

To our patients:

January 4, 2021

While we will not be offering the vaccine at SDCA, our providers would like to offer the following quick facts about the COVID-19 vaccines:

The vaccines:

Vaccines developed by Pfizer and Moderna have received Emergency Use Authorization from the FDA after their safety and effectiveness were demonstrated in clinical trials of approximately 70,000 patients (~35,000 receiving the vaccine).

These studies found both of these vaccines to be approximately 94-95% effective at preventing COVID illness after second dose.

No serious side effects were noted over the study period. Side effects noted were a sore arm, headache, fatigue, muscle, joint pain, and rarely fever. Side effects were more common with the second dose. The side effects if they do occur, last 1-2 days.

Who should consider taking the vaccine:

Our patients at SDCA typically fall into a high risk COVID-19 demographic because of comorbid cardiovascular disease as well as average age. We recommend our patients age 18 and older should consider taking the vaccine.

Who should not take the vaccine:

Patients with a history of severe allergies to foods, medications, or environmental allergens should not take the vaccine at this time. This is because this may elicit a severe allergic reaction.

Areas of uncertainty:

Children under the age of sixteen have not been sufficiently studied to know whether the vaccines are safe or effective. Similarly, the data are insufficient in pregnant women. These groups are actively being studied and recruited into clinical trials to answer these questions. We recommend pregnant women should have a discussion with their obstetricians about the decision to take the vaccine.

Frequently asked questions:

1) How were the vaccines developed so quickly?

The vaccines actually began development with the first SARS epidemic in 2002. While this virus did not become a pandemic, it allowed scientists to define targets for a future vaccine. With this second SARS-COV2 (or COVID-19) scientists were able to build on this previous knowledge. In truth, while the development was very quick, it had the benefit of prior research and development.

2) *Is this a new kind of vaccine?*

Both the Pfizer and Moderna vaccines are relatively new types of vaccines using mRNA to create immunity. However, this technology has existed for a few years. It has already been applied to cancer therapeutics and demonstrated good results. There are data that the immunity created by mRNA vaccines is very strong and it may exceed traditional vaccines.

3) *Will the current vaccines alter my DNA or genetic code?*

There is no evidence that this has or will ever happen. At any given moment, one cell can have approximately 360,000 active mRNA strands. Additionally, mRNA has a very short half-life (4-5 minutes). Because the vaccines use mRNA technology, they must be stored at a very cold temperature to prevent it from degrading. The active functions of mRNA are typically outside the nucleus, or far away from your permanent genetic code. For these reasons, mRNA vaccines are extremely unlikely to permanently affect your genetic code.

4) *Do I need to take two doses?*

Yes. In the case of the Pfizer vaccine, the vaccine was only 52% effective after the first dose. The effectiveness rose to 95% one week after taking the second dose. In both vaccines (Pfizer and Moderna), both doses are needed to ensure high level immunity. It can take 4-6 weeks in a two-dosing regimen, for a person to achieve high level immunity.

5) *Should I take the vaccine if I have already had COVID-19?*

After infection with COVID-19, the associated immunity appears not to be permanent in some individuals. The current CDC guidance is that immunity lasts at least three months, after which re-infection becomes possible. The neutralizing antibodies associated with infection can fade over time. Based upon this understanding, it is recommended that those with prior COVID infection still receive vaccination if eligible. This vaccination should ideally take place later in the three-month immunity window.

This document was created by South Denver Cardiology physician, Daniel Alyesh, MD.