

VROOM study plain language summary 300/300 words)

What was the question?

Methotrexate is a drug that helps arthritis and other inflammatory conditions by damping down the immune system that is causing inflammation. We wanted to see if temporarily stopping methotrexate for two weeks after a COVID-19 booster vaccine could improve how well the vaccine works on the immune system and how well it can fight the virus.

What did we do?

We recruited 383 people taking methotrexate for a mixture of inflammatory conditions and randomly allocated half of them to continue their methotrexate and half to pause their methotrexate for two weeks after their booster vaccine. We measured the levels of antibodies created by the vaccine in the blood that can fight the virus in both groups of people after their vaccine and tested how well the antibodies killed the virus.

What did we find?

Four weeks after the vaccine, people who temporarily stopped methotrexate had double the amount of antibodies that can fight COVID infection in their blood. This improved response to the vaccine and was also seen at 12 and 26 weeks after the vaccine. Blood from those who temporarily stopped methotrexate was also better at killing the virus. The benefit was similar at different ages, in different diseases, with different vaccine types, in people who had a previous COVID-19 infection and those who had not. In the first month, people who paused methotrexate had more flare ups of their condition. However, these flares did not last long and quality of life was similar in both groups of people.

What does this mean?

Temporarily stopping methotrexate for two-weeks after the COVID-19 booster vaccine allows a better response to the vaccine leading to better protection against COVID-19 infection. If patients are stable on their treatment, pausing methotrexate for 2 weeks after the vaccine should be considered.