

Hydatid Disease

Updated: September 2021

What is hydatid disease?

Hydatid disease, also known as hydatidosis or echinococcosis, is a tapeworm infection that can occur in various species of animals, including humans.

Echinococcus granulosus is the tapeworm which causes hydatid disease in Australia.

How is hydatid disease spread?

It is spread via the faecal-oral route. Hydatid eggs pass out in the faeces of infected dogs, dingos and foxes, often contaminating pasture.

If the eggs in the contaminated pasture are eaten by a suitable host, such as grazing sheep, cattle, goats or pigs, these eggs may develop into cysts in their internal organs ('offal'), especially the liver, heart and lungs.

On the Australian mainland, these cysts also occur in several wild animals including kangaroos and wallabies.

Hydatid cysts contain large numbers of what are basically new tapeworm heads. The life cycle of the tapeworm is completed when a dog, dingo or fox eats raw, untreated, infected offal and consequently becomes infected themselves.

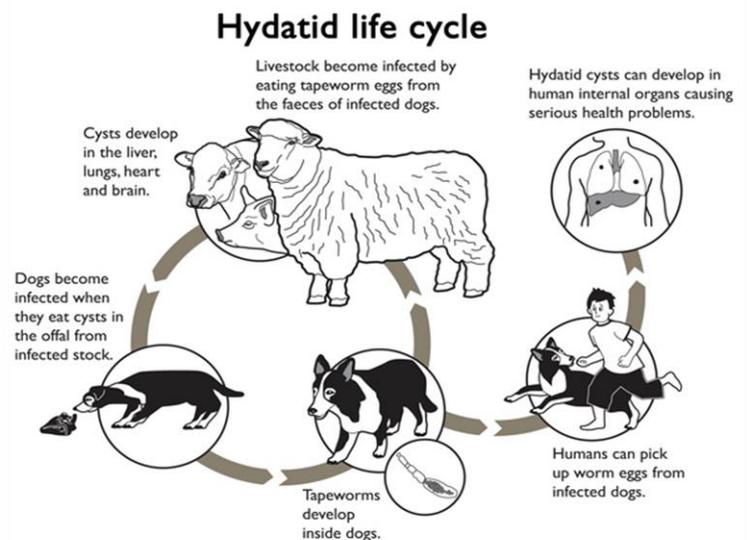
In areas with a high level of environmental contamination (very unlikely in Tasmania), eggs from dog faeces may be transmitted through other routes such as the inhalation of dust containing eggs or potentially via flies. Wind and water can also facilitate movement of eggs in the environment.

What are the signs an animal may be infected with hydatids?

Animals typically do not show signs of infection. On the Australian mainland, infected wallabies may show signs such as breathing issues, poor body condition, slow movement and similar behaviours which ultimately make them more susceptible to predation.



Echinococcus granulosus seen under the microscope.
Photo: Peter M Schantz



Hydatid disease in Tasmania

In the early 1960s, a program to improve public health was undertaken by the Tasmanian Government, aimed at eliminating the transmission of hydatid disease from animals to humans. At the time, the disease was extremely common in sheep and rural dogs, and a disturbing number of human cases were occurring.

The Tasmanian program was based on treating infected dogs and denying dogs access to the offal of cattle, sheep, goats and pigs.

Hydatid disease in Tasmania affects mainly dogs, sheep and cattle. Unlike mainland Australia, Tasmania does not have dingoes and there is no known involvement of other native or feral animals. Tasmania is also considered to be free from the presence of foxes.

The program was extremely successful; it appears that transmission of the disease to humans in Tasmania ceased in the early 1970s. In contrast, no hydatid disease control programs have been attempted on mainland Australia due to the sheer number and distribution of wild dogs, dingos and foxes and other susceptible wildlife.

Legislated treatment options for offal

Untreated offal (from any cattle, sheep, goats or pigs, imported or of Tasmanian origin) must not be fed to dogs. To help prevent the potential spread of hydatids in Tasmania, penalties apply if these restrictions are not adhered to.

