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## ***ECHINOCOCCOSIS (Hydatid Disease)***

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### **What is echinococcosis?**

Echinococcosis or hydatid disease results from being infected with the larvae (a developing phase) of the tapeworms *Echinococcus granulosus*, *E. multilocularis*, or *E. vogeli*. *E. granulosus* is found most commonly in dogs that consume the viscera of infected sheep, but can also be found in coyotes, wolves, dingos, and jackals. *E. multilocularis* is found in foxes, coyotes, dogs and cats. *E. vogeli* has been identified only in Central and South America, and will not be discussed further.

Infection with *E. granulosus* results in the formation of cysts in the liver, lungs, kidney and spleen. This condition is also known as cystic hydatid disease and can usually be successfully treated with surgery. Infection with *E. multilocularis* results in the formation of parasitic tumors in the liver, lungs, brain, and other organs. This condition is more likely to be fatal than the disease caused by *E. granulosus*. It is also called alveolar hydatid disease.

### **Who gets echinococcosis?**

Anyone can get echinococcosis by swallowing the eggs of the *E. granulosus* or *E. multilocularis* tapeworm. Echinococcal infections among humans occur worldwide, although they are rare. The primary areas where *E. granulosus* has been found in North America include sheep-raising regions of Utah, California, Arizona and New Mexico. The primary areas where *E. multilocularis* has been found in North America include the north central region from eastern Montana to central Ohio, as well as Alaska and Canada.

### **How is echinococcosis spread?**

Dogs, coyotes, wolves, dingos and jackals get infected with *E. granulosus* when they eat the viscera of infected sheep or other animals. Once they become infected, they will pass the eggs in their stool. These very tiny eggs are directly infectious to other animals and humans.

Foxes, coyotes, dogs and cats get infected when they eat *E. multilocularis* larvae in infected rodents. Once they become infected, they will pass the eggs in their stool. These very tiny eggs are directly infectious to other animals and humans.

Humans are usually exposed to these eggs in one of two ways:

- By directly ingesting food items or drinking water that is contaminated with stool from an infected animal.
- By petting or having other contact with cats and dogs that are infected. These pets may shed the eggs in their stool, and their fur may be contaminated. They may also contaminate other objects, such as harnesses or leashes, which can also spread infection.

## **How soon after exposure do symptoms appear?**

Because the cysts are usually slow-growing, infection may not produce symptoms for years. Symptoms usually reflect the size and location of the cysts.

## **How is echinococcosis diagnosed?**

Echinococcosis is diagnosed by a blood test that can detect the presence of antibodies to the parasite. The disease may also be diagnosed by directly identifying the parasite in fluid or tissue samples.

## **What is the treatment for echinococcosis?**

Surgery is the most common form of treatment for echinococcosis. Removal of the cyst may not be 100% effective, and medication may be necessary to keep the cyst from growing back.

## **How can echinococcosis be prevented?**

Two steps can help prevent both kinds of echinococcosis and other diseases as well:

- After handling pets, always wash your hands with soap and warm water.
- Do not eat wild fruits or vegetables picked directly from the ground without careful washing or cooking.

Other steps can be taken to prevent *E. granulosus*:

- Do not feed sheep viscera to dogs.
- Do not allow dogs to have access to sheep carcasses.

If in an area where *E. multilocularis* is found, take the following precautions:

- Don't touch a wild canine, dead or alive, without wearing gloves.
- Don't keep wild canines as pets or encourage them to come close to your home.
- Don't allow your cats and dogs to wander or to capture and eat rodents.
- If you think that your pet may have eaten rodents, consult your veterinarian about the possible need for preventive treatments.

## **Where can I get more information?**

- Your personal doctor or veterinarian.
- Your local health department listed in your telephone directory.
- The Utah Department of Health, Office of Epidemiology (801) 538-6191