



Questions and Answers About Monkeypox

Overview: About Monkeypox

What is monkeypox?

Monkeypox is a rare viral disease that occurs mainly in the rain forest countries of central and west Africa. The disease was first discovered in laboratory monkeys in 1958. Blood tests of animals in Africa later found evidence of monkeypox infection in a number of African rodents. The virus that causes monkeypox was recovered from an African squirrel, which may be the natural host. Laboratory studies showed that the virus also could infect mice, rats, and rabbits. In 1970, monkeypox was reported in humans for the first time. In June 2003, monkeypox was reported in prairie dogs and humans in the United States.

What is the cause of monkeypox?

Monkeypox is caused by *Monkeypox virus*, which belongs to the orthopoxvirus group of viruses. Other orthopoxviruses that cause infections in humans include variola (smallpox), vaccinia (used for smallpox vaccine), and cowpox viruses.

What are the clinical features of monkeypox?

In humans, monkeypox is similar to smallpox, although it is often milder. Unlike smallpox, monkeypox causes lymph nodes to swell (lymphadenopathy). The incubation period for monkeypox is about 12 days (range 7 to 17 days). The illness begins with fever, headache, muscle aches, backache, swollen lymph nodes, a general feeling of discomfort, and exhaustion. Within 1 to 3 days (sometimes longer) after the appearance of fever, the patient develops a papular rash (i.e., raised bumps), often first on the face but sometimes initially on other parts of the body. The lesions usually develop through several stages before crusting and falling off.

How long does monkeypox last?

The illness typically lasts for 2 to 4 weeks.

Is monkeypox fatal?

Studies of human monkeypox in rural central and west Africa – where people live in remote areas and are medically underserved – have reported case-fatality ratios of 1% to 10%.

How do people get monkeypox?

Monkeypox can spread to humans from an infected animal through an animal bite or direct contact with the animal's lesions or body fluids. The disease also can be spread from person to person, although it is much less infectious than smallpox. The virus is thought to be transmitted by respiratory droplets during direct and prolonged face-to-face contact. In addition, it is possible monkeypox can be spread by direct

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contact with body fluids of an infected person or with virus-contaminated objects, such as bedding or clothing.

Is there a treatment or vaccine for monkeypox?

Currently, there is no proven, safe treatment for monkeypox. Smallpox vaccine has been reported to reduce the risk of monkeypox among previously vaccinated persons in Africa. CDC is recommending that persons investigating monkeypox outbreaks and involved in caring for infected individuals or animals should receive a smallpox vaccination to protect against monkeypox. Persons who have had close or intimate contact with individuals or animals confirmed to have monkeypox should also be vaccinated. These persons can be vaccinated up to 14 days after exposure. CDC is not recommending preexposure vaccination for unexposed veterinarians, veterinary staff, or animal control officers, unless such persons are involved in field investigations.

Monkeypox in the United States

Where has human monkeypox been reported in the United States?

As of June 12, a total of 62 persons with suspected monkeypox had been reported in Wisconsin (21), Illinois (12), Indiana (28), and New Jersey (1). Monkeypox had been confirmed by laboratory tests in nine persons. At least 14 of the people with suspected monkeypox had been hospitalized for their illness; there have been no deaths related to the outbreak. The number of cases and states involved in the outbreak will likely change as the investigation continues. Check the [CDC Web site](#) for the [monkeypox case definition](#) and other current information about the outbreak.

How did these people become infected with monkeypox virus?

On the basis of preliminary investigations, it appears that most of the patients became ill after having close contact with infected prairie dogs that had been purchased as pets. Traceback investigations have found a common distributor of exotic pets where prairie dogs and Gambian giant rats were housed together in Illinois. The Gambian rats were shipped to the United States from Ghana. The shipment contained a large number of other small mammals that might have been the actual source of monkeypox. In addition, the possibility of human-to-human transmission in some cases cannot be excluded at this time.

What evidence is there that monkeypox virus causes these illnesses?

The clinical features of the illness in U.S. patients – fever, headache, muscle aches, and rash – are consistent with those of monkeypox. There is also strong laboratory evidence of monkeypox. Scientists at the Marshfield Clinic in Marshfield, Wisconsin, recovered viral isolates from a patient and a prairie dog. Using an electron microscope, they found that the virus had the size and appearance of a poxvirus ([see for electron microscopy images](#)). Laboratory tests at CDC – including several PCR-based assays, serologic tests, electron microscopy, immunohistochemistry, and gene sequencing – confirmed these results and showed that the virus is *Monkeypox virus*.

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Has monkeypox previously been reported in the United States?

No. Prior to the recent report of the disease in the United States, community-acquired monkeypox had never been reported outside of Africa.

How was monkeypox introduced in the United States?

There is not enough information to determine with certainty how monkeypox arrived in the United States. One hypothesis is that the prairie dogs contracted the virus from infected Gambian giant rats, which were housed in the same animal-holding facility or pet shop as the prairie dogs. The Gambian giant rats were likely imported into the United States from Africa. Studies have shown that Gambian rats and other rodents in Africa have evidence of monkeypox virus infection.

What should people do if they think they have been exposed to an animal or person with monkeypox?

Persons who think they may have been exposed to a person or an animal (e.g., pet prairie dog) with monkeypox should contact their health care provider and their state or local health department.

Could I have monkeypox?

It appears that most people who are ill with monkeypox in the United States got sick after close contact with infected prairie dogs that had been purchased as pets. Some patients may have been infected through contact with other infected animals, including a Gambian giant rat (purchased as an exotic pet) and a rabbit. If you have not had close contact with an exotic animal then the risk that you might have monkeypox is very low.

What measures have been taken to help contain the outbreak?

CDC and the public health departments in the affected states, together with the US Department of Agriculture, the Food and Drug Administration, and other agencies, are participating in a variety of activities to prevent further spread of monkeypox and identify the source of the outbreak. To assist with the investigation and outbreak response, CDC has taken the following steps:

- Activated its Emergency Operations Center.
- Deployed teams of medical officers, epidemiologists, and other experts to several states to assist with the investigation.
- Conducted extensive laboratory testing on specimens from humans and animals thought to have been exposed to monkeypox.
- Issued an interim U.S. case definition for human monkeypox.
- Issued interim guidelines on infection control and exposure management for patients in the health care and community settings.
- Issued an immediate embargo and prohibition on the importation, interstate transportation, sale, and release into the environment of certain rodents and prairie dogs.
- Provided ongoing assistance to state and local health departments in investigating possible cases of monkeypox in both humans and animals the United States.
- Worked with state and federal agencies to conduct trace the origin and distribution of potentially infected animals.

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- Issued an interim guidance on the use of smallpox vaccine, cidofovir, and vaccinia immune globulin in the setting of an outbreak of monkeypox.
- Issued interim guidelines for veterinarians.
- Issued interim guidance for persons who have frequent contact with animals, including pet owners, pet shop employees, animal handlers, and animal control officers.

Additional information will be posted on [CDC's Web site](#) as it becomes available.

For more information, visit www.cdc.gov/ncidod/monkeypox or call the CDC public response hotline at (888) 246-2675 (English), (888) 246-2857 (Español), or (866) 874-2646 (TTY)

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