



U.S. Food and Drug Administration



[FDA Home Page](#) | [Search FDA Site](#) | [FDA A-Z Index](#) | [Contact FDA](#)

**FDA Consumer magazine**  
January-February 2004 Issue

[Email this Page](#)   
[To a Friend](#)

## Keeping Pets (and People) Healthy

By Linda Bren

Pets occupy an esteemed place in many of our households, often being treated as members of the family. They offer a source of amusement, pleasure, and companionship. They provide opportunities for outdoor exercise and socialization. And, according to some studies, they can decrease our blood pressure, cholesterol levels, and triglyceride levels.

But along with the emotional rewards and health benefits of pet ownership also come health risks. Pets--and other animals--can give us diseases.

Animal diseases that can be transmitted to humans are known as zoonotic diseases, or zoonoses. Some people are more likely than others to get zoonoses: the elderly, pregnant women, infants and children less than 5 years old, people undergoing treatments for cancer, people who have received organ transplants, and people with suppressed immune systems, such as those with HIV/AIDS.

If you fit into one of these categories, the Centers for Disease Control and Prevention (CDC) advises avoiding contact with certain animals that are more likely than others to carry diseases: reptiles (turtles, lizards, and snakes), baby chicks, and ducklings.

The list of zoonoses is long and continues to grow as people travel to more remote parts of the world and bring diseases back with them, and as animals that carry diseases are imported. The first human outbreak of monkeypox, a rare smallpox-like disease, occurred in the United States in May 2003. The disease was believed to have been brought into the country in April by a shipment of rodents and other small mammals imported from Africa. These animals infected prairie dogs being sold as pets, which in turn infected humans in close contact with the prairie dogs.

In June 2003, in response to the monkeypox outbreak, the Food and Drug Administration and the CDC banned the import of all African rodents, and the transport, sale, and release into the environment of prairie dogs and six species of African rodents. In November 2003, both agencies issued a new rule that clarifies and extends the import and transport restrictions for these animals. This interim rule, which is open for public comment until Jan. 20, 2004, gives an increased measure of protection to help prevent future outbreaks of monkeypox in the United States.

Even if people never leave the country or acquire a pet from further away than their local animal shelter, they may still be vulnerable to getting certain diseases from pets. Fortunately, the risk of getting a disease from your pet is small, and you can minimize the risk by practicing good personal hygiene, keeping pet areas clean, controlling disease-carrying insects, and getting regular vaccinations and veterinary care for pets.

Parasites, bacteria, fungi, and viruses are the culprits responsible for spreading many diseases from pets to humans. Some are more common and troublesome for pets and pet owners than others.

### Worms

Worms, such as roundworms and hookworms, can infect dogs, cats, and some other animals. Worms can also infect people if they ingest the organisms or, in the case of hookworms--which can penetrate the skin--if they walk barefoot on infected soil.

### National Pet Owners Survey (2003/2004)

In the United States, there are more pets than people--about 378 million pets versus 280 million people

Breakdown of pet ownership:

Cats: 77.7 million

Dogs: 65 million

Birds: 17.3 million

Reptiles: 9 million

Small Animals: 16.8 million

Saltwater fish: 7 million

Freshwater fish: 185 million

Source: American Pet Products Manufacturers Association  
Infographic by Renée Gordon

Worms live in the intestines of animals and are expelled in the stool. If left untreated in pets, homes and yards can become contaminated from worm eggs that are passed in animal feces and hatch in the soil. If your animal has worms, get it treated and clean up after it promptly, advises Linda Wilmot, D.V.M., a veterinary medical officer in the FDA's Center for Veterinary Medicine (CVM). "Don't give the eggs that are passed in the feces time to hatch."

More than 90 percent of puppies are born with worms, says Wilmot. Mother dogs can pass worms to their puppies before birth and both dogs and cats can pass it to their offspring through their milk after birth.

Touching the stool or contaminated soil and then touching the mouth or handling food are common routes of transmission of worms to humans. Children are at risk for acquiring worms if they walk barefoot or play in the dirt where an infected dog has defecated or on the floor where a dog may have tracked in dirt or feces.

