

# Reducing the Risk of Human Infection from Pet Rodents

All rodents, pet and wild, can carry bacteria and viruses that cause infections in people. Rodent infections that can be transmitted to humans include leptospirosis, hantaviruses, rat bite fever, and lymphocytic choriomeningitis virus (LCMV). The common household mouse and pet rodents can become infected by contact with wild mice. All rodents, including those kept as pets, should be presumed to carry organisms even if they appear to be healthy and have no signs of infection. Although uncommon, these infections may have serious consequences, and can be fatal. The very young, the elderly, those with chronic conditions or a weak immune system, and pregnant women should be particularly careful.

## Leptospirosis

Leptospirosis is a bacterial infection that can be carried in wild and pet rodents, as well as other animals. Rodents can show no outward signs of infection.

People can be infected by direct or indirect contact with infected animal urine, tissues or secretions, or water contaminated with infected animal urine. It can enter the body through cut or damaged skin, membranes, and eyes.

Human illness is highly variable. Initial symptoms can include fever, headaches, muscle aches, abdominal pain, jaundice. Severe disease can lead to renal and liver failure, meningitis, and respiratory distress. Symptoms usually develop 7 days after exposure with an incubation range of 2-29 days.

## Hantavirus

Hantaviruses are a group of viruses carried and transmitted by rodents. Hantaviruses have been found in both pet and wild rodents.

People usually become infected by breathing in particles contaminated with the virus, such as dust from feces, contaminated bedding, or splashes of urine. People can also get infected if contaminated material comes in direct contact with a cut, open skin, or from a bite of an infected animal.

Symptoms can include fever, headache, nausea, vomiting, diarrhea, kidney injury, respiratory/pulmonary disease. The time to illness after exposure is 2-4 weeks.

## Rat-Bite Fever

Rat-bite fever is a rare infection caused by the bacterium *Streptobacillus moniliformis*. The bacteria are found worldwide and are carried in the upper respiratory tract of apparently healthy rodents.

Transmission may occur either from a rat bite/scratch when handling infected rats, or from direct contact with their urine.

The bite usually heals without signs of infection. Rat-bite fever usually develops within 3-10 days of the bite, and begins with fever and chills, followed by severe muscle and joint pain, headache and nausea. Many patients develop a rash, most often on the arms and legs.

## LCMV

LCMV is an infection carried by rodents which causes a type of meningitis. The common house mouse and rodents become infected by contact with wild mice.

People become infected after exposure to rodent urine, droppings, saliva, or nesting materials through direct contact with broken skin, the nose, the eyes, or the mouth, or via the bite of an infected rodent.

Infection without symptoms or as a mild flu-like illness is common, within 6 – 13 days from exposure. Severe disease can lead to meningitis (headaches, fever), encephalitis (drowsiness, confusion, motor or sensory abnormalities), or a combination of both. Infection in pregnancy has been associated with disease in the newborn.

It is important for people who keep pet rodents as companion animals be aware of the early symptoms of these infections because early diagnosis and treatment are important to prevent development of severe disease. If a rodent bites you, the bite wound should be promptly cleaned and disinfected before being covered by a waterproof bandage. There is no vaccine for any of these infections, therefore the only way to prevent infection is through careful attention to hygiene practices and avoiding exposure to infected animals. Leptospirosis and rat bite fever can be treated with antibiotics, but there are no specific drugs to treat the other infections.

### How Are These Infections Passed To People?

Infections may be acquired from animal bites, contact with rodent urine, droppings, or bedding materials, and breathing in rodent dander, dried droppings and urine, or dust from contaminated bedding materials.

### Should pregnant women be concerned?

The risk of infection from pet rodents is generally low. Remember to keep your pet rodent in a separate part of the home and ask another family member or friend to clean the cage and care for the pet. Avoid prolonged stays in the room where the rodent is kept. Additionally, pregnant women should avoid contact with wild rodents.

### Should children be concerned?

Always supervise children to ensure they do not put the pet rodent or objects that it has been in contact with near their mouths. Ensure children wash their hands thoroughly with soap and water immediately after handling the pet. Closely supervise young children when cleaning cages, and make sure they wash their hands immediately after handling rodent cages or bedding.

