

Recommendations to Prevent Seoul Virus Infections in Rats and Humans

Seoul virus is a hantavirus that is carried by wild Norway rats worldwide. People usually become infected when they come in contact with infectious body fluids (blood, saliva, urine) from infected rats or are bitten by them. Most cases in people are reported in Asia. Infections in humans usually consist of mild flu-like symptoms (e.g., fever, headache, back and abdominal pain, chills, blurred vision, redness of the eyes, or a rash). However, an estimated 1-2% of infected persons may have severe disease including renal failure and death. The virus is not spread between people and cannot be transmitted to or from other types of pets. Rats infected with Seoul virus typically do not appear sick. For more information, visit <https://www.cdc.gov/hantavirus/outbreaks/seoul-virus/index.html>.

Public health has confirmed a case of Seoul virus from a Utah facility linked to a multi-state investigation of Seoul virus infections among pet rats and persons exposed to rats at rat-breeding facilities in 15 states. Three of six frozen rats purchased from the Utah facility as feed have also tested positive. This facility has been closed since August 2016. The extent of Seoul virus infections in other ratteries in Utah is unknown. Currently, the Centers for Disease Control and Prevention (CDC) estimates that Seoul virus is not yet endemic in the U.S. domesticated rat population and has made recommendations for controlling the disease in the 15 states at <https://emergency.cdc.gov/han/han00400.asp>. Some practical measures for preventing the spread of Seoul virus in ratteries:

- Avoid breeding domesticated rats with wild rats. Ensure that pens where rats are kept are securely maintained so wild rats cannot enter them.
- If there is concern that a rat population may be infected with Seoul virus, then rats from the population should be tested. Validated testing is available through IDEXX BioResearch. The specimen for testing can be obtained using the Opti-Spot® method, which is minimally invasive but must be submitted by a veterinarian. Detailed instructions on ordering the IDEXX test strips, sample collection, and submission of specimens has been compiled by a veterinarian (Dr. Abigail Smith) in Pennsylvania and can be found at: <http://ratguide.com/reference/SeoulVirus.pdf>.
- If any rats in a population are found to be positive for Seoul virus, the entire population should be euthanized, and the facility should be thoroughly cleaned and disinfected (using the methods below) before starting another colony. New rats should be quarantined and tested before being introduced into a “clean” colony.
- Alternatively, a culling procedure can be performed. This consists of testing 100% of the population and euthanizing rats found to be positive. An identification method must be in place to ensure which test result belongs to which rat. The rats testing negative should be moved to a clean pen and re-tested in 4 weeks. This procedure should be repeated every 4 weeks until all rats test negative.
- Avoid attending events where your rats may be exposed to other rats.



Preventing human infections:

- Always wash hands with soap and water after handling rodents or cleaning their habitat.
- Be aware that pet rodents and wild rodents can shed infectious viruses that contaminate surfaces and can remain viable for some period of time.
- Clean up after rodents using the methods recommended at <https://www.cdc.gov/rodents/cleaning/index.html>. It is especially important to avoid aerolization of dried rat urine, feces and nesting material by vacuuming or sweeping.
- Avoid bites and scratches from rodents. If bitten by a rodent, wash the wound for several minutes with soap and water.
- Owners of pet rats can get their rats tested by a veterinarian using the methods outlined above.

Persons who have been exposed to rats and develop the above symptoms should seek care with their provider. Testing of humans suspected to have been exposed to Seoul virus can be done at CDC. For assistance in submitting a test to the CDC, please call the Utah Department of Health at 801-538-6191.