Hookworm larvae can cause painful inflammation in areas where they penetrate a person's skin and crawl just below the skin's surface. The larvae can also travel through the body, eventually reaching the small intestine. There they develop into half-inch-long worms, attach themselves to the intestinal wall, and suck blood.

Roundworms may also cause problems. "Between 5 percent and 20 percent of children have been infected by dog roundworm at some time in their lives," says Larry Glickman, V.M.D., Dr.P.H., a professor of epidemiology and environmental health at the Purdue School of Veterinary Medicine. In most cases, it never becomes apparent and doesn't need to be treated, he says. But in some cases, larvae migrate through the body and damage tissues and organs.

Just one roundworm larva has been known to damage the retina of the eye and cause blindness. Glickman developed an eye fluid test, used by some eye doctors and the CDC, to detect the dog roundworm in people's eyes so they can be treated before permanent damage sets in.

Prevention and early treatment are the best defenses against worms, says Wilmot. FDA-approved drugs are available to destroy worms that infect dogs, cats and people. Guidelines from the CDC and the American Association of Veterinary Parasitologists advise using deworming drugs in dogs and cats beginning at two weeks of age. Your veterinarian can provide dewormers and a treatment schedule.

Adult animals should have their stool tested at least annually by a veterinarian, who can also prescribe drugs to help prevent your pet from getting worms in the future.

### **Toxoplasmosis**

Cats may be carriers of *Toxoplasma gondii*, a parasite causing the disease toxoplasmosis. Direct contact with cat feces is one possible route of human infection, but toxoplasmosis is more likely to spread to people through eating raw or undercooked meat. Food animals may become infected by grazing in fields or eating feed contaminated with cat feces. People can also get toxoplasmosis from gardening and accidentally ingesting soil where an infected cat has defecated. Wearing gloves while gardening and washing hands afterward are recommended.

Cats pick up the toxoplasma parasite by eating rodents, birds or other prey, undercooked meat, the feces of infected cats, or contaminated soil. Most cats infected with *Toxoplasma* don't show signs and don't need to be treated, but those that do get sick may be diagnosed with laboratory tests and treated with medications. The CDC estimates that more than 60 million people in the United States probably carry the toxoplasma parasite, but few become ill from it. Those who get sick may have flu-like symptoms such as swollen glands and muscle aches.

Pregnant women with cats in the household need to take special precautions because toxoplasmosis can cause miscarriage, premature births and birth defects.

Pregnant women and others with suppressed immune systems should avoid changing a cat's litter box or, at a minimum, wear disposable gloves and wash their hands thoroughly afterward, says the CDC. Changing the box daily is recommended because it takes the toxoplasma parasite at least 24 hours to become infectious. It's also possible to become infected by inhaling the dried feces, so seal the waste in a plastic garbage bag for disposal. Cover children's sandboxes when not in use to prevent contamination from cat feces.

Antimicrobial drugs are available to treat people who become infected with toxoplasmosis.

### **Salmonellosis**

Salmonellosis is a disease caused by the bacterium *Salmonella*. People usually get salmonellosis by eating contaminated food, such as undercooked meats or eggs. But *Salmonella* can also be transmitted to people through pets, particularly reptiles, baby chicks, and ducklings, which commonly pass the organism in their feces.

Most, if not all, reptiles carry some *Salmonella* in their intestinal tract, says Scott Stahl, D.V.M., owner of Stahl Exotic Animal Veterinary Services in Vienna, Va., and past president of the Association of Reptilian and

Amphibian Veterinarians. Stahl says he and other reptile veterinarians have stopped testing the animals for *Salmonella*. "They tend to intermittently shed the organism, so a fecal culture may be a false negative," he says, giving the reptile owner a false sense of security. Once the bacteria are shed in droppings, *Salmonella* may be found on the reptile's skin, its cage, the floor, and any other surface the animal touches.

