



TOXOPLASMOSIS

The cat disease most humans don't get from cats.

What is Toxoplasmosis?

Toxoplasmosis is an infection caused by a parasite, *Toxoplasma gondii* that lives inside cells.

It affects most animals especially sheep, cats and humans, but even fish, insects and earthworms may be carriers.

Cats are the main hosts for Toxoplasma and toxoplasma must find its way to a cat's intestines in order to reproduce sexually.

In cats the parasite completes its life cycle in the gastrointestinal tract and gets back into the environment in the feces.

Toxoplasmosis Disease Transmission

- Although cats are the primary hosts for toxoplasma owning a cat is not a common way to acquire toxoplasmosis
- Although it is possible to get Toxoplasmosis from cats, no correlation has been found between cat ownership and Toxoplasma infection.
- There is, however, a strong association between Toxoplasma infection and working with raw meat. Be careful handling raw meat and do not eat undercooked meat.

What is the Risk to an Unborn Child?

A human with an acute Toxoplasma infection experiences varying degrees of illness: fever, swollen lymph nodes, muscle stiffness, joint pain, swollen liver and/or spleen (manifested as a sore upper abdomen). These symptoms may be so mild as to go unnoticed. Illness lasts 1 to 12 weeks and is often dismissed as a bad cold or glandular fever.

However, if the person infected is a pregnant woman, the Toxoplasma organism may cross the placenta to the developing fetus. The amount of damage done depends on the stage of pregnancy at the time of infection. Infection in early pregnancy may result in miscarriage or stillbirth; it may also result in a child with varying degrees of blindness (due to inflamed retina) and/or various severe neurological conditions including hydrocephalus, microcephaly, and retardation. Sometimes problems are not evident at birth and show up late in life.

Fortunately, only 30 to 40% of infections in pregnant women result in damage to the fetus, the most common problem being eye disease.

The problems described above occur only when someone is infected with Toxoplasma for the first time; that is, a person who has already had the infection is not likely to get

sick again nor is she likely to transmit the organism to an unborn child. (It is estimated that up to one third of the world population has already had Toxoplasmosis.) In general, people who experience more than one acute episode are severely immunosuppressed (as from HIV or cancer therapy.)

How do People get this Disease?

There are two basic forms of Toxoplasma organism: the oocyst, which is shed in cat feces, and the Toxoplasma tissue stages, which live in the flesh of such food animals as pork, lamb, venison, free-range poultry, game meat and in Australia kangaroo meat. A person who inadvertently eats either of these forms of Toxoplasma is liable to become infected. Unpasteurised milk, particularly goat's milk, is also a source of infection.

If my Cat has Toxoplasma, Won't he be Obviously Sick?

Not necessarily. The form of feline infection that is contagious to humans is the intestinal form in which a cat sheds oocysts in its feces. The cat may or may not show diarrhea.

Cats may experience an acute illness similar to that which humans experience; however, in adult cats, symptoms are usually mild and go unnoticed. This form of infection is not contagious to humans, though a pregnant cat could transmit the disease to her kittens.

Is my Cat a Risk to me?

The cat has been over-emphasized as a carrier of Toxoplasma; most human infections result from eating tissue stages of Toxoplasma in undercooked meat.

Usually a cat will only shed oocysts after the first infection of Toxoplasma; a cat that has already had a Toxoplasma infection usually will not re-shed the oocysts unless its immune system has been compromised (as through the feline leukemia virus infection or drugs.) Cats shedding oocysts generally do so for 5 to 14 days.

Oocysts require 24 to 48 hours to sporulate --- that is, grow into a form that is dangerous to people. For this reason, the cat's litter box should be changed daily or twice daily. Dangerous oocysts can be contacted when gardening. Note that freezing weather will not reliably kill dangerous oocysts in soil nor will freezing meat reliably kill the dangerous tissue forms.

Dogs that eat cat feces can also shed oocysts for 2 days afterwards.

Your cat may be tested to see if she has already had Toxoplasmosis; a cat that has already been infected is unlikely to shed dangerous oocysts in the future.

RECOMMENDATIONS FOR PREVENTION

1. Food Hygiene

The most important thing is to be careful when cooking raw meat, especially lamb and pork.

DO NOT EAT MEAT OR TASTE MEAT BEFORE IT IS FINISHED COOKING.

Cooking in a Microwave does not heat the meat evenly enough to reliably kill the organism.

Freezing meat does not reliably kill the dangerous tissue forms.

Meat must be frozen to -10°C for 3 days or -20°C for 2 days.

To prevent toxoplasmosis and other food borne illnesses, food should be cooked to safe temperatures. A food thermometer, placed in the thickest part of the meat, should be used to measure the internal temperature of cooked meat to ensure that meat is cooked all the way through (until no longer pink).

- Beef, lamb, and veal roasts and steaks should be cooked to at least 67°C. Allow meat to rest* for three minutes before carving or eating.
- Pork, minced meat, and wild game should be cooked to 71°C before eating. Minced meats do not need a rest time
- Poultry, whole cuts and minced, should be cooked to 74°C and allow whole poultry to rest* for three minutes before carving or eating.

*"A 'rest time' is the amount of time the product remains at the final temperature, after it has been removed from a grill, oven, or other heat source. During the three minutes after meat is removed from the heat source, its temperature remains constant or continues to rise, which destroys pathogens."

- Fruits and vegetables should be peeled or thoroughly washed before eating.
- Cutting boards, dishes, counters, utensils, and hands should always be washed with hot soapy water after they have contacted raw meat, poultry, seafood, or unwashed fruits or vegetables.
- Cats should be fed only canned or dried commercial food or well-cooked table food, not raw or undercooked meats.

2. Cat litter box hygiene

The cat itself is not a source of oocysts: only its feces are.

- Wash your hands after handling your cat and the litter box.
- Change the litter box daily or twice daily because *Toxoplasma* oocysts require several days to become infectious.
- It is best, of course, if someone else changes the box while you are pregnant.
- Wear gloves when gardening.
- Do not allow dogs to eat the cat's feces.

Pregnant women

- should wear gloves when gardening and during any contact with soil or sand because cat waste might be in soil or sand. After gardening or contact with soil or sand, wash hands thoroughly.
- should avoid changing cat litter if possible. If no one else is available to change the cat litter, use gloves, then wash hands thoroughly.
- should be encouraged to keep their cats inside and not adopt or handle stray cats.

3. Health education

- Health education for women of childbearing age should include information about meat-related and soil borne toxoplasmosis prevention. Health-care providers should educate pregnant women at their first prenatal visit about food hygiene and prevention of exposure to cat feces.
- Health-care providers who care for pregnant women should be educated about two potential problems associated with *Toxoplasma* serology tests. First, no assay exists that can determine precisely when initial *Toxoplasma* infection occurred. Second, in populations with a low incidence of *Toxoplasma* infection, a substantial proportion of the positive IgM test results will probably be false positive.

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