

Transmissible Diseases of Cats

Our topics for this week are:

- Diseases transmitted from cats to humans
- Preventive measures for transmittable diseases of cats

Apparently healthy domestic cats pose little risk of transmitting disease to healthy adult handlers who practice conventional personal hygiene. The risks of physical injury are greater than the risks of acquiring an infectious disease. However, there is much overlap. Up to 80% of cat bites become infected.

The most suitable pets for young children are dogs and cats because the risks of injury and infection are better known and more easily controlled than other animals.

Direct Transmitted

Directly transmitted zoonotic diseases from cats can result in signs of disease systemically or primarily in the respiratory, digestive, or skin (integumentary) system of humans.

Systemic Disease

Many zoonoses from cats can cause generalized (systemic) illness. Nearly all are described as “flu-like symptoms.” None are common in adult handlers of healthy appearing cats. Cats are the primary host for a protozoan parasite called toxoplasmosis. Cats are the only species to pass toxoplasmosis in their feces, although dogs that eat infected cat feces can mechanically and briefly pass the parasite in their feces. Toxoplasmosis is primarily a danger to pregnant women who have no immunity developed in earlier life to the parasite. If acquired first during pregnancy, toxoplasmosis can cause abortion. However, humans usually acquire toxoplasmosis from inadequately cooked meat. The cat is a low risk source of the disease because the feces are not infective until after one to five days outside the host, and the organisms are only passed for two weeks after the cat becomes infected. Still, it is advisable that litter boxes should be cleaned daily, but not by a pregnant woman. Litter boxes should not be placed in a dining room or kitchen. The hair of normal cats is too dry and cats are too fastidious to allow the organism to remain for one to five days on the hair coat and become infective. Pet cats pick up the organism by hunting and eating prey. They should not be allowed to hunt or scavenge or be fed raw or undercooked meat products. About 30% of cats allowed to kill and eat prey will have antibodies indicating exposure to toxoplasmosis.

Cat Scratch Disease (Bartonellosis) is significant, affecting more than 20,000 people per year in the U.S. Up to 50% of normal cats have or previously had *Bartonella henselae*. It is more often carried by kittens and is transmitted among cats by fleas, as well as bites and scratches. Humane declawing of kittens that will be in contact with young children, the elderly, or others with impaired immunity is advisable, as is control of fleas. Cat Scratch Disease is carried for months by kittens without clinical signs. Transmission can be by scratch, bite, or cat saliva contamination of an open wound. Young children should be closely supervised if allowed to handle cats to encourage gentle handling and minimize the risk of scratches, bites, or exposure

to cat saliva. All handler's hands and scratches or bites should be thoroughly washed after handling cats.

Echinococcosis is a disease caused by a tapeworm (*Echinococcus multilocularis*) of cats that are permitted to eat wild rodents, such as voles, shrews, or lemmings. It is acquired by ingesting cat feces contaminated materials. Echinococcosis typically causes parasite cysts in the lungs in humans.

Capnocytophaga canimorsus, a potentially fatal bacteria in cats' oral cavity, is a risk for humans with impaired immune systems, such as from chemotherapy, cancer, AIDS, or splenectomy. *Capnocytophaga* is less common in cats than in dogs.

Listeriosis can cause generalized disease in immunosuppressed humans that includes an atypical pneumonia. Transmission is generally via uncooked or under cooked foods.

Plague is a disease of cats that hunt and eat rodents in the southwestern United States. Transmission to humans can occur from sick cats by coughing, sneezing, or breathing onto a human's face or by being bitten by a plague-carrying flea from a sick cat.

Rabies is a fatal viral infection that is transmitted by bites or saliva contaminated wounds. Cats are vaccinated against rabies less commonly than dogs although most rabies in domestic animals in the U.S. is in unvaccinated cats.

Visceral larvae migrans, ocular larvae migrans, cutaneous larvae migrans, and acquired toxoplasmosis are serious diseases of young children. These diseases are acquired after incubation and hatching, or sporulation outside an animal's body. Exposure occurs indirectly via environmental contamination by cats. Young children should be kept from playgrounds and beaches where cats are allowed to defecate. Handling cats without fecal contamination of their hair coat is not a risk for transmission of these diseases.

Coxiellosis (Q Fever) is a bacterial disease that is transmitted by inhalation of dust contaminated by the body secretions of animals (urine, milk, feces, etc.) that are infected with *Coxiella burnetii*. Cats from farms with livestock are most likely to transmit Q Fever in placental fluids.

Respiratory Disease

Pasteurellosis (*Pasteurella multocida*) is a respiratory bacterial infection that can be acquired from cats, but these bacteria in humans usually require an impaired immune response to become severe or prolonged infections. Pasteurella is also the most frequent cause of wound infection from cat bites. Cat respiratory or oral secretions can be a source of infection in immunosuppressed humans with *Bordetella bronchiseptica*, *Chlamydia felis*, plague (*Yersinia pestis*) and tularemia (*Francisella tularensis*). However, based on reported cases the risks of these appear low to immunologically immature children. Young children should not be permitted to kiss cats and expose themselves to pet respiratory or oral secretions. Plague or tularemia can also be transmitted by infected ticks that may be carried to humans by cats.

