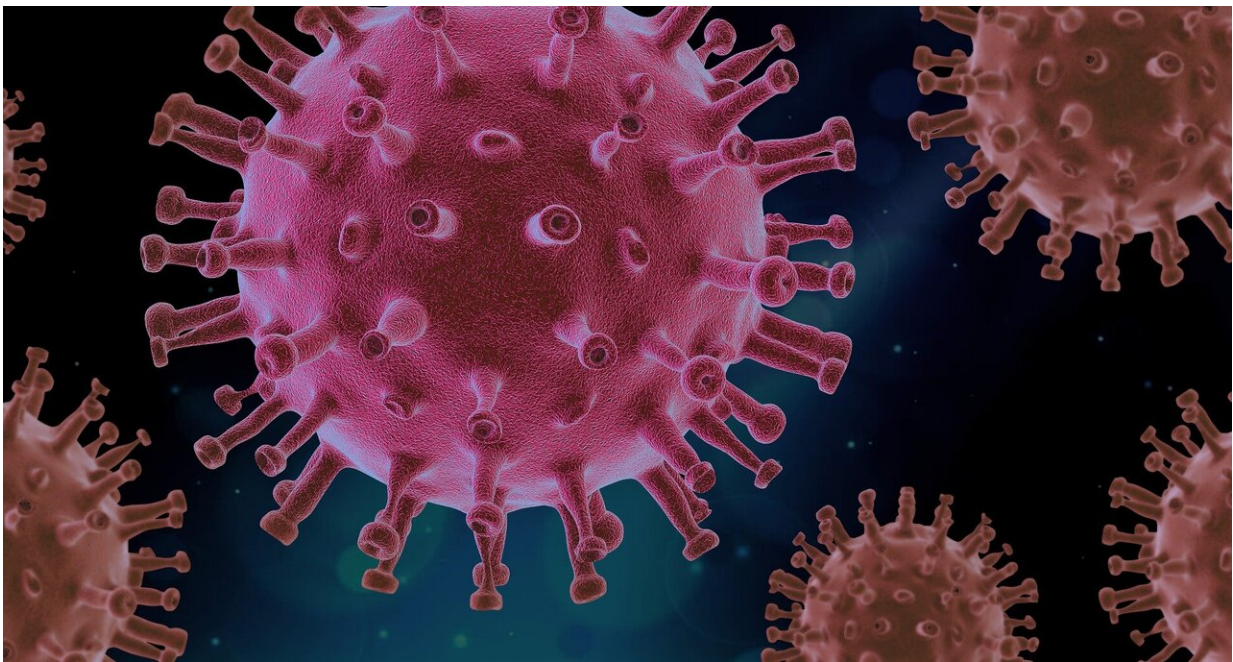


# Cancer patients with poor antibody response to COVID-19 vaccines also lack secondary immune response

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Patients with the blood cancer multiple myeloma often mount a poor antibody response to COVID-19 vaccines. Mount Sinai researchers have now discovered that these patients also have a weak response from a different part of the immune system, known as T cells. Their discovery was published in a research letter in *Cancer Cell* in October.

In a trial of 44 patients with multiple myeloma, those with low or no antibody response to the COVID-19 mRNA also had few or no T [cells](#) that could have protected them from a severe COVID-19 infection. T cells are an important component of the immune system and play a central role in the body's ability to fight off infections, and researchers had believed they might respond even in people with a poor antibody response.

"The unexpected lack of T cell responses, coupled with the absence of antibodies following SARS-CoV-2 vaccination, is of concern and emphasizes the need for serological testing post-vaccination to identify these patients," said lead author Samir Parekh, MD, Director of Translational Research in Multiple Myeloma at The Tisch Cancer Institute at Mount Sinai and Professor of Medicine (Hematology and Medical Oncology), and Oncological Sciences, at the Icahn School of Medicine at Mount Sinai. "With the current rapid spread of a more transmissible viral variant, the Delta variant, booster vaccination, continuing [safety precautions](#), and passive antibody treatments should be considered to prevent severe disease and death in multiple myeloma patients with poor vaccine responses."

This study was the first to analyze patients with multiple myeloma and compare their T cell responses to COVID-19 proteins to those in a control group of healthy people. Approximately 96 percent of patients with detectable antibodies against the "spike" protein—an important component of SARS-CoV-2, the virus that causes COVID-19, and a frequent target of vaccines—had detectable COVID-19-specific T cell responses; in contrast, only 35 percent of the patients who had no detectable [antibodies](#) had a T cell response. Fewer patients on certain multiple myeloma therapies that impact the immune system had a T cell response compared to those on other therapies.

The team of Mount Sinai researchers continue to study the durability of

antibody and T cell responses of these patients after COVID-19 mRNA vaccines and boosters. These findings show that with the current rapid spread of more transmissible viral variants, such as the Delta variant, patients with immune system disorders, including multiple myeloma, should work with their doctors and understand their risk and response to the COVID-19 vaccines. Researchers believe this study underscores high-risk [patients](#)' need for booster vaccination and continued safety precautions such as masking and social distancing.

**More information:** Adolfo Aleman et al, Variable cellular responses to SARS-CoV-2 in fully vaccinated patients with multiple myeloma, *Cancer Cell* (2021). [doi.org/10.1016/j.ccell.2021.09.015](https://doi.org/10.1016/j.ccell.2021.09.015)

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