Since *Salmonella* are part of a reptile's normal bacteria and cannot be eliminated from its intestinal tract, people need to practice good hygiene around reptiles. Stahl advises no eating, drinking, or smoking around the animals. Nor should the pets be allowed to roam freely through the house, especially in areas where food is prepared or eaten. Always wash your hands with hot, soapy water after handling reptiles, their cages or equipment, and any surfaces they come into contact with.

The CDC estimates that 70,000 people in the United States get salmonellosis each year from contact with reptiles. Reptiles are not appropriate pets for small children and should not be in the same house as an infant, advises the CDC.

### **Ringworm**

Ringworm is not caused by worms, but by several different types of fungi. People can get this skin and scalp disease just by touching the skin or fur of an infected animal, typically a cat, which holds the fungal spores. Ringworm can also infect dogs, ferrets, horses, rabbits, guinea pigs and other animals.

Signs of the disease can be "virtually invisible" in some cats and dogs, says Wilmot, but they can still transmit the disease to people. Others will lose patches of fur or hair, exposing bare skin with a lesion that is sometimes ring-like and itchy. Ringworm in people may show itself as a ring-shaped, reddish, itchy rash that can be dry and scaly or wet and crusty.

Keeping animal areas clean will help prevent ringworm, since the disease-causing fungi grow in dirt and contaminated bedding. In addition to contracting it from animals, people can also get ringworm from contact with other infected people or their personal items.

Topical and oral medications may be used to treat ringworm in people and pets.

### **Cat-Scratch Disease**

The CDC estimates that more than 20,000 people in the United States get cat-scratch disease (CSD) each year. Most cat scratches don't develop into CSD, but those that do may cause fever, fatigue, headache and swollen lymph glands.

The bacteria believed to cause CSD may be transmitted by fleas. About 40 percent of cats carry the infectious bacteria at some time in their lives, according to the CDC. Many do not show signs of illness, but some develop fever, lethargy, swollen lymph glands, inflamed eyes and gums, and neurological disease, requiring treatment by a veterinarian. Cat owners should use a good flea control, keep cats' claws trimmed short, and discourage rough play to prevent scratches and bites. If you are bitten or scratched, wash the area immediately with soap and water. Do not let cats--or any animal--lick open wounds on your body.

### **Rabies**

Rabies, a deadly viral disease that infects the brain and spinal cord in animals and people, is transmitted through the saliva of a rabid animal, usually by a bite. Vaccines to help prevent rabies are available for dogs, cats, horses, ferrets, and some farm animals. Pet owners should keep their pets' vaccinations, including rabies vaccinations, up to date. Vaccines for animals are licensed by the U.S. Department of Agriculture (USDA) and vaccines for people are approved by the FDA.

The number of rabies cases in domestic animals has steadily declined since animal control and vaccination programs began in the 1940s. Today, domestic animals account for less than 10 percent of the reported animal rabies cases. The number of cases in wild animals, however, has increased. Rabies is frequently found in raccoons, skunks, bats, and foxes.

People and pets should avoid contact with wild or unfamiliar animals. If you are bitten, immediately wash the wound with soap and water, clean the bite by allowing the wound to bleed, and get medical help at once. If a pet is bitten by a wild animal, seek veterinary assistance immediately.

After a person has been exposed to rabies, rabies immune globulin (proteins that function as antibodies) and the first of five doses of vaccine must be given promptly. The remaining four vaccine doses are given over a 28-day period. This regimen works by stimulating the immune system to produce antibodies that neutralize the rabies virus before it causes the actual disease. By the time symptoms appear, it is too late for this treatment, and the disease is almost always fatal.

According to the CDC, no one in the United States has developed rabies after being exposed to it when the vaccine was given promptly. Unlike the older rabies vaccines, which were painful injections in the abdomen, today's rabies vaccines are relatively painless and can be given in the arm.

### Rodent-borne Diseases

Two diseases of emerging concern, especially in young children, may be spread by rodents, including pet hamsters, mice and rats. Lymphocytic choriomeningitis (LCM) is a viral disease that people can get from inhaling infectious airborne particles of rodent urine, feces, or saliva, or by ingesting food contaminated with the virus. Rat-bite fever is a bacterial illness that can be transmitted through the bite or scratch of a rodent or by ingesting food or water contaminated with rodent feces.

