



Pfizer and Moderna Vaccines Found to Protect Firefighters and Frontline Workers

Researchers at the University of Miami Miller School of Medicine have found that the Pfizer and Moderna vaccines are 91% effective in preventing COVID-19 infections in fully vaccinated firefighters, health care workers and other frontline/essential workers. They also found that the vaccines are 81% effective in partially vaccinated working-age adults. Among participants who were vaccinated and had a positive COVID-19 test, the study also found that being vaccinated reduced the severity of illness and symptoms from the virus.



Dr. Caban-Martinez, center, and researchers found that Pfizer and Moderna vaccines were 91% effective in fully vaccinated firefighters and other frontline/essential workers.



The research was conducted in collaboration with experts at the Centers for Disease Control and Prevention (CDC), as well as at other universities, health systems and center across the country. Their findings were reported on June 30 in the *New England Journal of Medicine*.

Leading the Miller School research were Alberto J. Caban-Martinez, D.O., Ph.D., M.P.H., associate professor in the Department of Public Health Sciences, and Natasha Schaefer Solle, Ph.D., research assistant professor in the Department of Medicine.

Demonstrating the importance of vaccination

“Our national epidemiologic study among first responders and forward-facing occupational groups demonstrates the importance of the COVID-19 vaccine in preventing illness, reducing symptoms from COVID-19 infection and mortality,” Dr. Caban-Martinez said.

“This was a tremendous opportunity for our team to work collaboratively with first responders and other essential workers from across the country which will inform public health intervention at the local, state level,” said Dr. Schaefer Solle. “We are thankful to our Florida firefighters for their continued engagement and participation in this important work.”

Mark Thompson, Ph.D., epidemiologist and deputy branch chief of science at the CDC’s Influenza Division of the National Center for Immunization and Respiratory Diseases, served as lead author on the study.

Researchers analyzed testing data from 3,975 participants in two ongoing national COVID-19 cohort studies – “Research on



the Epidemiology of SARS-CoV-2 in Essential Response Personnel (RECOVER)” and “Health Care, Emergency Response, and Other Essential Workers Surveillance (HEROES)” –both sponsored by the CDC. Participants, who were located in Arizona, Florida, Minnesota, Oregon, Texas, or Utah, were monitored and completed weekly COVID-19 tests from December 14, 2020 to April 10, 2021.

Key findings

The study found the following:

- Two doses of either the Pfizer or Moderna vaccine were 91% effective in preventing symptomatic and asymptomatic COVID-19 infection
- Vaccine effectiveness in partial immunization was 81%
- Participants who were partially or fully immunized, but who contracted COVID-19, shed 40% less viral RNA and were less likely to be positive for more than one week, compared to participants who contracted the virus, but who were unvaccinated
- Among partially or fully immunized participants, the odds of having febrile COVID-19 were 80% lower than in those who were unvaccinated
- COVID-19 and its effects were about six days shorter with two fewer days sick in bed

“We hope this real-world observational study on vaccine effectiveness provides fire departments across the country the evidence they need to understand the positive impact of COVID-19 vaccines for their first responder workforce,” Dr. Caban-Martinez said.



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