

Zoonotic Diseases Article Drafts

A simple reference for pet owners

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Toxoplasmosis

What is Toxoplasmosis?

Toxoplasmosis is an infection caused by a tiny parasite called *Toxoplasma gondii*. This parasite can infect humans and animals, especially cats. However, most people who get toxoplasmosis do not feel sick at all.



Toxoplasma gondii (Getty Images)

What is a Cat's Role in This?

Cats play a key role in the life cycle of this parasite. The parasite reproduces in cats and can be passed in their feces. However, this does not mean cats are dangerous. In fact:

- Cats usually only shed the parasite for a short period of time after infection
- Indoor cats that do not hunt are less likely to carry it

How Do People Get Toxoplasmosis?

Many pet owners are surprised to learn that cats are not the most common source. People can get infected by:

- Eating uncooked or undercooked meat (a major cause)
- Touching cat litter or soil with the parasite and then touching their mouth without proper handwashing
- Eating unwashed fruits or vegetables
- Drinking contaminated water or unpasteurized goat milk

What Are the Symptoms?

Most healthy people have no symptoms at all. Some people may have mild symptoms such as:

- Muscle aches
- Swollen lymph nodes
- Symptoms similar to having the flu

Serious illness is rare but can happen in people with weakened immune systems and pregnant women.

Why is it a Concern During Pregnancy?

People who get infected for the first time during pregnancy can pass the parasite to their baby. This can lead to miscarriage or vision and brain problems in the baby. That is why extra precautions are recommended during pregnancy.

How Can Pet Owners Stay Safe?

You do not need to give up your cat. Simple habits can reduce the risk greatly.



Around your cat:

- Clean the litter box daily, or if you are high-risk, have someone else do it
- Wear gloves and wash hands thoroughly after cleaning
- Keep cats indoors so they do not hunt, which reduces the chance of exposure
- Feed cats commercial food rather than raw meat

In the kitchen and outdoors:

- Cook meat thoroughly
- Wash fruits and vegetables before eating
- Wash hands after gardening or touching soil

References

<https://www.cdc.gov/toxoplasmosis/about/>

<https://www.mayoclinic.org/diseases-conditions/toxoplasmosis/symptoms-causes/syc-20356249>

<https://my.clevelandclinic.org/health/diseases/toxoplasmosis>

Leptospirosis

What is Leptospirosis?

Leptospirosis is an infection caused by a type of bacteria called Leptospira. These bacteria can be found in soil and water all around the world and can infect both humans and animals. It is one of the most widespread zoonotic diseases globally, meaning it can spread from animals to people.



Leptospira

What is a Dog's Role in This?

Dogs are one of the most common pets affected by leptospirosis. The bacteria can be found worldwide in soil and water, and all dogs are at risk regardless of age, breed, lifestyle, or location. However, this does not mean your dog is automatically dangerous. In fact:

- Most dogs that are vaccinated are well protected
- Dogs that stay away from wildlife and stagnant water have a much lower risk
- Cats can become infected but it is considered rare

How Do Dogs and People Get Leptospirosis?

The bacteria that cause leptospirosis are spread through the urine of infected animals. The bacteria can contaminate water or soil, where they can survive for weeks to months.

Dogs can get infected by:

- Drinking from or swimming in ponds, puddles, lakes, or slow-moving water
- Contact with soil or surfaces contaminated with infected urine

- Exposure to wildlife like rats, raccoons, or skunks

People can get infected by:

- Contact with water or soil contaminated by infected animal urine
- Touching their mouth or an open wound after handling an infected animal
- Swimming or wading in contaminated water



What Are the Symptoms?

In dogs, symptoms can range from mild to very serious and may include:

- Vomiting and diarrhea
- Fatigue and loss of appetite
- Fever and muscle pain
- In severe cases, kidney or liver failure

In people, symptoms may include fever, headache, chills, and body aches. Some people may show no symptoms at all. Because leptospirosis symptoms can appear within just two days in dogs, contact your vet immediately if you notice any signs.

