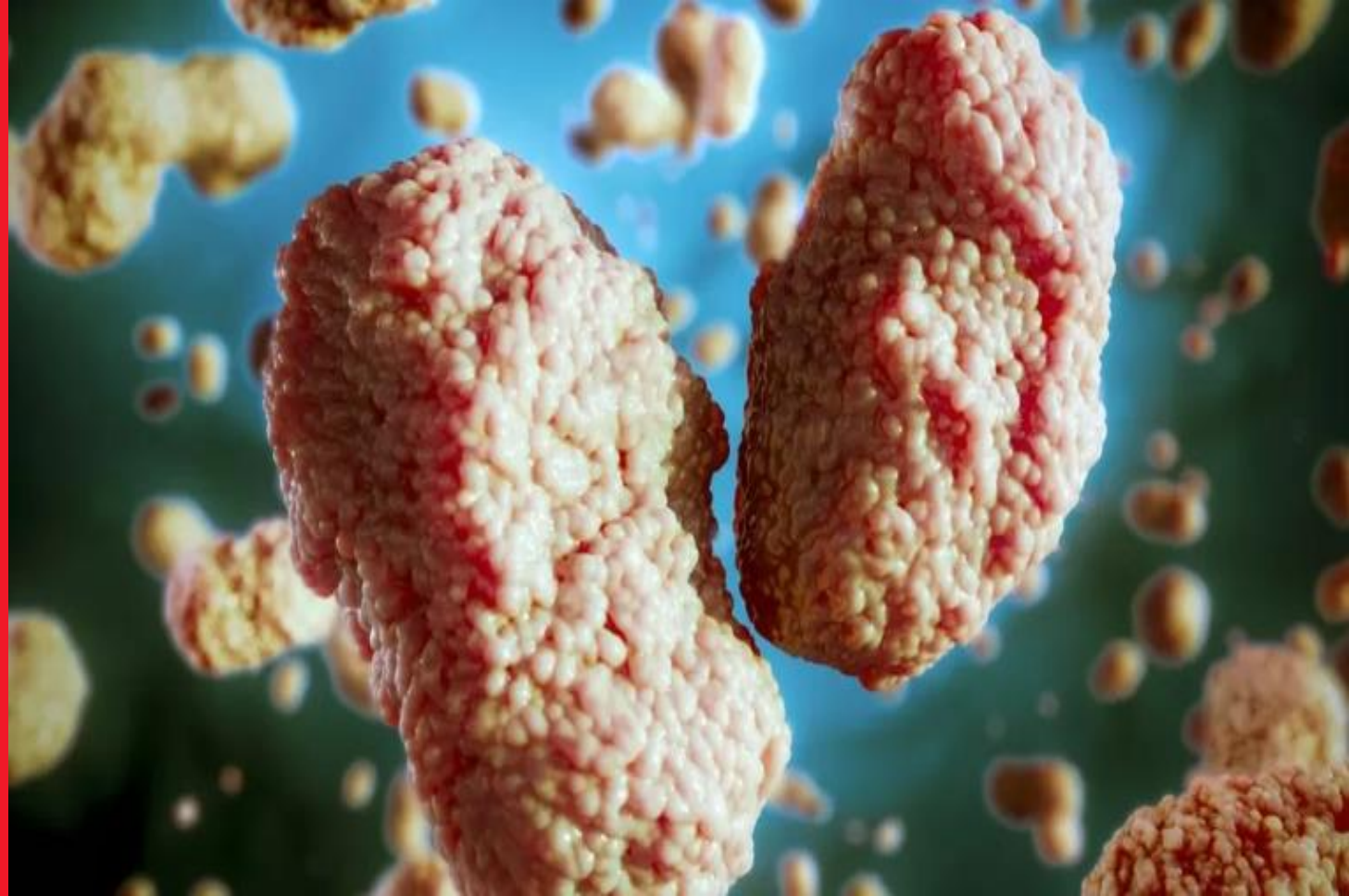


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# Monkeypox

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# Overview

- Monkeypox is caused by double-stranded DNA monkeypox virus, a member of the **Orthopoxvirus** genus in the family **Poxviridae**.
- Discovered in 1958 when two outbreaks of a pox-like disease occurred in colonies of monkeys kept for research.
- **Viral zoonosis** (a virus transmitted to humans from animals) with symptoms similar to those seen in the past in smallpox patients, although it is **clinically less severe**.
- Monkeypox primarily occurs in **central and west Africa**, often in proximity to tropical rainforests, and has been increasingly appearing in **urban areas**.
- Animal hosts include a range of **rodents and non-human primates**.

Monkeypox primarily occurs in **central and west Africa**, often in proximity to tropical rainforests, and has been increasingly appearing in **urban areas**. There are two distinct genetic clades of the monkeypox virus: the central **African (Congo Basin)** clade and the **west African clade**.

