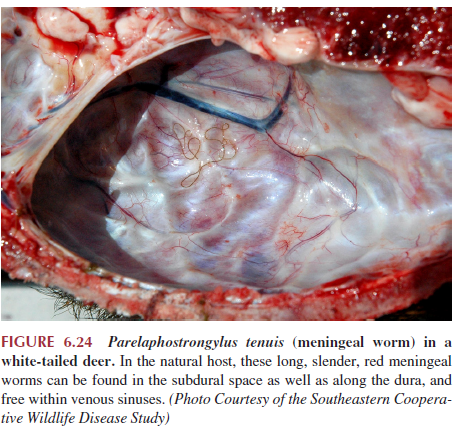
Chitwood, M. Colter, et al. "Meningeal worm (Parelaphostrongylus tenuis) as a cause of mortality in the restored elk (Cervus canadensis) population in Missouri, USA." *Journal of wildlife diseases* 54.1 (2018): 95-100.

Abstract: Meningeal worm (Parelaphostrongylus tenuis) is an important cause of mortality of elk (Cervus canadensis) in populations in the eastern US and has been implicated in the failure of several restoration attempts**. From 2011 to 2013, the Missouri Department of Conservation translocated 108 adult and yearling elk from Kentucky (US) to southern Missouri (US) to establish a free-ranging population. From release in spring 2011 through August 2015, we monitored 167 elk (adult, yearling, and calf) to determine causes of mortality. Of 78 mortalities, 26 (33%) were linked to meningeal worm** based on necropsy results and/or observed behavior; this group included 19 elk with confirmed or suspected cases of meningeal worm infection that died of other proximate causes. **Other important mortality sources included euthanasia (n=11, 14%), emaciation (n=7, 9%), and predation (n=5, 6%). Eleven of the 26 (42%) meningeal worm-related mortalities were adults, and 22 (85%) were female.** **Meningeal worm was an important cause of mortality during the restoration of Missouri elk, potentially contributing to the loss of 16% of the monitored individuals.** Greater mortality in adult female elk could reduce initial population growth by limiting reproductive output in the restored herd, especially given that females were disproportionately affected in Missouri. **Because translocated Missouri elk undoubtedly were exposed to meningeal worm in Kentucky, our results could be explained by exposure to a different genetic strain of meningeal worm once in Missouri, loss of immune response due to translocation, increased dose of larval worms, or some unquantified factor.**

Question:

Identify the following parasite observed on necropsy of a white-tailed deer (*Odocoileus virginianus*):



Answer: *Parelaphostrongylus tenuis*

Image from Terio Book Ch 6 – Cervidae

Rivas, Anne E., et al. "EVALUATION OF PASSIVE TRANSFER IN NINE SPECIES OF CERVIDAE." *Journal of Zoo and Wildlife Medicine* 52.2 (2021): 838-842.

Abstract: The reliability of **packed cell volumes (PCV), total solids (TS), blood glucose (BG), γ-glutamyl transferase (GGT), and glutaraldehyde test in determining passive transfer of colostral immunoglobulins was investigated in nine species of cervids**: axis deer (*Axis axis*), hog deer (*Axis porcinus*), sika deer (*Cervus nippon*), tufted deer (*Elaphodus cephalophus*), Père David's deer (*Elaphurus davidianus*), pudu (*Pudu puda*), sambar deer (*Rusa unicolor*), barasinga deer (*Rucervus duvaucelli*), and Eld's deer (*Rucervus eldii*). **Individually the parameters evaluated were significant though imperfect predictors of passive transfer status in cervids. Interpreted collectively as a panel along with neonate condition, these tests were clinically helpful in diagnosing failure of passive transfer (FPT).** Collectively interpreting test results as a panel along with clinical assessment of the animal is recommended. Some species-specific variations in TS, GGT, and glutaraldehyde test results were identified.

Question:

Which of the following clinicopathologic findings are supportive of a diagnosis of failure of passive transfer in sika deer (*Cervus nippon*)?

1. Decreased γ-glutamyl transferase
2. Hyperglycemia
3. Increased total protein
4. Increased hematocrit
5. Positive glutaraldehyde test

Answer: A

**Practice Question**

Which species of lungworm have been identified in free-ranging elk in Wyoming?

1. *Dictyocaulus viviparus, D. eckerti*
2. *D. eckerti, D. cervi*
3. *D. cervi, D. capreolus*
4. *D. capreolus, D. viviparus*
5. *D. viviparus, D. cervi*

Answer: E

**Practice Question:**

Which of the following is true regarding copper supplementation in white-tailed deer?

1. Supplementation increased liver concentrations and susceptibility to CWD
2. Supplementation increased liver concentrations but not survival time after exposure to CWD
3. Supplementation increased brain but not liver copper concentrations
4. Supplementation increased brain concentrations but did not affect survival with CWD
5. Supplementation decreased susceptibility to CWD increased survival time after exposure

Answer: B

Cervids 8/11/21 Questions

1. A Colorado game manager would expect an overall \_\_\_\_\_ in the number of hunting licenses for mature male mule deer (*Odocoileus hemionus*) would result in an \_\_\_\_\_ in chronic wasting disease prevalence over time.
   1. Increase, increase
   2. Decrease, decrease
   3. Increase, decrease
   4. Decrease, plateau
   5. Plateau, increase
2. The primary cause of calf mortality of moose (*Alces alces americanus*) on the Grand Portage Indian Reservation in northeastern Minnesota was found to be:
   1. Stillbirth
   2. *Dermacentor albipictus*
   3. Natural predation
   4. Hunter harvest
   5. Failure of passive transfer

**A HEADACHE FROM OUR PAST? INTRACRANIAL ABSCESS DISEASE, VIRULENCE FACTORS OF TRUEPERELLA PYOGENES, AND A LEGACY OF TRANSLOCATING WHITE-TAILED DEER (ODOCOILEUS VIRGINIANUS)**

Which of the following bacteria is most often isolated in white-tailed deer (*Odocoileus virginianus*) with intracranial abscessation-suppurative meningoencephalitis disease complex?

1. *Staphylococcus aureus*
2. *Serratia proteamaculans*
3. ***Trueperella pyogenes***
4. *Enterococcus spp.*
5. *Corynebacterium sp.*

**Evaluation of a test and cull strategy for reducing prevalence of chronic wasting disease in mule deer (Odocoileus hemionus)**

Which of the following is true regarding the results of a recent study using the test and cull strategy for reducing prevalence of chronic wasting disease in mule deer (*Odocoileus hemionus*)?

1. Prevalence in females decreased
2. **Prevalence in males decreased**
3. There was no change in prevalence in males or females
4. Prevalence in males increased
5. Prevalence in female increased

Based on a recent study in Rocky Mountain Elk (Cervus canadensis Nelsoni), seropositivity of *Brucella abortus* correlated with a significant change in which of the following?

1. Pregnancy rates
2. Winter migration timing
3. Body fat
4. Type of migration
5. Spring migration timing

Answer: a

What is the genus of the primary vector for orbiviruses such as bluetongue virus and epizootic hemorrhagic disease virus?

Answer: Culicoides (biting midges)