

COVID-19 vaccination protects adults on dialysis against infection and severe disease

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Multiple studies have shown that individuals with kidney failure who are undergoing dialysis mount weaker antibody responses after COVID-19 vaccination than people in the general population, but new research indicates that these individuals' immune responses are still capable of protecting against SARS-CoV-2 infection and severe COVID-19. The findings are published in *JASN*.

For the study, Matthew Oliver, MD, MHS (Sunnybrook Health Science Centre, University of Toronto, Ontario Health) and his colleagues analyzed health records for 13,759 individuals receiving maintenance [dialysis](#) between December 21, 2020 and June 30, 2021—17% of whom were unvaccinated and 83% of whom had received at least 1 mRNA COVID-19 [vaccine](#) dose.

The study was conducted in the entire maintenance dialysis population of Ontario, Canada's most populous province. The population was multicultural and included patients receiving both home dialysis and in-center hemodialysis.

"Patients on maintenance dialysis often have suppressed immune systems and many are unable to isolate because they must attend dialysis treatments 3 times per week in a dialysis center. Reducing hospitalizations and deaths is very important in this population because approximately two-thirds of these patients were hospitalized and 1 in 4 died when infected by SARS-CoV-2 early in the pandemic," said Dr. Oliver.

Dr. Oliver and his team found that there were 663 SARS-CoV-2 infections along with 323 hospitalizations and 94 deaths during the study period. Compared with individuals who were unvaccinated, those who had received 1 COVID-19 vaccine dose were 41% less likely to become infected with SARS-CoV-2 and 46% less

likely to develop severe COVID-19 that required hospitalization or resulted in death, and those who had received 2 doses were 69% and 83% less likely to become infected or experience severe disease, respectively. The risk of hospitalization in the unvaccinated group was 52% and the mortality rate was 16%, whereas the risk of hospitalization in the 2-dose group was 30% and the mortality rate was 10%.

There were no significant differences in [vaccine effectiveness](#) among age groups, mode of dialysis, or vaccine type (Pfizer-BioNTech or Moderna).

"Governments and [health care providers](#) prioritized patients on maintenance dialysis for early COVID-19 vaccination in many countries, including the U.S and Canada. This strategy was correct and important because our results show that 2 doses of an mRNA vaccine significantly protected this population, preventing many hospitalizations and deaths and reducing the burdens on patients, families, and the health care system," said Dr. Oliver. "The effectiveness of the vaccines was less than that seen in studies in the [general population](#) but still provided substantial protection." It is now recommended that all adults and teenagers, especially those who are immunocompromised, receive a third dose of COVID-19 vaccine to ensure an optimal [immune response](#).

More information: "Vaccine effectiveness against SARS-CoV-2 infection and severe outcomes in the maintenance dialysis population in Ontario, Canada," *JASN*, [DOI: 10.1681/ASN.2021091262](#)

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