

COVID-19 Variants and Vaccines

Viruses are constantly evolving. Their genetic code is prone to changes called mutations that can change how a virus looks or affects its hosts.

SARS-CoV-2, the virus that causes COVID-19, is no different. Coronavirus variants, first identified in the UK, South Africa and Brazil, are currently circulating in the United States and have raised concerns as they continue to spread globally.

“All of the strains are worrisome for the same reason. They are more transmissible, which means the virus binds more tightly to our human cells, and therefore has the potential to cause infection in more people. So when more people become ill, just by numbers you get more people that are hospitalized, and you get more people that have negative outcomes.” explains Douglas Kasper, MD.

Dr. Kasper 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 adds that despite the increased transmissibility of the virus variants, they usually do not make us sicker.

“Typically as these variants change, they do not change the clinical outcome which we see with our patients. They are very small changes that do not change how sick we get or change any response to therapeutics or vaccine.”

The emergence of these new variants has sparked questions about what this means for the efficacy of the vaccines currently available in the United States.

Dr. Kasper says the mutation of the virus that causes COVID-19 is something scientists and [vaccine developers](#) have expected since the beginning of the epidemic. When developers created vaccines against COVID-19, they tested them against many different variations.

Dr. Kasper believes the current vaccines do provide protection against the emerging strains, and is fairly confident the vaccines will continue to be effective against many mutations that may arise. However, he warns, scientists need to continue to work quickly to stay ahead of any drastic virus mutations, in case vaccine updates are needed in the future.

“From what we know at this point, the vaccines still cover the variant strains to a point that they provide clinical protection, which means protects the person from getting the severe outcomes of COVID-19 infection,” he says. “We do need to monitor this though, because as these strains emerge and as they become predominate within our community, if there are changes that require updating the vaccine or updating to a booster shot, we want to make sure that those things are ready to go early so we’re not waiting until another surge to implement changes.”

As COVID-19 continues to spread across the world, more mutations will occur and more strains of this virus will be discovered.

The more people get infected with the virus, the more it is replicating. The more it replicates, the more it mutates – and the more likely it becomes that a dramatic shift in the structure of the virus will occur.

The rate of this change, however, is something that can be slowed if the spread of the virus can be mitigated.

“As the case rates are low, that means there is less circulating virus, by keeping our social distancing and masking, that means less infections being transmitted, and then as vaccination increases and those numbers remain low, we’ll be in a great position to really start to see the end of the pandemic,” says Dr. Kasper.

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.

It is expected that most Americans will have the opportunity to get vaccinated this year, but many will have to wait weeks or months for that chance.

Until then, Dr. Kasper and others urge everyone to be patient and continue following public health guidelines to [slow the spread of COVID-19](#) whether or not you have received a vaccine: wear a mask, practice hand washing, avoid large crowds and maintain physical distance for a while longer.