



Hantavirus Disease

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What is hantavirus disease?

Hantavirus disease is caused by several different strains of hantaviruses. Hantaviruses are found in wild rodents, such as mice and rats, in different parts of the world. Hantaviruses found in North America can cause Hantavirus Pulmonary Syndrome, a severe lung disease which can be fatal. A milder form of the disease called Non-Pulmonary Hantavirus infection, can also occur. In the U.S., human hantavirus infections were first identified in the Southwest in 1993. Although most cases have occurred in states west of the Mississippi River, sporadic (single) cases have reported in several eastern states including New York.

Who gets hantavirus disease?

Anyone who comes into contact with infected rodent droppings, urine, saliva, nesting materials, or particles from these, can get hantavirus disease. Exposure to poorly ventilated areas with active rodent infestations in households, is the strongest risk factor for infection. Entering rarely opened or seasonally closed buildings with rodent activity may also cause infection. In addition, visitors to rural areas and nature resorts - campers, hikers, and others who take part in activities outdoors - can become exposed to the virus.

Among documented U.S. cases of HPS, patients with potential occupational exposures have included grain farmers, an extension livestock specialist, field biologists, and agricultural, mill, construction, utility and feedlot workers. Many of these individuals also had household exposures.

Hantavirus infections are rare. Sporadic (single) cases may occur throughout the country, but most, greater than 90%, of the cases have occurred in the west of the Mississippi River. From 1995-2017, five New York State residents were diagnosed with hantavirus infection.

How is hantavirus spread?

Hantavirus is spread from wild rodents, particularly mice and rats, to people. The virus, which is found in rodent urine, saliva, and feces (poop), can be easily released in the air in confined spaces when disturbed by rodents or human activities, such as sweeping or vacuuming. Breathing in the virus is the most common way of getting infected; however, people can also become infected by touching their mouth or nose after handling contaminated materials. While rare, a rodent's bite can also spread the virus. The types of hantavirus found in the U.S. cannot be spread from one person to another.

What are the symptoms of hantavirus disease, and how long after infection do they appear?

Most often symptoms occur 9-33 days after the virus enters the body, but symptoms can appear as early as one week or as late as eight weeks. Early symptoms are general and include fever, fatigue, and muscle pain. Other symptoms may include headache, nausea (a feeling of sickness in the stomach), vomiting, diarrhea (loose stool/poop) and dizziness. As the illness progresses, the main symptom of hantavirus infection is difficulty in breathing, which is caused by fluid build-up in the lungs, and which quickly progresses to an inability to breathe. Infected people sometimes die of respiratory failure or shock. Mild illnesses not requiring hospitalization also have been reported.

How is hantavirus disease diagnosed?

Early diagnosis can be challenging since initial symptoms can be vague. It is important to talk to health care providers about possible exposure to rats or mice or their droppings. If a person reports history of rodent exposure and is experiencing fever, fatigue, and shortness of breath, a physician may draw blood to test for hantavirus infection.

Is there any treatment?

There is no specific treatment, cure, or vaccine for hantavirus disease. Early supportive treatment of patients with hantavirus disease can improve survival. If there is a high degree of suspicion of hantavirus disease, patients should be immediately transferred to an emergency department or intensive care unit for close monitoring and care. Rapid diagnosis and supportive treatment have increase the chance of survival.

What is the best way to prevent exposure to hantaviruses?

Avoid contact with rodent droppings or urine. Avoid touching live or dead rodents. Do not disturb rodents, burrows or nests. The New York State Department of Health has created guidance on [mice](#) and [rat](#) control in the home and community.

What should be done to reduce exposure to hantavirus at home?

To reduce exposure to hantavirus around the home, prevent or eliminate rodent infestations. If rodents are in the home, consult an exterminator or your local health department for additional information on rodent removal and control. Snap traps are preferred to eliminate rodents. Glue traps or live traps are not recommended because the rodent may defecate or urinate which might spread the virus. Ideally, the snap traps should be set in an empty container, such as a milk carton lying on its side, or on newspaper to prevent contact with potentially infectious material. The used trap, box, or newspaper and rodent should be thoroughly wet down with a household disinfectant solution (such as detergent and 1½ cups of bleach for each gallon of water) and then placed in plastic bags for disposal. Use disposable gloves during cleanup and then wash hands with soap and water after completing the cleanup. After eliminating rodents from a building, you should then eliminate the conditions that attract them (improperly stored food sources, rubbish, etc.). Rodent-proofing measures should be applied to prevent rodent entry.

What should be done to clean up after rodent droppings?

The virus, which is able to survive in the environment for a few hours or days (for example, in dirt and dust in the shade or in rodent nests) can be killed by most household disinfectants, such as bleach, detergents, or alcohol. Exposure to the sun's UV rays can also kill the virus. Dwellings with large amounts of rodent droppings should first be aired before re-occupying the building. It is important to keep rodent dropping particles from getting into the air where they can be inhaled. The debris should be thoroughly wet down with a household disinfectant solution (such as detergent plus 1½ cups of bleach for each gallon of water) to reduce airborne dust. An old spray bottle with a fine mist is ideal for applying the solution. Debris should then be wiped up while wearing disposable gloves and placed in plastic bags for disposal, together with any cleanup materials such as paper towels. Do not use vacuum cleaners or sweep with brooms, which will create dust in the air. Use of disposable gloves, dust masks, long-sleeved clothing, and protective eyewear may help prevent personal exposure. Wash hands with soap and water after completing the cleanup.

What should be done to minimize the risk of hantavirus infection while camping?

- Before occupying abandoned or unused cabins, open them up to air them out for at least 30 minutes. Inspect for rodents and do not use cabins if there are signs of rodent infestation such as droppings or nests.
- If sleeping outdoors, check potential campsite grounds for rodent droppings and burrows.
- Avoid sleeping near woodpiles or garbage areas, which are commonly frequented by rodents.
- Avoid sleeping on bare ground; use a tent with a floor, mat or elevated cots if they are available.
- Do not leave pet food in feeding dishes which may attract rodents.
- Store foods in rodent-proof containers and promptly discard, bury or burn all garbage in accordance with campsite regulations.

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Department of Health

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