The tapeworm *Taenia solium*, transmitted between humans and pigs, affects millions of people in sub-Saharan Africa. Epilepsy and severe headache are common presentations leading to human suffering, stigmatization, and death. Infected pigs lead to considerable economic losses (1).

*Taenia solium* cysticercosis is emerging because:

1. The number of pigs and people are increasing significantly in sub-Saharan Africa
2. Demand for pork is increasing
3. Knowledge regarding *T. solium* cysticercosis is almost nonexistent
4. Free roaming pigs is the norm
5. Meat inspection is either non-existent or inappropriate
6. Open defecation is highly prevalent
7. Personal hygiene is poor

People can get infected with *Taenia solium* even if they do not eat pork!

People become infected with the adult tapeworm (taeniosis) by eating raw or undercooked infected pork.

Tapeworm eggs pass with an infected person's stool and can be ingested by free-roaming pigs. The larval form of the parasite develops in the pig as small cysts in the muscles, heart and brain. This renders pork unfit for consumption and poses a serious constraint for marketing of pigs and pork. People can also become infected with the larval form of the parasite by ingesting *T. solium* eggs either from direct contact with a human tapeworm carrier or from contaminated food or water.

In humans, the cysts often develop in the brain causing a condition called neurocysticercosis, which can cause epileptic seizures, severe headaches and even death. Neurocysticercosis is one of the common causes of incapacitating epilepsy, which is preventable.
Distribution of *Taenia solium* in Africa

*Taenia solium* is endemic in large parts of sub-Saharan Africa (dark red areas), from Senegal in the west to Kenya and Tanzania in the east, and Mozambique and South Africa in the south. It is especially common where humans live in close proximity to their pigs with low levels of sanitation and poor understanding of pig management.

*Taenia solium* cysticercosis causes epilepsy

Neurocysticercosis is estimated to be responsible for 30% of all cases of acquired epilepsy in endemic areas (2). Porcine cysticercosis has been found to cause considerable economic losses in affected countries. Annual losses due to porcine cysticercosis have been estimated at 25 million € for ten Western and Central African countries in 2002 (3), and 5 million US $ for the Eastern Cape Province of South Africa in 2004 (4).

**Diagnosis in humans:** Tapeworm eggs can be detected in the human stool by microscopic or molecular analysis. Antibodies and antigens from both adult worms and cysts can be measured in the blood. Cysts in the brain may be detected using computed tomography (CT) scanning.

**Diagnosis in pigs:** Cysts can be detected in live pigs by examining the tongue. However, this will only identify the more severely infected pigs. Antibodies and antigens from cysts can be measured in the blood. Post mortem, pork can be inspected for cysts in the meat.

**Control of Taenia solium**

*Taenia solium* is considered eradicable because of its simple life cycle, with humans as the only tapeworm carrier. Elimination of the parasite in Europe and North America was facilitated through industrialization including pig confinement and improved hygiene and sanitation. As *T. solium* is a zoonosis, control requires an integrated approach with inter-sectoral collaboration where both the government and the public are involved, with health and veterinary education as central elements addressing all key solutions.

**References:**

**Figures:**
1: Free roaming pigs, Mozambique (M.V. Johansen);
2: Pork with *T. solium* cysticercosis (M. Boa);
3: *Taenia solium* cysticercosis life cycle (M.V. Johansen);
4: Distribution of *T. solium* in Africa (WHO, 2010);
5: CT scan with calcified *T. solium* cysts (C. Trevisan);
6: Pig tongue with visible *T. solium* cysts (U. Braae);
7: Simple and well-designed pig confinement, Tanzania (H. Mejer).

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**Key solutions to control**
- Stop open defecation
- Treat human taeniosis cases
- Confine all pigs at all times
- Ensure proper meat inspection
- Condemn infected pork
- Cook pork properly
- Wash hands before preparing or eating food
- Educate all stakeholders
- Provide clean drinking water to pigs and people

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