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# Dispelling the myths about the COVID-19 vaccine

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**THERE HAS BEEN MUCH MISINFORMATION** shared about the COVID-19 vaccines. As health-care professionals, we should be well informed and should pass on evidence-based facts related to the vaccines. I hope this information provides a resource to help dispel the many myths that we're hearing.

**MYTH: This vaccine was created too quickly, so safety must have been compromised.**

**FACT:** The speed that enabled this vaccine to be in use in less than one year is due to several things.

1. Past vaccines required the use of human or egg cells to actually grow the virus used in the vaccine. It takes a long time to harvest cells, grow the virus in those cells, harvest and purify the virus, kill or render the virus less infectious, and then formulate the carrier for the virus in order to make the final vaccine. Since no part of the virus is used in the messenger RNA (mRNA) vaccine, this time-consuming (months long) process was avoided. Instead, the mRNA can be made synthetically, and mass produced quickly.

2. Since the genetic code of the virus was known in January 2020, manufacturing of the mRNA was able to begin then. This enabled clinical trials to start quickly, with both the Pfizer and Moderna trials having 30,000 to 40,000 participants. Due to the continued spread and high infection rates of COVID-19, the clinical trials were finished much more quickly than normal. With trials for previous vaccines there were so few infections that it took much longer to determine if there was a protective effect from the vaccine, which prolonged the clinical trials.
3. The Food and Drug Administration review was as thorough as for any vaccine but was expedited due to the urgent need.
4. Finally, actual vaccine production would typically not start until after FDA approval. But because the government ordered and paid for hundreds of millions of doses in advance, pharmaceutical companies began producing them even before clinical testing was started.

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**MYTH: The mRNA vaccine can change or enter your DNA.**

**FACT:** mRNA *cannot* alter your DNA. It can only enter your cells, *not* your DNA. It then instructs your DNA to make the spike protein of the coronavirus that your body recognizes as foreign and develops immunity against. Then the mRNA dissolves.

**MYTH: This is new technology so it may not be safe.**

**FACT:** mRNA technology has been around for more than 10 years. It was unable to be used in a vaccine because when it was being developed for Zika, SARS, and MERS, those viruses disappeared and clinical trials could not be completed. Ultimately there was no need for vaccines against those viruses.