

# Hantavirus Pulmonary Syndrome (HPS): What You Need To Know

<b>RESERVOIR</b>	The <b>deer mouse</b> ( <i>Peromyscus maniculatus</i> ) is the primary reservoir of the hantavirus that causes hantavirus pulmonary syndrome (HPS) in the United States.
<b>TRANSMISSION</b>	Infected rodents shed the virus through urine, droppings, and saliva. HPS is transmitted to humans through a process called <b>aerosolization</b> . Aerosolization occurs when dried materials contaminated by rodent excreta or saliva are disturbed. Humans become infected by breathing in these infectious aerosols.  HPS in the United States <b>cannot</b> be transmitted from one person to another.  HPS in the United States is not known to be transmitted by farm animals, dogs, or cats or from rodents purchased from a pet store.
<b>RISK</b>	Anything that puts you in contact with <b>fresh rodent urine, droppings, saliva or nesting materials</b> can place you at risk for infection.
<b>VIRUS</b>	Hantaviruses have been shown to be viable in the environment for <b>2 to 3 days</b> at normal room temperature. The ultraviolet rays in sunlight kill hantaviruses.
<b>PREVENTION</b>	<b>Rodent control</b> in and around the home remains the primary strategy for preventing hantavirus infection.
<b>CLEANING</b>	Use a <b>bleach solution or household disinfectant</b> to effectively deactivate hantaviruses when cleaning rodent infestations.

## What is hantavirus pulmonary syndrome (HPS)?

Hantavirus pulmonary syndrome (HPS) is a deadly disease transmitted by infected rodents through urine, droppings, or saliva. Humans can contract the disease when they breathe in aerosolized virus.

## Who is at risk of getting HPS?

Anyone who comes into contact with rodents that carry hantavirus is at risk of HPS. Rodent infestation in and around the home remains the primary risk for hantavirus exposure. Even healthy individuals are at risk for HPS infection if exposed to the virus.

## Which rodents are known to be carriers of hantavirus that cause HPS in humans?

In the United States, deer mice, cotton and rice rats (in the Southeast), and the white-footed mouse (in the Northeast), are the only known rodent carriers of hantaviruses causing HPS.



DEER MOUSE

## How is HPS transmitted?

Hantavirus is transmitted by infected rodents through urine, droppings, or saliva. Individuals become infected with HPS after breathing fresh aerosolized urine, droppings, saliva, or nesting materials. Transmission can also occur when these materials are directly introduced into broken skin, the nose or the mouth. If a rodent with the virus bites someone, the virus may be spread to that person, but this type of transmission is rare.

## Can you contract HPS from another person?

HPS in the United States cannot be transmitted from one person to another. You cannot get the virus from touching or kissing a person who has HPS or from a health care worker who has treated someone with the disease. In addition, you cannot contract the virus from a blood transfusion in which you receive blood from a person who survived HPS.

## Can you contract HPS from other animals?

Hantaviruses that cause HPS in the United States are only known to be transmitted by certain species of rodents. HPS in the United States is not known to be transmitted by farm animals, dogs, or cats or from rodents purchased from a pet store.

## Can you contract HPS from the tops of soda pop cans?

There is no evidence that hantavirus can be spread via soda cans. Wiping off the top of soda cans is good practice. However, if you fail to wipe off soda cans it is highly unlikely that an individual would become sick from

hantavirus pulmonary syndrome. For more information, see Hoaxes and Rumors on the CDC Web page (<http://www.cdc.gov/ncidod/hoaxes/hanta-hoax.htm>).

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### **How long can hantavirus remain infectious in the environment?**

The length of time hantaviruses can remain infectious in the environment is variable and depends on environmental conditions, such as temperature and humidity, whether the virus is indoors or outdoors or exposed to the sun, and even on the rodent's diet (which would affect the chemistry of its urine). Viability for 2 or 3 days has been shown at normal room temperature. Exposure to sunlight will decrease the time of viability, and freezing temperatures will actually increase the time that the virus remains viable. Since the survival of infectious virus is measured in terms of hours or days, only active infestations of infected rodents result in conditions that are likely to lead to human hantavirus infection.

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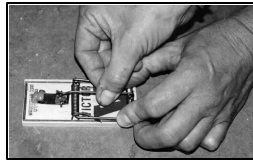
### **How do I prevent HPS?**

#### **SEAL UP, TRAP UP, CLEAN UP**

Seal up rodent entry holes or gaps with steel wool, lath metal, or caulk. Trap rats and mice by using an appropriate snap trap. Clean up rodent food sources and nesting sites and take precautions when cleaning rodent-infested areas. See the HPS Prevention Checklist for a complete listing.



SEAL UP



TRAP UP



CLEAN UP

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### **What are the recommendations for cleaning a rodent-infested area?**

- Put on rubber, latex, vinyl or nitrile gloves.
- Do not stir up dust by vacuuming, sweeping, or any other means.
- Thoroughly wet contaminated areas with a bleach solution or household disinfectant.  
**Hypochlorite (bleach) solution:** Mix 1 and ½ cups of household bleach in 1 gallon of water.
- Once everything is wet, take up contaminated materials with damp towel and then mop or sponge the area with bleach solution or household disinfectant.
- Spray dead rodents with disinfectant and then double-bag along with all cleaning materials. Bury, burn, or throw out rodent in appropriate waste disposal system.  
(Contact your local or state health department concerning other appropriate disposal methods.)
- Disinfect gloves with disinfectant or soap and water before taking them off.
- After taking off the clean gloves, thoroughly wash hands with soap and warm water.

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### **Can I use a vacuum with HEPA filter to clean up rodent-contaminated areas?**

HEPA vacuums are not recommended since they blow air around and may create aerosols.

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### **How do I clean papers, books, and delicate items?**

Books, papers, and other items that cannot be cleaned with a liquid disinfectant or thrown away should be left outdoors in the sunlight for several hours or in an indoor area free of rodents for approximately 1 week before final cleaning. After that time, the virus should no longer be infectious. Wear rubber, latex, or vinyl gloves and wipe the items with a cloth moistened with disinfectant.

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### **I do not want to bleach my clothes or stuffed animals; is there anything else I can do?**

Wash clothing or stuffed animals in the washing machine using hot water and regular detergent. Laundry detergent can break down the virus's lipid envelope, rendering it harmless. Machine dry laundry on a high setting or hang it to air dry in the sun. CDC does not recommend simply running the clothing through the dryer without washing first.

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### **How do I clean rugs, carpets and upholstered furniture?**

Disinfect carpets and upholstered furniture with a disinfectant or with a commercial-grade steam cleaner or shampoo.

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### **What precautions should I take if I think I have been exposed to hantavirus?**

If you have been exposed to rodents or rodent infestations and have symptoms of fever, deep muscle aches, and severe shortness of breath, see your doctor immediately. Inform your doctor of possible rodent exposure so that he/she is alerted to the possibility of rodent-carried diseases, such as HPS.