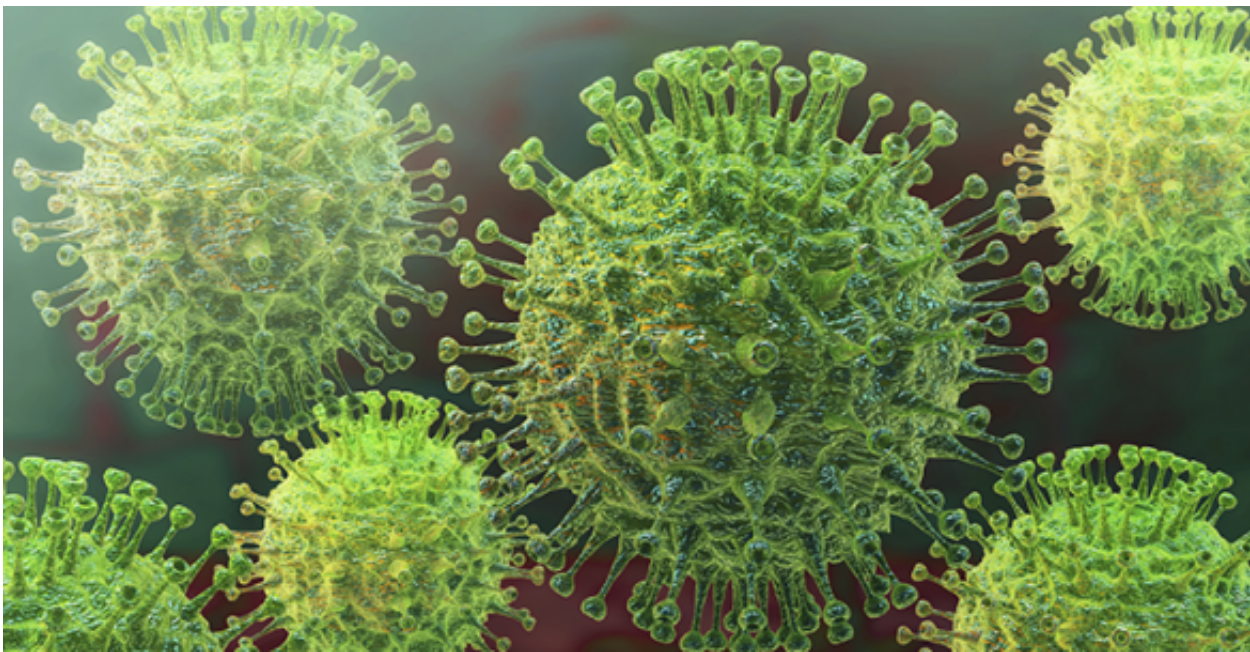




# COVID-19 cannot be transmitted by either farm animals or domestic animals



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When asked about potential transmission of the COVID-19 disease via contaminated domestic animals or food, ANSES urgently convened an expert group to answer this question. On the basis of their report, the Agency concluded that in light of the scientific knowledge available, there is no evidence that pets and livestock play a role in the spread of the SARS-CoV-2 virus causing this disease. Any transmission through food would therefore necessarily imply contamination of that food by a patient or person infected with the virus, during handling or meal preparation. This could concern all types of foods (animal or plant products). Furthermore, while there is no evidence to suggest that consumption of contaminated food can lead to infection of the digestive tract, the possibility of the respiratory tract becoming infected during chewing cannot be completely ruled out. The Agency reiterates that cooking food and observing good hygiene practices when handling and preparing food are effective at preventing contamination with the SARS-CoV-2 virus.

Since the SARS-CoV-2 coronavirus – responsible for the COVID-19 disease – emerged in China in December 2019, the knowledge acquired has shown that its main route of transmission is human-to-human, through contact between people or inhalation of infectious droplets emitted by patients when they sneeze or cough.

Nevertheless, because the virus's genetic structure indicates that it probably originated in animals, ANSES was consulted, and set up an Emergency Collective Expert Appraisal Group to examine the potential role of domestic animals and food in virus transmission.

## Potential role of domestic animals in virus transmission

With regard to possible transmission of the virus by livestock and domestic animals, the conclusions of the expert group indicate that:

- ▶ The genetic structure of the SARS-CoV-2 virus does indeed suggest that an animal was its initial source. It probably comes from a species of bat, and an intermediate host may or may not have been involved. However, as things stand today and in light of the published information available, the **passage of SARS-CoV-2 from humans to another animal species currently seems unlikely**.
- ▶ The SARS-CoV-2 virus binds to a specific cellular receptor, which allows it to gain access to cells. Although this receptor has been identified in domestic animal species and appears to be capable of interacting with the human virus – and further studies on this subject are needed – the experts reiterate that **the receptor's presence is not a sufficient condition for infection** in these animals. This is because the virus uses not only the receptor, but also other cell components that allow it to replicate.
- ▶ While the virus genome was detected in the nasal and oral cavities of a dog in contact with an infected patient in Hong Kong, **detection of the genome is not sufficient evidence to conclude that the animal was infected**. Passive contamination cannot be ruled out, especially since the virus may be able to survive in moist mucous membranes without necessarily replicating. In view of this, the experts stress the need to investigate this case further by carrying out additional analyses, and to continue publishing the results as they are produced.

## Potential transmission of the virus via food

Since contamination of an animal is unlikely, the possibility of direct transmission of the virus through food derived from a contaminated animal was ruled out by the experts. **Only the hypothesis of contamination of food by a person who is sick, or is an asymptomatic carrier of the SARS-CoV-2 virus**, was investigated. This could occur through respiratory droplets from a contaminated patient. However, the question of the faecal-oral route was also raised, as viral particles have been detected in the faeces of some patients.

The expert group reached the following conclusions:

- ▶ Based on the current state of knowledge, **transmission of the SARS-CoV-2 virus directly via the digestive tract can be ruled out**. Indeed, while the virus has been observed in patients' faeces, it was probably due to circulation of the virus in blood following respiratory infection rather than through the digestive tract. However, **the possibility of the respiratory tract becoming infected during chewing cannot be completely ruled out**.
- ▶ As with other known coronaviruses, this virus is sensitive to cooking temperatures. **Heat treatment at 63°C for 4 minutes** (temperature used when preparing hot food in mass catering) can therefore reduce contamination of a food product by a factor of 10,000.
- ▶ An infected person can contaminate food by preparing or handling it with dirty hands, or via infectious droplets produced when coughing or sneezing. **Good hygiene practices, when properly applied, are an effective way to prevent food from being contaminated with the SARS-CoV-2 virus**.

ANSES and the experts of its Emergency Collective Expert Appraisal Group will remain alert to any future studies and information liable to change this assessment.

## FOR MORE INFORMATION

- ▶ [ANSES OPINION on an urgent request regarding certain risks associated with COVID-19](#)
- ▶ [See our article "Coronaviruses: Identity card of the virus and role of ANSES" \(in French\)](#)