How Can Pet Owners Stay Safe?

You do not need to give up your dog. Simple precautions go a long way.

Around your dog:

- Vaccinate your dog against leptospirosis - it is the best form of prevention
- Wash your hands after handling your dog or cleaning up urine
- Wear gloves when cleaning areas where your dog has urinated
- Keep rodents under control around your home, as rats are a major carrier

Outdoors:

- Avoid letting your dog drink from or swim in rivers, lakes, ponds, or slow-moving water
- Keep your dog away from wildlife and farm animals
- Do not let your dog urinate near puddles or areas where children play

References

<https://www.avma.org/resources-tools/pet-owners/petcare/leptospirosis>

<https://my.clevelandclinic.org/health/diseases/24021-leptospirosis>

<https://www.cdc.gov/leptospirosis/about/index.html>

Rabies

What is Rabies?



Rabies is a serious and almost always fatal viral disease that affects the brain and nervous system. It can infect all mammals, including dogs, cats, and humans. While rabies is rare in domestic pets in the United States thanks to widespread vaccination, it remains one of the most dangerous zoonotic diseases in the world.

What is a Pet's Role in This?

Dogs and cats can both contract rabies, most often through a bite from an infected wild animal such as a bat, raccoon, skunk, or fox. In the United States, cats are actually the most commonly infected domestic animal. Globally, dogs remain the primary source of human rabies cases.

However, vaccinated pets are extremely well protected. A few key facts:

- Pets vaccinated against rabies are very unlikely to contract or transmit the disease
- Cats in the U.S. are more often infected than dogs, largely because they may roam outdoors and are sometimes not vaccinated as consistently
- Birds, fish, and reptiles do not get rabies

How Do People Get Rabies?

Rabies is spread through saliva, almost always through a bite from an infected animal. In some rare cases, it can also spread if infected saliva contacts an open wound or mucous membrane such as the eyes, nose, or mouth. You cannot get rabies from simply petting an animal.

People may be exposed through:

- A bite or scratch from a rabid wild animal
- A bite from an unvaccinated dog or cat that has been exposed to wildlife
- In the U.S., bat bites are a particularly common source because they can go unnoticed due to how small the bite mark is

What Are the Symptoms?



In pets, early signs of rabies include:

- Sudden changes in behavior (aggression, unusual friendliness, or restlessness)
- Fever and loss of appetite
- Difficulty swallowing or excessive drooling
- Paralysis and seizures as the disease progresses

In people, symptoms usually appear one to three months after exposure and include:

- Flu-like symptoms at first - fever, headache, fatigue
- Burning or itching at the bite site
- Anxiety, confusion, and hallucinations as the virus spreads to the brain
- Once neurological symptoms appear, the disease is nearly always fatal

Why Act Immediately if Bitten?

If you are bitten or scratched by any animal you suspect may have rabies, wash the wound immediately with soap and water for at least 10 to 15 minutes and go to a doctor right away. Post-exposure treatment (a series of vaccines) is highly effective if given before symptoms start. Once symptoms appear, there is no effective treatment.

How Can Pet Owners Stay Safe?

Around your pets:

- Vaccinate all dogs, cats, and ferrets against rabies - it is required by law in most U.S. states
- Keep pets supervised outdoors and away from wild animals
- Do not handle wild animals, especially bats, raccoons, or skunks
- Report stray animals to local animal control

If your pet is bitten by a wild animal:

- Contact your veterinarian immediately
- Do not handle the potentially infected animal without gloves
- Notify your local health department

References

<https://www.who.int/news-room/fact-sheets/detail/rabies>

<https://www.cdc.gov/rabies/>

<https://www.mayoclinic.org/diseases-conditions/rabies/symptoms-causes/syc-20351821>

<https://www.vet.cornell.edu/departments-centers-and-institutes/riney-canine-health-center/canine-health-topics/rabies-infections-and-prevention>

Ringworm

What is Ringworm?



