



# Should Immunocompromised Humans Avoid Pets?

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Patients that have a compromised immune system due to underlying medical illness (eg, AIDS, malignancy, asplenism) or administration of immunosuppressive agents (eg, chemotherapy, steroids, biologicals) are at high risk for acquiring serious and potentially life-threatening infections, some of which can be zoonotic (ie, transmitted from animals to humans).<sup>1</sup>

The list of potential zoonotic infections transmitted from dogs and cats is extensive, with most exposures occurring from bites, especially in children.<sup>2</sup>

Rabies is likely the best known and most potentially lethal zoonotic disease transmitted via bite. Some parasitic diseases are also zoonotic. Infections that can be transmitted from other types of household pets include psittacosis, cryptococcosis, and nontuberculous mycobacterial (*Mycobacterium avium*) infection from birds; salmonellosis from reptiles, amphibians, poultry, and

rodents; and *Mycobacterium marinum* infection from aquarium fish.

Despite the risk for zoonotic disease transmission, pets have an invaluable role in human health. Humans that are immunocompromised often suffer emotional stress and physical discomfort from their illness and treatment, and pet ownership has been documented to reduce stress and enhance a sense of well-being. Therapy animals are used with success in hospital settings to reduce feelings of isolation in human patients.

Questions about the safety of pet ownership are often focused on transmission of zoonoses. Bite-related infections are the most common adverse effect of animal contact, and the sequelae of a bite wound can be more severe in an immunocompromised host. Immunocompromised humans who have been bitten by an animal should seek immediate

medical attention. Humans bitten by a cat—whether while immunocompromised or healthy—should receive antibiotic prophylaxis.

*Capnocytophaga canimorsus* is an uncommon pathogen that is particularly dangerous to asplenic or immunocompromised humans. It can cause fulminant septicemia and carries a high mortality rate. Immunocompromised patients should limit their exposure to potentially aggressive animals.

Other common infectious complaints include infectious gastroenteritides, including those caused by *Campylobacter* spp, *Listeria* spp, and *Salmonella* spp. Although these agents can be transmitted from various sources (eg, birds, pet reptiles, other humans, raw or undercooked food), small animals are occasionally the source. The risk for disease transmission from a household dog or cat does not likely pose a signifi-

cant hazard. For bird or reptile owners, surveillance for *Salmonella* spp and *Campylobacter* spp can be conducted by regular veterinary visits.

The following tips can be used to avoid transmission of zoonotic infectious diseases:

- ▶ All pets should be examined by a veterinarian and vaccinated against diseases that can be transmitted to humans.
- ▶ Pets should receive broad-spectrum parasite preventives.
- ▶ Cats should be kept indoors and not allowed to hunt.
- ▶ All pets should be fed commercial cooked diets.
- ▶ Gloves should be used when removing pet feces and cleaning aquariums.
- ▶ Pet owners should wash their hands thoroughly after handling their pet, especially before eating.
- ▶ Contact with reptiles, amphibians, and poultry, including chicks and ducklings, should be minimized because of the potential risk for salmonellosis.

An awareness of zoonotic diseases to which immunocompromised humans are susceptible is important. Leptospirosis can be transmitted from dogs to humans, so immunocompromised humans should be advised to have their dog vaccinated against this organism. Toxoplasmosis is transmitted exclusively by cats; however, the risk comes entirely from exposure to cat feces. As with pregnant women, immunocompromised patients should be advised to delegate the cleaning of the litter box to

other household members. Dermatophytes (ie, ringworm) are commonly transmitted bidirectionally between humans, dogs, and cats. Pets with suspect skin lesions should be evaluated. Cat-scratch disease, caused by *Bartonella henselae*, is a relatively common illness that causes lymphadenopathy and ocular signs. The risk for transmission comes largely from kittens that are infested with fleas. This organism is transmitted via inoculation of flea feces containing viable *B. henselae* organisms. Transmission from cats older than one year of age is rare. Therefore, adult cats are preferred over kittens as pets for immunocompromised patients.

Immunocompromised patients should take steps to minimize the potential for any zoonotic disease transmission. Healthy pets pose little risk to humans, but animal bites or scratches should always be examined by a physician. In general, the emphasis on protecting immunocompromised patients should be on self-care (eg, consistent hand washing, good hygiene, regular medical attention) rather than on limiting contact with animals. ■

## References

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