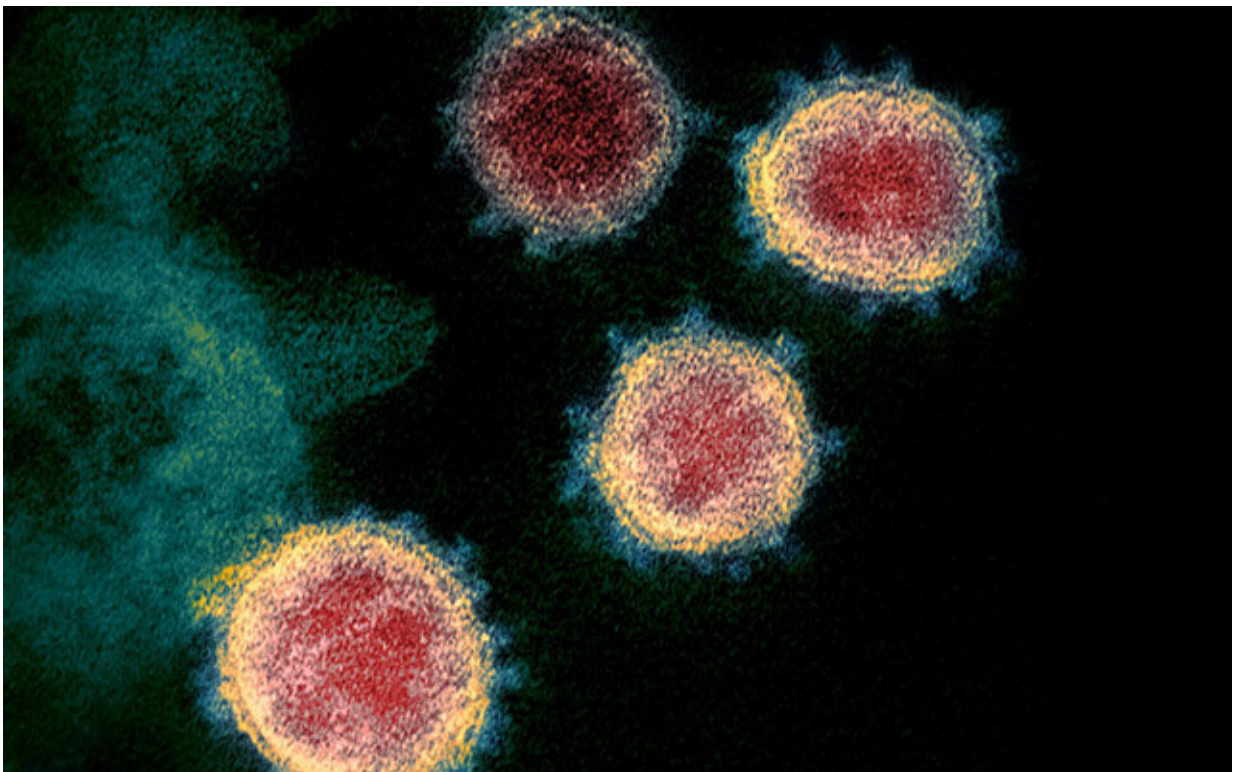


Study suggests substantial proportion of pet cats and dogs are infected with SARS-CoV-2 by their owners

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A colorized scanning electron micrograph of the SARS-CoV-2 virus. Credit: NIAID

A small study by Canadian veterinary science experts being presented at this ESCMID Conference on Coronavirus Disease (ECCVID, held

online from 23-25 September) suggests that a substantial proportion of pet cats and dogs can be infected by SARS-CoV-2 by their owners. Furthermore, in several cases pets found to be infected had COVID-19-like respiratory symptoms at the time their owner had COVID-19.

"These preliminary results suggest that a substantial proportion of pets in households of persons with COVID-19 seroconvert," says study co-author Dorothee Bienzle, Professor of Veterinary Pathology at the University of Guelph, Ontario, Canada.

SARS-CoV-2 has been reported to infect a range of animal species. However, neither [risk factors](#) nor susceptibility or clinical features of [infection](#) in different animal species are well defined. This study investigated the prevalence of SARS-CoV-2 shedding and seropositivity in pets whose owners had COVID-19.

In this study, people who owned a cat, dog or ferret and had a diagnosis of SARS-CoV-2 infection or symptoms consistent with COVID-19 within a 2-week period, were invited to have their pet swabbed. If humans were outside the 2-week window of suspected infectiousness, collection of a blood sample from their pet for serology was offered. Swabbing of the nose, throat and rectum was done for PCR-testing to test for current infection in the pets, while standard blood antibody ELISA tests were used to detect recent (IgM [antibodies](#)) or past infection (IgG antibodies). Results were compared with blood stored from animals collected before December 2019, to act as a control group.

Swabs were collected from 17 cats, 18 dogs and one ferret. All PCR results (for current infection) were negative except those from one cat that were considered indeterminate. Blood samples were taken from 8 cats and 10 dogs. The results indicated presence of IgG or IgM in 4 (50%) and 3 (38%) distinct cat samples, respectively. The sample from

the cat with indeterminate PCR results had a positive IgM ELISA result, indicating its infection, although not current, was extremely recent.

"All cats with an indeterminate PCR or positive antibody result were reported to have had respiratory and/or other illness by their owners around the time of the owner's COVID-19 infection," explains Professor Bienzle. "Two (20%) of dogs had positive IgG antibody results, indicating past infection, and one of these was reported to have had an episode of respiratory disease. No dogs had positive IgM results, which would have indicated more recent infection."

She concludes: "While eligible participant number was limited by relatively low human transmission rates in the study area, these preliminary results suggest that a substantial proportion of pets in households of persons with COVID-19 end up developing antibodies. Due to the narrow window of time available to detect a current infection in pets, especially if their owner is still sick and isolating, blood testing the animal at a later time to check for previous infection is preferable for assessment of human-to-animal transmission."

She adds: "Transmission from mink to humans has been reported on mink farms with a high proportion of infected animals maintained in close quarters and cared for by humans. Transmission from pets to humans has not been reported, but since the virus changes minimally or not at all after transmission from humans to animals, such reverse transmission may occur."

Regarding pet care, Prof Bienzle recommends that people infected with SARS-CoV-2 should not only keep away from other people, but also their pets. She says: "There is sufficient evidence from multiple studies, including ours, to recommend that SARS-CoV-2 infected persons should isolate from people and [animals](#)."

Her team will be studying COVID-19 antibody prevalence in other pet populations in the near future.

Provided by European Society of Clinical Microbiology and Infectious Diseases

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