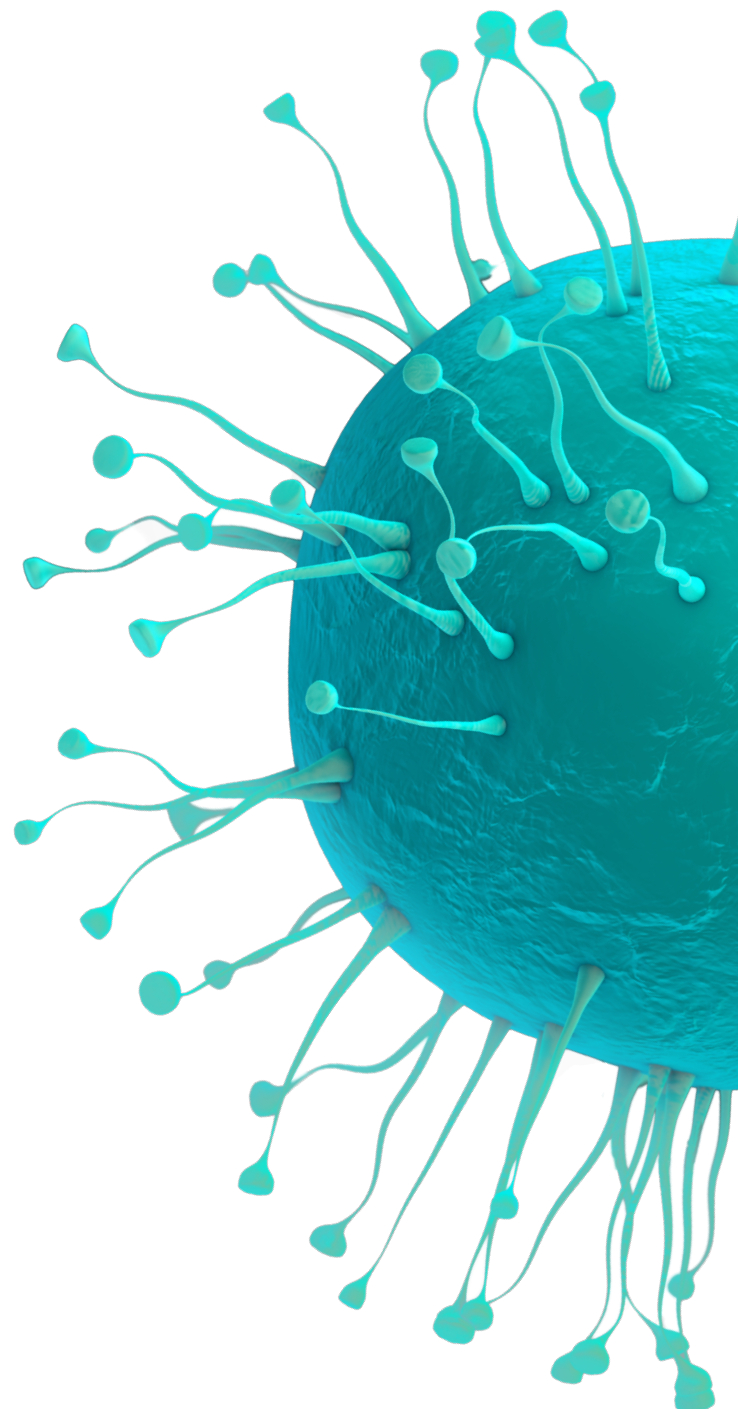
1. What is Mpox (Monkeypox)?

Mpox is an infectious disease caused by the monkeypox virus, part of the Orthopoxvirus genus within the Poxviridae family. These viruses cause pustular rashes and fever and are recognized by the WHO for their epidemic or pandemic potential. Mpox primarily affects humans and certain animals, first identified in lab monkeys in 1958, with the first human case in 1970 in the Democratic Republic of the Congo.

2. Why was a public health emergency declared for Mpox in August 2024?

The monkeypox virus is a zoonotic, double-stranded DNA virus with two main clades. Clade I, linked to Central and East Africa, is known for its higher virulence and death rates, with a case death rate of 3% to 10%. Clade II, associated with West Africa, is less virulent, with a case death rate typically under 1%.

The 2022 outbreak was driven by Clade IIb, which spread rapidly across Europe, the Americas, and all six WHO regions, resulting in approximately 87,000 cases and 112 deaths (a death rate of 0.13%) across 110 countries.



The 2023 outbreak, however, was driven by Clade 1b, a new strain from the Democratic Republic of the Congo (DRC), with a death rate exceeding 5.5%. This strain caused more than 1200 deaths among the 22,000 reported cases in the DRC and several other African countries. Due to the rapid spread and high death rate of Clade 1b, the World Health Organization (WHO) has declared a Public Health Emergency of International Concern (PHEIC). The WHO is concerned about the potential for further spread across Africa and beyond, emphasizing the need for a coordinated international response, including increased vaccination efforts and funding for surveillance and response activities.

3. How is the monkeypox virus transmitted to humans?

The virus enters the body through

- Broken skin,
- Mucosal surfaces
 - Mouth
 - Throat
 - Nose
 - Eye
 - Reproductive organs
 - Anus and rectum

3.1 Person-to-person transmission

It can occur through direct contact with infectious skin or lesions, including:

- **Face-to-face (talking or breathing)**
- **Skin-to-skin (touching or vaginal/anal sex)**
- **Mouth-to-mouth (kissing)**
- **Mouth-to-skin contact (oral sex or kissing the skin)**
- **Respiratory droplets or short-range aerosols from prolonged close contact**

People with mpox can pass the disease on to others until all sores have healed and a new layer of skin has formed.