Freezing is the preferred method where offal is being treated in the home environment:

- the offal must be frozen solid to a core temperature of **-20 degrees Celsius for a minimum of 48 hours**;
- The [June 2016 Order](#) published in the Tasmanian Government Gazette details the acceptable parameters and record keeping requirements for freezing offal.

There are several other acceptable treatment methods available under Tasmanian legislation:

- **commercial sterility** - where the offal has been subjected to commercial processing (for example canned or various hard, dried products);
- **thermal treatment** (cooking); or
- another method approved by the Chief Veterinary Officer of Tasmania.

The [Animal Health Regulations 2016](#) (Sections 15 and 17) detail the requirements for commercial sterilisation and cooking. Strict conditions apply to record keeping for these treatments.

Note: Untreated offal is permitted for sale as food for non-canines (e.g. cats) and for human consumption.

Tasmania's provisional freedom from hydatid disease

In February 1996, Tasmania was declared provisionally free of hydatid disease in dogs and sheep, following disposal of the last known infected sheep flocks. This does not mean that hydatid disease has been eradicated from Tasmania but indicates that we have reached a significant stage in the eradication process. The disease is now rare in Tasmania. To maintain provisional freedom, we must continue to reduce the risk of hydatids through the following steps:

1. Detect and remove any hydatid infection in dogs.
2. Minimise the risk of hydatids in dogs entering Tasmania.

3. Control or remove any stray dogs.
4. Permanently identify all imported livestock to enable tracing.
5. Assess carcasses (e.g. during the slaughter process at abattoirs, knackeries, and home kill operations). Any lesions suspicious for hydatids must be submitted to the [Animal Health Laboratory](#) for analysis. If you see any lesions suspicious for hydatids in farm animal offal, please contact Biosecurity Tasmania and a veterinary officer will co-ordinate the submission to the [Animal Health Laboratory](#).
6. Ensure carcass disposal of stock animals is undertaken in a manner that prevents access by dogs and other animals.
7. Manage dogs appropriately (see below: Recommendations for all dog owners).

Can people contract hydatids from infected animals?

Yes; humans can become infected by accidentally swallowing hydatid eggs. In being very small and sticky, hydatid eggs are easily transferred from an infected dog to human hands such as via the dog's coat or contaminated items such as footwear. Hydatid infections in people have the potential to cause serious disease and can be fatal. If you have any concerns, please speak with your doctor.



Screening for Echinococcosis using ultrasonography, (Photo courtesy of the WHO).

What happens if my stock animals are found to have hydatids?

Positive cases of hydatids in animals are investigated by Biosecurity Tasmania. Depending on the situation and the details surrounding a hydatid detection, the infected flock or herd may be quarantined and progressively slaughtered. Each year in Tasmania, up to 400,000 sheep and 60,000 cattle are inspected in abattoirs. Any lesions suspicious for hydatid cysts found at Tasmanian abattoirs, are sent to the Animal Health Laboratory for testing. This is part of Biosecurity Tasmania's hydatid surveillance program. DPIPW also receives information on sheep and cattle of Tasmanian origin that are slaughtered in some mainland abattoirs.

Hydatid disease in animals is a [notifiable disease](#), meaning that confirmed cases or suspicion of the disease must be reported immediately. This can be done by calling the **Emergency Animal Disease Watch Hotline (1800 675 888)** or via your registered veterinarian.

Minimising the risk of entry

Dogs entering Tasmania are required to be treated for hydatids. Dogs are allowed entry to Tasmania if accompanied by:

1. A veterinary certificate (from a registered veterinarian) detailing effective treatment within 14 days of export to Tasmania, OR
2. A Statutory Declaration (made by the dog owner) indicating effective treatment within 14 days of export to Tasmania, OR
3. Evidence of effective treatment, such as the worming product packet.

The major air and sea transport operators are advising people booking travel for dogs to Tasmania of these special entry requirements, and asking them to call the free-call telephone number (**1800 684 215**), which provides a 24 hour recorded information service with details of this entry requirement.

