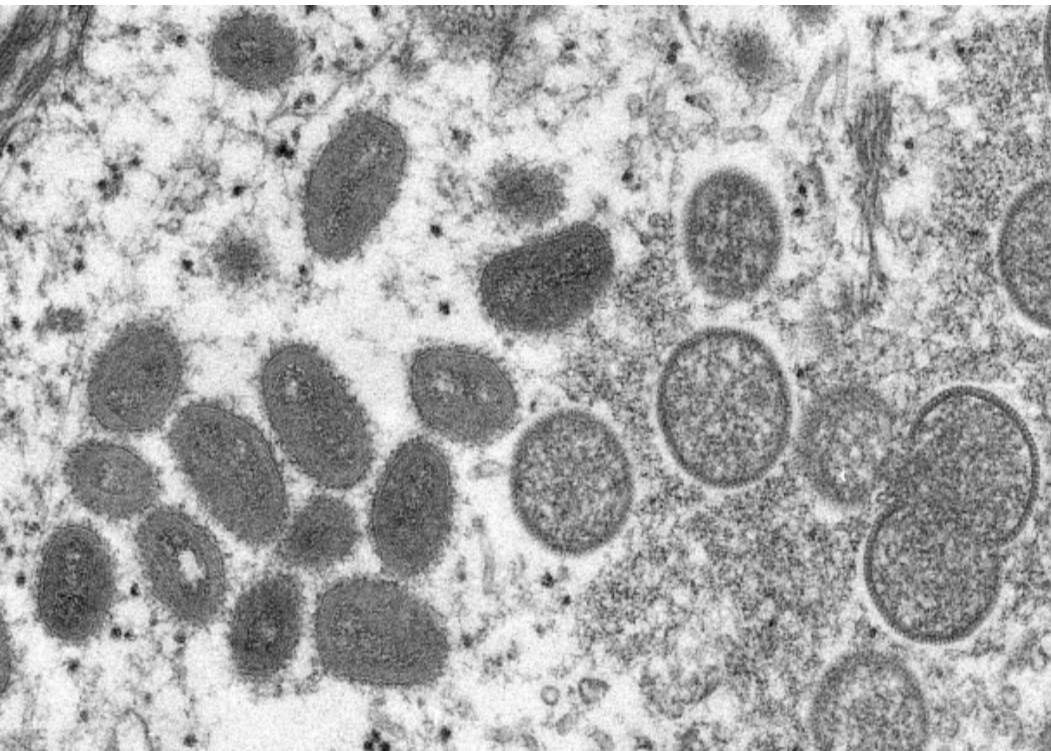


FAQ

Monkeypox

(Monkeypox virus, MPXV)



FAQ Monkeypox

What is monkeypox?

„Monkeypox“ is a virus disease caused by the monkeypox virus *Orthopoxvirus simiae* (MPXV) within the genus Orthopoxvirus. The virus is related to the classical human poxvirus (variola, smallpox) and the cowpox virus, which are also known to be zoonotic diseases.

Where does monkeypox occur?

The disease occurs naturally in West and Central Africa in countries such as the Central African Republic, Congo, Ghana, and Nigeria. Human infections have been observed there for decades and the numbers have increased over the last decade. So far, the disease has only sporadically been introduced into regions outside Africa.

Which animals are the reservoir for monkeypox?

This has not yet been conclusively clarified. MPXV has been detected in Africa e.g. in various rodent species (squirrels, rats, dormice) and shrews. In the USA, transmission to prairie dogs kept as pets have occurred after contact with rodents imported from Africa.

Monkeys, like humans, are dead-end hosts and can become infected and clinically ill through contact with a reservoir host. Little is known about outbreaks in monkeys in Africa because cases are not recorded systematically.

How is the pathogen transmitted?

The disease is transmitted through close contact with an infected (reservoir) host or contact with virus-containing materials such as scabs. Droplet infections are also possible. Particularly high concentrations of the virus are found in the typical pox lesions (skin lesions).

Ports of entry are very often minute skin lesions and all mucous membranes, possibly also the respiratory tract.

What symptoms do infected animals show?

Infected reservoir hosts usually develop no or only very mild symptoms. All dead-end hosts, such as infected monkeys or humans, may show flu-like symptoms during the initial phase (e.g. fever, fatigue, reduced food intake, swollen lymph nodes).

After a few days, the typical skin lesions resembling those of classical smallpox develop. In rare cases, the course in dead-end hosts may be severe, in very rare cases even fatal.

Can the pathogen be transmitted to humans?

