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Unveiling the interplay between influenza vaccination and SARS-CoV-2 immune responses

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Dear Readers,

The coronavirus disease 2019 (COVID-19) pandemic has brought to light the importance of understanding the complexities of immune responses to viral infections. In the midst of this global health crisis, researchers have been tirelessly exploring various factors that may influence response to severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) [1–4], including widely used vaccinations. In this issue of the *Central European Journal of Immunology*, you will find an article entitled "Influenza vaccination as a prognostic factor of humoral IgA responses to SARS-CoV-2 infection" [5]. The study provides evidence that influenza vaccination may confer additional benefits beyond its primary role in protecting against influenza viruses, and it has been chosen by the editorial board as the Editors Pick.

The research, led by Barbara Poniedziałek, Dominika Sikora, Ewelina Hallmann, Lidia Brydak, and Piotr Rzymski, investigated the relationship between influenza vaccination and humoral IgA responses to SARS-CoV-2 infection. Through an analysis of serum samples from individuals who underwent COVID-19, the study revealed that influenza-vaccinated individuals exhibited a higher seroprevalence of IgA antibodies specific to various components of the SARS-CoV-2 virus compared to non-vaccinated controls. Furthermore, multivariate analysis, accounting for age, sex, and COVID-19 severity, confirmed a significant association between influenza vaccination and heightened IgA responses to SARS-CoV-2 infection. Notably, older age emerged as an additional factor predicting more intensive IgA responses, emphasising the importance of age-related considerations in vaccine responses. While the study elucidates the association between influenza vaccination and enhanced IgA responses to SARS-CoV-2 infection, several questions remain unanswered. Specifically, the mechanisms underlying this observed phenomenon, including the potential involvement of trained immunity and associated interactions among innate and adaptive immune responses, warrant further investigation. In our opinion, this research has significant implications for public health strategies aimed at combating the COVID-19 pandemic. They underscore the potential benefits of influenza vaccination not only in preventing influenza-related morbidity and mortality but also in bolstering the immune responses to SARS-CoV-2 infection. As we expect new health challenges in the future, it is imperative to continue exploring avenues to optimise our immune responses against emerging infectious diseases. The study's findings show the importance of vaccination in bolstering our defences against viral threats and highlight the need for ongoing research to unravel the intricacies of our immune system's responses.

In conclusion, the study represents a noteworthy contribution to our understanding of the interplay between influenza vaccination and SARS-CoV-2 immune responses. It underscores the importance of vaccination as a cornerstone of public health efforts and paves the way for future investigations aimed at harnessing the full potential of our immune system in combating infectious diseases.

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