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Monkeypox is a 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.

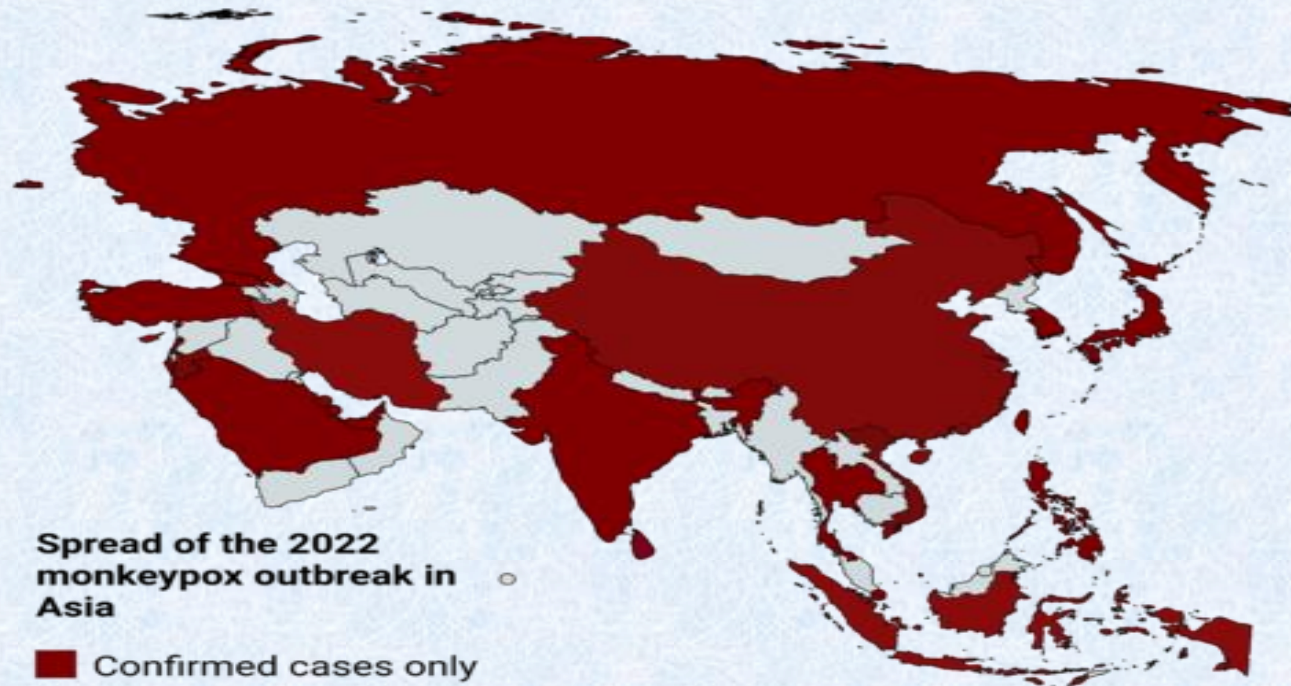
Orthopoxvirus is a genus of viruses in the family Poxviridae and subfamily Chordopoxvirinae. Vertebrates, including mammals and humans, and arthropods serve as natural hosts. There are 12 species in this genus. Diseases associated with this genus include smallpox, cowpox, horsepox, camelpox, and monkeypox

The first human case of monkeypox was recorded in 1970. Prior to the 2022 outbreak, monkey pox had been reported in people in several central and western African countries. Previously, almost all monkey pox cases in people outside of Africa were linked to international travel to countries where the disease commonly occurs or through imported animals

Epidemiology

Monkeypox is an emerging infectious disease that was initially recognized in 1958 but was not seen outside of Africa until 2003. It is caused by an orthopoxvirus, related to the smallpox virus, and presents with a pustular rash after a viral prodrome. A worldwide outbreak beginning in May, 2022, and affecting over 26 000 people to date, was declared a public health emergency of international concern by WHO on July 23, 2022.

Spread in Asia



Are there different types of monkeypox?

Yes, there are two strains of monkeypox.

