



## Taenia solium



Taenia solium is the causative agent of taeniosis and cysticercosis.

Taenia solium (pork tapeworm) is 3-4m long and is thus smaller than Taenia saginata. The scolex has a rostellum armed with two rows of hooks in addition to the four suckers. Inside the gravid segments, the number of lateral uterus branches is usually 7-13 (see fig.). The proglottids at the posterior end of the chain are longer than wide and each contains a treelike branched uterus containing 80.000-100.000 eggs. The eggs are released when a proglottid detaches from the tapeworm in the intestinal lumen or when a segment disintegrates outside the host. The eggs are

highly resistant and can remain infective in a moist environment for weeks or months. Carried by feces of humans infected with Taenia solium, they contaminate pastures or feed either directly or via sewage. When pigs ingest the eggs, the oncospheres hatch in the small intestine, migrate into the intestinal wall and are transported with the bloodstream into the striated musculature, in which they develop into the infective metacestodes or cysticerci within two to three months. Humans are infected by ingesting raw or undercooked pig containing cysticerci. In the small intestine the cysticercus evaginates the scolex, attaches to the mucosa of the upper small intestine, and develops into the adult tapeworm, which can live for years or even decades.

Taenia solium in the intestine causes no or only mild symptoms. The metacestodes (cysticercus cellulosae) can colonize various human organs and cause the clinical picture of cysticercosis. Infections occur under unhygienic conditions due to peroral ingestion of eggs stemming from the feces of tapeworm carriers (exogenous autoinfection or alloinfection). It is assumed that oncospheres hatching from eggs released from gravid proglottids in the human digestive tract may also cause an infection (endogenous autoinfection).

Cysticercosis of the central nervous system (neurocysticercosis) or of the eye (ocular cysticercosis) is among the more severe forms of the infection. In the CNS, the metacestodes are usually localized in the cerebrum (ventricle, subarachnoid space), more rarely in the spinal cord; they can cause epileptiform convulsions, raised intracranial pressure, and other neurological symptoms. The cysticerci can also develop in subcutaneous tissues, in the heart and in the skeletal musculature.

The pork tapeworm occurs worldwide. It is mainly endemic in poorly developed regions of Central and South America, Africa, and Asia, with sporadic occurrence in the USA as well as western, eastern and south Europe. In Mexico, 0,1-7% of the rural population are carriers of the adult tapeworm and up to 25 % of the pigs carry the cysticerci of Taenia solium. Imported human cases of cysticercosis are being diagnosed in increasing numbers in nonendemic regions (e.g. central Europe, USA).

Species	Disease	Symptoms	Mechanism of infection
Taenia solium	Taeniasis Cysticercosis	Taenia solium in the intestine causes no or only mild symptoms  Symptoms of cysticercosis depend on the befall of organs (e.g. headache, feeling of sickness, vomiting, rheumatic discomfort)	Ingestion of raw or undercooked pig, peroral ingestion of eggs, endogenous autoinfection

Infections may be diagnosed by:

- Microscopy: Determination of segments in stool
- Serology: Determination of specific antibodies based on the ELISA-technique

## **NovaLisa™ Taenia solium IgG ELISA:**

The NovaLisa™ Taenia solium IgG ELISA is intended for the qualitative determination of the IgG-class antibodies against Taenia solium in human serum or plasma (citrate).

### **Antigens:**

Purified Taenia solium antigens

### **Specific performance characteristics:**

	Intraassay			Interassay			Sensitivity %	Specificity %
	n	Mean	CV %	n	Mean	CV %		
IgG	8	1,31	6,6	5	0,8	4,4	93,8	>95

### **Order information:**

ELISA	Number of determinations	Product number
Taenia solium IgG	96	TAEG0420