

## Effectiveness of the COVID-19 Vaccine

Since the start of the COVID-19 pandemic, experts around the world have worked tirelessly to create safe and effective vaccines to stop the spread of the virus and put an end to this pandemic. Today, just over a year since the virus first came to the U.S., there currently are three vaccines available that have been approved for emergency use by the U.S. Food and Drug Administration (FDA), manufactured by pharmaceutical companies: Pfizer, Moderna and Johnson & Johnson. Before the FDA even determines whether to approve a vaccine or authorize a vaccine for emergency use, clinical trials are conducted to determine [vaccine efficacy](#).

Because COVID-19 is a novel (new) coronavirus, it was able to spread worldwide at an unprecedented rate until scientists were able to study it in-depth and turn the focus to developing a way to stop the spread. This isn't the first time science has had to catch up with a virus to keep the public safe. Douglas Kasper, M.D. is the section head of infectious disease at the University of Illinois College of Medicine Peoria, and a leader in the OSF HealthCare response to COVID-19. He compares the current need to produce an effective vaccine to the creation of the smallpox vaccine in the 1790s, which paved the way for many more to follow in its wake.

"Disease processes that younger generations have only heard in film are still present in the minds of older generations. Polio is not a condition we see in the hospital because of vaccination. Smallpox is not a disease process that is part of our generation – it has been eradicated by vaccination. We have worldwide endeavors to try to control serious illness by vaccine that have been ongoing for decades," says Dr. Douglas Kasper.

Dr. Kasper explains that studies have shown all three COVID-19 vaccines are not only safe, but are also extremely effective in preventing serious illness, or even death, from COVID-19.

So, how soon will you build immunity to COVID-19 once you have received the vaccine?

"I think that's an important point – that when receiving the vaccine, immunity is not conferred instantly. It isn't even conferred within the first week or two after the vaccines are received. We're looking more at two to four weeks post vaccine for the individual to have the most effect," Dr. Kasper explains.

Dr. Kasper adds that it is important to continue to follow the guidelines put into place by the Centers for Disease Control and Prevention (CDC), even after you have been vaccinated.

"We expect the public health measures of social distancing, masking, and hand washing to be part of the success of the vaccines. I think that's very important for people to understand because the vaccine, when it's administered, is an individual benefit – but our population does not achieve the full benefit of vaccines until everyone who should and can receive a vaccine has had the opportunity to receive it," Dr. Kasper says.

While some may question the effectiveness of these vaccines due to their expedited development, Dr. Kasper reminds us that scientific developments and breakthroughs over the years have provided the blueprints we need for quick action and safe vaccines.

"When society as a whole puts their strength behind something, the timeframe can move up much more rapidly. And so while you have seen locally scientific communities, this is a worldwide response. You have donations coming from very large foundations. You have governments putting a stop to other scientific endeavors to turn their entire response to this. So the output you are seeing is a coordinated output to a group of people as a whole trying to solve a problem," adds Dr. Kasper.

When it comes to the COVID-19 vaccine, the [benefits outweigh the risks](#) – and scientists are still studying and learning ways to continue to enhance the current vaccines available in order to provide the best protection possible.

"Modifications to the vaccine are already underway. For example, Moderna has announced that they are trialing an updated booster that looks at the variant strains – and this is similar to how we have approached Influenza in the past. You notice changes in the virus, you update the vaccine to confer protection. The difference now is that the timeframe this is being done on is unheard of for how we have approached viral infections – in a positive way," Dr. Kasper explains.

Currently, demand for vaccines against the virus that causes COVID-19 far outweighs the supply. And while public health agencies and health systems like OSF HealthCare are doing everything possible to make vaccines available in their communities, they face an enormous task in accomplishing this goal.

Until then, Dr. Kasper and others urge everyone to be patient and continue following public health guidelines to [slow the spread of COVID-19](#) and when it is your turn to get the vaccine, get it. All three of the vaccines that are currently available are both effective and safe, so whichever one becomes available to you first is the one you should get. To learn more about where and how to get the COVID-19 vaccine in Illinois, go to the [IDPH website](#).