1. Which of the following is true in regards to *Mycoplasma bovis* (Mb) in North American bison?
2. *Mb* can be readily controlled with supportive care along with treatment of a triple antibiotic combination
3. The cattle vaccine is recommended for protection in North American bison in field conditions
4. *Mb* can reside in the upper respiratory tract in healthy bison with no apparent history or clinical signs
5. There is no cross reactivity between antibodies elicited by other mycoplasmas and the ELISA capture antigen
6. *Mb* causes severe pneumonia by producing toxins, in which early affected animals show early signs of disease

Answer: C.

2. Which of the following offers the highest accuracy for diagnosing chronic pancreatic disease in lesser kudu?

1. Alanine transaminase
2. Amylase
3. Lipase
4. Fructosamine
5. Aspartate transaminase

Answer: D

**QUESTION:** In a study regarding causes of mortality in managed Kirk’s dik-diks, which of the following was observed?

1. High neonatal mortality due mainly to poor maternal care
2. High mortality due to trauma from conspecifics
3. High frequency of mortality due to neoplasia
4. No mortalities due to capture myopathy
5. No mortalities due to anesthetic complications

Answer: A

Source: "RETROSPECTIVE ANALYSIS OF MORTALITY CAUSES IN MANAGED KIRK'S DIK-DIKS (MADOQUA KIRKII) IN NORTH AMERICA FROM 1988 to 2019." Journal of Zoo and Wildlife Medicine 53.2 (2022): 349-356. Daniela Yuschenkoff, Charlotte Bolch, Kristen Phair, Gary West, Alexandra Goe, Rachel E. Burns.

**QUESTION:** In a study of morbidity and mortality in takin managed in zoological institutions in North America, which of the following was reported as the most common cause of mortality in neonates?

1. Trauma
2. Sepsis
3. Congenital defects
4. Pneumonia
5. Endoparasitism

Answer: A

Source: "Morbidity and mortality of takin (budorcas taxicolor) in north american zoological institutions from 1997 to 2017." Journal of Zoo and Wildlife Medicine 52.1 (2021): 157-165. Balbine Jourdan, Michael M. Garner, Priscilla H. Joyner, Jan Ramer, Dawn Zimmerman.

**Parameters for identifying failure of passive transfer in sitatunga (*Tragelaphus spekii*).**

Fraess, G.A., Sander, S. and Bronson, E.

*Journal of Zoo and Wildlife Medicine*, 2020;51(2):259-264.

List one disadvantage of each of the following parameters used to assess failure of passive transfer in sitatunga (*Tragelaphus spekii*): single radial immunodiffusion (RID), zinc sulfate turbidity test (ZSTT), GGT, serum total protein. What is the gold standard test for failure of passive transfer in nondomestic ruminants?

Answer:

RID - species-specific, expensive, specialized equipment

ZSTT - low specificity (false negatives)

GGT - high individual variation and not statistically different between affected and healthy

TP - affected by hydration status

Gold standard: this paper says protein electrophoresis (disadvantage - not patient-side, wait time for results); other paper says FTP is evaluated by RID or ELISA

**Comparison Of Diagnostic Predictors Of Neonatal Survivability In Nondomestic Caprinae**

Bliss TN, Marinkovich MJ, Burns RE, Carroll C, Clancy MM, Howard LL

*JZWM* 2022;53(1):31-40

Which of the following was positively associated with neonatal survivability in nondomestic Caprinae neonates?

1. Serum GGT
2. Gutaraldehyde coagulation
3. Serum glucose
4. Sodium sulfite precipitation
5. Serum fibrinogen

Answer: C

[**Suspected Moxidectin Toxicosis In A Roan Antelope (*Hippotragus equinus*), A Sable Antelope (*Hippotragus niger*), And An Arabian Oryx (*Oryx leucoryx*) At A Semi-Free Range Zoological Park**](https://doi.org/10.1638/2019-0061)

**Practice Question:** What is a risk factor for moxidectin toxicity in non-domestic ruminants?

Answer: Low body condition score

[**Effect Of Sustained-Release Trace Element Ruminal Bolus On Plasma Trace Mineral Profiles In Captive Blesbok Antelopes (*Damaliscus pygargus phillipsi*)**](https://doi.org/10.1638/2021-0120)

**Practice Question:** A blesbok antelope (*Damaliscus pygargus phillipsi*) presents for a history of thin body condition under managed care. Animal care staff report its coat color has blanched in color from a rich chocolate brown to a beige color and the texture appears dull. What is your top differential?

Answer: Copper deficiency

Placement of a laryngeal mask (LMA) during anesthesia in big horn sheep (ovis canadensis) resulted in which of the following changes?

1. An increase in body temperature
2. An increase in corrected partial pressure of carbon dioxide (PaCO2)
3. A decrease in corrected partial pressure of oxygen (PaO2)
4. A decrease in base excess (BE)
5. A decrease in total carbon dioxide (TCO2)

Answer: B

Name one dead end host and one aberrant host of the liver trematode Fascioloides magna

Dead-end hosts: moose, bison, domestic cattle, and horses

* + Fluke eggs trapped in the liver and are not shed into the environment

Aberrant hosts: domestic sheep, domestic goats, and bighorn sheep

* + Immature flukes penetrate the intestinal wall, do not encapsulate in the liver, and can migrate extensively within the abdominal and pleural cavities
	+ This can contribute to severe liver and multisystemic pathology, and even death