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# Questions and Answers:
SARS-CoV-2 Variants Detected in Animals

U.S. Department of Agriculture's (USDA) National Veterinary Services Laboratories (NVSL) have been testing samples from animals for the presence of SARS-CoV-2, the virus that causes COVID-19, since the beginning of the pandemic. When sufficient virus nucleic acid is present, experts at NVSL perform genetic sequencing to further characterize the virus from that animal, which can include determination of the virus lineage and classification of viral variants. Virus lineage is used to group viruses into groups, some of which are classified as variants.

USDA Animal and Plant Health Inspection Service (APHIS) scientists, in collaboration with their partners, have studied SARS-CoV-2 in animals through surveillance, testing, and research. Experts have confirmed cases in several animal species including cats, dogs, animals in zoos and aquariums, mink, white-tailed deer, and mule deer. The full list of confirmed cases of SARS-CoV-2 in U.S. animals can be found on the APHIS One Health website.

Scientists do not know all the animal species that can become infected with SARS-CoV-2. For regular updates on species that have been confirmed as infected, check out the Confirmed Cases of SARS-CoV-2 in Animals in the United States public reporting dashboard. For more information on testing animals, consult the APHIS One Health website and guidance from the Centers for Disease Control and Prevention (CDC) on Evaluation for SARS-CoV-2 Testing in Animals.

More studies are needed to understand if and how different animal species are affected by SARS-CoV-2. APHIS is implementing a provision in the American Rescue Plan Act to increase and enhance the animal health community's capability to prevent, detect, investigate, and control emerging and zoonotic diseases, including SARS-CoV-2, in susceptible animal species.

As APHIS expands and enhances its capacities to address the immediate threat of SARS-CoV-2, teams at APHIS are also building critical capacity to address future emerging threats to potentially prevent or limit future pandemics.

Below are frequently asked questions about SARS-CoV-2 in animals:

**How are animals getting infected?**
Reports of animals infected with SARS-CoV-2 have been documented around the world. Most of these animals became infected after contact with people with COVID-19, including owners, caretakers, or other humans who were in close contact.

Experts at APHIS are still learning about SARS-CoV-2 in animals, but there is currently no evidence that animals play a significant role in spreading the virus to humans. Based on the limited information available to date, the risk of animals spreading SARS-CoV-2 to people is low. To protect your family and your pets, it is recommended to always maintain a safe distance from wildlife and their droppings. Keep reading to find more tips on how to protect you and your pets from SARS-CoV-2. More information about how to protect you and your pets from SARS-CoV-2 are answered in the questions below.

**How are people getting infected?**
The primary route of transmission of this virus is from person to person, between people who are in close contact with one another or through respiratory droplets produced when an infected person

coughs, sneezes, or talks. Further studies are needed to understand how different animals could be affected by the virus that causes COVID-19 and the role animals could play in the spread of the virus. Under the American Rescue Plan Act, APHIS is conducting multiple projects aimed at understanding how SARS-CoV-2 might behave in different animals, how it moves between animals and people, and what we can do to interrupt the chain of transmission.

**What is a variant?**
All viruses, including SARS-CoV-2, change over time by acquiring mutations. "Variant" is used to describe a group of viruses which have similar genetic changes. Most of these changes have little or no impact on the virus' properties, such as how easily it infects a host – whether that is a person or an animal – or how sick it can make them.

Variants are most commonly monitored for their potential impact on human health. The term "variant of concern" specifically references concern about human health risks. New SARS-CoV-2 variants will continue to emerge if the virus continues to infect susceptible hosts, the vast majority of which are humans. Some variants emerge and quickly disappear while some variants continue to spread. APHIS and other public health organizations collaborate to monitor all variants of the SARS-CoV-2 virus infecting people and animals.

**Which variants have been found in animals?**
Many variants found in humans have also been found in animals. Variants found in animals can be found on the APHIS website at Confirmed Cases of SARS-CoV-2 in Animals in the United States, in the table titled "SARS-CoV-2 and Variants Detected in Animals." SARS-CoV-2 variants found in animals over time are found in the figure, "SARS-CoV-2 and Variants by Sample Collection Date."

**Why is it important to track variants in animals?**
As new variants emerge, it is possible that range of animals susceptible to SARS-CoV-2 infection could change. However, overall species susceptibility is unlikely to change drastically in the short term. Scientists in APHIS and USDA Agricultural Research Service continue to examine data on SARS-CoV-2 in animals to identify any potential changes in the virus. Alongside our One Health partners, APHIS and others in the international scientific community, such as academic researchers and non-governmental organizations, are continually studying these issues. The research completed by APHIS accounts for new variants and supports the effort to address future emerging threats to potentially prevent or limit any future pandemics.