Monkeypox is a classical zoonosis, i.e. the disease can be transmitted from infected animals to humans. The course of the disease is often similar to that of a mild human smallpox virus infection. However, severe or even fatal courses are also possible. Transmission from animals to humans can occur through contact with infected animals (bites, secretions and excretions, close contact when handling, carcasses during hunting, contact with MPXV-contaminated material) and through consumption of inadequately heated meat from infected animals. Droplet infections may also play a role.

Human-to-human infection is also possible and usually occurs through very close contact or contact with virus-containing material (including secretions and excretions). Ports of entry are often minute skin lesions or the mucous membranes (eye, mouth, nose, genitalia). Although transmissibility is rather low, a limited spread may occur.

In Africa, infections are more common in affected regions. Cases outside Africa mostly have been associated with visits to these regions.

In Germany, the [Robert Koch Institute](#) is responsible for questions related to human infections.

What is the difference between classical human smallpox, monkeypox, cowpox, and chickenpox?

Classical (human) smallpox is caused by smallpox viruses (variola virus) and is a life-threatening human infectious disease. These pathogens also belong to the orthopoxviruses. The disease has been eradicated worldwide since 1979 through successful vaccination campaigns. Since that time, vaccination has been used only in very rare special cases. Due to the close relationship, the classical smallpox vaccine also provides protection against monkeypox infection.

Monkeypox also belong to the orthopoxviruses. The course of monkeypox in humans is usually much milder than the severe form of classical smallpox. However, due to similar symptoms, each case must be thoroughly examined.

Cowpox virus (CPXV) is a very long-known representative of the orthopoxviruses. Monkeypox and cowpox can be transmitted from animals to humans and thus are zoonotic diseases. Cowpox occurs in a variety of host animals, with small rodents being the natural reservoir of the pathogen. From this reservoir, the viruses can be transmitted to numerous other species such as cattle, cats, and zoo animals (e.g. big cats, elephants, rhinos).

The causative agent of chickenpox (varicella), on the other hand, belongs to the herpesviruses. It is a very contagious infectious disease that mainly affects children. Therefore, children are often vaccinated against it prophylactically.

Based on the clinical symptoms the pathogens cannot be reliably differentiated; however, a clear differentiation is possible using laboratory diagnostic methods.

Can pets such as cats, dogs or hamsters become infected with monkeypox?

So far, there are neither studies nor reported cases. Experimentally, only rabbits have been shown to develop monkeypox. In the USA, cases in prairie dogs kept as pets occurred in 2003. They had become infected through contact with infected rodents imported from Africa.

It cannot be ruled out that other domestic animal species may also be susceptible. Transmission can occur through close contact with diseased humans or with strongly poxvirus-containing material, such as scabs.

How should pets be handled in households with monkeypox-infected humans?

Infected humans should avoid direct contact with their pets and pay special attention to hygiene measures such as washing their hands thoroughly and cleaning/disinfection of surfaces.

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Can pets infect each other with monkeypox?

This cannot be ruled out in the case of very close contact between animals or contact with poxvirus-containing material (e.g. scabs). However, it is most important to avoid transmission of the disease to animals by infected humans.

Can infected pets transmit monkeypox to humans?

This cannot be ruled out in the case of close contact. An outbreak in the USA in 2003 is known, where about 70 humans became infected through close contact with prairie dogs kept as pets.

Can farm animals such as pigs or cattle become infected with monkeypox?

So far, there is no evidence of this, not even from Central or West Africa, where monkeypox occurs naturally.

Could an animal reservoir for monkeypox develop in Europe - in domestic, farm, or wild animals (especially rodents)?

The host range of monkeypox for spillover infection (isolated infections through close contact with infected reservoir hosts) is broad, but it is questionable whether there are any animal species in Europe that could be suitable reservoir hosts.

In addition to a successful initial infection, the virus would have to be transmitted within the population to spread. It is possible that a single domestic animal such as a cat could become infected through direct contact with an affected human, but at present it seems rather unlikely that this would start a chain of infection.

The human infections currently observed are exclusively based on human-to-human transmission; a potential reservoir animal species would first need to have close contact with an infected human and then also be able to efficiently infect other animals.

The animal reservoir in Europe for cowpox, which are related to monkeypox, is primarily voles. An establishment of monkeypox in these reservoir hosts is also highly unlikely due to cross-immunity.

Therefore, the overall risk that monkeypox might establish in a new animal population in Europe can be considered as very low based on the current knowledge.

Nevertheless, further developments must be monitored.