

Foodborne parasitic infections

TRICHINELLOSIS

(Trichinosis)



Introduction

Trichinellosis (trichinosis) is a zoonosis, caused by roundworms of the genus *Trichinella*. Humans, and domestic and wild animals can be infected and become carriers of the parasites. Domestic

pigs, wild boars, bears, rodents and horses are reservoir animals. *Trichinella* spp. occur worldwide, most frequently in regions with temperate climates. About 10,000 human infections occur annually

worldwide. Cultural factors such as traditional dishes based on raw or undercooked meat or meat-derived products play an important role in the epidemiology of the disease.



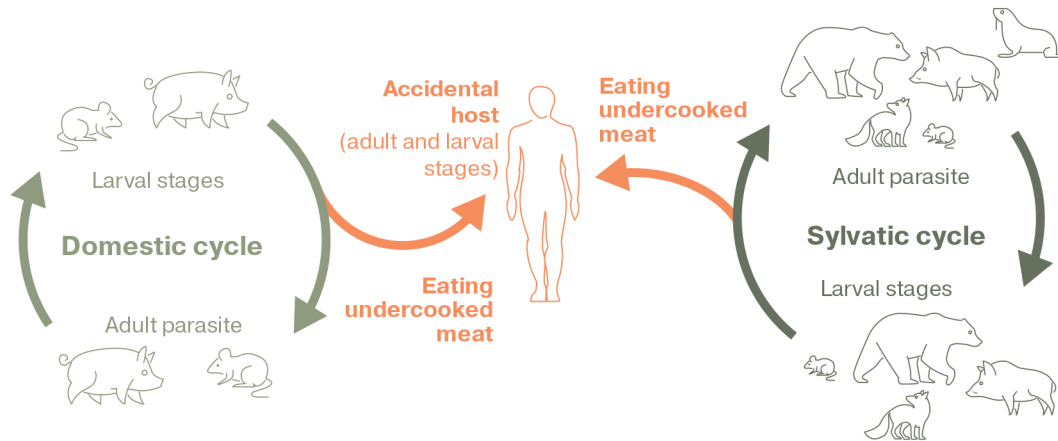
Transmission and risk factors

People acquire trichinellosis by **consuming raw or undercooked meat infected** with the *Trichinella* larvae, particularly pork, horses or wild game meat (for example, wildboar meat).

Trichinella larvae are encysted in the muscle tissue of domestic or wild animals. *Trichinella* cysts break open in the intestine and release larvae that grow into

adult roundworms. The females release larvae that invade the muscle tissues and encyst. This process takes 2 to 8 weeks.

Person-to-person transmission does not occur; however, even tasting very small amounts of undercooked meat during preparation or cooking could put a person at risk of infection. Outbreaks occur in settings where multiple people consume the same *Trichinella*-infected meat.



Signs and symptoms

Intestinal invasion in humans can be accompanied by gastrointestinal symptoms (diarrhoea, abdominal pain, nausea, vomiting). Larval migration into muscle tissues (one week after infection) can cause uneasiness, eyelid or facial oedema, conjunctivitis, fever-associated chills, muscle pain and itchy skin.

Occasional life-threatening manifestations include heart failure, pneumonia or encephalitis. Cardiovascular complaints represent the most important complications of trichinellosis and are particularly evident in the moderate and severe courses of the disease.

Infected animals are usually asymptomatic.



Treatment

Trichinellosis in humans is treated with antiparasitic medicines and steroids. Albendazole and mebendazole eliminate the adult worms from the intestine (can be used in humans and animals) but have little effect on cysts in muscles. There is no effective treatment for trichinosis once the larvae have invaded the muscles.



Public health prevention and control

1. Risk communication

- Freezing of meat (for most strains)
- Thorough cooking of meat and meat products from both domestic pigs and wild animals
- Through cleaning of meat grinders after each use

2. Prevention and control in animals

- Hygienic pig management practices (e.g. stop feeding pigs with meat scraps)
- Rodent control
- Proper and quick disposal of dead animals to avoid scavenging
- Rigorous meat inspection through microscopic examination



Detection and diagnosis

In humans: the suspicion of trichinellosis is based on a history of consuming raw or undercooked pork and on clinical symptoms and can be confirmed by specific diagnostic tests including antibody detection and muscle biopsy.

In animals: meat inspection is the only way to detect *Trichinella* cysts in meat. Microscopic examination (trichinelloscopy) and the artificial digestion method should be used in endemic areas.