

Topic Page: [tapeworm](#)

Definition: **tapeworm** from *The Hutchinson Unabridged Encyclopedia with Atlas and Weather Guide*

Any of various parasitic flatworms of the class Cestoda. They lack digestive and sense organs, can reach 15 m/50 ft in length, and attach themselves to the host's intestines by means of hooks and suckers.

Tapeworms are made up of hundreds of individual segments, each of which develops into a functional hermaphroditic reproductive unit capable of producing numerous eggs. The larvae of tapeworms usually reach humans in imperfectly cooked meat or fish, causing anaemia and intestinal disorders.

images

tapeworm

Summary Article: **tapeworm**

from *The Columbia Encyclopedia*

name for the parasitic flatworms forming the class Cestoda. All tapeworms spend the adult phase of their lives as parasites in the gut of a vertebrate animal (called the primary host). Most tapeworms spend part of their life cycle in the tissues of one or more other animals (called intermediate hosts), which may be vertebrates or arthropods.

Anatomy and Function

An adult tapeworm consists of a knoblike head, or scolex, equipped with hooks for attaching to the intestinal wall of the host (which may be a human), a neck region, and a series of flat, rectangular body segments, or proglottids, generated by the neck. The chain of proglottids may reach a length of 15 or 20 ft (4.6–6.1 m). Terminal proglottids break off and are excreted in the feces of the host, but new ones are constantly formed at the anterior end of the worm. As long as the scolex and neck are intact the worm is alive and capable of growth. A rudimentary nervous system and excretory system run the length of the worm, through the proglottids. However, there is no digestive tract; the worm absorbs the host's digested food through its cuticle, or outer covering.

Reproduction

Each proglottid contains a complete set of male and female reproductive organs that produce the sex cells. Fertilization is internal; in most species cross fertilization between two adjacent worms is necessary, but in a few species self-fertilization may occur between two proglottids of the same worm, or within the same proglottid. In some species the fertilized eggs are shed continuously and leave the host's body in the feces; in others the fertilized eggs are stored until the proglottid is filled with them and the entire proglottid is then shed. The eggs develop into embryos with a hard outer shell; these do not hatch until they are eaten by a suitable intermediate host.

Humans as Tapeworm Hosts

Human tapeworm infestations are most common in regions where there is fecal contamination of soil and water and where meat and fish are eaten raw or lightly cooked. In the case of the human tapeworm most common in the United States (the beef tapeworm, *Taenia saginata*) the usual intermediate host is a cow, which ingests the proglottid while drinking or grazing. The round-bodied embryos, equipped with sharp hooks, hatch and bore through the cow's intestinal wall into the bloodstream, where they are

carried to the muscles. Here each embryo encloses itself in a cyst, or bladder; at this stage it is called a bladder worm. During the bladder worm stage the embryo develops into a miniature scolex; it remains encysted until the muscle is eaten by a primary host, in this case a human. If the scolex has not been killed by sufficient cooking of the meat, it sheds its covering and attaches to the intestinal wall, where it begins producing proglottids.

A human tapeworm common in Mexico, the pork tapeworm (*T. solium*), has a similar life cycle, with a pig as the usual intermediate host. The fish tapeworm, *Diphyllobothrium latum*, transmitted to humans from fish, especially pike, is common in Asia and in Canada and the northern lake regions of the United States. This tapeworm has a more elaborate life cycle, involving both a fish and a crustacean as intermediate hosts. The dwarf tapeworm, *Hymenolepis nana*, is transmitted through fecal contamination and is common in children in the southeastern United States. There are also several tapeworms for whom humans are the usual intermediate host; among these, the dog tapeworm, *Echinococcus granulosus*, spends its adult phase in the intestines of dogs.

Consequences of Infestation

Intestinal tapeworm infestation frequently occurs without symptoms; occasionally there is abdominal discomfort, diarrhea, constipation, or weight loss. The presence of tapeworm proglottids in clothing, bedding, or feces is the usual sign of infestation. Treatment is typically with albendazole or praziquantel, which kill the worm.

The most serious tapeworm infestation in humans is caused by the ingestion of *T. solium* eggs through fecal contamination, which results in the person serving as the intermediate, rather than the primary, host. The embryos migrate throughout the body, producing serious illness if they lodge in the central nervous system. In many poorer regions of the world, the larvae of *T. solium* are a major cause of human epilepsy. The embryos of the dog tapeworm encyst in various internal organs of humans, most commonly in the liver. The cysts produced by these embryos are called hydatid cysts, and the infestation of the liver is called hydatid disease.

Classification

Tapeworms are classified in the phylum Platyhelminthes, class Cestoda.

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