

TRICHINOSIS

(Trichiniasis, Trichinellosis)

REPORTING INFORMATION

- **Class B2:** Report by the end of the business week in which the case or suspected case presents and/or a positive laboratory result to the local public health department where the patient resides. If patient residence is unknown, report to the local public health department in which the reporting health care provider or laboratory is located.
- Reporting Form(s) and/or Mechanism:
 - [Ohio Confidential Reportable Disease form](#) (HEA 3334, rev. 1/09), [Positive Laboratory Findings for Reportable Disease form](#) (HEA 3333, rev. 8/05), the local public health department via the Ohio Disease Reporting System (ODRS), or telephone.
- The Centers for Disease Control and Prevention ([CDC](#)) [Trichinosis Surveillance Case Report](#) is required. Information collected from the form should be entered into ODRS **and** faxed to ODH – Outbreak Response & Bioterrorism Investigation Team 614-564-2456. The mailing address for this form is: ODH Outbreak Response & Bioterrorism Investigation Team (ORBIT), 246 N. High St., Columbus, OH 43215. Additional reporting information, with specifics regarding the key fields for ODRS Reporting can be located in [Section 7](#).

AGENT

Larvae of *Trichinella spiralis*, a small filiform nematode.

CASE DEFINITION

Clinical Description

A disease caused by ingestion of *Trichinella* larvae. The disease has variable clinical manifestations. Common signs and symptoms among symptomatic persons include eosinophilia, fever, myalgia and periorbital edema.

Laboratory Criteria for Diagnosis

- Demonstration of *Trichinella* larvae in tissue obtained by muscle biopsy or
- Positive serologic test for *Trichinella*.

Case classification

Confirmed: a clinically compatible illness that is laboratory confirmed.

Comment

In an outbreak setting, at least one case must be laboratory confirmed. Associated cases should be reported as confirmed if the patient shared an epidemiologically implicated meal or ate an epidemiologically implicated meat product and has either a positive serologic test for trichinosis or a clinically compatible illness.

SIGNS AND SYMPTOMS

Many infections are asymptomatic. Symptomatic cases result from the ingestion of a large number of larvae. Three phases are recognized: intestinal, larval migration and convalescence.

Intestinal: nonspecific gastroenteritis, with anorexia, nausea, vomiting, abdominal pain and diarrhea

Larval Migration: occurs 7-11 days after ingestion. Signs of muscular invasion begin, with edema of the upper eyelids, myalgia, headache, fever, sweating, chills, weakness and marked eosinophilia. Usually lasts 10-30 days.

Convalescence: involves muscular pain, which sometimes persists for several months.

DIAGNOSIS

The most specific diagnostic test is a muscle biopsy of the deltoid, biceps or gastrocnemius muscle. Contact the ODH Laboratory at 614-728-0544 (Monday – Friday; 8 AM – 5 PM) for the Centers for Disease Control and Prevention (CDC) specimen submission criteria.

EPIDEMIOLOGY

Source

Many domestic and wild animal species harbor the parasite. Swine are the primary source of infection in humans and human infection is usually the result of eating inadequately cooked pork or wild game, especially bear meat.

Occurrence

Worldwide, but is most common in areas where raw or undercooked pork or wild game meat are eaten.

Mode of Transmission

Humans are infected from eating raw or undercooked meat from infected animals, primarily pork products.

Period of Communicability

Trichinosis is not transmitted by person-to-person contact. Animals remain infective for months. Meat from infected animals remains infective for considerable periods unless it is properly cooked, frozen or irradiated.

Incubation Period

Incubation period is usually 8-15 days, with a range of 5-45 days, and seems to be related to the number of larvae ingested.

PUBLIC HEALTH MANAGEMENT

Case

Investigation

Investigation is directed toward determining the source of uncooked meat and identifying other exposed persons.

Treatment

Medications are available that are safe and effective, such as Mebendazole, with albendazole as an alternative is used for treatment. Steroids are sometimes used for infections with severe symptoms.

Isolation and Follow-up Specimens

None

Contacts

Trichinosis is not passed from person-to-person.

Prevention and Control

Public education of the need to cook all pork products and meat of wild animals at a sufficient temperature (170° F or 77° C or until meat changes from pink to grey allows a good margin of safety). Freezing may not kill all worms in the case of game meats.

REFERENCE

CDC Trichinosis information: <http://www.cdc.gov/parasites/trichinellosis/index.html>

What is trichinosis?

Trichinosis, also called trichinellosis, is caused by a worm called *Trichinella*. Trichinosis is acquired by eating raw or undercooked meat of animals infected with trichinella. Swine are the primary source of infection in humans, but trichinosis can also be contracted by eating undercooked meats of wild feline (such as a cougar), fox, dog, wolf, horse, seal, or walrus, and particularly bear.

Once very common, trichinosis is now relatively rare. CDC reports an average of 12 cases per year. There was one confirmed case in Ohio in 2005.

How does infection occur in humans and animals?

When a human or animal eats meat that contains infective *Trichinella* cysts, the worms mature and breed in the intestines. Eggs develop into immature worms, travel through the arteries, and are transported to muscles. Within the muscles, the worms curl into a ball and encyst (become enclosed in a capsule).

Trichinosis is not contagious, infection only occurs by eating contaminated meat.

What are the symptoms of a trichinosis infection?

Many infections cause no ill effects and go undiagnosed. Problems are more likely to develop in those who consumed many larvae. The initial signs include lack of appetite, nausea, vomiting, diarrhea, and abdominal pain. After the first seven days signs may change as the larvae migrate through the body. These symptoms may include headache, fever, sweating, weakness, and swelling of the upper eyelids. Muscle pain, fatigue, and weakness may last for several months.

How soon after infection will symptoms appear?

Abdominal symptoms can occur 1-2 days after infection. Further symptoms usually start 2-8 weeks after eating contaminated meat.

How is trichinosis infection diagnosed?

A blood test or muscle biopsy can diagnose trichinosis.

Can trichinosis be treated?

Yes, several safe and effective prescription drugs are available. The decision to treat is based upon symptoms, exposure to raw or undercooked meat, and laboratory test results.

How can I prevent trichinosis?

- Cook meat products until the juices run clear or to an internal temperature of 170°F.
- Freeze pork less than 6 inches thick for 20 days at 5°F to kill any worms.
- Cook wild game meat thoroughly. Freezing wild game meats, unlike freezing pork products, may not effectively kill all worms.
- Do not allow hogs to eat uncooked carcasses of other animals, including rats, which may be infected with trichinosis.
- Clean meat grinders thoroughly if you prepare your own ground meats.
- Curing (salting), drying, smoking, or microwaving meat does not consistently kill infective worms.

For more information please visit the following Web site:

CDC Trichinosis <http://www.cdc.gov/parasites/trichinellosis/index.html>