Recommendations for hunters and farmers

Farmers should dispose of dead stock animals as soon as possible and in such a way that prevents access by dogs and other animals. Dogs that are used for hunting should be regularly wormed for hydatids, especially prior to being used on someone else's property. Muzzling dogs during their hunting activities is recommended to help reduce the likelihood of scavenging.

Recommendations for all dog owners

Although Tasmania is considered to be provisionally free of hydatid disease, there are a number of simple recommendations that all dog owners should continue to observe:

1. Never feed untreated, raw offal to dogs.
2. Prevent dogs gaining access to dead stock animals, dead/burial pits or raw, untreated offal.
3. Prevent dogs from roaming, scavenging, or straying. Livestock farmers have the legal right to kill any dog that strays onto their property under the [Dog Control Act 2000](#). Dog owners, especially those in rural or semi-rural areas, should never allow their dog to roam.
4. Always wash hands thoroughly after handling dogs.
5. Treat dogs at the correct dose and regularly with a worming treatment containing the active ingredient **praziquantel**. For any questions regarding worming, please speak with your veterinarian.

FURTHER INFORMATION

Visit the Biosecurity Tasmania [Hydatid Disease](#) website for more information on hydatids.

If you suspect hydatid cysts in a carcase or offal, please contact:

AnimalDisease.Enquiries@dpiw.tas.gov.au or **1800 675 888** (testing is **free**)

Information regarding sample collection and submission can be found on the Biosecurity Tasmania [Animal Health Laboratory website](#).

Glossary of hydatid images

Hydatid cysts can occur in a range of offal and occur most commonly in the liver, lung and heart. Generally the raised cysts extend from the surface of the organ into the body of the organ. These cysts often have a pale white to slightly translucent wall and contain clear fluid (with microscopic hydatid sand/parasitic scolices). The cysts can vary from 1-2 cm to 7-8cm in diameter. Degenerate hydatid cysts will have collapsed pale white, firm walls often with gritty (mineral) deposits and can vary from 5mm to 3-4cm in diameter.



Figure 1. A clear, fluid filled hydatid cyst in part of a bovine lung. Photo courtesy of Dr Andrew Davis (Animal Health Laboratory, Biosecurity Tasmania).



Figure 2. Multiple solid, firm hydatid cysts in a bovine liver. Photo courtesy: Graeme Knowles (Animal Health Laboratory, Biosecurity Tasmania).

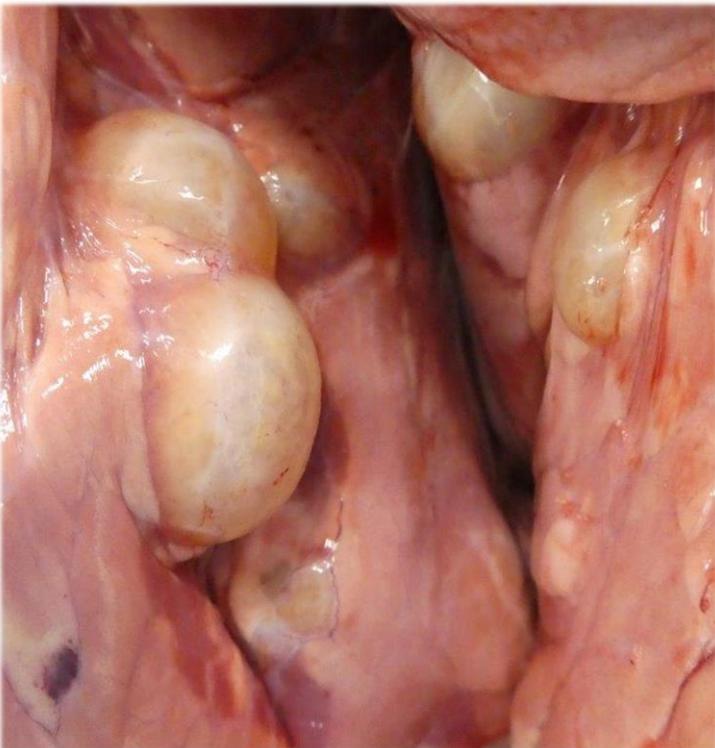


Figure 3. Multiple fluid filled hydatid cysts in the lungs of a cow. Photo courtesy: Dr Andrew Thompson (Animal Health Laboratory, Biosecurity Tasmania).



