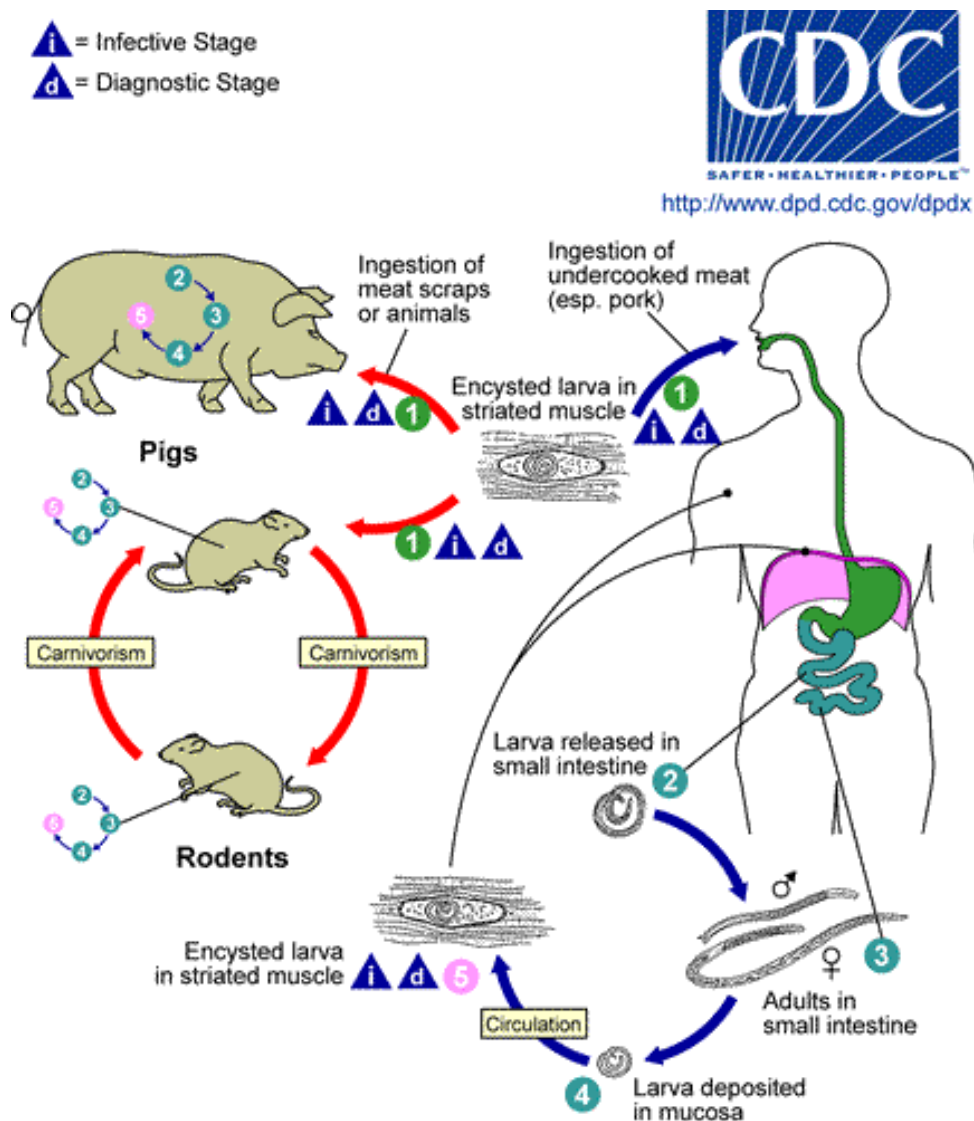


# Trichinellosis

## Causal Agents:

Trichinellosis (trichinosis) is caused by nematodes (roundworms) of the genus *Trichinella*. In addition to the classical agent *T. spiralis* (found worldwide in many carnivorous and omnivorous animals), several other species of *Trichinella* are now recognized, including *T. pseudospiralis* (mammals and birds worldwide), *T. nativa* (Arctic bears), *T. nelsoni* (African predators and scavengers), and *T. britovi* (carnivores of Europe and western Asia).

## Life Cycle:



Trichinellosis is acquired by ingesting meat containing cysts (encysted larvae) <sup>1</sup> of *Trichinella*. After exposure to gastric acid and pepsin, the larvae are released <sup>2</sup> from the cysts and invade the small bowel mucosa where they develop into adult worms <sup>3</sup> (female 2.2 mm in length, males 1.2 mm; life span in the small bowel: 4 weeks). After 1 week, the females release larvae <sup>4</sup> that migrate to the striated muscles where they encyst <sup>5</sup>. *Trichinella pseudospiralis*, however, does not encyst. Encystment is completed in 4 to 5 weeks and the encysted larvae may remain viable for several years. Ingestion of the encysted larvae perpetuates the cycle. Rats and rodents are primarily responsible for maintaining the endemicity of this infection. Carnivorous/omnivorous animals, such as pigs or bears, feed on infected rodents or meat from other animals. Different animal hosts are implicated in the life cycle of the different species of *Trichinella*. Humans are accidentally infected when eating improperly processed meat of these carnivorous animals (or eating food contaminated with such meat).

### **Geographic Distribution:**

Worldwide. Most common in parts of Europe and the United States.

### **Clinical Features:**

Light infections may be asymptomatic. Intestinal invasion can be accompanied by gastrointestinal symptoms (diarrhea, abdominal pain, vomiting). Larval migration into muscle tissues (one week after infection) can cause periorbital and facial edema, conjunctivitis, fever, myalgias, splinter hemorrhages, rashes, and blood eosinophilia. Occasional life-threatening manifestations include myocarditis, central nervous system involvement, and pneumonitis. Larval encystment in the muscles causes myalgia and weakness, followed by subsidence of symptoms.

### **Laboratory Diagnosis:**

The suspicion of trichinellosis (trichinosis), based on clinical symptoms and eosinophilia, can be confirmed by specific diagnostic tests, including antibody detection, muscle biopsy, and microscopy.

### **Diagnostic findings**

- Microscopy
- Antibody detection

### **Treatment:**

Several safe and effective prescription drugs are available to treat trichinellosis. Treatment should begin as soon as possible and the decision to treat is based upon symptoms, exposure to raw or undercooked meat, and laboratory test results. Steroids are used for infections with severe symptoms, plus mebendazole\*, with albendazole\* as an alternative.

\* This drug is approved by the FDA, but considered investigational for this purpose.