

Taenia saginata (beef tapeworm)

Taenia saginata (*T. saginata*) is a tapeworm that can infect people if they eat undercooked beef containing viable tapeworm worm cysts

A tapeworm is a segmented parasitic worm, which lives in the intestine. They can range in length from a millimetre to 20 metres. There are many different types of tapeworms with different life cycles affecting most mammals but some types in particular affect human beings, including *Taenia saginata*.

Taeniasis, the infection of a human with a tapeworm, is rare in New Zealand but a few cases of infection have been reported here. Cooking or freezing beef kills the larval stage of the tapeworm which can cause human infection.

What are the symptoms?

Symptoms of infection in humans are generally mild and readily treatable. Symptoms can include digestive disturbances, nausea and weight loss.

Taeniasis is a notifiable disease in New Zealand. Taeniasis is treated with drugs that kill the tapeworm, which will then pass through, either wholly or partially digested, within a day or two of treatment.

How is *T. Saginata* transmitted?

Taenia saginata in humans is caught by eating undercooked beef that carries the larval stage of the tapeworm. This is very rare in New Zealand, as the tapeworm is not endemic as it is in other countries and the larval stage is not therefore present in our meat. Tapeworms cannot be passed from person to person or spread between cattle.

Cattle can become infested with the parasite by ingesting materials contaminated with tapeworm eggs originating from human faeces. Pastures can be infested with eggs by tapeworm-carrying humans defaecating on pastures, or from untreated sewage. The eggs hatch and develop into larvae which form tapeworm cysts (*Cysticercus bovis*) in the animal's muscle tissue. New Zealand has stringent inspection processes to detect any cysts in meat at slaughter. People who have become infected can shed as many as one million eggs each day so it is important to seek treatment to break the cycle, and to educate people not to defaecate on grazing land or near water.

How common is it?

The infection of a human with a tapeworm is rare in New Zealand but a few cases of infection by *Taenia saginata* have been reported here. It is common in Africa, the Americas and parts of Asia. It is advisable that travellers to these areas avoid eating undercooked beef.

How is it controlled in New Zealand?

This tapeworm is not endemic in New Zealand as it is in some other meat-exporting countries. However cattle could become infected with this tapeworm when eating pasture or drinking water that is contaminated with *Taenia saginata* eggs from an infested human's faeces. In New Zealand, human sewage is not permitted to contaminate any pasture for any animal.

In addition, the Animal Products Act 1999 requires inspection of all beef for any sign of disease after slaughter. If any signs of the parasite are found, the meat is removed and frozen on-site for at least 20 days to kill the tapeworm cysts before being declared safe for human consumption. In very rare cases, where there is extensive infection the entire carcass is removed and destroyed.

It is unusual for cysts to be discovered during meat inspection in New Zealand. When inspection indicates a number of animals from one farm are involved, an investigation will be initiated. This may include controls on the movement of animals from the farm. Cattle from the same farm may be subject to intensified inspection when slaughtered and meat condemned if cysts are detected. Meat from a farm suspected to be infected will also be frozen as an added precaution.