Medical Xpress

Immunocompromised? Why the COVID-19 vaccine might still protect you

July 7 2021, by Denise Mann Healthday Reporter

(HealthDay)—COVID-19 vaccinations may not offer as much

protection to people with compromised immune systems, but just how much appears to be driven by the type of underlying condition, new research suggests.

"People with conditions that compromise their immune systems exhibit a wide spectrum of antibody responses to COVID-19 vaccination, ranging from only 1 in 5 lung transplant patients having an antibody response to a response nearly identical to that of healthy individuals in patients with well-controlled HIV," said study author Dr. Ghady Haidar, a transplant infectious diseases physician at the University of Pittsburgh Medical Center.

"This highlights the urgent need to optimize and individualize COVID-19 prevention in patients with immuno-compromising conditions and have other treatments—such as monoclonal antibodies—available should vaccination fail," he said.

To see how well, or even if, the COVID-19 vaccine worked in people with weakened immune systems, researchers compared levels of COVID-fighting antibodies in the blood of 107 healthy health care workers to those of 489 people with compromised immune systems due to a variety of causes. The study included folks who had solid organ transplants, autoimmune disorders, blood cancers, solid tumors and HIV.

While slightly more than 98% of the health care workers produced antibodies after vaccination, responses were lower among those with immunocompromising conditions. Just about 37% of folks who had solid organ transplants made antibodies. Responses in people with blood cancers were also low, with just around half making antibodies. By contrast, around 80% of people with solid tumors and/or autoimmune diseases produced antibodies after vaccination.

Medications also affect the likelihood of mounting an immune response

to vaccination, which makes perfect sense, Haidar said.

"Immunosuppressive drugs given to prevent organ rejection after transplantation also hinder the body's ability to produce antibodies that fight infections," he explained.

Radiation therapy for cancer also predicts poor responses to the vaccine. "Radiation therapy is very toxic to the cells of the immune system that make antibodies, Haidar added.

Still, there is more to the story. "The immune system is extremely complex, with different interconnected compartments that all talk to each other," Haidar said. "Thus, just because someone didn't make antibodies, it doesn't necessarily mean that the vaccines didn't 'take'—other parts of the immune system, such as T-cells, may have been activated."

Giving these individuals a booster shot or third dose of the COVID-19 vaccine may help strengthen their immune system's response, but it's too early to say for sure. "We expect to have data in the near future that may change recommendations for immunocompromised people here in the U.S," Haidar said.

The results, which are part of an interim analysis of a larger study, were published recently on the preprint server *medRxiv* and have not been peer-reviewed yet.

The findings come on the heels of another study that showed people with a blood cancer known as multiple myeloma also have varying responses to the COVID-19 vaccine.

"The study reiterates the unfortunate fact that people on immunosuppressant drugs and those with autoimmune diseases or who

are being treated for cancer won't respond to the COVID-19 vaccine the way that a healthy person does," said Dr. Len Horovitz, a pulmonary specialist with Lenox Hill Hospital in New York City.

"Get the vaccine and encourage everyone around you to do the same," said Horovitz, who has no ties to the new research. "If you have a compromised immune system, continue to wear masks in public and practice social distancing."

More information: Get the facts about the COVID-19 vaccination at the U.S. Centers for Disease Control and Prevention.

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