



## Echinococcus Tapeworm



### What is *Echinococcus granulosus*?

*Echinococcus granulosus* is a parasitic tapeworm that requires two hosts to complete its life cycle. Ungulates (deer, elk, moose, domestic sheep, and domestic cattle) are intermediate hosts for larval tapeworms. Canids (dogs, wolves, coyotes, foxes) are definitive hosts where larval tapeworms mature and live in the small intestine. Definitive hosts are exposed to larval tapeworms when ingesting infected ungulates. Adult tapeworms, 3-5 mm long, produce eggs which canids pass in their feces. Intermediate hosts ingest the eggs while grazing, where the eggs hatch and develop into larvae.

### Where is it found?

*Echinococcus granulosus* has a worldwide distribution with two recognized biotypes. The northern biotype above 45° latitude circulates between canids (wolf, coyote, and dog) and cervids (moose, elk, deer, caribou, and reindeer). This is thought to be the biotype seen in Wyoming wildlife and does not typically infect domestic livestock. The southern or domestic biotype circulates between dogs and domestic ungulates, especially sheep. It is endemic in most sheep raising areas of the world.

In the United States, the northern biotype of *Echinococcus granulosus* has been found in several states including Wyoming. Only a few cases have been documented in Wyoming elk, moose and one mule deer, but the definitive host origin is unknown.

### How is it spread?

Ungulates are infected by ingesting tapeworm eggs in the contaminated ground; once ingested, the eggs hatch and develop into cysts in the internal organs. The parasite is transmitted to canids when they ingest the organs of infected ungulates. Infected canids shed tapeworm eggs in their feces which contaminate the ground. The most common mode of transmission to humans is by the accidental consumption of soil, water, or food that has been contaminated by the fecal matter of an infected dog. *Echinococcus* eggs that have been deposited in soil can stay viable for up to a year.

### What are some clinical signs of disease?

Normally, *Echinococcus granulosus* is not harmful to canids but heavy infections may be associated with diarrhea or poor body condition. In ungulates, the presence of large numbers of hydatid cysts can lead to difficulty breathing. The presence of hydatid cysts in livestock at slaughter is generally not of concern, and if present, is trimmed from the edible product.

### How does this disease affect me?

Yes, humans are not a natural host for the parasite but can be infected by ingesting eggs which are passed with the feces from an infected canine. These can be ingested after handling contaminated soil or contaminated canid scat or fur and then touching the face or eating before washing hands. Humans cannot be infected by ingesting larval tapeworms from ungulates. Where the parasite is found in wild canids and wild ungulates, most public health agencies consider the public health risk to be very low.

In humans, larval tapeworms usually develop into cysts in the liver or lungs. Cysts can develop over long periods of time before any symptoms are evident. Treatment may involve administration of drugs and/or surgery to remove the cysts. Throughout the world, most human cases occur in indigenous people with close contact with infected dogs.

**Information for outdoor recreationists:**

Those hunting or trapping canids in Wyoming are encouraged to wear latex or rubber gloves when field dressing and skinning their animals and wash their hands thoroughly afterwards.

Regular deworming of domestic dogs and good hygienic practices by humans are the best methods to prevent infection in humans. Always wash your hands after handling a dog that has access to ungulate carcasses. When outdoors, avoid touching or disturbing scat. Do not feed uncooked meat or organs of deer, elk, moose or sheep to dogs. If your dog has had access to ungulate carcasses, consult your veterinarian for proper deworming protocols.

**Useful websites for further information about Echinococcus Tapeworm:**

[CDC-Echinococcus](#)

[Medscape- Echinococcosis Hydatid Cyst](#)

[Alaska Wildlife News Article](#)

For additional information on Disease Name or any other wildlife disease, please contact the WGFD Wildlife Health Laboratory at 307-745-5865.