



1 in 5 Zoo Animals Test Positive for COVID-19: Shocking Results

Description

A recent study serves as a stark reminder of the ongoing spread of the COVID-19 virus, with 9 out of 47 animals testing positive for SARS-CoV-2 at a zoo in Brazil. It is highly likely that the animals contracted the virus from humans.

The researchers, led by the Federal University of Minas Gerais in Brazil, point out the unique dynamics of human-animal interactions in zoos. The close proximity between multiple wildlife species and frequent interactions between animals and caregivers create an environment conducive to viral transmission.

Testing conducted at the Belo Horizonte Zoo between November 2021 and March 2023 revealed that three animals harbored viral genomes – a maned wolf and a fallow deer with the Alpha variant, and a western lowland gorilla with the Omicron strain. The genetic sequencing of the SARS-CoV-2 RNA from the animals closely resembled samples from infected humans in the same region.

The study highlights the role of close contact between zoo animals and caretakers as a major route of infection. The spatial proximity of the infected species within the zoo further supports this transmission pattern.

Given the potential for interspecies transmission, concerns arise regarding the virus's ability to establish reservoirs in new hosts, posing risks of future outbreaks. Detecting and monitoring infections in zoo animals is crucial not only for protecting endangered species like western lowland gorillas but also for preventing the spread and evolution of the virus within wild populations.

The researchers emphasize the importance of integrated public health strategies that encompass wildlife monitoring to mitigate the threats posed by emerging infectious diseases. This research, published in the *Virology Journal*, underscores the urgency of understanding and addressing the ongoing evolution and adaptation of the virus in new hosts.

Vocabulary List:

1. **Transmission** /trænz'mɪʃən/ (noun): The act of spreading something such as a virus from one individual to another.
2. **Surveillance** /sər'veɪləns/ (noun): Close observation especially of a suspected spy or criminal; in this context monitoring of infections.
3. **Ecosystem** /'i:kəʊsɪstəm/ (noun): A biological community of interacting organisms and their physical environment.
4. **Interspecies** /ˌɪn.tər'spiː.ʃiːz/ (adjective): Occurring between different species; relating to interactions or relationships between various species.



5. **Reservoirs** /'rezər,vwər/ (noun): Natural or artificial places where fluid is collected and stored often referring to carriers of disease.
6. **Endangered** /ɪn'deɪndʒərd/ (adjective): At risk of extinction; referring to species that are at high risk due to low population numbers.

Comprehension Questions

Multiple Choice

1. What percentage of animals tested positive for SARS-CoV-2 at a zoo in Brazil?
Option: 15%
Option: 20%
Option: 25%
Option: 30%
2. Which university led the researchers in the study conducted at the Belo Horizonte Zoo?
Option: University of São Paulo
Option: Federal University of Minas Gerais
Option: University of Brasília
Option: Federal University of Rio de Janeiro
3. Which animal in the study was found to have the Omicron strain of SARS-CoV-2?
Option: Maned wolf
Option: Fallow deer
Option: Western lowland gorilla
Option: Rhesus monkey
4. What is highlighted as a major route of infection between zoo animals and caretakers in the study?
Option: Feeding interactions
Option: Physical barriers
Option: Close contact
Option: Isolation zones
5. What concern arises due to the virus potentially establishing reservoirs in new hosts?
Option: Reduced mutation rates
Option: Risk of future outbreaks
Option: Vaccination effectiveness



Option: Climate change implications

6. What is crucial for protecting endangered species and preventing the spread of the virus within wild populations according to the study?

Option: Implementing visitor restrictions

Option: Monitoring infectious diseases in humans only

Option: Detecting and monitoring infections in zoo animals

Option: Increasing zoo animal populations

True-False

7. Interspecies transmission is not a concern mentioned in the study.

8. The study was conducted at the Rio de Janeiro Zoo.

9. The genetic sequencing of the SARS-CoV-2 RNA from the animals closely resembled samples from infected humans in the same region.

10. The researchers emphasize the importance of isolated public health strategies in the study.

11. The study was published in the Journal of Virology.

12. The study highlights the role of frequent interactions between animals and visitors as a major route of infection.

Gap-Fill

13. Testing was conducted at the Belo Horizonte Zoo between November 2021 and March 2023, revealing that three animals harbored viral genomes – a maned wolf and a fallow deer with the Alpha variant, and a western lowland gorilla with the _____ strain.

14. The potential for _____ transmission raises concerns about the virus establishing reservoirs in new hosts.

15. Detecting and monitoring infections in zoo animals is crucial for protecting endangered species like



western lowland gorillas and preventing the spread and evolution of the virus within _____ populations.

