

FAQ

SARS-CoV-2 / Covid-19 and animals



FAQ SARS-CoV-2/Covid-19 and animals

Can farm animals common in Germany become infected with SARS-CoV-2 and spread it further?

So far, there is no evidence that farm animals/food-producing animals common in Germany can become infected with SARS-CoV-2. The Friedrich-Loeffler-Institut has conducted studies on the susceptibility of animals to SARS-CoV-2. These animal studies are important to assess the potential risk to humans and animals and to test whether these animals might develop into a virus reservoir. These and other studies have shown that neither pigs nor chickens, ducks, or turkeys can become infected with SARS-CoV-2. Cattle do show a very limited susceptibility to SARS-CoV-2 but are unable to transmit the virus.

Can wild animals become infected with SARS-CoV-2?

In North America, both infection with and antibodies against SARS-CoV-2 have been detected in white-tailed deer. They can transmit the virus to conspecifics very efficiently, as shown in an animal study in the USA. This has also been confirmed in the field. White-tailed deer are widespread in North America and are also kept as caged deer. So far, it is unclear how exactly the animals have become infected.

Isolated cases in wild mink have also been reported. The animals were found in the vicinity of mink fur farms (for susceptibility of minks and ferrets see below). From India, there was a report of a leopard found dead that was infected.

According to current knowledge, wild animals do not play a role in the circulation of SARS-CoV-2 in humans. Transmission clearly occurs between humans. So far, there is no indication that (roe) deer in Germany might be infected. FLI currently conducts studies to detect antibodies against SARS-CoV-2 in wild animals in Germany.

In particular, roe deer as a related species to North American white-tailed deer are being studied.

Can pet animals be infected by infected humans?

As a rule, susceptible pet animals can be infected by infected humans. Persons infected with SARS-CoV-2, in particular if they show symptoms of disease, can excrete large quantities of the virus via the nose and mouth (droplet infection). It must be assumed that their surroundings are also contaminated with virus, even if basic hygiene rules are observed (sneeze and cough in the crook of your arm, wash your hands, clean surfaces). For this reason, infected persons should pay particular attention to hygienic measures, especially when in contact with their pets, avoid close contact as far as possible, not cough or sneeze on the animals, and not allow the animals to lick their face. In this respect also, vaccination of humans plays an important role, as it considerably reduces the probability to transmit the infection to pet animals.

Can pet animals such as cats and dogs transmit SARS-CoV-2 to humans?

Dogs, cats, rabbits, gold hamsters, and ferrets are susceptible to infection with SARS-CoV-2, guinea pigs are not. However, there is no evidence so far that these pet animals play a role in the spread of SARS-CoV-2 (also see assessment of the European Centre for Disease Control www.ecdc.europa.eu and the WHO www.who.int). For the Covid-19 pandemic, human-to-human transmission is crucial for its spread. Worldwide, there is one report from Hongkong of a small number of persons who might have become infected while caring for infected hamsters in pet shops. In Germany, such cases have not been reported so far.

FAQ SARS-CoV-2 / Covid-19 and animals

Can dogs be infected by infected humans?

Yes, dogs can also become infected when in close contact with infected humans. However, this is very rare. According to current knowledge, virus replication in dogs is very limited, so that dogs do not excrete sufficient amounts of virus to transmit the infection to other dogs..

Can cats and musteloids such as e.g. ferrets be infected by infected humans?

Yes, some cases have been detected. Several countries have reported SARS-CoV-2 positive cats, which sometimes also showed symptoms of disease. The cats came from households with Covid-19 patients and were in all likelihood infected by these persons. Several zoos also have reported the detection of SARS-CoV-2 in big cats (tigers, lions, etc.).

A study from China showed that cats can be infected with SARS-CoV-2 and can also transmit the virus to their conspecifics under experimental conditions. The same applies to ferrets as shown by an FLI study.

In another study, a total of about 140 cats from the city of Wuhan, which was particularly affected by Covid-19, were tested for antibodies against SARS-CoV-2. 102 of these were sampled after the Covid-19 outbreak, 11 had produced antibodies, which suggests that they had been infected.

In many countries, including the Netherlands, Denmark, Spain, Greece, and Canada, natural infections have been reported in mink (which belong to the musteloids) from fur farms. The animals were probably infected by their caretakers. Minks are related to ferrets so that these cases are not surprising. There is also evidence from the Netherlands and Denmark that staff members can become infected themselves by

contact with infected minks. Given the large number of susceptible animals and the correspondingly high viral load, this cannot be ruled out.

