

In this issue - **Myths and Facts** about the new COVID-19 vaccine

Myth: **The vaccine isn't safe because it was rushed through the FDA approval process.**

Fact: While SARS Co-V-2 is a novel virus, coronaviruses in general aren't new at all, and scientists have already done a lot of work to study them in years past. Prior to the current pandemic, a good understanding of these viruses, including the spike protein that the vaccines target, already existed, as did the mRNA technology that is the foundation of the vaccines.

Additionally, the Phase 3 clinical trials for these new vaccines were able to enroll participants very quickly, and also achieve statistical significance quickly because COVID-19 is so prevalent in this country.

Finally, Operation Warp Speed allowed companies to start producing vaccine even before they knew it would work. If the trials had failed, the companies would have had to throw away the vaccine, but that was a risk worth taking in the face of this global pandemic.

While this vaccine was developed faster than any other, it was done so with the same scientific rigor that is the hallmark of American vaccine trials.

Myth: **The vaccine could still harm me months or years down the line.**

Fact: The FDA required two months of safety data on these vaccines because many years of data on other vaccines have reassured us that the vast majority of significant vaccine adverse events are seen within six weeks or so. It would be exceptionally unlikely that someone would develop an adverse reaction to the vaccine months or years after receiving it.

Myth: **The mRNA technology used in the vaccine is brand new.**

Fact: Scientists have been working on mRNA technology for about three decades. Two scientists, Doctors Katalin Karikó and Drew Weissman, are generally credited with important advances in mRNA technology. Early attempts to inject RNA resulted in lots of inflammation in animals, but Doctors Karikó and Weissman discovered a process that used a modified RNA nucleoside to decrease the inflammation often caused by RNA when it was injected.

They started publishing this data in 2005, and filed a [patent](#) for it in 2010. Moderna, one of the companies making an mRNA COVID-19 vaccine, was actually founded and named by scientists who specifically wanted to study this technology ("Modified + RNA = Moderna"). mRNA technology has been studied in other [vaccines](#), including rabies, influenza, Zika and CMV. So while this COVID-19

vaccine is the first mRNA vaccine to ever be licensed in humans, the technology actually isn't all that new! This [article](#) gives an interesting history, and you can also read Dr. Weissman's and Dr. Karikó publications online.

Myth: **The vaccine mRNA can alter my DNA.**

Fact: It's nearly impossible for scientists to inject anything into our bodies that will incorporate into the nucleus and subsequently into our DNA, so this is just not possible from a scientific standpoint.

Myth: **Once I get the vaccine, I won't need to wear a mask anymore.**

Fact: The vaccine protects against *disease*, but we don't know how well it protects against *infection*. There isn't yet data to tell us whether a vaccinated person can still pass on an asymptomatic infection to someone else. We will need to continue to wear masks and distance for awhile in order to protect people around us.

Myth: **If I've had COVID-19, I don't need to get the vaccine.**

Fact: While much about COVID-19 immunity remains unknown, we do know that immunity after natural infection is really variable. It is best if everyone gets the vaccine, even if they've had COVID-19; it's also safe to do so.

Myth: **The vaccine works after one dose, so I don't need the second dose.**

Fact: While the Pfizer data demonstrates that some immunity develops after the first dose, the trial didn't have an arm where people only got one dose. Therefore, we have absolutely no idea what happens in terms of immunity if someone only receives one dose. We do have a lot of very good data on the safety and effectiveness of the two-dose series, so that is what we should all get.

Myth: **The vaccine was developed from aborted fetal cells.**

Fact: None of the new COVID-19 vaccines contain cells from aborted fetuses. The Pfizer and Moderna vaccines have not used any cells from fetal lines to develop their vaccines. AstraZeneca used cell lines replicated from a fetus aborted in 1973 to develop the vaccine, but again the actual vaccine does not contain any of these cells. The Vatican's Pontifical Academy for Life issued guidance on this topic in [2005](#) and reaffirmed it in [2017](#).

Myth: **The COVID19 vaccine will make me infertile.**

Fact: This myth is based on the information that a portion of the spike protein used in the COVID-19 vaccines has a miniscule amount of similar amino acid sequences to a protein found in the placenta (syncytin-1). However, the similarity is far too small for the body to ever confuse the two and attack the placenta. If the body did confuse the placenta with the spike protein, it's likely we would have seen far worse outcomes in pregnant patients over the course of the pandemic (reassuring article [here](#)).

For additional detail, please see COVID-19 vaccine trackers:



Vizient is a healthcare performance improvement company [Vizient vaccine tracker](#)

The Regulatory Affairs Professionals Society (RAPS) <https://www.raps.org/news-and-articles/news-articles/2020/3/covid-19-vaccine-tracker>

The New York Times tracker has won wide endorsement, including from the Hopkins Coronavirus Resource Center [COVID-19 Vaccine Tracker](#)

Members of the COVID-19 Vaccine Workgroup

Sue Cantrell, MD, Director, Lenowisco and Cumberland Plateau Health Districts; Leigh Johnson, MD MPH, ETSU Health Director of COVID-19 Response; David Kirschke, MD MPH, Northeast Regional Medical Director, Tennessee Department of Health; Stephen May, MD, Sullivan County Regional Health Department; David Reagan, MD PhD, former CMO, TN Department of Health; Clay Runnels, MD, EVP, Chief Physician Executive, Ballad Health; Karen Shelton, MD, Director, Mount Rogers Health District; Jamie Swift, RN, Chief Infection Prevention Officer, Ballad Health; Trish Tanner, Chief Pharmacy Officer, Ballad Health; and Amit Vashist, MD, Chief Clinical Officer, Ballad Health