Despite its name, ringworm is not caused by a worm at all. It is a fungal skin infection caused by a group of fungi called dermatophytes. It gets its name from the ring-shaped rash it can produce on the skin. Ringworm is one of the most common zoonotic infections shared between pets and people.

What is a Pet's Role in This?

Dogs and cats, especially kittens and puppies, are common carriers of ringworm. Cats in particular can carry the fungus without showing any visible symptoms, which makes it easy to accidentally spread the infection without knowing. Some key facts:

- Kittens and puppies are more susceptible than adult animals
- Long-haired cat breeds are at higher risk because fungal spores can get trapped in their fur
- Some pets are asymptomatic carriers - they carry the spores and spread them without appearing sick

How Do People Get Ringworm?

Ringworm spreads through direct contact with infected skin, fur, or surfaces. The fungal spores can survive for months on objects like:

- Pet bedding and blankets
- Grooming tools and brushes
- Carpets and furniture

You can also get it by:

- Petting or handling an infected animal

- Touching surfaces or objects contaminated with fungal spores
- Contact with soil where the fungus lives

What Are the Symptoms?

In people, symptoms usually appear 4 to 14 days after contact and include:

- A red, circular, ring-shaped rash that may be itchy
- Scaly or crusted skin around the rash
- Hair loss in the affected area

In pets, signs include:

- Circular patches of hair loss with red, scaly skin
- Brittle fur or nails
- Some pets show no signs at all even while infectious

Who Is Most at Risk?

Anyone can get ringworm, but children, elderly people, and those with weakened immune systems are at the greatest risk of infection. People who adopt pets from shelters or rescue situations should have their new pets examined by a vet, as ringworm is more common in high-density animal environments.

How Can Pet Owners Stay Safe?



If your pet has ringworm:

- Keep them isolated from other pets and limit human contact until treatment is complete
- Wear long sleeves and gloves when handling the infected pet or applying medication
- Wash your hands thoroughly after any contact

- Wash bedding, towels, and soft items in hot soapy water
- Disinfect hard surfaces with a diluted bleach solution (1 part bleach to 10 parts water)

To prevent ringworm:

- Have new pets examined by a vet before introducing them to the home
- Avoid letting pets roam in areas where they may contact infected animals
- Keep your pet's immune system healthy with proper nutrition and regular vet checkups

References

<https://www.cdph.ca.gov/Programs/CID/DCDC/Pages/Ringworm.aspx>

<https://www.cdc.gov/ringworm/>

<https://www.vet.cornell.edu/departments-centers-and-institutes/cornell-feline-health-center/health-information/feline-health-topics/zoonotic-disease-what-can-i-catch-my-cat>

Cat Scratch Disease

What is Cat Scratch Disease?



Cat Scratch Disease (CSD), also sometimes called cat scratch fever, is a bacterial infection caused by a bacterium called *Bartonella henselae*. Despite its dramatic nickname, most cases are mild and resolve on their own. However, it can be more serious for people with weakened immune systems.

What is a Cat's Role in This?

Cats are the main reservoir for *Bartonella henselae*, but they do not get sick from it. The bacteria spread among cats through flea bites. When an infected flea feeds on a cat, it leaves flea dirt (flea feces) behind in the cat's fur. That flea dirt can then get into scratches, bites, or open wounds. Some important facts:

- Kittens are more likely than adult cats to carry and transmit the bacteria
- About 30% of cats carry the bacteria at some point in their lives
- Cats that carry the bacteria usually show no signs of illness
- You cannot tell just by looking at a cat whether it can spread CSD

How Do People Get Cat Scratch Disease?

CSD is transmitted when infected flea dirt gets into the body through:

- A cat scratch (the flea dirt is often under the cat's claws)
- A cat bite (saliva can contain the bacteria from grooming)
- Touching your eyes with contaminated hands

It is not spread from person to person, and you cannot get it from simply petting a healthy cat.