16. The researchers emphasize the importance of integrated public health strategies that encompass _____ monitoring to mitigate threats posed by emerging infectious diseases.

17. According to the study, close contact between zoo animals and _____ is highlighted as a major route of infection.

18. The genetic sequencing of the SARS-CoV-2 RNA from the animals closely resembled samples from infected _____ in the same region, indicating a potential source of transmission.

Answer

Multiple Choice: 1. 19% 2. Federal University of Minas Gerais 3. Western lowland gorilla 4. Close contact 5. Risk of future outbreaks 6. Detecting and monitoring infections in zoo animals

True-False: 7. False 8. False 9. True 10. False 11. False 12. True

Gap-Fill: 13. Omicron 14. interspecies 15. wild 16. wildlife 17. caretakers 18. humans

Vocabulary quizzes

Multiple Choice (Select the Correct answer for each question.)

1. What term is used to describe species that are at risk of extinction?

- Option: Oscillating
- Option: Endangered
- Option: Detrimental
- Option: Infiltrating

2. What is the contamination of the environment with harmful substances known as?

- Option: Cataclysmic
- Option: Pollution
- Option: Transmission
- Option: Interference



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3. What process involves the accumulation of substances in an organism?
- Option: Ultra-dense
 - Option: Bioaccumulation
 - Option: Reservoirs
 - Option: Interventions
4. Which type of pollutants are small plastic particles of less than 5mm?
- Option: Phenomenon
 - Option: Microplastics
 - Option: Infiltrating
 - Option: Timestamp
5. What term is used to describe actions to reduce the severity of something?
- Option: Mitigation
 - Option: Enigma
 - Option: Diffraction
 - Option: Toxicity
6. What is considered a biological community of interacting organisms and their physical environment?
- Option: Rydberg
 - Option: Ecosystem
 - Option: Spectroscopy
 - Option: Innovative
7. Which term relates to interactions between different species?
- Option: Endocrine disruptors
 - Option: Interspecies
 - Option: Infiltrate
 - Option: Surveillance
8. The degree to which a substance can damage an organism is known as its:
- Option: Ultra-dense
 - Option: Toxicity
 - Option: Enigma
 - Option: Innovative
9. What term refers to the obstruction of a wave by another wave?
- Option: Endocrine disruptors
 - Option: Interference
 - Option: Spectroscopy
 - Option: Timestamp



10. What is the term for gradually seeping into something or somewhere?

- Option: Diffraction
- Option: Infiltrating
- Option: Enigma
- Option: Rydberg

Gap-Fill (Fill in the blanks with the correct word from the vocabulary list.)

11. Diseases can be _____ through various means.

12. The conservation of _____ is vital for maintaining biodiversity.

13. The company focused on developing _____ solutions to complex problems.

14. Water _____ can serve as breeding grounds for disease vectors.

15. The earthquake had a _____ impact on the region.

16. _____ is used to analyze the interaction between matter and electromagnetic radiation.

17. The mystery surrounding the old mansion was an intriguing _____.

18. Every digital entry is marked with a specific _____ indicating the time of creation.

19. The newly discovered star has an _____ core.

20. The Northern Lights are a natural _____ that mesmerize viewers.

Matching Sentences (Match each definition to the correct word from the vocabulary list.)

21. The monitoring of behavior and activities for the purpose of gathering information is known as surveillance.
22. Chemicals that interfere with the endocrine system can disrupt hormonal balance in organisms.
23. The Rydberg constant is used in calculating the wavelengths of spectral lines.
24. The bending of waves around obstacles is a characteristic of the phenomenon of diffraction.



25. The pendulum's motion was described as gently swinging back and forth in an oscillating manner.
26. Secret agents attempted to infiltrate the enemy's ranks to gather information.
27. The cutting-edge technology company was known for its innovative approach to problem-solving.
28. A timestamp is essential for tracking when a specific event or data point occurred.
29. The coded message presented a challenging enigma for the cryptographers to decipher.
30. When two or more waves meet interference can result in amplification or cancellation of the wave amplitudes.

Answer

Multiple Choice: 1. Endangered 2. Pollution 3. Bioaccumulation 4. Microplastics 5. Mitigation 6. Ecosystem 7. Interspecies 8. Toxicity 9. Interference 10. Infiltrating

Gap-Fill: 11. transmitted 12. ecosystems 13. innovative 14. reservoirs 15. cataclysmic 16. Spectroscopy 17. enigma 18. timestamp 19. ultradense 20. phenomenon

Matching sentence: 1. Surveillance 2. Endocrine disruptors 3. Rydberg 4. Diffraction 5. Oscillating 6. Infiltrate 7. Innovative 8. Timestamp 9. Enigma 10. Interference

CATEGORY

1. Health - LEVEL5

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