

# HUMAN-ANIMAL INTERACTIONS ENRICH OUR LIVES,

but can also pose risks to both humans and animals. One of these risks is the spread of disease between humans and animals. Fortunately, preventive measures and good hygiene are simple ways to reduce the risk of disease.

## WHAT ARE ZONOTIC DISEASES?

Zoonotic diseases are diseases that can be spread between animals and people. They can be caused by pathogens (disease-causing organisms) such as viruses, bacteria, parasites and fungi. Examples include rabies, Salmonella, some strains of influenza A, and West Nile Virus, just to name a few. At least 65 percent of recent major disease outbreaks have zoonotic origins, and 75 percent of emerging infectious diseases are zoonotic. Emerging zoonoses can come from many animal species, including pets.

## HOW ARE ZONOTIC DISEASES SPREAD?

Zoonotic diseases can be spread in a number of ways. Some methods of transmission include:

**Fecal-oral transmission** occurs when people ingest small, usually invisible, amounts of stool or droppings containing a pathogen. It is often an unintentional exposure because the person does not realize, or forgets, that they came in contact with fecal material. This can occur when a person does not thoroughly wash their hands after handling infected animals or items from an animal's environment. *Cryptosporidium* is a common zoonotic parasite that affects people because it can survive in recreational waters, such as pools, and can be ingested during swimming or playing in water.

**Foodborne transmission** occurs when people ingest food contaminated with a pathogen, or if a person handles contaminated pet food, uncooked meat or fomites and does not wash his/her hands before handling foods or drinks. Examples of pathogens that can be transmitted in this way include *Salmonella*, *E. coli*, *Listeria* and *Campylobacter*.

**Insect-borne transmission** occurs when insects carry a pathogen from an infected animal or person and transfer it to another animal or person. Examples include mosquitoes transmitting West Nile Virus, ticks transmitting Lyme disease, and fleas transmitting plague.

**Direct contact** occurs when a person becomes infected through touching or handling an infected animal or through a bite, scratch, or contact with the eyes, nose or mouth of an infected animal. Rabies, ringworm and bartonellosis are examples of zoonotic diseases spread through direct contact.

**Indirect contact** occurs when a pathogen is transmitted without physical contact with the animal. Many pathogens can survive outside a person or animal for a period of time. Some pathogens can survive well in water and soil, or on inanimate objects, also known as fomites. These items can transfer pathogens such as *Salmonella*, *Leptospira* and fecal parasites from place to place, animal to animal and from animals to people.

## WHAT ZONOTIC DISEASES CAN I GET FROM PETS AND OTHER DOMESTIC ANIMALS?

This list doesn't include every disease you can get from pets and other domestic animals, but below are some examples:

- Bartonellosis (caused by *Bartonella* bacteria)
- Brucellosis (caused by the *Brucella* bacteria)
- *Campylobacter* infection
- Cryptosporidiosis
- *E. coli* infection (caused by the *E. coli* bacteria)
- Leptospirosis (caused by *Leptospira* bacteria)
- Plague (caused by the *Yersinia pestis* bacteria)
- Rabies (caused by the rabies virus)



- Ringworm (caused by certain fungi)
- Salmonellosis (caused by the *Salmonella* bacteria)
- Toxoplasmosis (caused by the parasite *Toxoplasma gondii*)
- Toxocariasis (caused by *Toxocara* parasites – also called roundworms)
- Tularemia (caused by the *Francisella tularensis* bacteria)

## ARE CERTAIN PEOPLE AT HIGHER RISK OF BEING INFECTED WITH ZONOTIC DISEASES?

Children are at higher risk of infection because they are less likely to thoroughly wash their hands immediately after handling animals; they might not have fully developed immune function; and they are more likely to put their hands and other

objects in their mouths. Young children, pregnant women, older people, and anyone with certain health conditions such as chronic respiratory disease, heart disease or a weakened immune system should be extra careful when interacting with animals because these conditions make them more likely to become severely ill if infected. Examples of conditions that cause a weaker immune system include HIV/AIDS, autoimmune diseases, and people undergoing treatment with chemotherapy, steroids or other immune-suppressing medications. People who are around animals often are also more likely to be exposed to a zoonotic pathogen. If you fall into any of these groups, take extra precautions to protect yourself.

## HOW CAN I REDUCE THE RISK TO MYSELF AND MY FAMILY?

Sometimes animals carrying a zoonotic disease appear perfectly healthy. It is important to practice these habits with all animals, even if they do not appear to be sick.

- Wash your hands with soap and running water:
  - After petting or handling any animal
  - After you've cleaned up after your pet or livestock or handled their bedding
  - After handling uncooked food for you or your pet
  - After handling any pet or animal food
  - Before preparing food or drinks for yourself or others and before eating or drinking
- Make sure children wash their hands after touching an animal, whether at a petting zoo, fair, pond, beach, backyard, or any other place that they get to interact with animals. Children should also avoid touching their eyes, nose, and mouth until after they've thoroughly washed their hands.
- To help prevent illness and injury, keep children under 5 years of age away from areas where pets are fed.
- Make sure children stay away from wildlife, and that they do not pet unknown dogs or cats without the owner's permission.
- Keep your pet healthy.
  - Make sure your pet receives regular preventive veterinary care including vaccinations (talk to your veterinarian about the appropriate vaccinations for your pet) and flea, tick and intestinal parasite preventives.
  - Vaccinate your pets (including indoor cats!) against rabies.

- Clean up after your pets
  - » Discard pet waste in a tightly sealed, impermeable bag. Small biodegradable or plastic bags work well.
  - » Pet waste can contain harmful bacteria and parasites, so young children should not clean up after pets.
- Store pet foods separate from people foods, and feed your pets in separate areas from where you eat or prepare food for you and your family.
- Handle and cook food according to the directions provided on the package, or based on USDA recommendations.
- For your health as well as your pet's health, don't share your food with your pet.
- If you're attending a petting zoo or fair, do not eat or drink while in an area with animals. Wash your hands as soon as you leave the area.

## A WORD ABOUT REVERSE ZOOONOTIC DISEASES

Reverse zoonoses occur when a person spreads a disease to an animal. For example, methicillin-resistant *Staphylococcus aureus* (MRSA) can be spread to people from animals (zoonotic disease), but it can also be spread to animals from people (reverse zoonotic disease) and then possibly back to people from the infected animal. During the 2009 H1N1 influenza pandemic, there were several confirmed cases of people infecting their pets (ferrets, cats and dogs) with the influenza virus. Fortunately, the same precautions we've described above are effective ways to reduce the risk of making your pet sick.



Preventive measures and good hygiene reduce the risk of zoonotic disease.

For more information, visit:

[avma.org](http://avma.org)



[www.avma.org](http://www.avma.org) | 800.248.3862

# PREVENTING ZOOONOTIC DISEASES

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