What Are the Symptoms?

Symptoms usually appear 3 to 14 days after a scratch or bite and may include:

- A small, raised bump or blister at the site of the scratch or bite
- Swollen, tender lymph nodes near the wound (often in the armpit, neck, or groin)
- Mild fever, fatigue, and headache

Most healthy people recover on their own within a few weeks without treatment. In rare cases - especially in people with compromised immune systems - the infection can spread to other organs and become more serious.

Who Is Most at Risk?

Children tend to have the highest rates of CSD, likely because they spend more time playing with kittens. People with weakened immune systems, such as those undergoing chemotherapy or living with HIV, are at higher risk of severe disease and should take extra precautions.

How Can Pet Owners Stay Safe?

You do not need to give up your cat. Simple steps can greatly reduce your risk:

- Keep your cat on year-round flea prevention - this is the single most effective prevention strategy
- Keep cats indoors to reduce their exposure to fleas
- Avoid rough play with kittens that could lead to scratches or bites
- Wash any cat scratch or bite immediately with soap and water
- Do not let cats lick open wounds on your skin
- Keep your cat's nails trimmed short
- Wash your hands after playing with or handling your cat

References

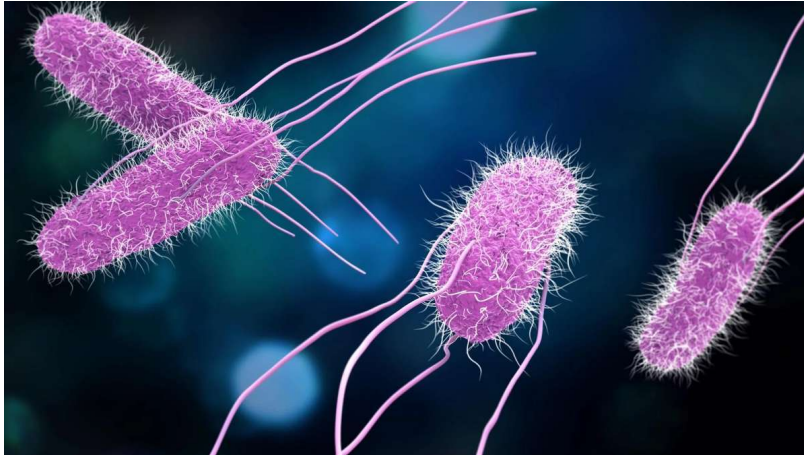
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<https://www.cdc.gov/bartonella/about/about-bartonella-henselae.html>

<https://vcahospitals.com/know-your-pet/cat-scratch-disease>

Salmonella? (Dogs & Cats)

What is Salmonella?



Salmonella is a type of bacteria that causes an infection called salmonellosis. It is one of the most common foodborne illnesses in the world, but it can also be spread through contact with infected animals, including household pets like dogs and cats.

What is a Pet's Role in This?

Dogs and cats can carry Salmonella in their digestive tracts without showing any signs of illness. This means your pet can appear completely healthy while still shedding the bacteria through their feces, saliva, or even their coat. Some things to know:

- Puppies and kittens are more likely to show symptoms than adult animals
- Pets fed raw meat diets have a higher chance of carrying Salmonella
- Even healthy adult pets can be silent carriers
- Cats can spread bacteria when they walk on kitchen countertops after using the litter box

How Do People Get Salmonella from Pets



You can pick up Salmonella from pets by:

- Touching your mouth after handling your pet, their food bowls, toys, or bedding
- Allowing your pet to lick your face or an open wound
- Cleaning up pet feces without washing hands afterward
- Handling raw or undercooked pet food (especially raw meat diets)
- Letting pets roam on food preparation surfaces

What Are the Symptoms?

In people, symptoms usually begin within a few hours to a few days after exposure and include:

- Diarrhea (sometimes bloody)
- Stomach cramps and nausea
- Fever
- Vomiting

Most people recover on their own within 4 to 7 days. However, young children, elderly adults, pregnant women, and people with weakened immune systems may become seriously ill and require medical attention.