The strain that is endemic in several countries in West Africa, which has been seen in outbreaks outside of Africa in 2022, is less severe than the strain that occurs in the Congo basin.

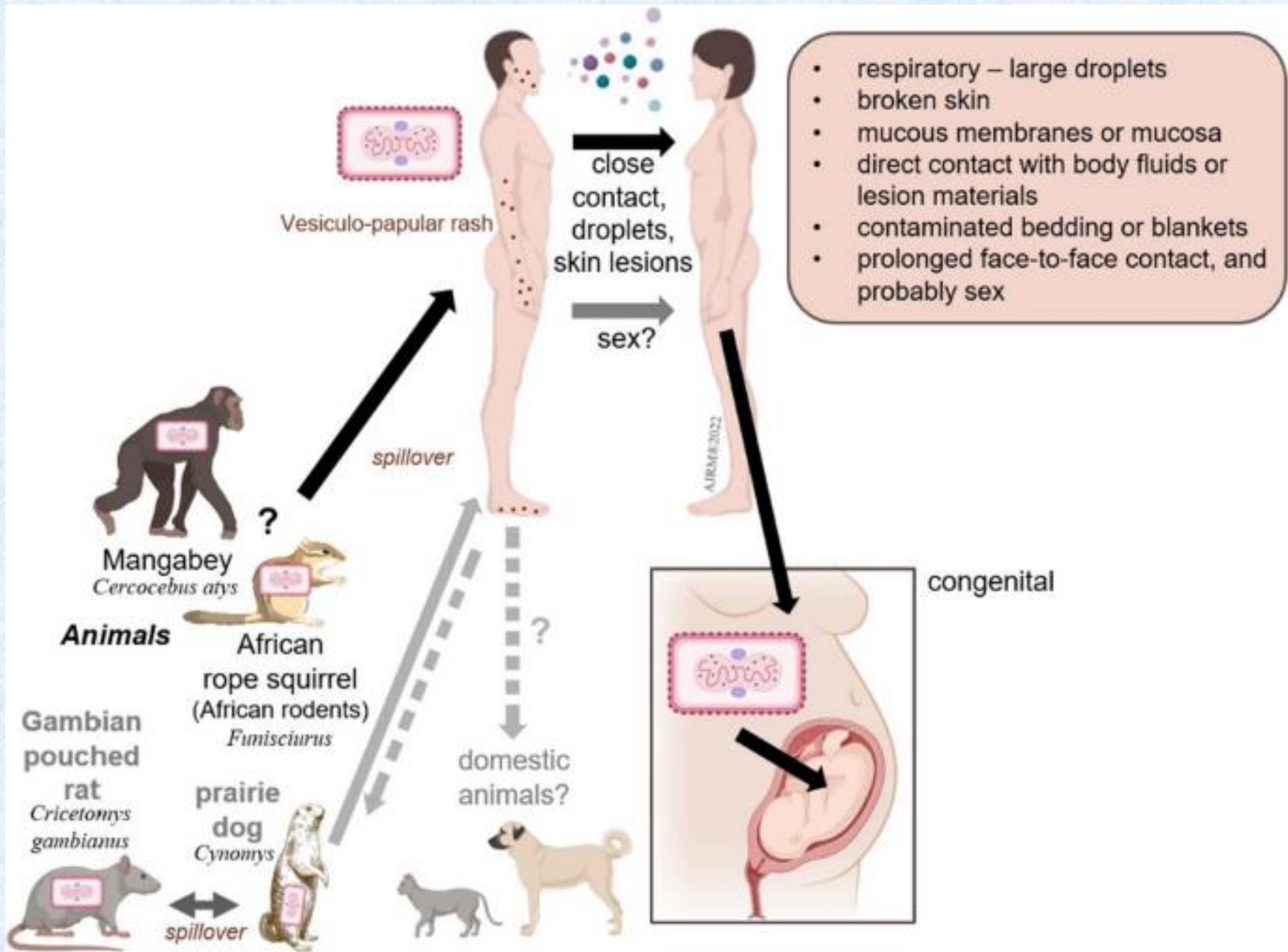
Transmition

Animal-to-human (zoonotic) transmission can occur from direct contact with the blood, bodily fluids, or cutaneous or mucosal membrane, evidence of monkeypox virus infection has been found in many animals including rope squirrels, tree squirrels, Gambian pouched rats, dormice, different species of monkeys and others lesions of infected animals

