

Toxoplasma and Wildlife

Every living organism has parasites and wildlife, pets and people are no exception. Parasites are small organisms that live in or on another organism, known as the host, which provides the parasite with food and shelter. Some parasites, such as *Toxoplasma gondii*, are zoonotic, which means they can be transmitted from animals to humans and vice versa.

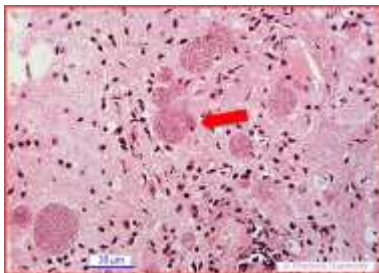
Increasing interactions between wildlife, pets and people are occurring due to urban expansion and land clearing. These interactions can spread zoonotic parasites. The impact of parasites transmitted to wildlife from people is an emerging threat to wildlife that is not well understood, yet is likely to increase in the future.

While many people enjoy interacting with wildlife, we may be inadvertently affecting the health of unique native animals by spreading parasites such as *Toxoplasma gondii*.

What is *Toxoplasma gondii*?

Toxoplasma gondii is a common zoonotic parasite of mammals, including people, and birds. The parasite is genetically highly variable with many different strains that vary in how much damage they cause to the host. Wildlife may be exposed to more virulent 'domestic' strains of *Toxoplasma gondii* in urban areas. Healthy wildlife infected with *Toxoplasma gondii* may remain healthy because their immune system produces antibodies that keep the infection under control. If an animal's immune system is suppressed due to disease or stress infection with *Toxoplasma gondii* may cause toxoplasmosis, which is rapidly fatal.

Toxoplasma gondii Profile



Toxoplasma gondii is a single-celled parasite with a complex life cycle. In cats, the parasite reproduces sexually and environmentally resistant oocysts are passed in the faeces. These oocysts can then infect other hosts when they are accidentally eaten. Within these hosts, the parasite reproduces asexually and may spread throughout the body.

Photo: *Toxoplasma* cysts in the brain of a wallaby, Murdoch University

How is *Toxoplasma gondii* spread?

Sources of *Toxoplasma gondii* include environmental contamination by domestic cats, exposure to cat faeces, and food or water that has been contaminated by cat faeces.

Eating oocysts is not the only way in which the parasite can be transmitted. People and animals can also become infected by eating the meat from an animal that has the parasite. Food, particularly meat scraps left in gardens to encourage wildlife, is a common source of *Toxoplasma gondii* in wildlife. In Perth, quenda taken to wildlife carers with neurological disease due to infection with *Toxoplasma gondii* are most likely to be infected as a result of eating household scraps, especially if these scraps contain raw or partly cooked meat.

Is this a problem for wildlife?

Toxoplasma gondii is common in wildlife, however large-scale die offs have not been reported. Most cases of clinical disease in wildlife are in captive animals. There have been increasing reports of infection with *Toxoplasma gondii* in quenda and other marsupials in rehabilitation. The illness and added stress of being captive can cause deadly toxoplasmosis. Reports of outbreaks of severe toxoplasmosis in captive animals have led to a perception that this infectious disease is contributing to population decline in free-ranging wildlife.

Did you know:

- The most common source of infection with *Toxoplasma gondii* in people and cats is raw or partly cooked meat.
- Cats rarely have symptoms when infected, so you don't know if your cat has been infected.
- Cats only spread *Toxoplasma gondii* in their faeces for a few weeks following infection with the parasite. This stops by itself therefore it does not help to have your cat's faeces tested for *Toxoplasma gondii*.

Find out more:

http://www.cdc.gov/parasites/toxoplasmosis/gen_info/faqs.html

[Pan, S., Thompson, R.C.A., Grigg M.E., Sundar N., and Lymbery, A.J. \(2012\) Western Australian marsupials are multiply infected with genetically diverse strains of *Toxoplasma gondii*. PLoS One 7: e45147.](#)

About Healthy Wildlife

The 'Healthy Wildlife Healthy Lives' – A One Health project aims to educate the public about people's interaction with wildlife in urban areas, particularly how people and domestic animals spread diseases to wildlife, such as birds, quenda (bandicoots), native fish, bobtails and kangaroos. The project informs people about how to avoid harm to wildlife, create positive interactions with wildlife and protect and conserve the environment. The aim is to keep wildlife healthy for a healthier world.

The project is a partnership between Eastern Metropolitan Regional Council and Murdoch University, supported by Lotterywest.

VISIT: www.healthywildlife.com.au