In pets, signs of salmonellosis include diarrhea, vomiting, lethargy, and loss of appetite, though many infected pets show no symptoms at all.

How Can Pet Owners Stay Safe?

Around your pet:

- Always wash your hands with soap and water after handling your pet, their food, bowls, or waste
- Do not let your pet lick your face, mouth, or open wounds
- Avoid feeding your pet raw meat diets when possible, as these carry a higher Salmonella risk
- Keep pets off kitchen countertops and food preparation surfaces

At home:

- Clean pet food bowls and litter boxes regularly
- Wash hands after cleaning the litter box, and wear gloves when doing so
- Do not use the kitchen sink to clean pet items - use a utility sink or do it outdoors

References

<https://www.fda.gov/animal-veterinary/animal-health-literacy/get-facts-about-salmonella>

<https://www.cdc.gov/salmonella/>

<https://my.clevelandclinic.org/health/diseases/15697-salmonella>

Campylobacter

What is Campylobacter?



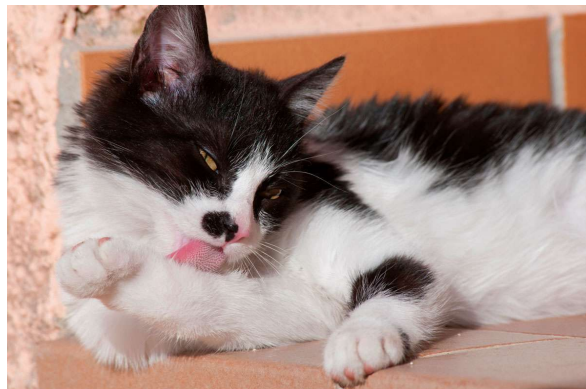
Campylobacter is a type of bacteria that is one of the most common causes of diarrheal illness in humans worldwide. While most cases come from contaminated food, pets - especially puppies and kittens - can also be a source of infection.

What is a Pet's Role in This?

Dogs and cats can carry Campylobacter in their digestive systems without appearing sick. Puppies and recently adopted animals are more likely to carry and shed the bacteria. Some important facts:

- Puppies and kittens under 6 months old are most likely to shed the bacteria
- Dogs and cats from shelters or high-density environments have higher rates of infection
- Some pets carry the bacteria without any symptoms at all
- Raw or undercooked meat in a pet's diet can increase the likelihood of carrying the bacteria

How Do People Get Campylobacter from Pets?



Transmission from pets happens through contact with their feces. This can occur by:

- Touching your mouth after handling a pet or cleaning up their waste
- A pet licking your hands or face after grooming themselves
- Handling pet food or bedding that has been in contact with feces

Most human cases of Campylobacter actually come from eating undercooked poultry or drinking unpasteurized milk - but pets are a recognized secondary source, especially in households with new puppies.

What Are the Symptoms?

Symptoms in people usually appear within 2 to 5 days of exposure and include:

- Diarrhea (sometimes bloody)
- Stomach cramps and pain
- Fever and nausea

Illness typically lasts about a week. It is rarely life-threatening in healthy adults but can be serious in young children, elderly people, and those with immune system conditions.

How Can Pet Owners Stay Safe?

- Wash your hands thoroughly after handling pets, especially puppies and kittens
- Clean up pet feces promptly and wear gloves when doing so
- Do not let pets lick your mouth or open wounds
- Avoid feeding pets raw or undercooked meat
- Take newly adopted puppies or kittens to the vet for a health check, especially if they have diarrhea
- Do not walk infected pets in public places until they have been treated and have recovered

References

<https://www.who.int/news-room/fact-sheets/detail/campylobacter>

<https://www.cdc.gov/campylobacter/>

Salmonella in Reptiles

What is Salmonella in Reptiles?

