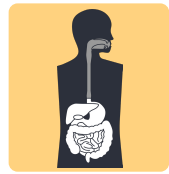


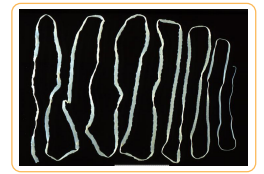
## TOPIC: HELMINTHIC DISEASES OF THE DIGESTIVE SYSTEM



# Tapeworms

### Helminth

FEATURES: \_\_\_\_\_ worm.  
Segmented.



(CDC, 1986).

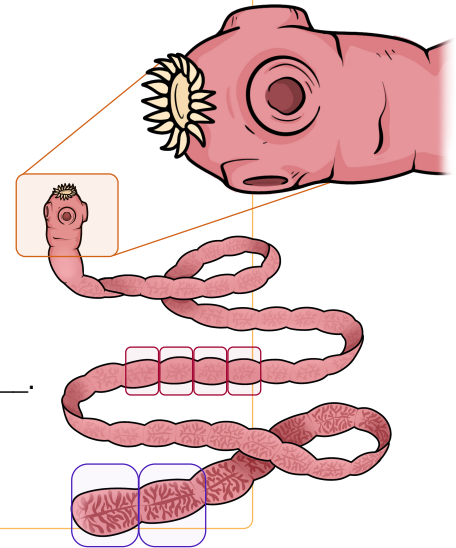
### CAUSE

Different species infect different \_\_\_\_\_.

- ◆ *Taenia saginata* → \_\_\_\_\_ tapeworm.
- ◆ *Taenia solium* → \_\_\_\_\_ tapeworm.
- ◆ *Diphyllobothrium latum* → \_\_\_\_\_ tapeworm.

Structural Components:

- ◆ **Scolex:** \_\_\_\_\_ organ w/ sucker or hooks.
- ◆ **Proglottids:** body \_\_\_\_\_.
- ◆ **Gravid Proglottids:** furthest from scolex → full of \_\_\_\_\_.
  - Break off and pass with \_\_\_\_\_.
  - Rupture and pass \_\_\_\_\_ with feces.



### SPREAD

Ingestion through contaminated raw or \_\_\_\_\_ meat.

### SYMPTOMS

Rarely symptomatic.

### DIAGNOSIS

Examination of feces for eggs or \_\_\_\_\_.

### TREATMENT

Single dose of niclosamide or praziquantel.

### IMMUNITY

N/A.

### References:

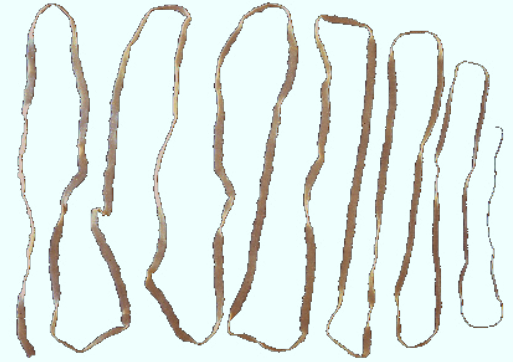
[Photograph of an adult *Taenia saginata* tapeworm that was approximately 4 meters in length]. (1986). Centers for Disease Control and Prevention. <https://phil.cdc.gov/Details.aspx?pid=5260>

## TOPIC: HELMINTHIC DISEASES OF THE DIGESTIVE SYSTEM

### EXAMPLE

The image below shows an adult tapeworm after removal from its host. The left side of the image represents the end of the tapeworm that would be closer to the host's large intestine, while the right side of the image represents the end of the tapeworm that would be closer to the host's duodenum or stomach.

- a) Identify the following features as instructed below. If the feature is not present, cross out the instruction.
- Draw a circle around the scolex.
  - Draw a box around the terminal proglottid.
  - Draw a star where the mouth would be located.
  - Draw an arrow to where eggs are most likely to be released from.
- b) Based on this image, which is typically much larger, the gravid proglottids or the scolex? \_\_\_\_\_
- c) This image shows *Taenia saginata*. From what organism would you expect this worm to have been removed from? \_\_\_\_\_



(CDC, 1986).

### PRACTICE

Which of the following terms does NOT describe cestodes?

- a) Roundworm.                      b) Flatworm.                      c) Segmented.                      d) Helminth.

