

New study launches into COVID-19 vaccine responses in patients with impaired immune systems

March 3 2021



Researchers will build on years of experience in understanding the immune system in the context of chronic conditions, to better determine the effectiveness of COVID-19 vaccines in certain clinically at-risk patient groups. Credit: University of Birmingham

A new UK study sponsored and run by the University of Birmingham has launched aiming to better understand the immune response to COVID-19 vaccinations in patients with certain immunosuppressed conditions including cancer.

The OCTAVE trial, which is funded by the Medical Research Council (MRC), is a collaborative research project involving the Universities of Birmingham, Glasgow, Oxford, Liverpool, Imperial College London and Leeds Teaching Hospitals NHS Trust. Researchers will build on years of experience in understanding the immune system in the context of chronic conditions, to better determine the effectiveness of COVID-19 vaccines in these clinically at-risk [patient groups](#).

People with cancer, inflammatory arthritis, diseases of the kidney or liver, or who are having a stem cell transplant, may be at increased risk of the more severe complications of COVID-19 infection. As a result, the rollout of vaccines is especially welcome for these vulnerable groups. However, these underlying medical conditions and the treatment that such patients receive as part of their care, may weaken the [immune system](#).

Professor Pam Kearns, Director of the University of Birmingham's Cancer Research UK Clinical Trials Unit (CRCTU), which will be running the study, said: "Current evidence shows that people with these medical conditions may not obtain optimal protection from established vaccines.

"Patients with significant underlying diseases were generally excluded from COVID-19 [vaccine](#) studies to date—it is now important to confirm that the COVID-19 vaccines work well in such conditions.

"We are pleased to be supporting this important nationally collaborative study that will inform the best use of the COVID-19 vaccines to protect

these vulnerable patients."

The OCTAVE study will investigate the effectiveness of COVID-19 vaccines being used in the UK in 2021 in up to 5,000 people within these patient populations. Using a variety of state-of-the-art immune tests performed on [blood samples](#) taken before and/or after COVID-19 vaccination, researchers will determine patients' COVID-19 [immune response](#) and, therefore, the likelihood that vaccines will fully protect these groups from SARS-CoV-2 infection.

Researchers have begun recruiting patients at sites across the UK, and will compare results from the study group against control groups of healthy people without underlying diseases who also received COVID-19 vaccines. The OCTAVE study will evaluate patients who receive COVID-19 vaccines as part of the national vaccination program.

Professor Iain McInnes, Head of the College of Medical, Veterinary and Life Sciences at the University of Glasgow who leads the OCTAVE study, said: "We urgently need to understand if patient populations with chronic conditions such as cancer, inflammatory arthritis and kidney and liver disease are likely to be well-protected by current COVID-19 vaccines. The OCTAVE study will give us invaluable new data to help us answer questions of this kind from our patients and their families."

Scientists do not yet know how long COVID-19 vaccines provide immunity for, and there may be an ongoing vaccination requirement against the disease for years to come. This may be especially so in people with weakened immune systems, due to drug treatments and underlying disease. Results from the OCTAVE study will help to inform how best to vaccinate patients with chronic conditions, and protect them from SAAR-CoV-2 infection.

Professor Fiona Watt, Executive Chair of the Medical Research Council,

which funded the study, said: "This study is investigating the response to the new COVID-19 vaccines in people whose immune systems make them more vulnerable to COVID-19 and other infections. This will help ensure that those more at risk from infection receive the best protection possible."

Provided by University of Birmingham

Citation: New study launches into COVID-19 vaccine responses in patients with impaired immune systems (2021, March 3) retrieved 25 April 2024 from <https://medicalxpress.com/news/2021-03-covid-vaccine-responses-patients-impaired.html>

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