[2022 Monkeypox outbreak Global Map](#)



# Natural host of monkeypox virus

- Various animal species have been identified as susceptible to monkeypox virus.
- This includes rope squirrels, tree squirrels, Gambian pouched rats, dormice, non-human primates and other species.



# Outbreaks

- Human monkeypox was first identified **in humans in 1970** in the Democratic Republic of the Congo in a 9-month-old boy in a region where smallpox had been eliminated in 1968.
- Since 2017, **Nigeria** has experienced a large outbreak, with over 500 suspected cases and over 200 confirmed cases and a case fatality ratio of approximately 3%. Cases continue to be reported until today.
- Monkeypox is a disease of global public health importance as it not only affects countries in west and central Africa, but the rest of the world.
- In 2003, the first monkeypox outbreak outside of Africa was in **the United States of America** and was linked to contact with infected pet prairie dogs.
- **In May 2022**, multiple cases of monkeypox were identified in **several non-endemic countries**.

# Transmission

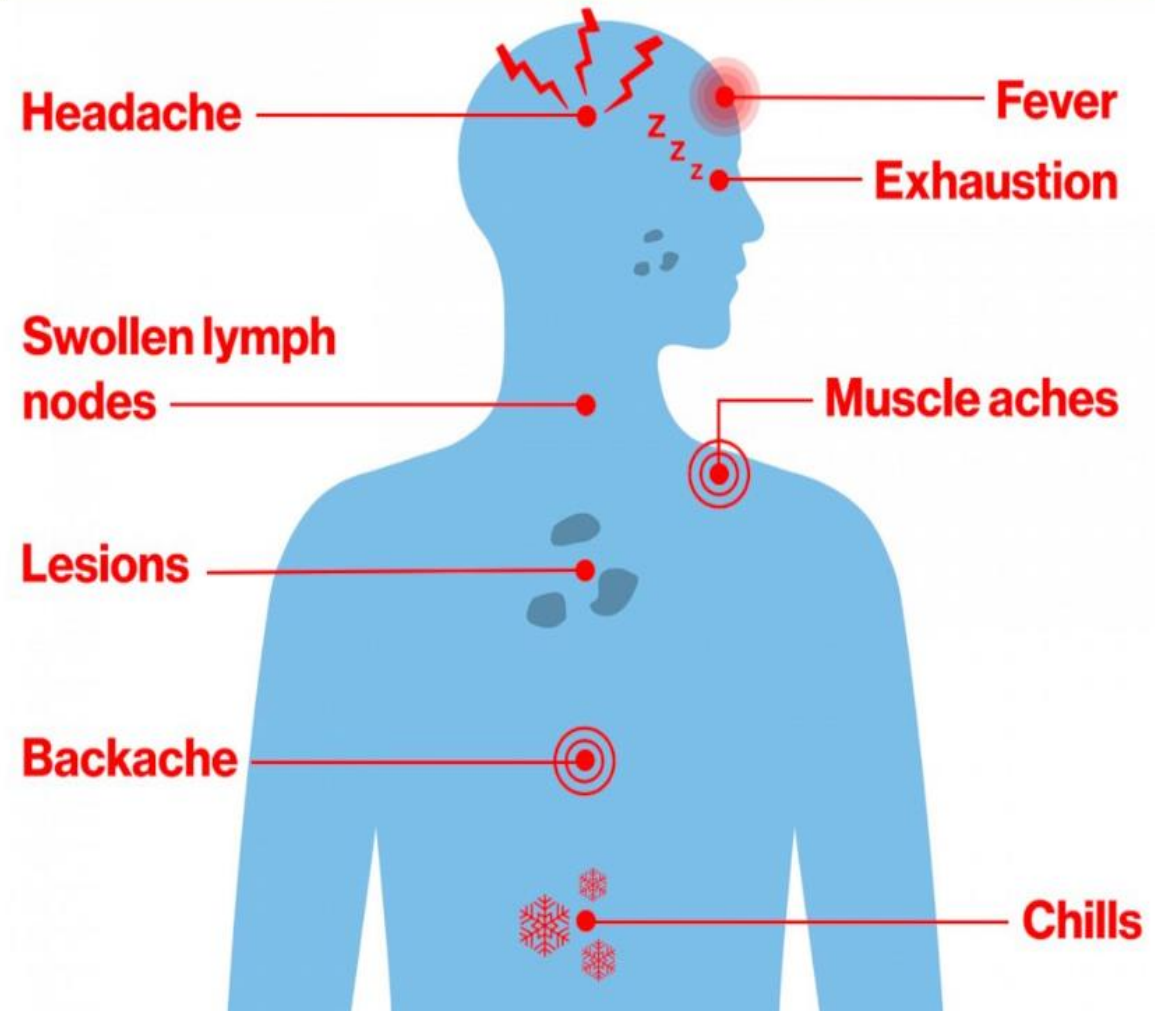
- **Animal-to-human (zoonotic) transmission** can occur from direct contact with the blood, bodily fluids, or cutaneous or mucosal lesions of infected animals.
- **The natural reservoir** of monkeypox has not yet been identified, though **rodents are the most likely**.
- **Human-to-human transmission** can result from close contact with respiratory secretions, skin lesions of an infected person or recently contaminated objects.
- **Transmission via droplet respiratory particles** usually requires prolonged face-to-face contact, which puts health workers, household members and other close contacts of active cases at greater risk.
- Transmission can also occur **via the placenta from mother to fetus** (which can lead to congenital monkeypox) or during close contact during and after birth.