Mpox can spread to anyone through close, personal, often skin-to-skin contact include:
Direct contact with mpox rash and scabs from a person with mpox, as well as contact with their saliva, upper respiratory secretions (snot, mucus), and areas around the anus, rectum, or vagina.

Mpox and Pregnancy

Monkeypox virus can be spread to the fetus during pregnancy or to the newborn by close contact during and after birth.



Monkeypox Symptoms

Incubation period is 1 to 2 weeks before symptoms appear.

Early signs of monkeypox include the following flu-like symptoms:

Chills

Exhaustion

Fever

Headache

Muscle aches and backache

Swollen lymph nodes

These flu-like symptoms are then typically followed by the development of a rash. The rash can look like pimples or blisters and can be painful. Lesions can appear on the face, in the mouth, and on the hands, feet, chest, genitals, or anus. Some people get the rash first, followed by other, flu-like symptoms, while some experience only a rash.

The rash goes through different stages, including pimple-like bumps and blisters that crust and fall off before healing completely. The illness caused by monkeypox typically lasts 2 to 4 weeks.

MONKEYPOX

VIRUS

Symptoms

- Swollen Lymph Nodes
- Muscle Aches
- Fever
- Headache
- Rash

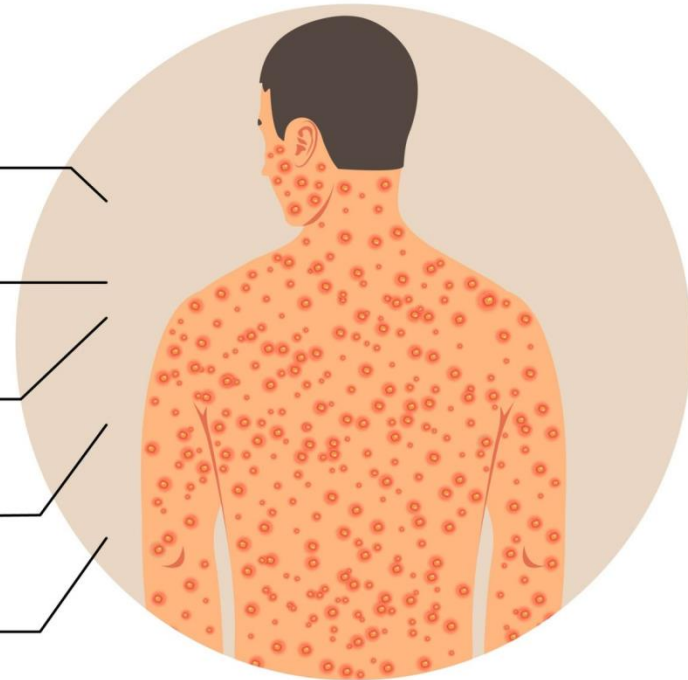




Image credit: who.int



What is Monkeypox disease?

Illness period

People usually develop symptoms 5 to 21 days after being exposed to the monkeypox virus. Symptoms typically last from **2 to 4 weeks** and may pass through several stages.

Complication

In most cases, the symptoms of monkeypox go away on their own within a few weeks. However, in some people, an infection can lead to medical complications and even death. Based on what we know from previous monkeypox outbreaks, new-born babies, children and people with underlying immune deficiencies may be at higher risk of more serious symptoms and death from monkeypox.

Complications from monkeypox include secondary skin infections, pneumonia, confusion, and eye problems. More recent complications include proctitis (sores and swelling inside the rectum that cause pain) and pain or difficulty when urinating. In the past, between 1% to 10% of people with monkeypox have died.

