

COVID-19 Vaccine Myths and Facts #1

-Myth: The COVID-19 vaccine is not safe because it was rapidly developed and tested.

Fact: Many pharmaceutical companies invested significant resources into quickly developing a vaccine for COVID-19 because of the world-wide impact of the pandemic. To speed delivery the pharmaceutical companies began production in parallel with clinical trials. NO steps were cut out of the process. In the Pfizer and Moderna trials more than 75,000 patients participated before they were authorized for use by the FDA

Myth: I can get COVID-19 from the vaccine.

Fact: You cannot! Because of the way in which these vaccines are made there is no virus in them. The vaccines only contain messenger RNA that encodes for the Spike protein on the outside of the virus. Even this has been manufactured and is not from the virus itself. The antibodies formed bind to the Spike protein and prevent them from entering cells. These vaccines DO NOT contain any particles from a live virus.

-Myth: I already had COVID-19 and recovered, so I don't need to get a COVID-19 vaccine when it's available.

Fact: This is called natural immunity. Early evidence suggests natural immunity from COVID-19 may not last very long and further suggests immunity from the vaccine is more robust and longer lasting. You should still get the vaccine.

Myth: There are severe side effects of the COVID-19 vaccines.

Fact: About 15% of people developed short lived symptoms at the site of the injection. 50% developed systemic reactions primarily headache, chills, fatigue or muscle pain or fever lasting for a day or two. Keep in mind that these symptoms should not be considered side effects but rather evidence that your immune system is responding to the vaccine and are common when receiving any vaccine.

Myth: I won't need to wear a mask after I get the COVID-19 vaccine.

Fact: That is false, while the vaccine may prevent you from getting sick if you are exposed to the virus, it is unknown at this time if you can still carry and transmit the virus to others. Until more is understood about how the vaccine protects, continuing with precautions such as mask-wearing and physical distancing will be important. The vaccine keeps you from getting sick if you are infected after you develop immunity, it does not prevent the virus from entering your body. This is true of many other diseases like the measles and its vaccine.

Myth: The COVID-19 vaccine will alter my DNA.

Fact: The first [COVID-19](#) vaccines are messenger RNA (mRNA) vaccines. Injecting mRNA into your body will not interact or do anything to the DNA of your cells. Human cells break down and get rid of the mRNA soon after they have finished using the instructions.

Myth: I am allergic to eggs so I shouldn't get the COVID-19 vaccine

Fact: Neither the Pfizer/BioNTech COVID-19 vaccine nor the Moderna COVID-19 vaccines contain egg nor were eggs used the development or production of either vaccine. However, those with severe allergic reactions to eggs or any other substance (i.e., anaphylaxis) are encouraged to remain after vaccination for 30 minutes for observation.

References:

Marsha Tanula COVID-19 vaccine myths debunked December 9, 2020, Mayo Clinic

COVID-19 Vaccine Myths and Facts #2

Specific questions can be sent to:

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Or

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Myth: The Pfizer and Moderna Vaccines have not been tested on African Americans, Latinx, Asians, Pacific Islanders or Native Americans.

Fact: In the Moderna Trials 36.5% of subjects were considered Persons of Color.

Here is the Breakdown taken directly from the FDA paperwork submitted by the two companies

	Pfizer	Moderna
Gender:		
Female	49.4%	47.8%
Male:	50.6%	52.2%
Race:		
White	81.9%	79.5%
African American	9.8%	9.8%
Asian	4.4%	4.7%
Ethnicity:		
Latinx	26.2%	20.0%

The safety and efficacy (how well it worked) showed no difference between any of the groups based on race, country of origin, age or ethnicity. The Pfizer study identified the US, Argentina, Brazil and South Africa as countries for the trial participants. They likewise had people with underlying medical conditions that put them at high risk of dying from COVID-19. These underlying conditions are unfortunately more prevalent in communities of color.

Dr. Herbert Smitherman, Jr. recently provided this data in an article: "I'm a Black doctor. Here's why we all should take the COVID vaccine" in BridgeDetroit. "...African Americans make up 14% of MI's population but 33% of Covid cases and 40% of Covid deaths... That is why Black Americans—and all Americans must be vaccinated against COVID."

