Which of the following is true about the drug Azaperone?

1. It is a dopaminergic drug
2. It causes severe hypothermia
3. It is antagonistic to alpha 2 receptors
4. It has minimal cardiovascular effects
5. It modulates the GABA receptor

Answer: D; Azaperone is a butyrophenone drug that has antidopaminergic effects and is antagonistic to alpha 1 receptors. This drug is relatively safe (at least in current literature) and seems to have minimal cardiovascular effects

Which of the following is true in terms of leading to lower prevalence of chronic wasting disease in mule deer?

1. Decreasing hunter numbers
2. Harvest middle age to older female deer
3. Decreasing harvest numbers
4. Harvest close to breeding season
5. Harvest 6 month fawns to yearlings

Answer: D. Increasing hunter and harvest numbers had a negative correlation with CWD, and not much is known on female deer; however, male deer closer to breeding season was found to be helpful because the disproportionately harbor higher prevalence of disease

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CAUSE OF DEATH, PATHOLOGY, AND CHRONIC WASTING DISEASE STATUS OF WHITE-TAILED DEER (ODOCOILEUS VIRGINIANUS) MORTALITIES IN WISCONSIN, USA

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1. Based on recent studies evaluating Chronic Wasting Disease (CWD) prevalence in free ranging white-tailed deer (*Odocoileus virginianus*) in Wisconsin, USA: what is true of the age association seen with the prevalence of CWD?
2. Steady increase in prevalence with increased age, peaks in older animals (>8 years old)
3. Steady decline in prevalence with increased age, subadults (<2 years) most affected
4. Increased prevalence with subadults (<2 years) and seniors (>8 years)
5. Steady increase in prevalence with increasing age, peaks at approximately 6 years old, then declining prevalence at older ages.
6. Steady increase in prevalence in adults 6 years and older, with a low prevalence in animals younger than 6 years.

Answer: D. Steady increase in prevalence with increasing age, with peaks at approximately 6 years old, then declining prevalence at older ages.

1. In a recent study evaluating the association between CWD and pneumonia white-tailed deer (*Odocoileus virginianus*) in Wisconsin, USA: What bacterial agent was cultured in 100% of mixed infection bronchopneumonia cases?
2. *Trueperella pyogenes*
3. *Bibersteinia trehalose*
4. *Pasteurella multocida subsp. multocida*
5. *Escherichia coli*
6. *Fusobacterium necrophorum*

Answer: A. N = 15/15 cases in which etiologic agents could be identified cultured *Trueperella pyogenes*. B/C were identified in some but not all. D was identified in some, not all as a likely contaminant. E: Fusobacterium is a distractor because only aerobic cultures were performed.. so fusobacterium could not be ID’ed if present, but has been identified as an etiologic agent of pneumonia in deer in previous studies.

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EVALUATING THE EFFICACY OF NONINVASIVE FECAL SAMPLING FOR PREGNANCY DETECTION IN ELK (*CERVUS CANADENSIS*)

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1. In methods described in a study evaluating pregnancy detection in elk (*Cervus canadensis*) in Tennessee, USA: which pregnancy detection sample and method was determined to be unaffected by stress of capture, least invasive, and most precise?
2. Blood sample: pregnancy-specific protein B ELISA
3. Blood sample: progesterone EIA enzyme immunoassay
4. Fecal sample: pregnancy-specific protein B ELISA
5. Fecal sample: progesterone EIA enzyme immunoassay
6. Fecal sample: progesterone metabolite enzyme immunoassay

Answer: D. a fecal sample obtained for progesterone EIA is non-invasive, fecal samples are unaffected by adrenal secretion of progesterone under stress, and the EIA kit had higher precision than the metabolite kit.

Option A and B are invasive, B and C are also paired incorrectly based on study methods. E is the correct method, and meets the first two criteria, but was not determined to be most precise.

**QUESTION**: Which parameter do you expect to be most accurate on a smartphone ECG when immobilizing sika deer *(Cervus nippon)*?