### PRACTICE

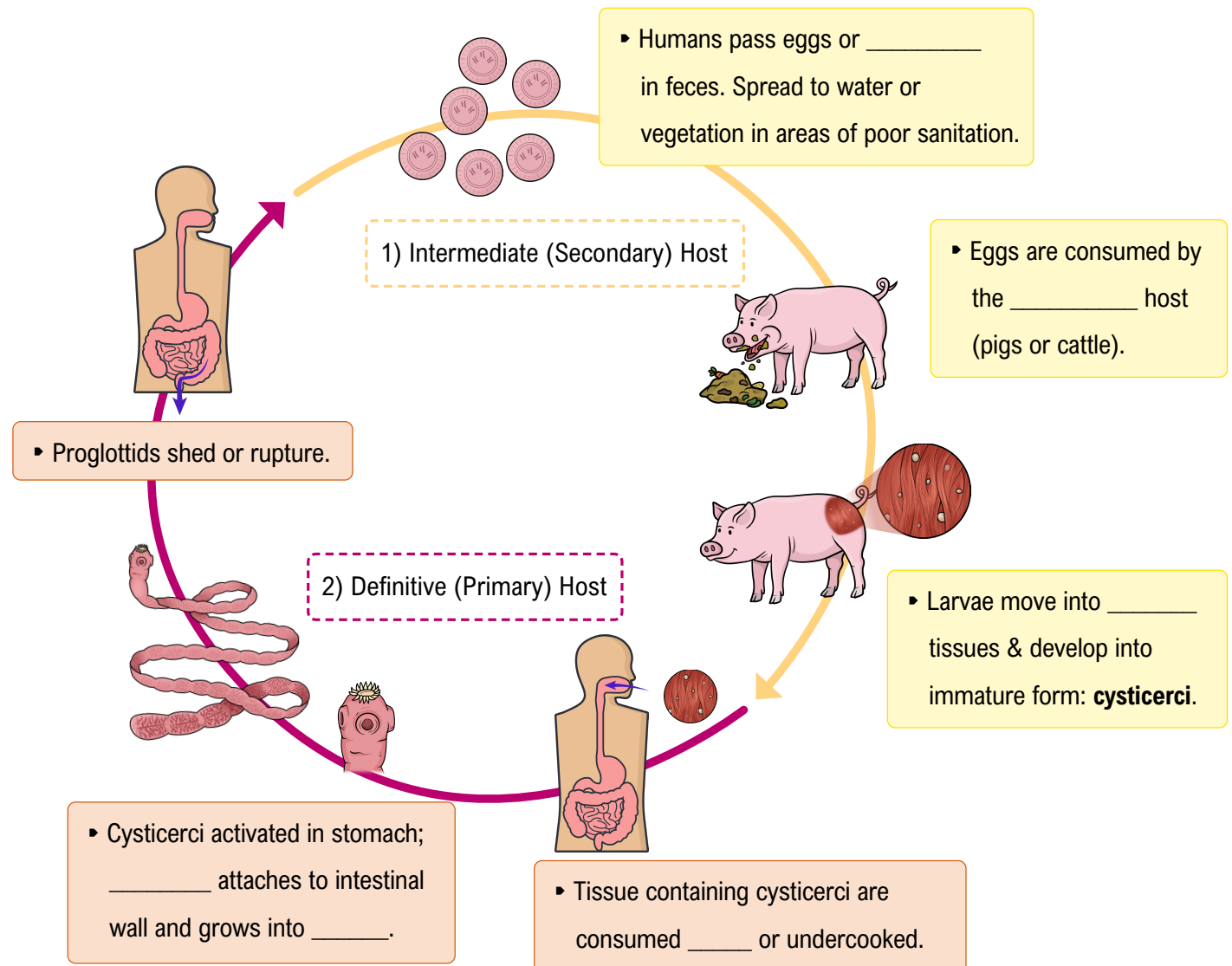
Gloria is diagnosed with a parasitic helminth after eating contaminated beef. Which of the following organisms is likely causing the infection?

- a) *Anisakis simplex*.                      c) *Trichinella spiralis*.  
b) *Taenia solium*.                      d) *Taenia saginata*.

## TOPIC: HELMINTHIC DISEASES OF THE DIGESTIVE SYSTEM

### Tapeworm Life Cycle

- ◆ Tapeworms have \_\_\_\_\_ life cycles that involve multiple \_\_\_\_\_.
- ▶ **Intermediate ( \_\_\_\_\_ ) Host:** host during \_\_\_\_\_ stage.
  - *Taenia solium*: \_\_\_\_\_ (pork tapeworm).      - *Taenia saginata*: \_\_\_\_\_ (beef tapeworm).
- ▶ **Definitive ( \_\_\_\_\_ ) Host:** host during \_\_\_\_\_ stage.
  - Both *Taenia solium* & *Taenia saginata*: \_\_\_\_\_.



## TOPIC: HELMINTHIC DISEASES OF THE DIGESTIVE SYSTEM

### EXAMPLE

Put the following events in the life cycle of *Taenia saginata* in order, starting with the attachment of the scolex to the intestinal wall. Some of the answer choices provided do not apply to *Taenia saginata*.

1)	Scolex attaches to the intestinal wall.
2)	_____
3)	_____
4)	_____
5)	_____
6)	_____

- a. Gravid proglottids rupture.
- b. Eggs are consumed by cows.
- c. Eggs are consumed by pigs.
- d. Proglottids crawl out of the digestive tract of the primary host to lay eggs.
- e. Larvae attach to the intestinal wall in cows.
- f. Larvae attach to the intestinal wall in pigs.
- g. Cysticerci develop in tissues outside of the intestinal tract.
- h. Human consumes tissue containing cysticerci.
- i. Cysticerci move out of the human intestine and into other organs.
- j. Adult tapeworm develops by growing proglottids.

### PRACTICE

What stage of the *Taenia solium* tapeworm lifecycle would you expect to find living in a pig?

- a) Proglottid.                      b) Worm.                      c) Cysticercus.                      d) Scolex.

### PRACTICE

Which of the following statements is true?

- a) Pigs are the normal definitive hosts of *T. solium*, but humans may be infected if they consume the eggs.
- b) During the pork or beef tapeworm lifecycle, gravid proglottids are found in the muscle of the secondary host.
- c) Tapeworms are most often spread through fecal-oral contamination from human to human.
- d) Consuming tapeworm eggs or gravid proglottids will *not* lead to infection by an adult tapeworm.