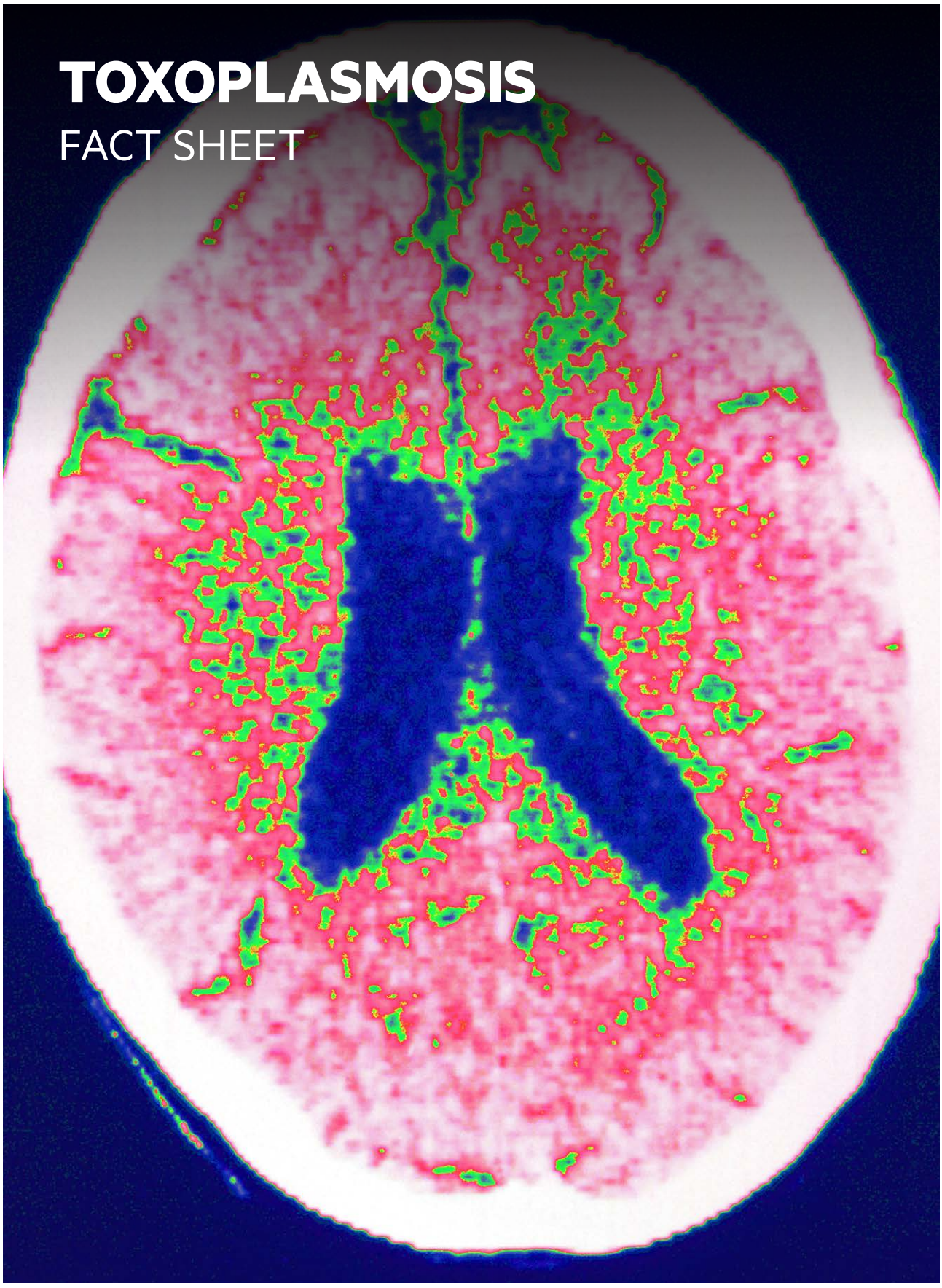
QUEENSLAND MUSEUM

TOXOPLASMOSIS

FACT SHEET



Q26-027

Queensland Government

WHAT IS TOXOPLASMOSIS DISEASE?

Toxoplasmosis is a zoonotic disease caused by the parasite *Toxoplasma gondii*. It is one of the most common parasitic infections worldwide and can be transmitted to humans from other animals, particularly other mammals.

ⓘ Approximately 1 in 3 Australians have been infected with *T. gondii* at some point in their lives. Most infections cause no symptoms.



Natural hosts

Cats are the natural reservoir hosts where the parasite completes its life cycle.

How is it spread?

Toxoplasmosis parasites cannot be transmitted directly from human to human. Human-to-human transmission only occurs from mother to foetus during pregnancy (congenital toxoplasmosis) or, rarely, through organ transplants or blood transfusion.

⚠ Infection during pregnancy can cause severe birth defects, stillbirth or miscarriage.

Humans are most commonly indirectly infected with *T. gondii*. Cats are the only animals where the parasite can complete its sexual reproduction cycle, producing infectious oocysts that are shed in faeces. Oocysts can survive in soil for over a year. Other animals, including livestock, kangaroos and humans, can harbour tissue cysts and complete asexual reproduction but cannot spread the parasite through their faeces.

ⓘ Cats only shed oocysts for 1–3 weeks after their first infection. After this, they rarely shed oocysts again, even if reinfected with the disease.

Indirect transmission to humans can occur through:

- contact with cat faeces in litter boxes, soil or sandpits
- contact with contaminated soil (e.g. during gardening, or through consuming or handling unwashed fruits and vegetables grown in contaminated soil)
- eating undercooked or raw meat containing tissue cysts, especially lamb, pork or kangaroo
- drinking water contaminated with oocysts from cat faeces.

