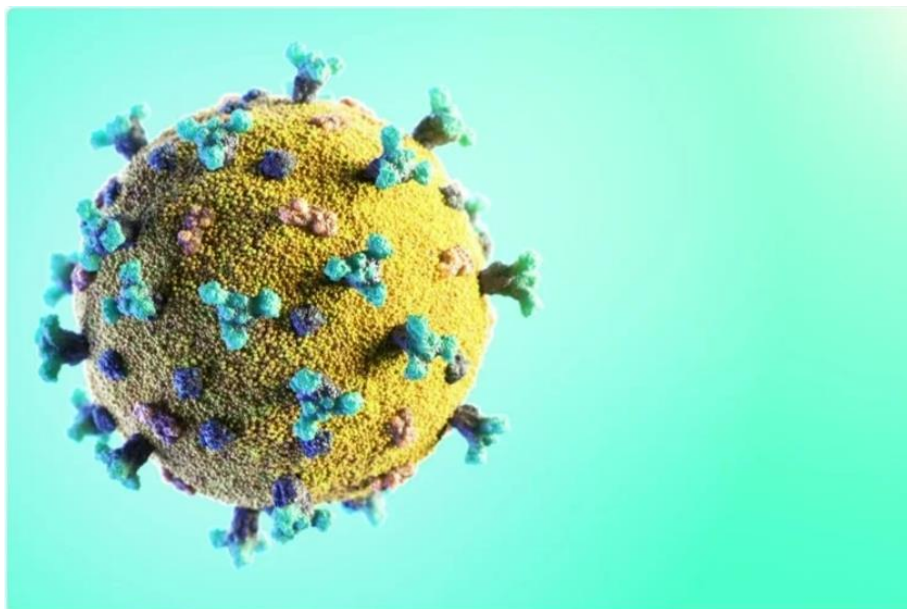


## **SARS-CoV-2 Infections Shows Greater Risk in Vaccinated Multiple Myeloma Patients**

Patients with existing immunological complications and malignancies have been inferred to be at greater risk of developing severe [coronavirus disease 2019](#) (COVID-19). This holds true for patients with multiple myeloma (MM).



Recent studies have shown a lower rate of seroconversion after vaccination with messenger RNA (mRNA) [anti-SARS-CoV-2 vaccines](#) in patients with MM and other hematological malignancies.

However, the risk and outcomes of SARS-CoV-2 breakthrough infection in vaccinated patients with MM remain unknown.

Researchers recently published, assessing the risks of patients with MM to breakthrough infections after completing their vaccination schedule compared to those without any form of [cancer](#).

### **Study Details**

Researchers used the cloud-based TriNetX Analytics network platform to access de-identified patient [electronic health records](#) (EHRs) from 63 health care organizations in the United States. The study population comprised of 5,07,288 patients who fulfilled the following inclusion criteria:

1. Had a recent medical encounter(s) with health care organizations since December 1, 2020.
2. Had documented evidence of full vaccination in the EHRs (Pfizer-BioNTech, Moderna, or Johnson & Johnson vaccine) between December 1, 2020, and October 8, 2021.
3. And had no prior COVID-19 infection.

Among 1,182 vaccinated patients with MM, 33.8 percent had monoclonal gammopathy of undetermined significance (MGUS), 11.7 percent were in relapse, 88.7 percent had never achieved remission, 60.0 percent had [chemotherapy](#), 50.3 had targeted therapy, 12.1 had radiation therapy, and 26.5 had stem cell transplant; mean (SD) blood lymphocyte count was  $2.08 \times 10^9 /L$  ( $12.2 \times 10^9 /L$ ).

Among 187 patients with MM with SARS-CoV-2 breakthrough infections, 34.8 had MGUS, 15.5 were in relapse, 86.6 had never achieved remission, 64.2 had chemotherapy, 54.3 had targeted therapy, 11.2 had radiation therapy, and 27.8 had [stem cell transplant](#); mean (SD) blood lymphocytes count was  $1.63 \times 10^9 /L$  ( $2.01 \times 10^9 /L$ ).

The overall risk of SARS-CoV-2 breakthrough infections was 15.4 in the MM population and 3.9 in the [non-cancer population](#). After propensity score matching for demographics, adverse socioeconomic determinants of health, transplant procedures, comorbidities, vaccine types, and medications, patients with MM remained at significantly increased risk for breakthrough infections compared with matched patients without cancer (Hazard Ratio, 1.34). The estimated probability of hospitalization at the end of the time window (October 8, 2021) was 34.4 for patients with MM.

### **Implications**

This study found that patients with MM were at increased risk of breakthrough infections and subsequent hospitalization. These findings raise consideration for the development and implementation of enhanced mitigation strategies. Entailing more studies to evaluate the timing and impact of [vaccine boosters](#) in such an immunosuppressed population can also help improve health outcomes for patients.

### **Source:**

<https://www.news-medical.net/news/20211125/Study-shows-vaccinated-multiple-myeloma-patients-at-greater-risk-of-breakthrough-SARS-CoV-2-infections.aspx>