

TAENIASIS-CYSTICERCOSIS

What are Taeniasis and Cysticercosis?

Taeniasis

- Taeniasis is an intestinal infection in human beings caused by the adult of three species: *Taenia solium*, *Taenia saginata*, and *Taenia Asiática*, although only *T. solium* causes severe health problems. Accordingly, we shall refer only to *T. solium* here.
- Taeniasis due to *T. solium* is usually characterized by few mild nonspecific symptoms such as abdominal pain, nausea, diarrhea, or constipation.
- Taeniasis is acquired by humans through the ingestion of tapeworm cysts (known as cysticerci) that are present in undercooked infected pork.
- Taeniasis can be treated with praziquantel (single 10 mg dose) or niclosamide (single 2g dose for adults, 1g for children weighing between 10 and 35 kg, and 500mg for children under 10 kg). Albendazole is also a good antiparasitic drug that should be used for three consecutive days at a daily dose of 400mg to be reliably effective.
- Human carriers of these adult tapeworms excrete the tapeworm segments or eggs in feces, contaminating the environment when defecating in open areas.

Cysticercosis

- Cysticercosis is infection with the larval form of the *T. solium* parasite. It results from ingesting the parasite's eggs, which are released to the environment in human feces. Pigs contract the infection and develop cysticerci (cysts) in their muscles. People who then eat the cysticerci-infected pork develop taeniasis, completing the cycle.
- Humans can also be infected by *T. solium* eggs if they consume water or food contaminated with tapeworm eggs, or as a result of poor hygiene. Tapeworm carriers with poor hygiene habits can infect themselves, or can contaminate other family members (for example, if they serve food).
- When people ingest *T. solium* eggs, the eggs become larvae and lodge in tissues such as muscles and the central nervous system, forming cysticerci. When the cysticerci are located in the central nervous system, the infection is known as neurocysticercosis. This is the principal disease caused by *T. solium*, and the clinically most important one, being associated with neurological symptoms, especially convulsions and epilepsy.
- The incubation period of cysticercosis due to *T. solium* is variable and infected people can remain asymptomatic for years.
- Since destruction of the cysts can produce an inflammatory response, the treatment of neurocysticercosis as an active disease sometimes requires prolonged treatment with praziquantel and/or albendazole plus symptomatic treatment with corticosteroids and/or anti-epileptics, or in some cases surgical treatment. Each case should be evaluated individually.
- In order to prevent, control, and ultimately eliminate *T. solium*, PAHO recommends various measures in addition to the taeniasis treatment: education on hygiene and food safety, improved environmental sanitation, better pig-rearing practices, anthelmintic treatment of pigs with oxfendazole at doses of 30 mg/kg, and vaccination of pigs (TSOL18 vaccine is commercially available) in addition to better meat inspection and processing of meat products.

Key Data

- Cysticercosis affects mainly the health and well-being of rural communities in developing countries in sub-Saharan Africa, Asia, and Latin America. Other negative effects might include a reduction in the market value of pigs and the risk of eating infected pork.
- In Latin America and the Caribbean, an estimated 14.9 million people have neurocysticercosis, and between 450,000 and 1.35 million suffer from epilepsy due to [this disease](#).

PAHO/WHO Response

- PAHO/WHO works closely with other agencies, such as the United Nations Food and Agriculture Organization (FAO) and the World Organization for Animal Health (OIE) in interdisciplinary collaboration to control *T. solium*.
- PAHO/WHO supports countries in identifying endemic communities and areas where there are risk factors associated with the presence of *T. solium*.
- In identified endemic areas in other countries where pilot control programs are underway, PAHO/WHO helps these control programs to keep abreast of the latest knowledge, so that they can be implemented in the best possible way and can be adapted to each country's specific circumstances.