# Signs and symptoms

- The **incubation period** is usually from **6 to 13 days** but can range from 5 to 21 days.
- **2 periods** of infection:
  1. the **invasion period** (0–5 days). Characterized by fever, intense headache, lymphadenopathy (swelling of the lymph nodes), back pain, myalgia (muscle aches) and intense asthenia (lack of energy).

## MONKEYPOX SYMPTOMS

LASTS BETWEEN 2-4 WEEKS



# Key Characteristics of Monkeypox Rash



2. the **skin eruption** usually begins within 1–3 days of appearance of fever. The **rash** tends to be more concentrated on the face and extremities rather than on the trunk. It affects the face (in 95% of cases), and palms of the hands and soles of the feet (in 75% of cases).



— Monkeypox is usually a **self-limited** disease with the symptoms lasting from **2 to 4 weeks**. Severe cases occur more commonly among children and are related to the extent of virus exposure, patient health status and nature of complications.

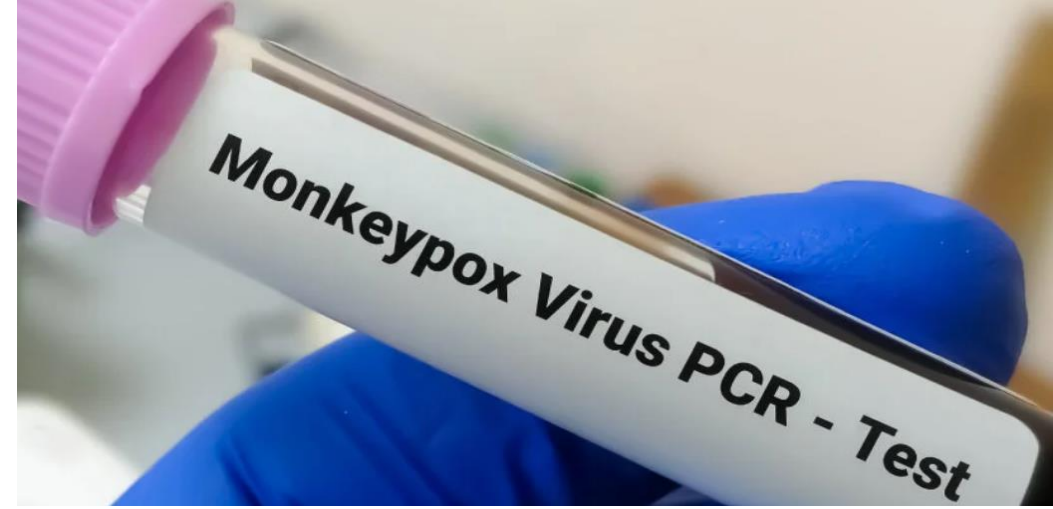
— Today persons **younger than 40 to 50 years of age** (depending on the country) may be **more susceptible** to monkeypox due to cessation of smallpox vaccination campaigns globally after eradication of the disease.

— In recent times, the **case fatality ratio** has been around **3–6%**.



# Diagnosis

- **The clinical differential diagnosis** that must be considered includes other rash illnesses, such as chickenpox, measles, bacterial skin infections, scabies, syphilis, and medication-associated allergies.  
**Lymphadenopathy** during the prodromal stage of illness can be a clinical feature to distinguish monkeypox from chickenpox or smallpox.
- **Polymerase chain reaction (PCR)** is the preferred laboratory test given its accuracy and sensitivity.



# Treatment

- Clinical care for monkeypox should be fully optimized to **alleviate symptoms, manage complications and prevent long-term sequelae.**
- Patients should be offered fluids and food to **maintain adequate nutritional status.**
- Secondary bacterial infections should be treated as indicated.
- **Tecovirimat**, is not yet widely available.



# Vaccination

Vaccination against smallpox is about **85 %** effective preventing monkeypox.

Evidence of prior vaccination against smallpox can usually be found **as a scar on the upper arm.**

In some countries vaccination is offered to persons who may be at risk such as **laboratory personnel, rapid response teams and health workers.**



# Prevention

- **Raising awareness of risk factors** and **educating people** about the measures they can take to reduce exposure to the virus is the main prevention strategy for monkeypox.
- During human monkeypox outbreaks, **close contact with infected persons** is the most significant risk factor for monkeypox virus infection.
- Unprotected contact with wild animals, especially those that are sick or dead, including their meat, blood and other parts must be avoided. Additionally, all foods containing animal meat or parts must be thoroughly cooked before eating.

# Thank you for your attention!