3.2 Animal to human transmission

- **Bites or scratches by infected animals**
- **Contact with the infected animals during activities such as hunting, skinning, trapping, cooking, playing with carcasses, or eating animals.**

The extent of viral circulation in animal populations is not entirely known.

3.3 Transmission from contaminated objects

- **Contact with contaminated objects such as towel, bed linens, or clothing**
- **Through injuries by a needle or sharp instrument used on an infected person in health care, or in community setting such as tattoo parlours.**

4. What are the symptoms of monkeypox, and what causes them?

• Incubation Period

- During this period, the person is infected without symptoms.
- It lasts 1 to 21 days, commonly 7 to 14 days.

• Early Symptoms: Fever, sore throat, muscle aches, headaches, back pain, and low energy

- These symptoms occur due to the release of immune mediators as the body fights the infection.
- They last 1 to 4 days.

• Enlarged Lymph Nodes

- It can develop at the same time as or slightly before the rash. It can persist for the duration of the illness, often noticeable until the rash begins to heal.
- Once inside the body, the virus replicates at the entry site and spreads to nearby lymph nodes, causing them to enlarge. Lymph nodes are organs that are distributed throughout the body and filter foreign substances like the monkeypox virus.

• Rash Formation

- Typically starts 1 to 3 days after the fever begins and lasts for 2 to 4 weeks.
- The virus spreads through the bloodstream to the skin, causing a rash that goes through several stages: flat lesions (macules), raised bumps (papules), fluid-filled blisters (vesicles), and pustules that crust over and scab.
- The rash, which is often itchy or painful, can appear anywhere on the body, including the face, palms of hands, soles of feet, mouth, throat, groin, genital areas and anus.
- Some people may have a few skin lesions and others have hundreds or more.

• Full Recovery

- It occurs within 2 to 4 weeks from the onset of symptoms. The scabs eventually fall off, leaving marks that may fade over time.

• Other Highlights

- Some people can be infected without developing any symptoms.
- Some people have painful swelling of their rectum or pain and difficulty when peeing.
- Children, pregnant people and people with weak immune systems are at risk for complications from mpox.

5. How is mpox diagnosed?

Diagnosing mpox is challenging because it can resemble conditions like chickenpox, measles, bacterial skin infections, scabies, herpes, syphilis, other sexually transmitted infections, and medication allergies. Testing is essential for accurate diagnosis.

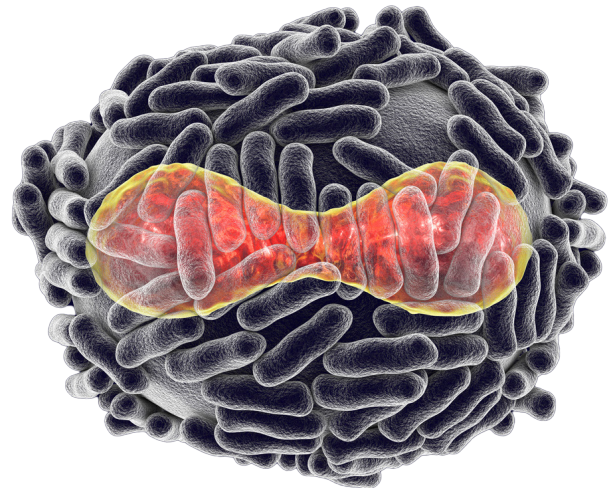
The preferred method is detecting viral DNA using real-time polymerase chain reaction (qPCR). The best diagnostic samples come from the rash—skin, fluid, or crusts—collected through vigorous swabbing. If skin lesions are absent, oropharyngeal, anal, or rectal swabs can be tested. Blood testing is not recommended, and antibody detection methods cannot distinguish between orthopoxviruses.

6. How is mpox treated?

The goal of treating mpox is to care for the rash, manage pain, and prevent complications. Early diagnosis through testing is crucial to manage symptoms, avoid complications, and prevent the disease's spread.

Vaccination can help prevent infection and should be administered within 4 days of exposure to someone with mpox (or up to 14 days if symptoms are not yet present). Vaccination is recommended for those at high risk, especially during an outbreak, including:

- Health workers at risk of exposure
- Men who have sex with men
- People with multiple sex partners
- Sex workers



Several antivirals, such as tecovirimat, initially developed for smallpox, have been used to treat mpox.

To manage mpox symptoms and prevent spreading the virus, individuals should isolate and follow these steps:

- Stay home and in your own room, if possible.
- Wash hands frequently with soap, water, or hand sanitizer, especially after touching sores.
- Wear a mask and cover lesions when around others until the rash heals.
- Keep skin dry and uncovered unless around others.
- Avoid touching items in shared spaces and disinfect regularly.
- Use saltwater rinses for mouth sores.
- Take sitz or warm baths with baking soda or Epsom salts for body sores.
- Use over-the-counter pain relievers like paracetamol or ibuprofen.
- Do not pop blisters or scratch sores to avoid slowing healing, spreading the rash, and causing infection.
- Do not shave areas with sores until scabs heal and new skin forms.

Continue isolation from symptom onset until lesions heal and scabs fall off.

References

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3. Centers for Disease Control and Prevention. 2023 DRC Mpox Outbreak. <https://www.cdc.gov/poxvirus/mpox/outbreak/2023-drc.html>