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BRIEF19

A daily review of covid-19 research and policy.

RESEARCH BRIEFING

Does wearing eyeglasses provide protection from SARS-CoV-2?

As the research community continues to learn more about covid-19, understanding the most effective methods of limiting transmission remains up for debate. It is clear that masks reduce transmission of SARS-CoV-2, the virus responsible for covid-19. Meanwhile, some authorities also recommend goggles to prevent absorption via the eyes, but there is no concrete evidence that this route of transmission is a significant one. Fragments of SARS-CoV-1 (a closely related coronavirus responsible for the SARS outbreak in 2002-2003) can be [detected](#) in tears, which could also be a concern for SARS-CoV-2. Indeed, a recent study published [Nature](#) reported that two rhesus monkeys developed covid-19 after researchers injected SARS-CoV-2 into the mucous membranes surrounding their eyes.

This week, researchers [reported](#) that patients hospitalized for covid-19 in Suizhou, China between January and March were less likely to wear eyeglasses than the general population of that region. The central finding of the study is that of the 276 covid-19 patients studied, 16 reported wearing eyeglasses for more than eight hours each day. (Fourteen others reported wearing glasses, but for fewer than 8 hours per day). The authors noted that the 5.8% of these hospitalized patients who said they wore eyeglasses 8 hours per day or more is much lower than the prevalence of nearsightedness in Suizhou (31.5%). Although the epidemiologic data on the prevalence of nearsightedness was gathered in the 1980s, it's not likely that there has been a large change in that figure.

While this study does suggest some evidence of protection from covid-19 through wearing glasses, it does have some serious limitations. For example, it is unlikely that everyone who is nearsighted in Suizhou wears eyeglasses for at least eight hours every day, as they could be contact lens wearers or have sought corrective surgeries. None of the 276 patients in this study were either contact lens wearers or had undergone corrective surgery (such as LASIK).

Meanwhile, asking the patients to recall their pattern of behavior (i.e. how many hours per day they wear their glasses) introduces recall bias—an error in data collection that arises in trials hinging on patients' memories of prior events. Patients may not remember events, or the order of events. They also may deliberately omit or invent events. That said, for people who are near-sighted, many of them wear glasses all day. So eight hours or more is a reasonable and even a conservative cutoff for many. Nevertheless, if even a handful of patients who have mild near-sightedness actually wear their glasses for 8 hours but underestimated that to researchers (believing, for example, that they only wear their glasses for 6-7 hours per day), the findings reported in this paper might be negated.

The scientific response to covid-19 has greatly and rapidly advanced our understanding of the disease, our ability to identify those most at risk and our knowledge of which public health measures are effective, such as social distancing and masking. Nevertheless, the sense of urgency as researchers and physicians should not supersede methodical research with facile analysis. The accompanying editorial in [JAMA Ophthalmology](#) discusses these issues in more detail.

—Michael Chary, MD PhD

POLICY BRIEFING

Pharmaceutical companies pump the breaks on vaccine expectations.

Traditionally, pharmaceutical companies push to bring their drugs and therapies to the public as fast as the Federal Drug Administration (FDA) will allow, but in an interesting role reversal, it seems they are now the ones insisting that an unvetted vaccine will not be put forward for covid-19. Leaders from nine major pharmaceutical companies signed a joint pledge on September 8th, stating they would not prematurely release a vaccine despite the public (and governmental) outcry for a solution to the covid-19 pandemic. This pledge came in the face of a recent statement by the president that a vaccine could be available before election day.

This show of scientific rigor is reassuring amidst a number of recent events—namely, the litany of recent Emergency Use Authorizations (EUA) issued by the FDA for use of unvalidated therapies, and a string of promises pouring out of the White House.

In an article recently published in [*New England Journal of Medicine*](#) two authors warn that approval of vaccines through the EUA pathway can come down to something as basic as the FDA commissioner's *belief* that a product's benefits outweigh its risks, as was the case for hydroxychloroquine and convalescent plasma. The more frightening scenario they highlight is the administration's potential to drag pharmaceutical companies kicking and screaming towards production. By using the Defense Production Act, or even threatening its use, it is feasible that the President could compel vaccine manufacturers to produce a product for which drug companies have yet to apply for approval.

While these scenarios seem extreme and unlikely even in these desperate times, these pharmaceutical companies should be lauded for their promise only to deliver a vaccine that has gone through proper clinical testing and clinical trials.

At the end of the day, many Americans remain skeptical of a politically motivated vaccine release—not to mention ambivalence about vaccines in general—so it will be important for the FDA and vaccine makers to get it right and maintain the public's trust.

—Fred Milgrim, MD

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Brief19 is a daily executive summary of covid-19-related medical research, news, and public policy. It was founded and created by frontline emergency medicine physicians with expertise in medical research critique, health and public policy.