Understanding Viral Vector COVID-19 Vaccines

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What You Need to Know

- Viral vector vaccines use a modified version of a different virus (the vector) to deliver important instructions to our cells.
- The benefit of viral vector vaccines, like all vaccines, is those vaccinated gain protection without ever having to risk the serious consequences of getting sick with COVID-19.

Learn more about getting your vaccine.

Viral vector vaccines are among the COVID-19 vaccines authorized for use in the United States.

How They Work

Viral vector vaccines use a modified version of a different virus (the vector) to deliver important instructions to our cells.

1. **First**, the vector (**not** the virus that causes COVID-19, but a different, harmless virus) will enter a cell in our body and then use the cell's machinery to produce **a harmless** piece of the virus that causes COVID-19. This piece is known as a spike protein and it is only found on the surface of the virus that causes COVID-19.
2. **Next**, the cell displays the spike protein on its surface, and our immune system recognizes it doesn't belong there. This triggers our immune system to begin producing antibodies and activating other immune cells to fight off what it thinks is an infection.
3. **At the end of the process**, our bodies have learned how to protect us against future infection with the virus that causes COVID-19. The benefit is that we get this protection from a vaccine, without ever having to risk the serious consequences of

getting sick with COVID-19. Any temporary discomfort experienced after getting the vaccine is a natural part of the process and an indication that the vaccine is working.

Facts about COVID-19 Viral Vector Vaccines

They cannot give someone COVID-19 or other infections.

- Viral vectors cannot cause infection with COVID-19 or with the virus used as the vaccine vector.

They do not affect or interact with our DNA in any way.

- The genetic material delivered by the viral vector does not integrate into a person's DNA.

How They Are Being Rigorously Studied for Safety

> Viral vector vaccines are safe and effective.

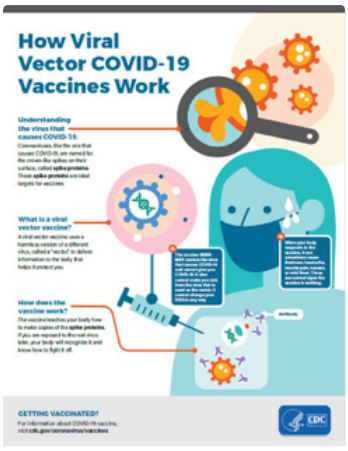
Viral vector vaccines for COVID-19 are being held to the same rigorous safety and effectiveness standards [332 KB, 24 pages] as all other types of vaccines in the United States. The only COVID-19 vaccines the U.S. Food and Drug Administration (FDA) will make available for use in the United States (by approval or emergency use authorization) are those that meet these standards.

How They Have Been Used during Recent Disease Outbreaks

Scientists began creating viral vectors in the 1970s. Besides being used in vaccines, viral vectors have also been studied for gene therapy, to treat cancer, and for molecular biology research. For decades, hundreds of scientific studies of viral vector vaccines have been done and published around the world. Some vaccines recently used for Ebola outbreaks have used viral vector technology, and a number of studies have focused on viral vector vaccines against other infectious diseases such as Zika, flu, and HIV.

> **Learn more about** Getting Your Vaccine

Printable Infographic



How Viral Vector COVID-19 Vaccines Work

PDF infographic explaining how viral vector COVID-19 vaccines work

- English [127 KB, 1 page]
- Spanish [119KB, 1 Page]

More Information

FDA's Vaccine Development 101

FDA's Emergency Use Authorization for Vaccines Explained

FDA Video

FDA Infographic: The Path for a COVID-19 Vaccine from Research to Emergency Use Authorization [1.13 MB, 1 page]

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