



Hantavirus

Hantaviruses exist worldwide, causing infections in rodents and rarely in humans. The virus, which is primarily transmitted from infected rodents, can cause severe health outcomes in humans.

General Hantavirus Information

Geographic Distribution

Many different hantaviruses exist throughout North America, with four main strains causing human illnesses throughout the continental US. In the US, the majority of human illnesses have occurred in rural residents of western states.

Hosts

Certain species of rodents serve as the primary hosts for hantaviruses. The deer mouse (*Peromyscus maniculatus*) is the primary host in the Western US while the white-footed mouse is the primary host in the eastern US. The rice and cotton rat also serve as hosts in the southeastern US. Deer mice are responsible for the majority of human infections.

The virus responsible for disease in the United States cannot be transmitted from human to human. Pets cannot transmit virus to humans or become sick.

Transmission

Hantaviruses are shed in the urine, feces, and saliva of infected rodents. Infectious particles

are then inhaled or ingested by a susceptible host. Rodents can also become infected through bites of other infected rodents, and humans can be infected through such bites. Staying or working in enclosed spaces with mice increases the risk for human infection by inhaling contaminated dust.

Signs and Symptoms

Rodent hosts infected with hantavirus typically do not show any clinical signs, although they may have a shorter lifespan.

Signs of human infection are typically present 1-8 weeks after exposure and can include:

- Fever
- Muscle and head aches
- Nausea & vomiting
- Severe respiratory disease
- Shortness of breath

Treatment

If you have any of the symptoms of hantavirus and were recently exposed to rodents or their droppings, consult your healthcare provider.

There is no specific treatment for hantavirus but supportive care can improve clinical outcome.

Prevention and Control

In wildlife, scientists have shown that natural habitats with more species of rodents and natural predators have lower rates of hantavirus infection in deer mice populations, so protecting natural ecosystems might be important to preventing hantavirus spread.

To prevent the disease while visiting the parks:

- Avoid contact with rodents and their droppings and clean promptly when found.
- Prevent rodents from entering buildings—seal any gap greater than one quarter of an inch.
- Properly store and dispose of food and trash, keep pet food in sealed containers, and keep vegetation at least 18 inches from buildings.

Sunlight and fresh air will quickly inactivate the virus.

One Health and Hantavirus

Human impacts on the environment, including land development, climate change, and the removal of natural predators, are affecting mouse behavior and habitats. Some of these changes to the land, air, and water promote the transmission and spread of diseases such as hantavirus in mouse populations and can thereby increase human risk.

By protecting natural environments and their ecological properties and processes, we can help protect ourselves from hantavirus – this is One Health in action.



Contact

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www.cdc.gov/hantavirus



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The deer mouse is native to most parks in the US.



Cleanup and indoor Rodent Trapping to Prevent Hantavirus

The following information is intended for light infestations in buildings or other structures. Consult public health and safety specialists before cleaning areas with a large rodent concentration and droppings, especially in enclosed, non-ventilated areas. These require more stringent personal protective measures and approved respirator fit testing. Consult a public health and safety officer if you are unsure the infestation is light or heavy.

Directions for cleaning up a light infestation

1. Open windows to ventilate rooms for at least 30 minutes prior to cleaning. Leave the area during this period. Direct sunlight also helps to inactivate the virus. Take care not to stir up dust and NEVER sweep or vacuum.
2. Dilute bleach with water to a 1:10 solution or use a pre-made disinfectant. Diluted solutions **MUST** be made fresh daily to be effective. Be sure chosen product is labeled as a disinfectant, has an EPA registration number, and consider how the product may affect the surface to be cleaned prior to use.
3. Wear gloves when cleaning. Re-usable gloves must be disinfected after use.
4. Soak the droppings, nest, rodent, and/or trap thoroughly with disinfectant solution and spray at least a 2-foot area around the trap. Spray/soak any associated droppings and urine. Allow to sit undisturbed for at **LEAST 10 minutes**.
5. Invert a plastic bag over the gloved hand, unfold it over the droppings and/or trap and rodent carcass as you pick up the trap and rodent carcass and tie-off or seal bag. Seal and place bag into another plastic bag and seal, always keep rodent at an arm's length and take care not to stir up dust. Traps can be reused if disinfected and/or left in sun for several hours.
6. Respray any exposed droppings with the disinfectant and then use a disposable paper towel to clean up any visible droppings.
7. Spray gloves (while on hands) and, if disposable, place in plastic bag, seal, and dispose. If a respirator and goggles were worn, lay in direct daylight for at least an hour. **Wash hands with soap and water after gloves are removed.**
8. Dispose of all bagged trash in a regularly emptied or collected receptacle in accordance with local trash policies.
9. Keep pre-made disinfectant (such as Lysol™) conveniently located (e.g., in vehicle) in the event of accidental or unexpected contact with rodent contaminated products.
10. Steam clean upholstery, shampoo with a disinfectant, or dispose of heavily contaminated items.

If you are uncertain of whether the infestation is light or heavy, consult with your safety manager or wear a respirator and goggles if you have been medically cleared and fit-tested for wear.



Soak mouse, trap, and any droppings or urine with EPA registered disinfectant and allow to sit for 10 minutes before wiping up.

Kit Components

- Snap traps (10 for a 12 ft x 12 ft room)
- Bleach or household disinfectant (e.g., Lysol™) concentrate and sprayer
- Plastic bags, small and large
- Gloves (doubled-up rubber, latex or nitrile or reusable rubber, nitrile)

Trapping Tips

- Place bait pan/trigger directly against wall— leave no space
- Placing two traps side-by-side can increase effectiveness
- Bait with cotton balls if traps will be left for a long period of time; refresh perishable baits such as peanut butter often
- Spring-loaded, multiple kill traps (e.g., Goodnature™ A24) may be a good option for buildings left vacant for long periods of time
- Leave snap traps set to monitor for rodent activity— fall months are highest risk for rodent ingress

More Information

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<https://www.nature.nps.gov/biology/ipm/Documents/NPS%20Rodent%20Exclusion%20Manual%20---%20Mechanical%20Rodent%20Proofing%20Techniques.pdf>

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