Figure 4. Numerous small, firm hydatid cysts containing cream to yellow coloured fluid in the liver of a steer. Photo courtesy: Dr Andrew Thompson (Animal Health Laboratory, Biosecurity Tasmania).

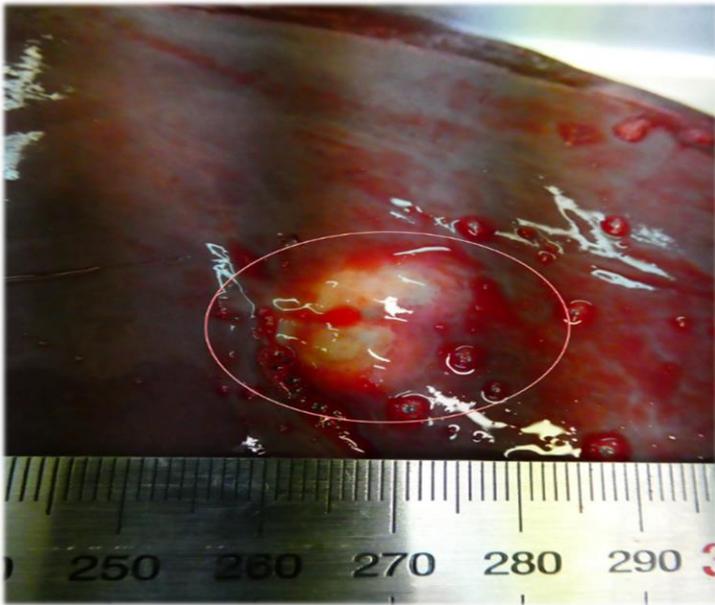


Figure 5. Two hydatid cysts (circled) in a bull's liver. Photo courtesy of Animal Health Laboratory, Biosecurity Tasmania.

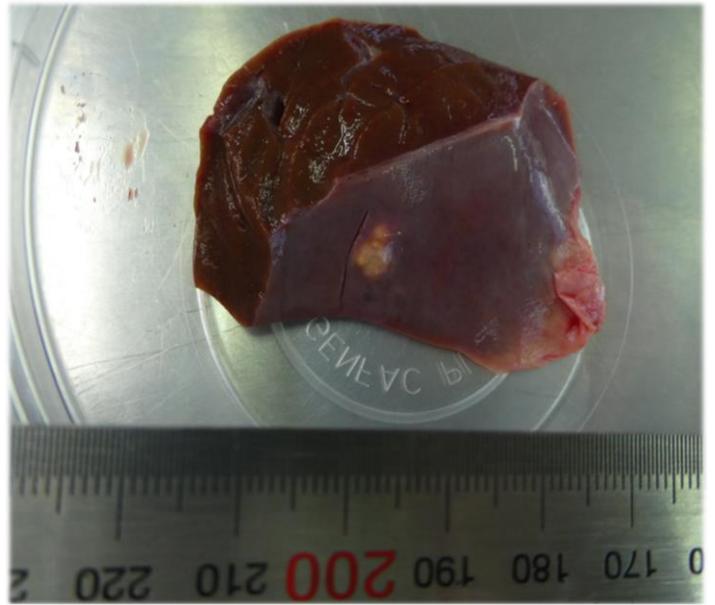


Figure 6. A single hydatid cyst in the liver of a steer. Photo courtesy of Animal Health Laboratory, Biosecurity Tasmania.