The most common **neurological manifestation** is a prodromal headache, usually generalized or frontal, that occurs in the majority of patients.

Asthenia and myalgias are also common prodromal symptoms. **Neuralgia** and mood disturbances can also manifest. In some people, **conjunctivitis** can occur, and corneal lesions can cause scarring with vision loss.

Rarely, encephalitis, with seizures, can occur.

Viral neuro invasiveness might be a particular concern in immunocompromised individuals. A study of 528 patients with monkeypox during the current outbreak found that 218 (41%) of them had a concurrent HIV infection, although most patients with HIV were well managed. There is concern for viral persistence in people with HIV/AIDS.

The main difference between symptoms of smallpox and monkeypox is that **monkeypox causes lymph nodes to swell (lymphadenopathy) while smallpox does not.** Lymph nodes may swell in the neck, armpits or groin and may occur on both sides of the body or just one.

Therapeutics

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. An antiviral agent known as ***tecovirimat*** that was developed for smallpox was licensed by the European Medicines Agency (EMA) for monkeypox in 2022 based on data in animal and human studies. It is not yet widely available. If used for patient care.

The recommended dose of [tecovirimat](#) depends upon the patient's weight; as an example, for those ≥ 40 kg to < 120 kg, the dose is 600 mg (three capsules) every 12 hours. Detailed dosing information, including dosing in children, is described in the Lexicomp drug information monograph on tecovirimat included within UpToDate.

Oral and intravenous (IV) preparations are available. The IV formulation should not be used in patients with severe renal impairment (creatinine clearance [CrCl] < 30 mL/min) and should be used with caution in those with moderate or mild kidney disease as well as those < 2 years of age due to accumulation of an ingredient in the IV formulation (hydroxypropyl-beta-cyclodextrin). For those who do receive the IV formulation, it can be transitioned to oral therapy once the patient can take oral medications.

The duration of treatment is typically 14 days. However, immunocompromised patients may require a longer course of therapy.

In persons with mpox, [tecovirimat](#) has generally been well tolerated . The most frequently reported side effects are headache, nausea, and abdominal pain.

Cidofovir/brincidofovir — [Cidofovir](#) has in vitro activity against monkeypox virus and has been shown to be effective against lethal monkeypox virus challenge in animal models

Trifluridine (and vidarabine) eye drops or ointments — If mpox lesions involve the eye or accessory structures of the eye (eg, lids), [trifluridine](#) (or vidarabine) eye drops or ointments can be used in addition to [tecovirimat](#). Drops or ointments should be applied every four hours for 7 to 10 days.

Prevention of Monkeypox virus



Wash

Wash your hands often with soap and water or use an alcohol-based hand sanitizer.



Don't touch

In Central and West Africa, avoid contact with animals that can spread monkeypox virus, usually rodents and primates. Also, avoid sick or dead animals, as well as bedding or other materials they have touched.

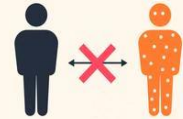


Cooked thoroughly

Eat meat that has been cooked thoroughly



Avoid



Avoid close, skin-to-skin contact with people who have a rash that looks like monkeypox.

IF YOU ARE SICK WITH MONKEYPOX

Isolate at home



If you have an active rash or other symptoms, stay in a separate room or area away from people or pets you live with, when possible.

Vaccination



CDC recommends vaccination for people who have been exposed to monkeypox and people who are at higher risk of being exposed to monkeypox

vaccination

Mpox is a disease caused by a virus that is closely related to the virus that causes smallpox. In the United States, two vaccines (JYNNEOS and ACAM2000) may be used to prevent the spread of mpox. Both vaccines are expected to provide a good level of protection against mpox. The main vaccine being used against mpox during the 2022 mpox outbreak is JYNNEOS.

JYNNEOS is a 2-dose vaccine. It was developed to protect against both mpox and smallpox. The vaccine may be given to children and adults who are at high risk for mpox. The second dose of JYNNEOS should be given 4 weeks after the first dose. The highest level of protection is expected to be reached 14 days after the second dose of the JYNNEOS vaccine.