Reptiles - including turtles, lizards, snakes, and geckos - are among the highest-risk pets when it comes to Salmonella. Unlike dogs and cats, where Salmonella is relatively uncommon, almost all reptiles naturally carry Salmonella bacteria in their digestive systems as part of their normal gut flora. They shed it in their feces constantly, even when they appear perfectly healthy.

Why Are Reptiles Different from Other Pets?

Reptiles are what scientists call “normal carriers” of Salmonella, which means the bacteria lives in them without causing harm to the animal. This makes reptile-associated salmonellosis a particularly important concern because:

- It is estimated that about 6% of all human Salmonella cases in the U.S. are linked to contact with reptiles
- You cannot look at a reptile and tell whether it is carrying Salmonella - they always look healthy
- The bacteria can also live on the reptile’s tank, water, equipment, and anything else the animal touches
- Small turtles (with shells less than 4 inches) are especially linked to infections in young children, and their sale has been banned in the U.S. since 1975

How Do People Get Salmonella from Reptiles?

Transmission can happen through:

- Touching the reptile and then touching your mouth without washing hands
- Handling the reptile’s tank, water, or food containers
- Allowing reptiles to roam freely on floors or furniture where people later have contact
- Children kissing or putting reptiles near their faces

What Are the Symptoms?

In people, Salmonella symptoms appear within 6 hours to 3 days and include:

- Diarrhea (sometimes bloody)
- Stomach cramps and fever
- Nausea and vomiting

Most people recover in 4 to 7 days without treatment. However, infants, young children (under 5), elderly adults, and people with weakened immune systems are at the greatest risk of severe illness. Children under 5 should not handle reptiles.

How Can Reptile Owners Stay Safe?

- Always wash your hands with soap and water immediately after handling any reptile or anything in their habitat
- Do not allow reptiles to roam freely in the home, especially in kitchens or bedrooms
- Keep reptile tanks and equipment out of kitchens and food preparation areas
- Never clean reptile tanks in the kitchen sink - use a utility sink or do it outdoors
- Do not allow young children to handle reptiles, and supervise any child who does
- Change clothes after handling reptiles before holding infants
- Do not purchase small turtles (shell length under 4 inches) - their sale is illegal in the U.S.

References

<https://www.cdc.gov/healthy-pets/about/reptiles-and-amphibians.html>

<https://www.avma.org/resources-tools/pet-owners/petcare/pets-poultry-and-salmonella>

https://www.health.ny.gov/diseases/communicable/zoonoses/salmonella/amphibian_reptilian_questions_and_answers.htm

What is Psittacosis? (Parrot Fever)

What is Psittacosis?

Psittacosis - also called parrot fever or ornithosis - is a bacterial infection caused by a germ called *Chlamydia psittaci*. It is primarily a disease of birds, but it can spread to humans. Despite the nickname “parrot fever,” you can get it from many types of birds, not just parrots.

What is a Bird’s Role in This?

Birds are the main reservoir of *Chlamydia psittaci*. The bacteria can infect over 450 species of birds, including popular pet birds like:

- Parrots, parakeets, cockatiels, and budgerigars
- Pigeons and doves
- Chickens, ducks, and turkeys

Importantly, many infected birds appear perfectly healthy and show no signs of illness, but they can still shed the bacteria. Some important points:

- Infected birds may shed bacteria in their droppings, respiratory secretions, and feather dust
- The bacteria can become airborne when droppings dry out and turn to dust
- Birds imported or purchased from unregulated sources may be more likely to carry the infection

How Do People Get Psittacosis?

Most people get psittacosis by inhaling air that contains dried bird droppings or respiratory secretions. This can happen during:

- Cleaning a bird’s cage
- Handling birds or their feathers
- Being in an area where birds live, like a pet store or aviary

Less commonly, psittacosis can be transmitted through a bird bite or mouth-to-beak contact. It is very rarely spread from person to person.

What Are the Symptoms?