Digestive Tract Disease

Ingesting fecal contaminated materials is required to contract the bacterial diseases, campylobacteriosis or salmonellosis from cats. Of these, campylobacteriosis is the most common, although the source is generally from kittens with diarrhea. Salmonellosis is rare in cats. The most common tapeworm of cats (*Dipylidium caninum*) can be acquired by humans, if they swallow the intermediate host, a flea. Giardiasis has been listed as a potential zoonosis from

infected cats although the status of giardiasis as zoonotic disease from cats has been questioned.

Zoonoses that are passed in the feces in the infective form and could be acquired from exposure to the rectum are salmonellosis, campylobacteriosis, cryptosporidiosis, yersiniosis (*Yersinia enterocolitica*), and perhaps, giardiasis. Among these, campylobacteriosis is the greatest risk from cats, although the risks are still small if no clinical signs (diarrhea) are present and hands are washed after handling cats.

Skin Disease

Ringworm is a fungus infection of the upper layers of the skin. Cat handlers may develop transient infections by contact, often by infected hair being caught under a sleeve or collar and rubbed against the skin, or caught under the fingernails and scratched into the scalp. The zoophilic skin fungus, *Microsporum canis*, is a common cause for ringworm, particularly *tinea capitis* (ringworm on the head), in young children. It is often carried on cats' hair coat without clinical signs and transferred to the scalp of children by contamination of a child's hands and fingernails. Young children should have their hands washed and fingernails cleaned after handling cats to reduce the risk of acquiring ringworm. Ringworm is the most common reported zoonosis other than bites and scratches in small animal veterinarians.

Mange mites (*Notoedres cati*, *Cheyletiella blakei*) can be transmitted transiently to handlers and cause chigger-like bite itchy bumps in the skin, but transmission by animals without clinical signs of disease is highly unlikely.

Staphylococcus may be carried by cats but much less commonly than in dogs. The species of staphylococcus is not typically the type that is found in people (*S. aureus*).

Sporotrichosis is a fungus that can grow in puncture wounds. Cats with sporotrichosis in their wounds have concentrated populations of the fungus. Humans handling cats with sporotrichosis lumps and draining sores on their skin are at risk of acquiring the disease by cat scratches or contaminating cuts on their hands or arms.

Vector-Borne

Tularemia is a bacterial infection that can be transmitted by deerflies and ticks. Cats may carry the bacteria in their mouth if allowed to eat rabbits or other prey that were infected with tularemia. They can also carry ticks into a household, but this is unusual. Ticks from cats could transmit plague or tularemia. Children should not handle cats with fleas or ticks and cats should be routinely examined and treated for external parasites.

Sanitary Practices

A handler of cats should wear appropriate dress to protect against skin contamination with hair and skin scales or saliva, urine, and other body secretions. External parasites, fleas and ticks, should be controlled. Vaccinations in cats should be kept current against rabies.

Basic sanitary practices should be employed, such as keeping hands away from eyes, nose, and mouth when handling cats and washing hands after handling cats. Cat handlers should be vaccinated against tetanus every 10 years.

Special precautions are needed if sick cats are handled, and sick cats should be isolated from apparently normal cats. New household or cattery members should be quarantined for at least two weeks to reduce the risk of transmitting a disease that new animals could be incubating before introducing to the rest of the clowder.

When handling more than one cat from different households or catteries, proper sanitation is required to prevent the spread of disease from carriers without clinical signs. Cats from different origins should not be confined in the same cage or group area. Other basic procedures are for handlers to wash their hands and to clean and disinfect table tops and cages used in handling. Restraint equipment such as blankets, muzzles, capture poles, grooming equipment, collars, cat bags, and slip leashes should be disposable or cleaned and disinfected after each use. Leather gloves should be kept as clean as possible and used infrequently.

Companion cats should be kept exclusively indoors. Remaining indoors virtually eliminates the risks of toxoplasmosis, plague, rabies, and many other zoonotic diseases. Rough play should be avoided with kittens for behavioral reasons and to reduce the risk of diseases from bites or scratches. Gloves should be worn when handling cats if there are any open wounds on the handler's arms or hands. A cat should not be allowed to lick an open wounds on handlers. Outdoor cats should not be allowed access to children's sandboxes, or to gardens.

Now, let's recap the key points to remember from today's episode:

- Ringworm is the most common transmittable disease from cats.
- Cat Scratch Disease is the most common potentially life-threatening disease acquired from cats.
- Young children, the elderly, or others with suppressed immunity should avoid scratches from cats, especially kittens.
- Pregnant women should not permit their housecat to ever roam outdoors

More information on animal handling is available in my book, *Animal Handling and Physical Restraint* published by CRC Press. It is also available on Amazon and from many other fine book supply sources.

Don't forget serious injury or death can result from handling and restraining some animals. Safe and effective handling and restraint requires experience and continual practice. Acquisition of the needed skills should be under the supervision of an experienced animal handler.