**Why is APHIS monitoring this information?**
Viruses can mutate as they infect new hosts or species. By looking for variants in animals, experts at APHIS can better understand the risk of transmission between humans and animals. Analyzing sequences from animals infected with SARS-CoV-2 provides scientists a better understanding how the virus may change over time.

APHIS is uniquely positioned for this work because of its scientific expertise in animal health and animal diseases, including preparing for and responding to foreign animal disease outbreaks. Teams across APHIS are prioritizing their charge under the provision of the American Rescue Plan Act to conduct monitoring and surveillance of SARS-CoV-2 in susceptible animals using a One Health approach.

**What is APHIS doing with this information?**

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APHIS is tracking and reporting variants identified in animals. High-quality genetic sequences are uploaded to GISAID, a public, global resource for SARS-CoV-2 sequences. This allows scientists and the public to analyze information about SARS-CoV-2 viruses identified in humans and in animals.

APHIS is updating the dashboard regularly. When new cases are confirmed, these figures will update to show where the cases were identified, and which variants were detected. For some confirmed cases, there is not enough genetic information to definitively identify the variant, so totals may vary between figures.

**Can animals give me COVID-19?**
The risk of animals spreading SARS-CoV-2, the virus that causes COVID-19, to people is low.

Currently, there is no evidence that animals play a significant role in spreading SARS-CoV-2, the virus that causes COVID-19, to people. More studies are needed to understand if and how different species could be affected by SARS-CoV-2.

**What should I do if I think my pet was infected with SARS-CoV-2?**
Pets infected with this virus may or may not get sick. Out of the pets that have been infected with SARS-CoV-2 and gotten sick, most only had mild illness and fully recovered. Serious illness in pets has been rare.

Pets that do have signs usually have mild illness that are able to be cared for at home.

Signs that a pet may have contacted the virus that causes COVID-19 could include:

- Fever
- Coughing
- Difficulty breathing or shortness of breath
- Lethargy (unusual lack of energy or sluggishness)
- Sneezing
- Runny nose
- Eye discharge
- Vomiting
- Diarrhea

If your pet is sick and you think it might be from SARS-CoV-2, talk to your veterinarian.

If you are sick with COVID-19 and your pet becomes sick, first call your veterinarian and let them know you are sick with COVID-19. Some veterinarians may offer telemedicine consultations or other plans for treating sick pets. To help control the spread of COVID-19, the best option may be for you not to take your pet to the veterinary clinic yourself.

**Someone in my family tested positive for COVID-19. How do I protect animals from getting infected?**
People with suspected or confirmed COVID-19 should avoid contact with animals, including pets, livestock, and wildlife.

If you are sick with COVID-19 — either suspected or confirmed by a test — you should avoid contact with your pets and other animals, just like you would with people. *Contact* includes petting, snuggling, kissing, licking, sharing food, and sleeping in the same bed.

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For more information, visit CDC's guidance on What to Do if You are Sick.

**My pet tested positive for SARS-CoV-2. How do I protect my family from getting infected?**
Depending on your pet's signs, your veterinarian may recommend that you isolate your pet at home.

If your veterinarian recommends home isolation and you can care for your pet at home, keep your pet at home, except to get medical care. A pet can be isolated in the same way as a person sick with COVID-19. Protect yourself when caring for a sick pet by following the same precautions recommended for people caring for an infected person at home.

Cats should be kept inside. Do not allow cats that have tested positive for SARS-CoV-2 to roam outside.

**I have heard about mink getting infected. Is that a risk for me?**
Currently, there is no evidence that animals, including mink, play a significant role in the spread of SARS-CoV-2 to people.

**I have heard about white-tailed deer getting infected. Is that a risk for me?**
APHIS has reported white-tailed deer infected with SARS-CoV-2 in multiple states, as shown on the dashboard, Confirmed Cases of SARS-CoV-2 in Animals in the United States. APHIS and other One Health partners are actively exploring how wild white-tailed deer are exposed to SARS-CoV-2 and what risk infections in wildlife presents to humans.

Currently, there is no evidence that animals, including wildlife, play a significant role in spreading SARS-CoV-2 to humans.

For more information about reducing the risk of SARS-CoV-2 spreading between people and wildlife, visit the CDC website .