

# Trichinella spiralis

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Trichinellosis, also called trichinosis, is the disease caused by eating raw or undercooked meat and wild game products infected with the larvae of the *Trichinella spiralis* worm.

Trichinellosis is a notifiable disease to both the public and animal health authorities in New Zealand. Infection of humans and domestic pigs is very rare.

## Symptoms of *Trichinella spiralis*

Symptoms of the disease include fever, nausea, diarrhoea, vomiting and abdominal pain. This may be followed by headaches, fever, chills, coughs, aversion to bright light, swollen or puffy eyes, aching muscles and sometimes a rash or skin irritation.

Abdominal symptoms can occur one to two days after infection. Further symptoms usually start two to eight weeks after eating contaminated meat.

## How you can become infected with trichinellosis

Unlike many parasites that depend on a specific host animal, the *Trichinella* worm infects nearly all orders of mammals. Rats and wild or domestic pigs are the most common hosts. Animals and humans are infected with *Trichinella spiralis* when they ingest infective larvae (juveniles) in raw or undercooked meat. Animals may also become infected when they eat hosts such as rodents, as part of animal feed.

*Trichinella spiralis* larvae are released in the stomach and enter the small intestine where they mature into adults and reproduce. Newborn larvae usually enter the bloodstream and are distributed around the body. Most eventually end up in the host's muscles. Here the larvae mature into infective larvae and will pass to the next host when the host's meat is eaten in a raw or undercooked state. As they penetrate cells, the larvae can cause extensive damage and a severe reaction in the animal or human host.

## *Trichinella spiralis* in New Zealand

In September 2001, two human cases of trichinellosis occurred in New Zealand in the Coromandel region as a result of people eating meat from a domestic pig slaughtered at a farm. This is described as homekill under the Animal Products Act. Homekill meat can only be consumed by the farmer or owner, their family, household and employees – it must not be sold or traded.

## How trichinellosis is monitored

There has been extensive monitoring for trichinellosis, over more than 30 years, in New Zealand domestic and wild pigs and horses slaughtered for food. Disease incidents occur very rarely with the most recent case in a horse. We continue to operate an assurance monitoring programme for the export and domestic markets in horses, wild and domestic pigs.

## How to avoid trichinellosis

Trichinellosis can be avoided by cooking homekill and recreational catch meat thoroughly. Cook this meat at 60 degrees Celsius or higher for at least one minute. It is important to remember the internal temperature must reach 60 degrees, not just the outside of the meat

Cooking the meat at these temperatures kills the juvenile worms in the meat that may still be infective. This treatment should include any off cuts or meat fed to animals eg, dogs. You can also kill *Trichinella* by freezing infected meat at -15 °C or colder for at least 20 days. Check your home freezer is running at recommended temperatures, -18 °C or below.

Ordinary curing and salting, smoking or microwaving of pork products will not kill the juvenile worms.

Since homekill and recreational catch products are not subject to any hygiene or safety regulations, people preparing and consuming homekill or recreational catch do so at their own risk.

As with all food preparation, following the basic food safety principles of cook, clean, cover and chill is the best way to reduce the risk of foodborne illnesses.

Recommendations for handling and preparing homekill and recreational catch meat:

- wash your hands before and after handling meat
- knives, chopping boards and other equipment must be washed thoroughly after butchering or cutting up all meat, homekill or recreational catch
- cook homekill or recreational catch meat thoroughly right through, before eating
- care should be taken when thawing homekill or recreational catch meat to ensure the juices do not contaminate other products in the fridge.
- The Ministry of Health provides a trichinosis fact sheet, which includes more information about:
  - the life cycle of *Trichinella spiralis*
  - managing the risk of trichinosis in domestic pigs
  - homekill and recreational (wild or feral) catch meat.