Because both diseases may cause flu-like symptoms initially, such as fever, headache, and muscle aches, they can be misdiagnosed or underestimated, says Victoria Hampshire, V.M.D., of CVM's Office of Surveillance and Compliance. LCM can escalate to muscle weakness and paralysis, and rat-bite fever can also cause severe complications. There are no specific drugs to treat LCM, and severe cases may require hospitalization. Rat-bite fever is usually cured with antibiotic drugs.

Owners of pet rodents should avoid exposure to their droppings and should periodically disinfect rodent habitats while wearing gloves and washing hands afterward. Traps should be used to rid the house and property of wild mice and rats. Make sure to tell your doctor if you or your child has flu-like symptoms and has had recent contact with rodents.

### Flea- and Tick-borne Diseases

Fleas and ticks are responsible for a number of diseases in pets and people. Some types of ticks, for example, can transmit the bacteria that cause Lyme disease to animals and humans. Fleas can harbor tapeworm larvae, which grow into adult tapeworms in the intestines of pets or people who may swallow the infected fleas.

Although pets cannot give flea- and tick-borne diseases directly to people, they can transport these pests into their homes, exposing family members to potential infection.

Many products are available to help control fleas and ticks on pets and in their environment. Check with your veterinarian for appropriate treatments. (See "[Taking the Bite Out of Fleas and Ticks](#)," July-August 2001 *FDA Consumer*.)

The USDA has licensed a vaccine for use in dogs for Lyme disease prevention. If you live in a tick-infested region, ask your veterinarian about this vaccine for your dog.

### Mycobacteria

Fish and the water they live in can harbor bacteria that may cause illness in people. *Mycobacterium* is one of the main infectious germ families associated with fish and aquarium water. A common route of this infection in humans is through cuts or scrapes on hands or feet.

People, especially those with compromised immune systems, should wear rubber gloves when cleaning the fish tank and wash their hands well afterwards, says Renate Reimschuessel, V.M.D., Ph.D., director of the FDA's aquatic research program. "Since these and other bacteria can be present in fish tanks, it's a good idea to keep kids from putting their hands in the tank, or, in the case of toddlers, drinking tank water," she adds. "The same advice goes for pets--keep your cats and dogs from drinking potentially contaminated water--either from a fish tank or a toilet. Basically, follow good hygiene procedures when handling aquatic animals or materials from their habitat."

### Psittacosis

The bacterium *Chlamydophila psittaci* is the cause of a common bird disease, psittacosis. The disease is also called parrot fever because of its frequent occurrence in parrot-type birds--especially cockatiels and parakeets. Some birds may get sick from it, while others show no signs of illness. Bacteria from infected birds are found in their droppings and nasal discharges, and people can become infected by inhaling the dried droppings and secretions.

People exposed to birds with psittacosis should see a health care provider if they develop flu-like symptoms such as fever, chills, headaches, muscle aches, or dry cough. Left untreated, psittacosis can develop into pneumonia and other health problems. Antibacterial drugs are used to treat the disease in birds and people.

To help prevent transmission of psittacosis, Victoria Hollifield, D.V.M., of Best Friends Veterinary Hospital in Derwood, Md., recommends that people not allow birds to peck them around the mouth area, or to fly around the house, particularly in eating or food preparation areas. Hand washing after contact with birds and wearing a dust mask and gloves when cleaning the cage are also good precautions. "The inhalation of particles is what's so potentially dangerous to us," says Hollifield, "and when you are scrubbing out the cage you tend to push a lot of those particles into the air."

Getting regular veterinary checkups for all pets is important, but it's especially critical for birds, says Hollifield. Being flock animals, birds will hide their signs of illness. "If they show that they're weak, the other birds will push them out," says Hollifield. "By the time you see a bird acting or looking like it's sick, it's probably been

sick a long time and it's probably very sick at that point."