However, this evidence does not change the assessment of the Friedrich-Loeffler-Institut: According to the current state of knowledge, pets do not play an epidemiological role in the spread of SARS-CoV-2 / Covid-19.

How infectious is the Omicron variant for pet animals?

We do not yet know exactly how Omicron behaves in pet animals and how contagious it is for them. However, no abnormalities have been reported so far. The answers given above and the studies mentioned above mainly refer to the SARS-CoV-2 variants prior to Omicron.

How should pets of persons infected with SARS-CoV-2 be handled?

Pets such as dogs and cats can and should remain in the household. However, general hygiene rules such as washing hands before and after contact with the animals and avoiding close contact with the animals should be strictly observed. To protect pet animals from the transmission of infections by infected persons, the Friedrich-Loeffler-Institut also recommends that infected pet owners wear a mouth-nose protection. A mandatory use of face masks for pet animals is irrelevant for infection protection, as the infection is transmitted by infected humans. For this reason and also for animal welfare reasons it is considered inappropriate.

According to current knowledge, the Friedrich-Loeffler-Institut does not consider it necessary to restrict contact between healthy persons and domestic ani-

FAQ SARS-CoV-2/Covid-19 and animals

imals. However, as a general precaution, it is always advisable to observe basic principles of hygiene when coming into contact with animals (e.g. wash hands thoroughly with soap).

What should be considered when walking dogs?

Individuals who are in quarantine or home isolation should ask appropriate persons outside their household for assistance in caring for their animals. This is especially true for walking dogs. These could be neighbours or friends who already provide food to the person(s) in quarantine/home isolation if necessary, or (in urban areas) professional dog sitters. Only young, healthy individuals should walk the dog, depending on the character of the dog they should be experienced in handling dogs. Depending on the situation, pragmatic solutions should be found that affect the welfare of the animal as little as possible and do not interfere with domestic isolation/quarantine. A separate leash should be used, preferably not the dog owner's. Always remember: always wash your hands after walking the dog! The risk of infection does not come from the dog, but from the possibly infected owner! Before handing over the dog, infected owners should wash and disinfect their hands thoroughly.

What should be considered for cats with outdoor access?

Cats owned by individuals in home isolation which normally leave the apartment or house („outdoor cats“) should be kept indoors for the duration of quarantine if possible. Cats should also not be housed with other unfamiliar cats (e.g., in a boarding facility). There is no reason to surrender pets to animal shelters as a precaution. If a pet tests positive for SARS-CoV-2, this is not a reason to euthanize the animal.

Why are SARS-CoV-2 infections in animals reportable?

Mandatory reporting helps to better understand the possible role of kept animals* in the Corona pandemic. This will help to better classify their possible importance as vectors and to provide further information on possible infection scenarios. Mandatory reporting bundles the reported cases and provides a Germany-wide overview.

* kept animals according to Art. 2 Animal Health Act (Tier-GesG) excluding trout, carp, bumblebees, and bees

What does mandatory reporting mean and who is affected?

Mandatory reporting is the obligation to report the detection of infection in an animal. However, there is no obligation to test for the presence of infection. In case of a positive result, the laboratory or the veterinarian must inform the district veterinary office. The veterinary office reports the case via the Animal Disease Notification System (TSN). No control measures result from mandatory reporting itself. However, the veterinary office can impose measures such as quarantine.

The heads of the veterinary diagnostic agencies, animal health offices or other public and private diagnostic institutions are obliged to report reportable diseases. The same applies to veterinarians who detect the infection in their professional capacity. They are obliged to report positive animals, unless sample material from the affected animal has been tested by one of the above-mentioned institutions. The costs of testing are usually borne by the animal owner. If there is a particular scientific interest in the test result and there is reason to suspect an infection, cost transfer can be discussed with the veterinary office

FAQ SARS-CoV-2 / Covid-19 and animals

When it is useful to have your pet animal tested for SARS-CoV-2?

If an animal owner infected with SARS-CoV-2 wishes to have his/her susceptible pet animals to be tested by a laboratory, the competent veterinary office should be notified of this test and the required sampling should be carried out on site by an authorized and appropriately protected person. Detection in animals follows the same test procedure (rapid test, PCR) as in humans. If other animal owners wish to have an animal tested for SARS-CoV-2, this should be done after consultation with the veterinarian. If the animal is to be tested, swabs from the pharyngeal mucosa, nasal mucosa, or, if other samples cannot be taken, feces can be used and tested by RT-PCR. Testing of animals without an epidemiological association with a SARS-CoV-2 infection or with Covid-19 (i.e., animals that have not had direct close contact with infected persons) is not supported by the Friedrich-Loeffler-Institut.

