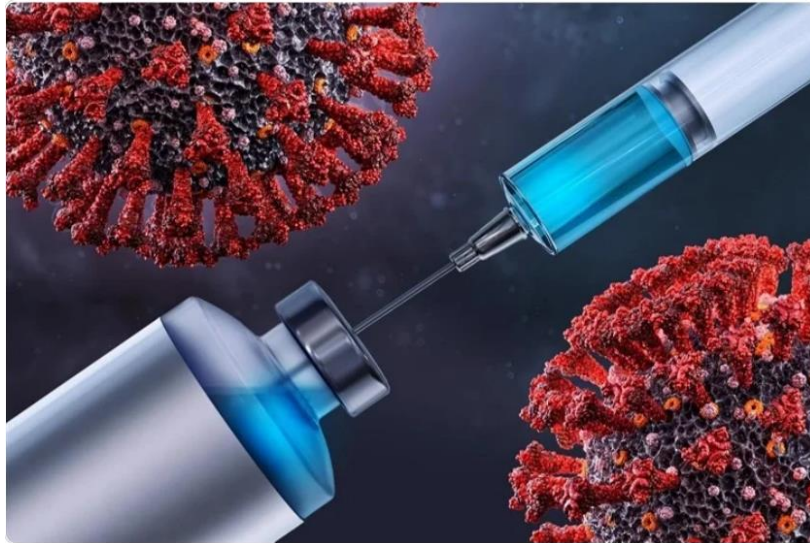


In Both Vaccinated and Unvaccinated Individuals Markers of SARS-CoV-2 are Shedding

[Coronavirus disease 2019](#) (COVID-19) vaccines effectively prevent severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2)-related illness and death. Because COVID-19 vaccines are not 100% effective in preventing illness, certain infections among those who have been vaccinated are expected.

The involvement of vaccinated people in the transmission will be a major predictor of the pandemic's future trajectory as global vaccination coverage rises. The extent to which vaccinated people who become infected contribute to the spread of [SARS-CoV-2](#), including the B.1.617.2 (Delta) variant, is unknown.



Introduction

Beginning in July 2021, the [Delta variant](#) has been linked to a spike in COVID-19 cases in the United States, including major outbreaks among vaccinated and unvaccinated people in crowded environments.

Due to the potential for rapid transmission of SARS-CoV-2 and the high prevalence of underlying health conditions associated with severe COVID-19, these findings are particularly concerning for congregate living [environments](#) such as correctional and detention facilities, as well as long-term care facilities.

In a recent Delta variant outbreak at a federal prison in Texas, the cumulative incidence of [infection](#) in two affected housing units was 74%; it was 93% and 70% among unvaccinated and vaccinated incarcerated people, respectively.

This report evaluates [reverse transcription-polymerase chain reaction](#) (RT-PCR) and viral culture characteristics as surrogate markers of transmission potential among persons fully vaccinated and those not fully vaccinated over time.

The study uses serial mid-turbinate [nasal specimens](#) collected from a subset of incarcerated persons infected during this outbreak.

Study

A total of 96 people with [SARS-CoV-2 infection](#) agreed to participate in serial specimen collection out of 189 eligible people; one participant had a single positive diagnostic test (Ct=36.2) followed by seven negative diagnostic tests and reported no symptoms, so they were ruled out as a non-case.

Of the 95 participants included in the study, 78 (82 %) were fully vaccinated against SARS-CoV-2, 15 (16 %) were unvaccinated, and 2 (%) were partially vaccinated but categorized as not fully vaccinated in subsequent analyses.

The Pfizer vaccination was given to most of the completely vaccinated subjects (73%); smaller proportions received the [Moderna vaccine](#) (18%) or the Janssen vaccine (9%).

Findings

There were no significant changes in the period since the last [RT-PCR positive result](#). The median duration of RT-PCR positivity was 13 days in fully vaccinated participants versus 13 days in non-vaccinated participants.

Moreover, the period since the last RT-PCR positive result was ten days in participants with a known history of prior SARS-CoV-2 infection (regardless of [vaccination](#)) versus 13 days in participants without any known prior infection.

The median duration of positivity among fully vaccinated participants was ten days for Moderna vaccine recipients, 13 days for [Pfizer](#) recipients, and 13 days for Janssen recipients; and 13 days for participants fully vaccinated more than 120 days prior to the outbreak, compared to 11 days for participants vaccinated 120 days or less prior to the outbreak.

Ct values from RT-PCR-positive specimens increased with the number of days since onset. Ct values in specimens from fully [vaccinated participants](#) increased from a median of 26.4 on the day of onset to a median of 32.9 on day 10. In comparison, Ct values in specimens from non-fully vaccinated participants increased from a median of 28.5 on the day of onset to a median of 34.5 on day ten.

After Bonferroni correction, no statistically significant difference in Ct values by vaccination status was observed across the course of infection. Furthermore, no significant differences in Ct values were found when Ct values were stratified by vaccine product, time since vaccination, or known prior SARS-CoV-2 infection.

There was no statistically significant difference in the duration of viral culture positivity between fully vaccinated participants (median: five days) and those who were not fully vaccinated.

Cumulative hazard functions show that fully vaccinated subjects who received the Moderna vaccine had a lower culture positivity rate than those who received Pfizer or [Janssen vaccinations](#). Still, there was no significant difference between Pfizer and Janssen vaccine recipients.

When stratified by time since vaccination or known prior infection, no statistically significant changes in the duration of culture positive were found.

Conclusion

In this study, the authors discovered no statistically significant difference in transmission potential between completely vaccinated people and those who were not fully vaccinated. As a result, the

findings suggest that prevention and mitigation measures should be implemented regardless of vaccination status for those living in high-risk environments or who have large exposure to the [virus](#).

In communal settings, such as penal and detention centers, post-exposure testing and [quarantine](#), in addition to other suggested preventative measures, remain critical tools for limiting transmission when cases are detected.

This study adds to a growing body of research describing the potential for vaccinated people to transmit disease.

As the pandemic progresses and new variants emerge, future studies of transmission potential from vaccinated persons with infection, incorporating similar laboratory-based markers and evidence of transmission from secondary attack rates and network analysis, may help better describe the contributions of vaccinated persons in [transmission chains](#).

Source:

<https://www.news-medical.net/news/20211124/Markers-of-SARS-CoV-2-shedding-in-vaccinated-and-unvaccinated-individuals.aspx>