1. P wave amplitude
2. PR interval
3. QT interval
4. Minimum heart rate
5. Cardiac rhythm

Answer: E

*Source:* Gonzalez-Jassi et al. AJVR 2021. Utilizing smartphone-based electrocardiography and thoracic radiography to evaluate cardiac function and morphology in geriatric Sika deer (*Cervus nippon).*

**QUESTION:** Which statement is true regarding SARS-CoV-2 detection in white tailed deer (*Odocoileus virginianus*)?

1. Lymph node samples are not adequate tissues for detection of antigen via RT-PCR
2. Serum is more practical for viral detection than lymph nodes post-mortem
3. Antibodies can be detected in lymph node exudates with high specificity
4. Deer have not been documented to transmit the virus to humans
5. Neutralizing antibody test is unlikely to be useful for population surveillance

Answer: C

*Source:* Poonsuk et al. JWD 2023. DETECTION OF SARS-COV-2 NEUTRALIZING ANTIBODIES IN RETROPHARYNGEAL LYMPH NODE EXUDATES OF WHITE-TAILED DEER (ODOCOILEUS VIRGINIANUS) FROM NEBRASKA, USA.

**Wild, Margaret A., et al. "Surveillance for an emergent hoof disease in elk (*Cervus elaphus*) in the US Pacific West supplemented by 16S rRNA gene amplicon sequencing." *The Journal of Wildlife Diseases* 58.3 (2022): 487-499.** - reviewed by HSS

Question:

Which of the following histologic staining techniques is most useful for the identification of spirochetes?

1. Hematoxylin and eosin
2. Ziehl-Neelsen
3. Warthin-Starry
4. Congo red
5. Von Kossa stain

Answer: C

Explanation: H&E is a widely used staining technique, but it is not specific for spirochetes. Spirochetes are argyrophilic and can be identified with silver stains (Steiner or Warthin-Starry). Ziehl-Neelsen is an acid-fast stain, Congo red stains amyloid, and Von Kossa stains calcium.

**Jones, Jennifer D., et al. "Reproductive Fate of Brucellosis-Seropositive Elk (*Cervus canadensis*): Implications for Disease Transmission Risk." *The Journal of Wildlife Diseases* 60.1 (2024): 52-63.** - reviewed by HSS

Question:

Which of the following statements is most correct regarding the reproductive fate of brucellosis-seropositive elk (*Cervus canadensis*) in the Greater Yellowstone Ecosystem?

Answer:

1. The annual predicted probability of a seropositive elk having an abortion is low
2. The majority of seropositive elk were positive for *B. abortus* in at least one tissue during necropsy
3. *B. abortus* was not detected in any samples from live births
4. Seropositive prime-age elk had a lower probability of pregnancy compared to older elk
5. There was no difference in the predicted probability of pregnancy in seropositive compared to seronegative elk

Answer: A

Explanation: The predicted annual probability of a seropositive elk having an abortion as 6%. *B. abortus* was detected in 3/17 seropositive individuals on necropsy. The predicted probability of a seropositive elk having *B. abortus* in any tissue as 18%. *B. abortus* was detected in 2/57 live births (4%). The predicted probability of pregnancy for a prime-age elk was 94% if the elk was seronegative and 85% if it was seropositive. The predicted probability of pregnancy for an old elk was 69% if the elk was seronegative and 43% if it was seropositive.

**Efficacy of tolazoline and vatinoxan in reducing adverse effects of butorphanol-azaperone-medetomidine immobilization in rocky mountain elk (*Cervus canadensis*).** *Journal of Zoo and Wildlife Medicine.* 2024. 55(1): 136-142.

Laura Martinelli

**Question:** What adverse effects of alpha-2 agonists does Vatinoxan primarily counteract in rocky mountain elk (*Cervus canadensis*)?

1. Bradycardia & Hypotension
2. Bradycardia & HCO3
3. Bradycardia & PaO2
4. Bradycardia & Hyperventilation
5. Bradycardia & PaCO2

Answer: A

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**Lethal toxin neutralizing antibody response induced following oral vaccination with a microencapsulated Bacillus anthracis sterne strain 34F2 vaccine proof-of-concept study in white-tailed deer (*Odocoileus virginianus*).** *Journal of Zoo and Wildlife Medicine.* 2024. 55(1): 212-218.

Laura Martinelli

Question: What season should a commercial white-tailed deer producer be most worried about *Bacillus anthracis*?

1. Hot, dry summer and recent cool, wet weather
2. Hot, dry summer and recent increase in heat and dryness
3. Cool, wet spring and recent hot, dry weather
4. Cool, wet spring and recent increase in coolness and wetness
5. Cool, wet fall and recent hot, dry weather

Answer: A