Do pet animals that test positive for Corona show similar symptoms of disease as humans?

Yes, they may have similar symptoms such as dry cough, runny/stuffy nose and fever.

How should pet animals that test positive be handled?

If a pet animal that is tested positive does not already live in a household with persons in isolation or quarantine, or if the pet owner has to be hospitalized, the animal should be kept in isolation as much as possible according to the applicable quarantine rules for humans. Persons in close contact with the animal are classified as category II contacts. More information on contact person management can be found on the [website of the Robert Koch Institute](#).

Are there other coronaviruses in pet and farm animals?

Yes, there are coronaviruses in various animal species. For example, feline infectious peritonitis (FIP) occurs in cats. In pigs, porcine epidemic diarrhea (PED) is caused by a coronavirus. These pathogens pose no risk to humans and can be clearly distinguished from SARS-CoV-2.

Where does SARS-CoV-2 come from?

Molecular biological studies of the genetic material of SARS-CoV-2 (sequence analyses) indicate that closely related viruses are found in certain bats. SARS-CoV-2 belongs to the so-called betacoronavirus group. The most closely related coronaviruses are SARS-CoV (occurred first in 2003, also with bats as the known reservoir host), MERS-CoV (*Middle East Respiratory Syndrome Coronavirus*, first detected in 2012 on the Arabian Peninsula; dromedaries are the natural hosts) and other coronaviruses of bats.

SARS-CoV, SARS-CoV-2 and MERS-CoV are infectious agents that can be transmitted between animals and humans; therefore, the infections they cause are zoonoses. It is unclear whether SARS-CoV-2 was transmitted directly from bats to humans or whether an animal intermediate host played a role in the early transmission to humans. An experimental study of the Friedrich-Loeffler-Institut has shown that raccoon dogs are susceptible to SARS-CoV-2, but remain clinically inapparent. This makes them and other fur-bearing animals, e.g. mink, suitable as intermediate hosts.

What role do endemic bat species play?

In principle, coronaviruses belong to the natural pathogen spectrum of endemic bats. However, these coronaviruses are clearly distinguishable from

FAQ SARS-CoV-2/Covid-19 and animals

SARS-CoV-2. Although it is assumed that the current corona pandemic has its origin in Asian bats, there has been no direct detection so far. Instead, other intermediate hosts must be considered. According to current knowledge, endemic bats do not play a role in the current corona pandemic. Therefore, there is no reason to persecute these strictly protected species, to scare them off houses or to destroy their living quarters. This is also prohibited for species protection reasons. Direct contact between bats and humans is per se extremely rare. However, it cannot be ruled out that the pathogen is introduced into endemic bat species by infected humans. This must be strictly avoided.

More information on this topic can be found in the information sheet [„Einheimische Fledermäuse und SARS-CoV-2“](#) (in German language) jointly produced by the Bundesverband für Fledermauskunde, NABU, Fledermauszentrum Noctalis, the University of Greifswald, the Leibniz-IZW, Museum für Naturkunde Berlin, BAT. e.V. and the Deutsche Fledermauswarte e.V.

References:

Study from the USA: Palmer MV, Martins M, Falkenberg S, et al. Susceptibility of white-tailed deer (*Odocoileus virginianus*) to SARS-CoV-2 [published online ahead of print, 2021 Mar 10]. *J Virol.* 2021;95(11):e00083-21. doi:[10.1128/JVI.00083-21](https://doi.org/10.1128/JVI.00083-21)

Study from China: Shi J, Wen Z, Zhong G, et al. Susceptibility of ferrets, cats, dogs, and other domesticated animals to SARS-coronavirus 2. *Science.* 2020;368(6494):1016-1020. doi:[10.1126/science.abb7015](https://doi.org/10.1126/science.abb7015)

FLI Study: Schlottau K, Rissmann M, Graaf A, et al. SARS-CoV-2 in fruit bats, ferrets, pigs, and chickens: an experimental transmission study. *Lancet Microbe.* 2020;1(5):e218-e225. doi:[10.1016/S2666-5247\(20\)30089-6](https://doi.org/10.1016/S2666-5247(20)30089-6)

Andersen KG, Rambaut A, Lipkin WI, Holmes EC, Garry RF. The proximal origin of SARS-CoV-2. *Nat Med.* 2020;26(4):450-452. doi:[10.1038/s41591-020-0820-9](https://doi.org/10.1038/s41591-020-0820-9)