



## M250 TEST QUESTIONS

### Parasites of Human Interest

by Sharlene Peterson

1. Our partnership with all the microbes in and on our body is called a symbiotic relationship. In biology, the word symbiosis refers to the close, long-term interaction between two different species. The relationship between the two species can be further described as:
  - A. free living, pathogenic, or intracellular
  - B. mutualism, commensalism, or parasitism
  - C. biotic, abiotic, or parasitic
2. In addition to taxonomy (phylum, genus, species, etc.), protozoans are further categorized by **how they move** within and outside the host. The main movement categories are:
  - A. commensals, pathogens, enteric
  - B. parasite, protoplasm, asexual
  - C. ciliates, amoebae, flagellates, and sporozoa
3. (True or False) *Balantidium coli* is the only member of the ciliate family known to be pathogenic to humans.
  - A. True
  - B. False
4. (True or False) In addition to ulcerated colitis, Crohn's disease, and general IBS, chronic infection with *Entamoeba histolytica* has also been associated with autoimmune conditions.
  - A. True
  - B. False
5. *Acanthamoeba keratitis* is:
  - A. a serious eye infection where microscopic whip worms are visible in the eye tissue
  - B. a serious eye infection where microscopic cysts or trophozoites are present
  - C. a minor eye infection with both cysts and microscopic worms
6. (True or False) A chronic infection with *Giardia* can lead to arthritis, cause weight loss, malabsorption of vitamins A, D, E, K, B12, lactose intolerance, and in children it may slow physical and mental growth development.
  - A. True
  - B. False

7. (True or False) *Trichomonas vaginalis* infections used to be considered a sexually transmitted disease and both partners needed to be treated. It is now believed that it is not transmitted sexually, it is only transmitted when swimming in contaminated water.
- A. True
  - B. False
8. Treatment of Chagas disease in the United States currently focuses on killing the parasite in acute infection and managing signs and symptoms in later stages. Chronic infection complications include:
- A. irregular heartbeat, congestive heart failure, and sudden cardiac arrest
  - B. difficulty swallowing due to enlarged esophagus
  - C. abdominal pain or constipation due to enlarged colon
  - D. All of the above
9. (True or False) Toxoplasmosis is a food-borne illness and pork is the main source of infection. About 15% to 25% of apparently healthy pigs in the U.S. are estimated to be exposed to *T. gondii*, as determined by antibody tests.
- A. True
  - B. False
10. *Cryptosporidium* parasite infections in early childhood have been shown to result in:
- A. delayed growth, which may persist well beyond the period of infection.
  - B. immunity to other parasitic infections and complications
  - C. the development of chronic constipation
11. In humans, malaria infections begin when the infected female *Anopheles* mosquito attaches for a blood meal. Within the liver cells, the sporozoites multiply and release merozoites (in a merozoite form) and eventually travel through the heart and accumulate in the lungs. Within the lungs the merozoites disintegrate and release merozoites into the bloodstream. What happens next?
- A. The merozoites use the bloodstream to invade the central nervous system .
  - B. In the bloodstream, the merozoites invade red blood cells.
  - C. In the bloodstream the immune system quickly eliminates the merozoites.
12. (True or False) Health officials in the past recommended DDT powder, applied directly to a child's scalp, as a remedy for head lice.
- A. True
  - B. False

13. (True or False) In the United States, babesiosis and anaplasmosis are common tick-borne diseases. Ticks are only able to transmit one parasite at a time which eliminates the possibility of co-infections.
- A. True
  - B. False
14. *Enterobius vermicularis*, also known as a pinworm, threadworm or seatworm, is the most frequent \_\_\_\_\_ infection in the U.S.
- A. nematode
  - B. cestode
  - C. protode
15. (True or False) Only children get pinworms. Adults have immunity because as a child, they already had pinworms and acquired immunity.
- A. True
  - B. False

**The answer is false - adults can get pinworms. Whether or not a person is able to develop immunity to pinworms is under debate (2021).**

16. *Ascaris* infections often show no symptoms (asymptomatic) however, the following may occur:
- A. An individual may develop a cough when the larvae migrate to the lungs.
  - B. Damage to intestinal villi may impair the absorption of iodine, fats, and fat-soluble vitamins like vitamin A.
  - C. An allergic reaction to worm waste (metabolic waste / you are their outhouse) may cause skin rashes (dermatitis), eye pain, asthma, insomnia and restlessness
  - D. All of the above
17. (True or False) Based on the investigations into *Ascaris suum* transmission, it was concluded that cattle are not able to acquire an infection when they around infected pigs. Pigs are the only animals that that can host this species-specific organism.
- A. True
  - B. False
18. (True or False) *Trichinella* cysts are found in in the muscle/meat of many different wild and domestic animals. The prevalence of the cysts in the U.S. swine population has been steadily increasing. Irradiation of pork and other meats may be legalized in the future to destroy the cysts and increase the safety of the meat supply.
- A. True
  - B. False

19. *Toxocara* infections can manifest a wide range of inflammation-related symptoms and diseases including:
- A. asthma, allergies, pneumonia, endomyocarditis, meningoencephalitis
  - B. hepatitis, lymphadenopathy, and skin disorders
  - C. Answers A & B
  - D. The statement is false, *Toxocara* infections are always asymptomatic and mild.
20. (True or False) *Toxocara canis* infections have been shown to increase the risk of developing asthma and allergies by 400%.
- A. True
  - B. False
21. Hookworm larvae live in soil and typically enter humans through \_\_\_\_\_. The larvae travel through the bloodstream and into the host's lungs and throat before latching on to the small intestine.
- A. their nostrils or mouth with high winds
  - B. the bottom of their shoes, they are able to penetrate both rubber and leather soles
  - C. the soles of their bare feet
22. *Schistosoma* species are trematodes that can penetrate a human's skin and the adult worms can lay over 300 eggs per day. What is a common name for *Schistosoma* species:
- A. parasitic round worm
  - B. liver flukes.
  - C. blood flukes
23. (True or False) *Clonorchis sinensis* and *Opisthorchis spp* are trematodes/flatworms that are commonly known as liver flukes. They primarily infect cows, sheep, and swine.
- A. True
  - B. False
24. *Paragonimus westermani* are lung flukes that infect individuals when they consume infected:
- A. raw or pickled perch, trout, sea bass
  - B. raw or pickled crabs and crayfish
  - C. raw or under-cooked pork

25. Cestodes are parasitic tapeworms with three life stages and the ability to regenerate.

Which statements(s) are true:

- A. There are two types of infections that can develop from tapeworms depending on the route of infection. The ingestion of eggs from an adult tapeworm (expelled in feces) results in cysticercosis and/or neurocysticercosis. The ingestion of cysticerci, from under-cooked meat, results in the growth of an adult tapeworm within the upper small intestine which is called taeniasis.
- B. Except for *Taenia asiatica*, the pork tapeworm commonly called the Asian tapeworm, the *Taenia* species have a worldwide distribution. Transmission of *Taenia* parasites occurs mainly in rural areas where pigs are exposed to untreated human sewage/feces.
- C. Diphylobothriasis is an intestinal infection caused by the fish tapeworm *D. latum*. The infective larvae, plerocercoid, reside in the muscles/meat of trout, perch, burbot, salmon, pike, whitefish and sea bass.
- D. All of the above

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