Hollifield advises pet owners to get birds and other pets from a reputable source who can produce documentation to show that the animal has been tested for certain diseases. This is particularly important for exotic pets, says Hollifield, who sees hedgehogs, chinchillas, and even tarantulas in her veterinary practice. She advises people to think carefully before getting an exotic pet, and never take in an exotic animal caught in the wild. They are more likely to carry parasites and become sick in captivity.

"I think pets are a wonderful part of our lives, and especially beneficial to children," says Hollifield. "But we know more about domesticated animals and are better equipped with vaccines and knowledge to make these safe pets. It is a safer choice to select a domesticated animal for a pet."

---

### For More Information

CDC Web site for animal/human health risks  
[www.cdc.gov/healthypets](http://www.cdc.gov/healthypets)

---

### Petting Zoos

Children are enchanted by face-to-face encounters with animals in public settings. But their fascination can fade quickly if the animal gives them a disease.

"In the past few years, we've seen numerous outbreaks of disease among persons visiting petting zoos, farms and county fairs," says John Dunn, D.V.M., Ph.D., an epidemiologist at the Centers for Disease Control and Prevention (CDC).

Infections in people, particularly children, have been linked to venues where they had hands-on contact with animals. One of the largest outbreaks occurred in 2000 among school groups and families that visited a dairy farm in Worcester, Pa. Fifty-one people reported symptoms that included bloody diarrhea, fever, and vomiting within 10 days of their visit. While none of the infected people died, 16 needed to be hospitalized, including one child who required a kidney transplant.

The illnesses, caused by a strain of the bacterium *Escherichia coli* (*E. coli*), arose from nail-biting, eating food, or other manners of touching the mouth with hands after petting the animals, according to the CDC. This and similar incidents prompted the CDC to publish federal safety guidelines for operators of events and facilities that offer public contact with farm animals. The guidelines recommend providing hand-washing facilities with soap and disposable towels, posting information about diseases that can be contracted from animals, and prohibiting human food in the interaction area.

"We're not advocating that people don't interact with animals," says Dunn. "We want to emphasize hygiene and education; people should be informed that there is some risk when handling animals, especially when eating afterwards without washing their hands."

---

### BARF and Bacteria

There is a growing trend on the part of pet owners to feed pets a diet that includes raw meat and bones, typical of what animals in the wild would eat. For dogs and cats, these diets are often referred to as BARF-bones and raw food, or biologically appropriate raw food.

"The FDA believes that feeding raw meat diets to pets is not consistent with its goal of protecting the public from significant health risks," says William Burkholder, D.V.M., Ph.D., the Food and Drug Administration's pet food specialist. In addition, he says, raw meat and bones do not have all the required nutrients that a pet, for example, a dog, needs on a daily basis.

But in recognition of owner preferences and the popularity of these diets, the FDA has published draft guidelines to manufacturers of pet foods that contain raw meat or other raw animal tissues for dogs, cats, and other pets as well as captive animals that are not pets (such as zoo animals). The guidelines give recommendations on manufacturing practices and labeling to protect pet owners and pets from risks involving food safety and nutritional deficiency.

Pet owners who feed raw meat and bones should handle these products very carefully to avoid bacterial contamination, says Burkholder. Just as when preparing raw foods for humans, use hot water and soap to wash hands, utensils, containers, and surfaces that come into contact with the food. Don't put your hands near your mouth until you've washed them, and don't allow your pet to lick your face right after it has eaten raw meat.

Pets may also contract an infection from raw meat. "Vomit and diarrhea are potential sources of infection for humans," says Burkholder. "If your animal gets sick, wash your hands after cleaning up."

If owners choose to feed bones to their pets, they should supervise their pet when it is chewing on bones, he adds. "If the pet consumes a big chunk of bone that won't pass through the digestive system, it could perforate the gastrointestinal tract, which is life-threatening for the pet. Owners would need to seek immediate veterinary care."

---

[FDA Home Page](#) | [Search FDA Site](#) | [FDA A-Z Index](#) | [Contact FDA](#) | [Privacy](#) | [Accessibility](#)

FDA Office of Public Affairs  
[FDA Consumer magazine](#)