



# COVID-19 VACCINE AWARENESS

## HOW ARE VACCINES TESTED?

Nina Galllauresi, Executive Director, MHBP

**C** OVID-19 vaccines are a key part of overcoming the pandemic. Fully vaccinated people can start doing some of the things they had to stop. This includes visiting friends and loved ones who are also fully vaccinated.

You might still have questions about vaccines. How do they work? How do scientists know they're safe? It's important to know these answers and share them with others. Vaccines are the best protection against many serious diseases. They teach your body to recognize and fight off things like viruses and bacteria.

The COVID-19 vaccines were developed with amazing speed. But they're still safe and effective. These vaccines were held to the same standards used to ensure the safety of any approved vaccine. Before a new vaccine is given to people, a lot of testing is done in a lab. Then, it's tested in people in clinical trials to make sure it's safe and effective.

There are three phases of clinical trials. Phase 1 is done in a small group of people. Scientists first determine if the vaccine is safe and test different doses. If it passes this phase, it moves on to phase 2. Phase 2 tests the vaccine in more people to see if it works. Researchers look at how the body responds to it and track any side effects. Finally, in phase 3, the vaccine is tested in thousands of people. This rigorous process ensures that any approved vaccine is safe and effective.

## SINGLE-SHOT COVID-19 VACCINE PROTECTS AGAINST VARIANTS

Vaccines against COVID-19 were developed early in the pandemic. But the virus has been changing. Now there are different versions, called variants, all over the world. Researchers found that the single-shot COVID-19 vaccine still protects against new variants.

In the study, 20 volunteers received the Janssen/Johnson & Johnson vaccine. Researchers took blood samples about two months later.

The samples were tested for different cells and antibodies that can fight the disease. The team looked at whether these provided protection against the original virus. They also looked for protection against the alpha, beta, and gamma variants.

Overall, the vaccine offered strong protection against both the original virus and the variants. The team found lower

amounts of neutralizing antibodies to the variants than to the original virus. These are a type of antibody that can block infections. But other immune responses were similar.

"These data show that this vaccine has strong protection against many of the COVID-19 variants in the world today," says Dr. Dan Barouch from Beth Israel Deaconess Medical Center.

A follow-up study showed protection against other variants, including the delta variant. More research is still needed to better understand how the body fights off COVID-19.

## HOW LONG DOES PROTECTION LAST AFTER COVID-19?

After your body's disease defense system (the immune system) fights off a virus, it keeps a memory of it. A study suggests that people's immune systems remember COVID-19 for months after recovery.

The immune system makes different types of cells and molecules to fight disease. These include antibodies, T cells, and B cells.

Researchers looked at immune responses from about 200 people who'd recovered from COVID-19. Some had been infected up to eight months before the analysis. Other cases were more recent. Of the people who recovered, 95% had immune system "memories" of the virus that causes COVID-19, SARS-CoV-2.

Almost everyone had antibodies that block the virus' spike protein. The virus uses this protein to enter cells. The number and type of antibodies varied between people. But the levels usually remained stable over time. They slightly decreased six to eight months after infection.

Immune cell levels also remained high. Memory B cells, which make antibodies, increased for a few months after infection and then remained stable. Most people had one important type of T cell. About half had another type of T cell that kills infected cells.

"Several months ago, our studies showed that natural infection induced a strong response, and this study now shows that the responses last," says Dr. Daniela Weiskopf at the La Jolla Institute for Immunology. "We are hopeful that a similar pattern of responses lasting over time will also emerge for the vaccine-induced responses."

## COMMUNITY IMMUNITY— HOW VACCINES PROTECT US ALL

"The important concept," says Dr. Marc Lipsitch of the Harvard School of Public Health, "is that vaccinating people protects not only them, but others in the community. If I'm protected, I can protect others."

This type of protection is known as "community immunity" or "herd immunity." When enough of the community is immunized against a contagious disease, most other members are protected from infection because there's little opportunity for the disease to spread.

"Epidemiologists think of infections as chain reactions, whose speed depends on contagiousness," says Lipsitch. "The more contagious the disease, the more vaccination is required. The data tells us that herd immunity works."

Using mathematical formulas and computer programs, NIH-funded scientists like Lipsitch have developed models to determine what proportion of the population has to be vaccinated to eliminate the spread of disease. As one example, a worldwide vaccination campaign completely eliminated, or eradicated, smallpox in the 1970s. So many people were immunized that the virus couldn't sustain itself.

"Get vaccinated. The vaccines are safe. They're incredibly effective," says Dr. Jason McLellan, an expert on coronaviruses at the University of Texas at Austin. McLellan's research was critical in developing these vaccines. His team, along with NIH scientists, figured out how to lock the shape of the spike protein to make the most effective antibodies.



[https://newsinhealth.nih.gov/sites/nihNIH/files/styles/featured\\_media\\_breakpoint-large/public/2013/October/illustration-young-woman-getting-vaccinated.jpg?itok=32h3qoM1](https://newsinhealth.nih.gov/sites/nihNIH/files/styles/featured_media_breakpoint-large/public/2013/October/illustration-young-woman-getting-vaccinated.jpg?itok=32h3qoM1)

As the pandemic has gone on, new versions of the virus, or variants, have appeared. "We're all very confident that vaccines will continue to work well against these variants," McLellan says. "Vaccination also helps stop the development of new variants, because it provides fewer opportunities for the virus to change as it replicates."

Many people will need to be vaccinated for the pandemic to end. Dr. Anthony Fauci, director of NIH's National Institute of Allergy and Infectious Diseases estimates that 70% to 85% of the U.S. population will need to be vaccinated to get "herd immunity." That's the point where enough people are immune to the virus to prevent its spread. That's important because it protects vulnerable people who can't get vaccinated.

"It is my hope that all Americans will protect themselves by getting vaccinated when the vaccine becomes available to them," Fauci says. "That is how our country will begin to heal and move forward."

### MHBP RESOURCES TO ASSIST YOU: MHBP IMPLEMENTS A MID-YEAR COVID -19 VACCINE INCENTIVE

MHBP members, 18 years and older, who receives or have received the COVID-19 vaccine during 2021 are eligible to earn a \$50 wellness incentive.

To earn the incentive, MHBP members must submit documentation (i.e., copy of vaccine card) demonstrating you have been fully vaccinated. MHBP will review the documentation to verify the member is fully vaccinated, and if so, will deposit \$50\* into your Wellness Fund Account.

It is very important your documentation includes the member name and ID number as it appears on your current MHBP ID card and submit to:

#### MHBP

Attn: Wellness

PO Box 981106

El Paso, TX 79998-1106

This is one of the many ways you can earn wellness incentives during 2021! Standard Option members can earn up to \$350 per person per calendar year. Value Plan members can earn up to \$300 per person per calendar year. Consumer Option Members will earn a \$50 deductible credit for 2022

If you have any questions or would like more information about how to get a COVID-19 vaccine, COVID testing or treatment, please call MHBP at 800-410-7778.

#### SOURCES:

*National Institutes of Health:* <https://newsinhealth.nih.gov/>  
*MHBP.com*