



Questions and Answers About Monkeypox

Overview: About Monkeypox

What is monkeypox?

Monkeypox is a rare smallpox-like disease that occurs primarily in the rain forest countries of central and west Africa. The disease was discovered in laboratory monkeys in 1958. Studies of animals in Africa later found evidence of orthopoxvirus infection in a number of African rodents. The virus has been isolated from an African tree squirrel, which may be the natural host. Laboratory studies showed that monkeypox 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 members of this group of viruses 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, except that enlargement of lymph nodes (lymphadenopathy) is associated with monkeypox. About 12 days after exposure, 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 as high as 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. In human transmission, 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 contact with body fluids of an infected person or with virus-contaminated objects, such as bedding or clothing.

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Is there a treatment for monkeypox?

Currently, no treatment is available for monkeypox. Smallpox vaccine has been reported to reduce the risk of monkeypox among previously vaccinated persons in Africa. CDC is assessing the potential role of postexposure use of smallpox vaccine as well as therapeutic use of the antiviral drug cidofovir.

Monkeypox in the United States

Where has human monkeypox been reported in the United States?

As of June 9, a total of 33 persons with suspected monkeypox had been reported in Wisconsin (18), Illinois (10), and Indiana (5). Monkeypox had been confirmed by laboratory tests in four persons. Seven 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 www.cdc.gov/ncidod/monkeypox for 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. 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. 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 <http://research.marshfieldclinic.org/crc/prairiedog.asp> 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*.

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.

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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.

What measures are being taken to control the outbreak?

CDC and the public health departments in the affected states, together with the US Department of Agriculture and other agencies, are participating in a variety of activities to prevent further spread of monkeypox and identify the source of the outbreak. CDC has recommended a number of interim prevention and infection-control measures, which are described at the following Web site: www.cdc.gov/ncidod/monkeypox. Additional information will be posted on this 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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