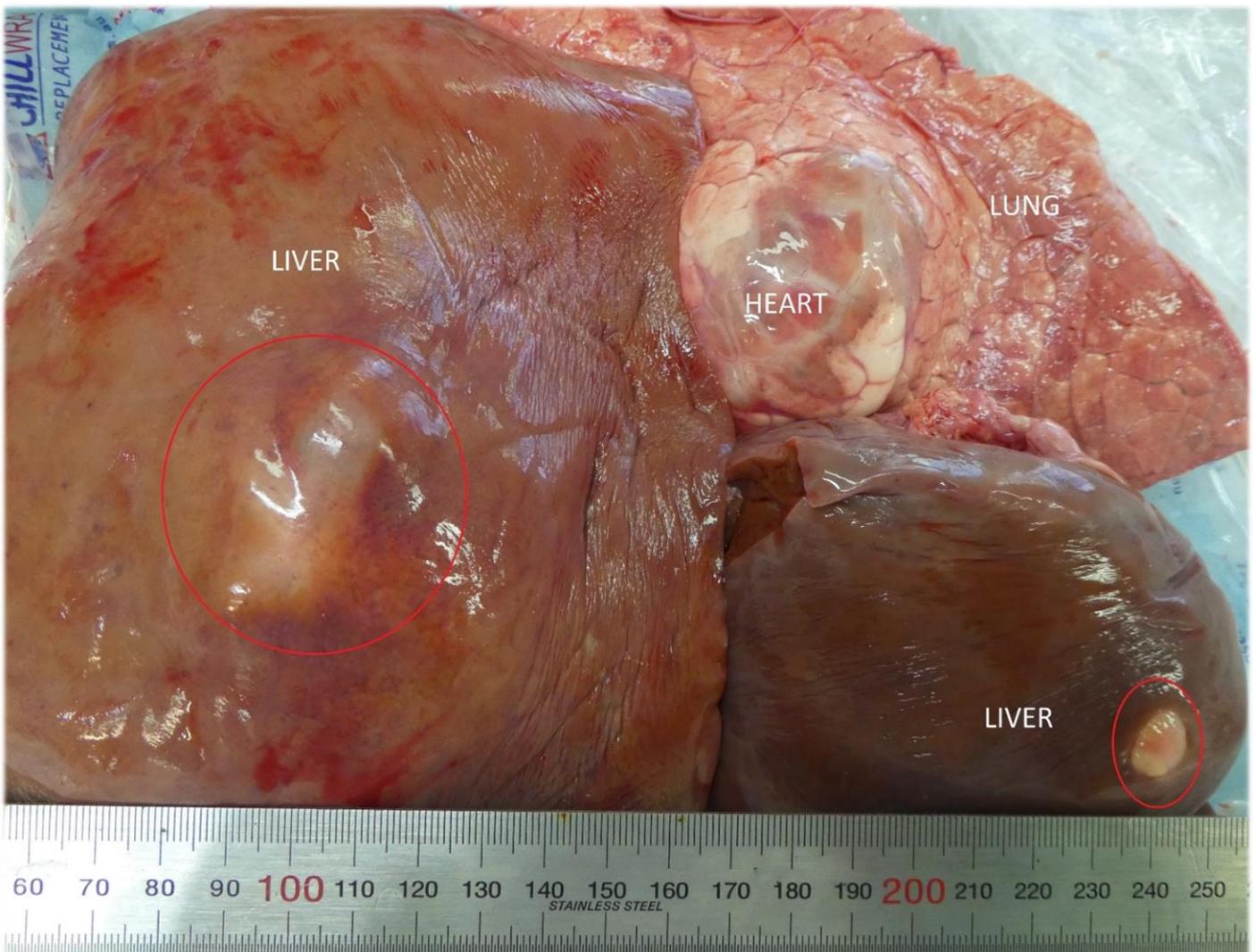


Figure 7. Multiple solid, firm hydatid cysts (circled) in the liver of a cow. Photo courtesy of Animal Health Laboratory, Biosecurity Tasmania.