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Longer-interval of Pfizer vaccine dose boosts antibody levels: Study

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Results reflect how the immune response generated by the Pfizer vaccine provides real-world protection against COVID-19

Universities of Sheffield, Oxford, Liverpool, Newcastle, and Birmingham, with support from the UK Coronavirus Immunology Consortium, have published a pre-print study on ‘Cell Press Sneak Peak’ which shows that both short and long dosing schedules of the Pfizer COVID-19 vaccine generate strong antibody and T cell immune responses.

It is one of the most comprehensive studies into the immune response generated by the Pfizer COVID-19 vaccine to date and has found T cell levels are well-maintained and antibody levels are higher following a longer interval between the first and second dose of the Pfizer COVID-19 vaccine. This is despite a significant drop in antibody levels between doses.

Regardless of the dosing schedule, the study found levels of antibodies and T cells varied significantly from person to person, which may depend on genetics, underlying health conditions, and past exposure to COVID-19 and other viruses.

This underlines the importance of everyone getting two doses of the COVID-19 vaccine to maximise the protection, particularly against variants of concern.

Follow up of this cohort six and 12 months after vaccination is needed to investigate longer-term immune response, as well as whether it translates to lower or less severe infection rates.

Dr Rebecca Payne, Study author from Newcastle University, said, “We found an interesting pattern in the levels of immune cells present. Our study provides reassuring evidence that both dosing schedules generate robust immune responses against SARS-CoV-2 after two doses. For the longer schedule, the antibody levels dropped off between the first and second dose, which included the loss of any neutralising effect against the Delta variant. However, T cell responses were consistent, indicating they may contribute to important protection against SARS-CoV-2 during this time."

Payne added, “After the second dose on the longer dosing schedule, antibody levels surpassed those seen at the same time

point after a shorter dosing interval."