

Asymptomatic Patients May Leave COVID-19 Viral Material on Surfaces Following Eye Exams

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Despite triage systems in place to exclude patients with coronavirus disease 2019 (COVID-19), viral material was found on [ophthalmology](#) examination room surfaces at one center, though the infectivity of the samples was unknown. Results [from](#) the small quality improvement study were published in *JAMA Ophthalmology*.¹

[COVID-19](#) is caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), an enveloped, single-stranded RNA virus, primarily transmitted through person-to-person contact. However, several studies have suggested the virus can be spread via contaminated surfaces.

One study of cruise ship outbreaks of SARS-CoV-2 reported “viral RNA was identified on the surfaces of cabins up to 17 days after patient disembarkation,” authors wrote.

To determine whether ophthalmologists risk encountering asymptomatic individuals with COVID-19 when maintaining elective examinations, researchers collected samples from 1 examination room in İzzit Tıp Fakültesi Eğitim ve Araştırma Hastanesi, İzzit, Turkey, one week

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contact with any person with a confirmed or suspected case were excluded from elective examinations. Patients with fever, coughing, or general illness were also excluded while patients showing no symptoms were examined. Medical personnel with no symptoms were not screened for COVID-19.

A plastic slit lamp breath shield was used as a physical barrier in the examination room. "The room was cleaned with hydrogen peroxide, 3%, after the last examination and had no visitors for approximately 18 hours after cleaning," researchers wrote. "No room cleaning was done between patients, but chin and forehead rests were wiped with isopropyl alcohol, 70%, between the patients."

Fourteen samples were taken from the biomicroscope stage, slit lamp shield, phoropter, tonometer, and door handles before and after patients visited on March 20, 2020, and were tested by real-time polymerase chain reaction (RT PCR).

Of the 29 patients who went to the hospital for an eye exam, 7 were directed for COVID-19 tests following triage and did not enter the examination room. A total of 22 patients went to the exam room with 9 companions and 1 healthcare professional (who was not symptomatic). Mean examination time was around 9 minutes.

RT PCR tests revealed:

- All 7 samples taken before the beginning of the examinations had negative results
- While 5 of 7 samples taken after the last patient had left the room had negative results, 2 samples obtained from the slitlamp shield and phoropter were found to be positive for COVID-19 viral material
- The negative sample that was closest to the patient was taken at 1.5 m distance
- Other negative samples were from 3 to 4 m and 5 m, respectively

"This study provided objective data about the potential for patients who are asymptomatic, those accompanying them, or health care personnel in an eye examination room to leave viral material on the surfaces tested," researchers wrote.

Because RT PCR establishes only the presence of viral material and provides no information about infectivity, virulence, viability, or viral load, authors cautioned the study's outcomes cannot determine the potential infection risk of encountering an individual carrying the virus asymptotically during a routine eye examination.

To partially address this issue and to reduce COVID-19 [exposure](#) among at-risk patients visiting ophthalmology clinics,² additional researchers recently developed a flexible and scalable scoring algorithm for patients with glaucoma aimed at triaging those seeking ophthalmologic care.

Patients with chronic ocular diseases, such as glaucoma, risk experiencing irreversible visual acuity or visual field loss from disease progression if they are unable to receive timely medical care, the researchers explained. “Yet a disproportionately large number of patients with glaucoma are also of older age and have medical comorbidities that predispose them to morbidity and mortality from COVID-19.”

Specifically, the algorithm’s success demonstrates how researchers can leverage big data to triage ophthalmic clinic appointments, balancing the glaucoma progression risk against the morbidity risk from COVID-19 exposure.

References:

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