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BRIEF19

A daily review of covid-19 research and policy

RESEARCH BRIEFING

Mothers provide protection for their infants if infected with covid-19 in most cases.

Late last year [we learned](#) the placenta effectively protect fetuses from SARS-CoV-2 even if their mother becomes infected. But what about antibodies among mothers who have already recovered from a previous infection?

For pregnant women, the question as to whether they pass antibodies that provide covid-19 immunity to their fetuses through the placenta has been of great interest. Passing along antibodies against various bacteria and viruses provides newborns with “innate immunity” to many communicable diseases. Respiratory viral illnesses—of which covid-19 is certainly one—are particularly worrisome in infants because of the tenuous nature of neonatal lungs, so the question of whether SARS-CoV-2 antibodies can be shared is all the more apt.

New research published last week in the [JAMA Pediatrics](#) found that pregnant women can in fact pass on these antibodies. The study was conducted between April and August of 2020 in Philadelphia. The investigators studied umbilical cord blood from mothers in order to assess whether it contained antibodies specific to SARS-CoV-2. Of the 1,471 women included in the study, 83 had evidence of acute or prior infection based on the presence of immunoglobulins that indicate an infection as recently as the past few days-to-weeks (“IgM”) or one that occurred weeks or longer ago (“IgG”). Typically, IgG antibodies, which develop over time, are the type we think about as those that confer long lasting immunity, and it is these which are passed through the placenta. In this new study, 72 of the 83 infants born to these “seropositive” mothers (i.e. those who had evidence of antibodies in their blood) demonstrated presence of IgG antibodies, indicating that a vast majority of fetuses born to mothers infected with SARS-CoV-2 were able to provide at least some degree of immunity to their fetuses prior to delivery.

Of note, of those 11 infants who did not receive antibodies, only 6 were born to mothers with detectable levels of IgG, while the others were noted to have significantly lower levels of IgG than the other mothers in the cohort. In essence, this implies that every woman in the study with a strong degree of immunity passed it along to their newborn.

It is also worth noting that researchers are hopeful that mothers who gain immunity from the vaccine rather than infection will be able to share vaccine-derived antibodies with their fetuses as well. The optimal time to vaccinate pregnant women remains unknown—whether prior to pregnancy, or during the first, second, or third trimester. With further research, hopefully this can be elucidated, though it is likely that earlier in the pregnancy would be preferable, as antibody levels are increasingly understood to rise over the several weeks and months after either infection or vaccination. Nevertheless, it’s clear that pregnant women with a robust SARS-CoV-2 immune response at the time of delivery can pass this protection on to their children. This may be an argument for vaccinating pregnant women. While pregnant women have not been studied directly in the clinical trials of the currently available vaccines, the US Centers for Disease Control and Prevention has stated, based on safety data garnered from women who *became* pregnant during the clinical trials, that there is not a known reason to exclude pregnant persons from receiving these vaccines. In fact, because the two currently available options in the United States are not based on weakened versions of live viruses (which vaccines against some other conditions like Varicella are), the risks are thought to be minimal.

—Joanna Parga-Belinkie, MD

POLICY BRIEFING

National mask requirement for public transit goes into effect tonight. CDC's previous guidance now a mandate.

The US Centers for Disease Control and Prevention (CDC) has [published](#) a notice and order that activates a new mask requirement for domestic travelers. The action is set to take effect tonight, February 1st 2021, at 11:59pm.

The policy sets a minimum standard that all individuals using transportation--defined as any "conveyance" (ie. vehicle) directly operated by United States local, state, territorial, or tribal government authorities. Masks will also be required wear for any persons inside of transportation hubs defined as "any airport, bus terminal, marina, seaport or other port, subway station, terminal, . . . , train station, U.S. port of entry, or any other location that provides transportation and is subject to the jurisdiction of the United States." People must wear a mask over their nose and mouth for the duration of travel or occupancy of a hub. States, localities, or tribal territories are exempt from the stipulations of the order, but only in cases where those jurisdictions have requirements that are at least as stringent.

The order empowers operators of the covered conveyances and hubs to require compliance to the policies, including only boarding those properly wearing a mask, instructing those that fail to comply that they are violating Federal law, monitoring those using the transportation services for compliance, disembarking any who refuse to comply, and providing adequate notice of this requirement. This new action is, in essence, a stricter version of a softer stance previously announced by the CDC in October, [as we covered](#) here in *Brief19*. At that time, the Trump administration effectively [blocked](#) the CDC's attempt to enact a mask mandate as extensive as this. Instead, guidance that had similar language as the forthcoming policy was published but was worded in ways that fell short of anything that could be construed as a true mandate outside of a few particular settings.

Additionally, the order makes exemptions for the following situations, as in the previous guidance: while eating, drinking, or taking medication; while communicating with someone who is hearing impaired where seeing the mouth is essential; while wearing an oxygen mask on an aircraft; if unconscious or otherwise incapacitated; when necessary to remove a mask during ascertainment of identity. Further exemptions include: children under age 2; a person with disability who cannot wear a mask as defined by the Americans with Disabilities Act; a person in whom wearing a mask would create a risk to workplace safety as defined by safety regulations or Federal guidelines.

These changes do *not* apply to personal, non-commercial transportation use, commercial motor vehicles in which the driver is the sole occupant, and those chartered or operated by the military that are otherwise in accordance with Department of Defense safety guidelines. While there are Federal penalties ascribed to the requirement, the CDC currently intends to rely on the honor system for compliance. *The Centers for Disease Control and Prevention.*

—*Brief19 Policy Team*

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