QUEENSLAND MUSEUM

# CRYPTOSPORIDIOSIS

## FACT SHEET



Q26-027

Queensland Government

# WHAT IS CRYPTOSPORIDIOSIS?

Cryptosporidiosis is an intestinal disease caused by microscopic parasites of the genus *Cryptosporidium*. Many species of *Cryptosporidium* contribute to human infection. Some are zoonotic (passed from animals to humans) while others are anthroponotic (passed from humans to animals).

*Cryptosporidium* is one of the most common causes of waterborne disease worldwide. It can survive in chlorinated swimming pools for up to 10 days.

## Natural hosts

The main species affecting humans are:

- *Cryptosporidium parvum* (natural reservoir hosts: ruminants, e.g. cattle, sheep, goats)
- *Cryptosporidium hominis* (natural reservoir hosts: humans).

## How is it spread?

Infection is spread through the faecal–oral route. The parasite forms hardy oocysts (eggs) that are highly resistant to chlorine disinfection. *C. parvum* is zoonotic and spreads from infected animals (livestock and wildlife including kangaroos and possums) to humans. *C. hominis* spreads among humans. Both species are highly infectious, with the ingestion of as few as 10–100 oocysts being capable of causing disease.

Native Australian animals like kangaroos and possums can carry *Cryptosporidium* parasites. Be cautious around wildlife, especially in areas with water sources.

Cryptosporidiosis is primarily transmitted through direct contact with infected animals and their faeces (e.g. on farms, in petting zoos or during wildlife encounters). People with cryptosporidiosis can infect others while the parasite remains in their faeces, which may be for several weeks after symptoms have resolved.

Animal-to-human transmission can occur through:

- drinking water contaminated with animal faeces (e.g. bore water, streams, rivers)
- swimming in natural bodies of water (e.g. lakes, rivers) where animals defecate
- eating contaminated food, especially raw vegetables contaminated with animal faeces or unpasteurised milk from infected livestock.

Human-to-human transmission can occur through:

- swimming in contaminated swimming pools
- touching faeces from infected babies during nappy changes
- close contact with someone who has had diarrhoea (e.g. in childcare centres or households)
- touching contaminated surfaces.

Even properly chlorinated pools can harbour *Cryptosporidium* parasites. Always shower before swimming and don't swim if you have diarrhoea.

## Who is at risk?

- Vets and vet nurses, farm workers, animal transporters, wildlife carers and volunteers, rangers, healthcare workers and childcare staff.
- People living in rural areas using bore water or tank water.
- Young children under 5 years of age, especially those in childcare.
- Parents and carers of young children who require nappy changing.
- People swimming in pools, lakes, rivers or water parks.
- People with weakened immune systems (can cause severe, chronic, life-threatening illness).

Children in childcare are at particularly high risk. Cryptosporidiosis spreads easily in these settings, even with good hygiene practices.



## What are the symptoms?

### In animals

Cattle and calves are major reservoirs of *C. parvum*. Young calves (1–3 weeks old) have symptoms that may include:

- profuse watery diarrhoea
- dehydration
- weight loss
- decreased growth rates.

Some calves may die if severely affected. Adult cattle are usually asymptomatic but can shed millions of oocysts in their faeces.

⚠ Young animals suffer more severe cryptosporidiosis symptoms than adult animals.

Sheep can be infected, with young lambs having symptoms that may include:

- watery diarrhoea
- poor growth.

Adult sheep typically show no symptoms but can shed oocysts.

Goats and kids show similar signs to sheep, with young kids being most severely affected.

Dogs, cats and horses can carry *Cryptosporidium* parasites (usually species-specific strains). Puppies, kittens and foals may suffer diarrhoea, while adult animals are often asymptomatic carriers.

Kangaroos, wallabies, possums and other Australian native wildlife can also carry various *Cryptosporidium* species. Most infected wildlife are asymptomatic but can still contaminate water sources and the environment with oocysts.



### In humans

Some people may be infected but have no symptoms; however, they can still spread the parasite to others through their faeces. Symptoms, most often stomach pain and diarrhoea, usually appear 2–10 days (average 7 days) after infection and last 1–2 weeks in healthy people. Immunocompromised individuals may have severe, chronic diarrhoea lasting months or years, which can be life-threatening.

Symptoms may include:

- watery diarrhoea (most common and prominent symptom; can be profuse)
- stomach cramps and abdominal pain
- nausea
- vomiting
- fever (usually low grade)
- dehydration (especially concerning in young children and the elderly)
- weight loss
- loss of appetite.

ⓘ Animals can spread *Cryptosporidium* parasites, even when they appear completely healthy. This makes prevention challenging on farms, as it is difficult to identify infected animals.

## How can I prevent infection?

No vaccine is currently available for cryptosporidiosis in humans or animals. Prevention is focused on avoiding contact with oocysts.

Prevention measures include:

- Wash hands thoroughly with soap and running water (for at least 20 seconds) after using the toilet, changing nappies or handling animals and before preparing food or eating.
- Don't swim when you have diarrhoea and wait at least 2 weeks after symptoms completely stop before swimming.
- Avoid swallowing water while swimming in pools, lakes or rivers.
- Drink only treated or boiled water (boiled for 1 minute) in areas with questionable water quality.
- Wash fruits and vegetables thoroughly, especially if they may have been washed in untreated water.
- Avoid raw milk and unpasteurised dairy products.
- Wear gloves when handling animal faeces and wash hands immediately afterwards.
- Supervise young children closely around animals to prevent them putting their hands in their mouth.

- Maintain good hygiene in childcare settings, with strict handwashing protocols.
- Exclude infected children from childcare until 24 hours after diarrhoea stops.

People can shed infectious oocysts for weeks after symptoms stop. Stay away from swimming pools for at least 2 weeks after your diarrhoea resolves.

## What treatments are available?

Most healthy people recover without specific treatment within 1–2 weeks. The main focus is staying well hydrated by drinking plenty of fluids (oral rehydration solutions may be helpful). In some cases, an antiparasitic medication may be prescribed, though it is not always effective. People with weakened immune systems require medical care and may need prolonged treatment and hospitalisation if severe dehydration occurs.

Alcohol-based hand sanitisers do not kill *Cryptosporidium* parasites! Only soap and running water is effective.

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

**Cover:** Scanning electronmicrograph-styled illustration of *Cryptosporidium*. Courtesy: Alamy/Science Picture Co
**Page 2:** Common brushtail possum. QM, Gary Cranitch
**Page 3:** Eastern grey kangaroo. QM, Gary Cranitch

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