## How to Reduce the Risk of Infection

- ❖ Keep rodent cages clean and remove soiled bedding often.
- ❖ Always wash your hands thoroughly with soap and water immediately after handling your rodent or cleaning their cage or any other materials such as bedding, toys, etc. Be especially careful to immediately clean your skin thoroughly if you get rodent urine directly on your skin.
- ❖ Do not kiss pet rodents or hold them close to your face.
- ❖ Cover cuts, scratches, or sores with a waterproof bandage before handling animals and thoroughly clean and cover any cuts or abrasions received while handling the animal.
- ❖ Keep your pet rodent out of rooms where food is prepared and eaten, and limit the parts of the house where it is allowed to roam freely.
- ❖ Do not use kitchen sinks for washing cages or equipment. If you use a bathroom sink, shower, or bathtub, it must be cleaned thoroughly with disinfectant afterwards.
- ❖ Wash any contaminated bedding or clothing with laundry detergent on a very hot wash if you see any rodent urine or droppings on them.
- ❖ These infections can be acquired by your pet through contact with wild rodents. Vermin control measures may be needed to minimize contact of your pets with wild species.
- ❖ Clean the cage in a well-ventilated area or outside.
- ❖ Use of a suitable face mask and gloves when cleaning animal housing is recommended.
- ❖ Do not keep pet rodents in the bedroom and where possible, house them in a well ventilated and sunlit room.

## How to Clean Up Rodent Urine and Droppings

- ❖ Do not sweep or vacuum up mouse or rat urine, droppings, or nests. This may cause infectious material to go into the air, where it can be breathed in.
- ❖ Wear a face mask and disposable rubber or plastic gloves, and if re-using gloves, disinfect after each use.
- ❖ Urine or droppings outside the cage should be removed with a wet wipe whilst wearing gloves. Place the wipes in a plastic bag before throwing in the trash. Spray the area with disinfectant.
- ❖ Wash hands with soap and water after putting disposable gloves in trash or disinfecting re-useable gloves. Then remove mask, bag, and trash. Re-wash hands and dry.

## Handling Dead Animals

- ❖ Wear rubber or plastic gloves.
- ❖ Wear a suitable face mask.
- ❖ Spray the dead animal with water before handling to stop infectious particles from becoming air-borne. Place the body in one plastic bag and bedding in a second plastic bag.
  - Spray disinfectant into the bag before tightly sealing the bag.
- ❖ Place the bag containing the dead animal into a second plastic bag. Seal that bag. Contact your vet about cremation or disposal.
- ❖ Scrub the cage surface and then rinse and dry with paper towels. Place the dirty towels used to clean/dry the cage in a plastic bag before placing in the trash. Other cleaning equipment (such as scrubbing brush, gloves if not disposable) should be cleaned and disinfected after use.
- ❖ Wash hands with soap and water after putting disposable gloves in the trash or disinfecting re-useable gloves. Then remove mask, bag, and put in the trash. Re-wash hands and dry.

## How to Clean Cages

- ❖ Wear a face mask and disposable rubber or plastic gloves, and if re-using gloves, disinfect after each use.
- ❖ Spray bedding with a generous amount of water before disturbing to stop infectious particles becoming air-borne. Wet the bedding with disinfectant and allow to soak for 5 minutes, and place in a plastic bag.
- ❖ Scrub the cage surface and rinse and dry with paper towels. Place the dirty towels used to clean/dry the cage in plastic bag before placing in the trash. Other cleaning equipment (such as scrubbing brush, gloves if not disposable) should be cleaned and disinfected after use.
- ❖ Wash hands with soap and water after putting disposable gloves in trash or disinfecting re-useable gloves. Then remove mask, bag, and put in the trash. Re-wash hands and dry.

**If you are ill, tell your health care provider that you own/keep/have handled a rodent**

## How to Clean Out Sheds and Animal Housing

- ❖ Open all doors and windows and expose to as much sunlight as possible. Leave open for at least 30 minutes before cleaning. While doing this, do not allow the cage to be in direct sunlight or to become subject to very high or low temperatures for welfare reasons.
- ❖ Ideally use a face mask.
- ❖ Wear rubber or plastic gloves.
- ❖ Clean up all rodent urine and droppings
- ❖ Mop floors or spray dirt floors with a disinfectant.
- ❖ Wash hands with soap and water after putting disposable gloves in the trash or disinfecting re-useable gloves. Then remove mask, bag, and put in the trash. Re-wash hands and dry.