ⓘ Indoor cats only fed commercial food are very unlikely to shed *T. gondii*. Outdoor cats that hunt for food are far more likely to be infected.

Who is at risk?

- Vets and vet nurses, farmers, agricultural workers, abattoir workers, animal shelter staff, pest control workers, animal handlers, pet groomers and kennel workers.
- Pet owners, especially those with cats, dogs, rabbits or guinea pigs. Cat owners are especially vulnerable when cleaning litter boxes.
- Pregnant women.
- People who consume raw or undercooked meat.

You can keep your cat with you during pregnancy with proper precautions. Have someone else clean the litter box, or, if you must do it, wear disposable gloves and wash your hands immediately afterwards.

What are the symptoms?

In animals

- Cats (both domestic and wild) infected with *T. gondii* usually show no symptoms and appear completely healthy. Rarely, young kittens or immunocompromised cats may develop fever, lethargy, loss of appetite or respiratory signs.
- Sheep and goats can develop serious disease, particularly if infected during pregnancy. Infection can cause abortion, stillbirth or birth of weak lambs/kids. Adult sheep generally show no symptoms but harbour tissue cysts in muscles and organs.
- Pigs and cattle usually show no clinical signs of infection but can carry tissue cysts in their meat, which can spread to humans who eat undercooked meat.
- Kangaroos, wallabies and other Australian wildlife can carry *T. gondii* tissue cysts. Most show no symptoms but can serve as a source of infection through their meat.

In humans

Most healthy adults and children (80–90% of those infected) have no symptoms or very mild symptoms that resolve on their own without treatment within weeks to months.

Initial symptoms may include:

- mild flu-like symptoms (e.g. fever, fatigue, muscle aches)
- swollen lymph nodes, especially in the neck
- headache
- sore throat.

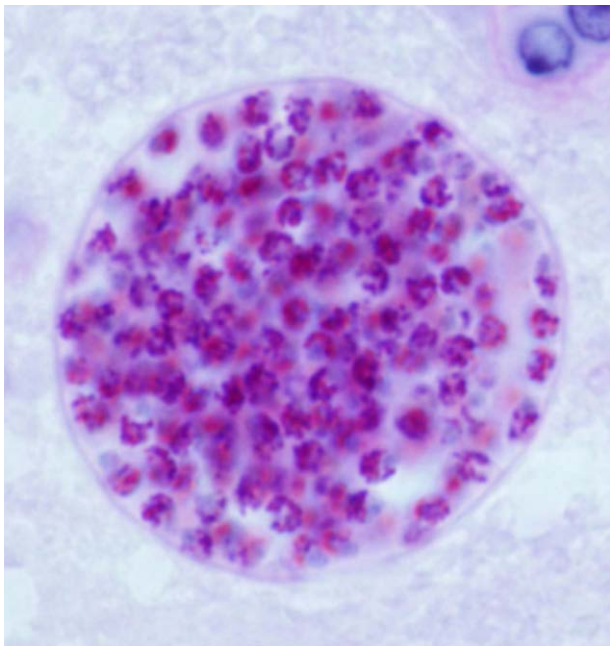
Severe infections in immunocompromised people may cause:

- encephalitis (brain inflammation)
- seizures and confusion
- lung problems (pneumonitis)
- eye infections (chorioretinitis) causing blurred vision or eye pain.

Babies infected in the womb may have:

- eye damage
- brain damage
- developmental delays
- hearing loss
- an enlarged liver or spleen.

Most infected babies appear normal at birth but may develop eye or brain problems later in childhood. Regular monitoring is important.



How can I prevent infection?

Currently, no vaccine is available for toxoplasmosis in humans or cats. However, there are other measures you can take to protect yourself from this disease. These include:

- Cook meat thoroughly to a safe internal temperature (above 66°C) to kill tissue cysts.
- Wash your hands thoroughly with soap and water after handling raw meat, soil or cats.
- Wash all fruits and vegetables thoroughly before eating.
- Wear gloves when gardening or handling soil.

- Avoid cleaning cat litter boxes when pregnant, or, if you must do it, wear disposable gloves and wash your hands immediately afterwards.
- Change cat litter daily; oocysts take 1–5 days after being shed to become infectious.
- Keep cats indoors and only feed them commercial food or well-cooked meat; this prevents cats from hunting and becoming infected.
- Cover children's sandpits when not in use to prevent contamination by cats.

Freezing meat at −20°C for several days can kill *T. gondii* tissue cysts. Domestic freezers usually maintain a temperature between −23 and −18°C (and some freezer-only units can achieve −34°C or lower). Home freezing above −20°C may not kill cysts in game meat, so check the temperature of your freezer before freezing meat.

What treatments are available?

Healthy people usually don't need treatment as the infection resolves on its own. Pregnant women, babies and immunocompromised people may need antiparasitic medications to prevent the disease progressing. Pregnant women diagnosed with toxoplasmosis should receive immediate treatment to reduce the risk of transmission to the foetus.

Infection during pregnancy is treatable and early treatment can significantly reduce the risk to the foetus.

If you think you may have been exposed to toxoplasmosis, please contact your doctor or public health agency for further advice.

Cover: A CT scan of a patient with toxoplasmosis. Courtesy: Alamy/Mediscan
Page 2: Changing cat litter daily and regularly cleaning your cat's toilet will help prevent infection with *Toxoplasma gondii* bacteria. Courtesy: Alamy/Dorling Kindersley
Page 3: Microscopic cysts containing *Toxoplasma gondii* develop in the tissues of many vertebrates. Here, in mouse brain tissue, thousands of resting parasites (stained red) are enveloped by a thin parasite cyst wall. Courtesy: Alamy/Science History Images

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