Symptoms usually appear 5 to 14 days after exposure and can range from mild to severe:

- Dry cough, fever, and chills
- Headache and muscle aches

- Fatigue and loss of appetite
- In more serious cases, pneumonia can develop

Most people recover with antibiotic treatment. Without treatment, the illness can become severe, particularly in older adults or those with underlying health conditions.

Who Is Most at Risk?

Pet bird owners, poultry workers, veterinarians, and pet store employees are at the highest risk due to regular close contact with birds. People who work with birds indoors in enclosed spaces face the greatest exposure to airborne particles.

How Can Bird Owners Stay Safe?

- Wash your hands thoroughly after handling birds, their cages, food dishes, or droppings
- Wear a mask and gloves when cleaning bird cages, especially when scraping or scrubbing dried droppings
- Wet the bottom of the cage before cleaning to prevent droppings from becoming airborne dust
- Keep bird cages clean and avoid letting droppings accumulate
- Do not stack cages so that droppings from one bird fall into another's cage
- Purchase birds only from reputable, licensed sources
- If your bird appears sick - ruffled feathers, loss of appetite, difficulty breathing - take it to an avian vet promptly

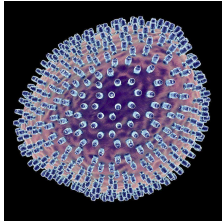
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<https://www.cdc.gov/psittacosis/>

<https://www.ncbi.nlm.nih.gov/books/NBK538305/>

What is Lymphocytic Choriomeningitis (LCM)?



Lymphocytic choriomeningitis, commonly known as LCM, is a viral infection caused by the lymphocytic choriomeningitis virus (LCMV). It is primarily carried by the common house mouse but can also be found in pet rodents such as hamsters, guinea pigs, and pet mice. While most healthy people recover without serious problems, LCM can be dangerous for certain groups.

What is a Pet's Role in This?

Wild house mice are the primary natural reservoir of LCMV. Pet rodents - such as hamsters - can become infected if they were exposed to wild mice at a breeding facility, pet store, or in the home environment. Key facts to know:

- Infected rodents often look completely healthy and shed the virus throughout their lives
- Hamsters can carry and shed the virus for several months after becoming infected
- The virus is spread through the urine, droppings, saliva, and nesting materials of infected rodents
- You do not need to be bitten to get infected - simply cleaning a cage can expose you to the virus through aerosolized particles

How Do People Get LCM?



People can get infected through:

- Breathing in air contaminated with infected rodent urine, droppings, or nesting material (common during cage cleaning)
- Touching the mouth, nose, or eyes after handling an infected rodent or their bedding
- A bite from an infected rodent

The virus does not spread from person to person - with one important exception. Pregnant women can pass the infection to the fetus.

What Are the Symptoms?

Most healthy people who get LCM either have no symptoms or experience a mild flu-like illness. Symptoms typically appear 8 to 13 days after exposure and may include:

- Fever, headache, and fatigue
- Muscle aches, nausea, and vomiting
- In more serious cases, the virus can affect the brain, causing meningitis (inflammation of the brain lining)

LCM is especially dangerous for:

- Pregnant women - it can cause miscarriage or serious birth defects in the baby including brain damage and blindness
- People with weakened immune systems, such as organ transplant recipients - in these individuals, LCM can be fatal

How Can Pet Owners Stay Safe?

- Wash your hands thoroughly with soap and water after handling any pet rodent, their cage, or bedding
- Wear gloves when cleaning cages and do it in a well-ventilated area or outdoors
- Do not kiss your pet rodent or hold it close to your face
- Prevent wild mice from entering your home by sealing gaps and using traps or pest control
- Keep pet rodents away from wild rodents and wild rodent nesting areas
- Pregnant women and immunocompromised individuals should have another family member care for rodent pets and clean their cages
- Purchase pet rodents from reputable, clean sources

References

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<https://www.webmd.com/a-to-z-guides/what-is-lymphocytic-choriomeningitis>

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