Myth: The vaccine contains a microchip so that I can be tracked.

Fact: This is a conspiracy theory propagated on the internet and was falsely attributed to Bill Gates in June 2020. I originally thought this myth too ridiculous to even warrant a response but here you go. The microchips used in humans (mainly Dutch) and in animals is slightly larger

than a grain of rice. That means the chip is 2 to 4 mm in diameter. The inner diameter of the 22 – 25 gauges needles used for Intramuscular (IM) injections is 0.152 to 0.260 mm. It is physically impossible to get a microchip through the needles used for the COVID-19 vaccines!

COVID-19 Vaccine Myths and Facts #3

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Myth: Taking the vaccine will cause infertility.

FACT: From Johns Hopkins University: The COVID-19 vaccine will not affect fertility. It “teaches” the body’s immune system to fight the virus that has that specific spike protein on it. Confusion arose when a false report surfaced on social media, saying that the spike protein on this coronavirus was the same as another spike protein called syncytin-1 that is involved in the growth and attachment of the placenta during pregnancy. The false report said that getting the COVID-19 vaccine would cause a woman’s body to fight this different spike protein and affect her fertility. The two spike proteins are completely different and distinct, and getting the COVID-19 vaccine will not affect the fertility of women who are seeking to become pregnant, including through in vitro fertilization methods.

Myth: Pregnant women should never be vaccinated for COVID-19.

FACT: From CDC: Based on how mRNA (Pfizer and Moderna) vaccines work, experts believe they are unlikely to pose a specific risk for people who are pregnant. However, the actual risks of mRNA vaccines to the pregnant person and her fetus are unknown because these vaccines have not been studied in pregnant women. Until findings are available from clinical trials and additional studies, only limited data are available on the safety of COVID-19 vaccines, including mRNA vaccines, administered during pregnancy:

- Limited data are currently available from animal developmental and reproductive toxicity studies. No safety concerns were demonstrated in rats that received Moderna COVID-19 vaccine before or during pregnancy; studies of the Pfizer-BioNTech vaccine are ongoing.
- Studies in people who are pregnant are planned.
- Both vaccine manufacturers are monitoring people in the clinical trials who became pregnant.
- 21.7 Million Americans have received at least one dose, ~15,000 women have become pregnant according the v-safe data. No data is yet available about them specifically.
- American College of Obstetrics and Gynecology (ACOG) recommends that COVID-19 vaccines should not be withheld from pregnant individuals who meet criteria for vaccination based on ACIP-recommended priority groups. The mRNA vaccines are not live virus vaccines, nor do they use an adjuvant to enhance vaccine efficacy. These vaccines do not enter the nucleus and do not alter human DNA in vaccine recipients. As a result, mRNA vaccines cannot cause any genetic changes.

COVID-19 VaxFacts #4

Specific questions can be sent to:

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I was vaccinated now what?

FACT: This chart is from the CDC, these are self-reported “reactions” to the Pfizer and Moderna vaccines on the web based V-safe program. There is no second doses of Moderna here because it was approved after the Pfizer and it requires 28 days not 21 days in between doses. At the time this slide was produced there were not enough people that had gotten the second dose of Moderna. Don’t be surprised if you feel bad about 20 to 24 hours after your second dose of the Moderna vaccine. Fortunately this seems to pass in about 4 hours or so. If this happens to you; rejoice! Your body is making antibodies to keep you safe.

Reactogenicity reported to v-safe

Local and systemic reactions, day 0-7*,†	All vaccines %	Pfizer-BioNTech dose 1 %	Pfizer-BioNtech dose 2 %	Moderna dose 1 %
Pain	70.7	67.7	74.8	70.1
Fatigue	33.4	28.6	50.0	29.7
Headache	29.4	25.6	41.9	26.0
Myalgia	22.8	17.2	41.6	19.6
Chills	11.5	7.0	26.7	9.3
Fever	11.4	7.4	25.2	9.1
Swelling	11.0	6.8	26.7	13.4
Joint pain	10.4	7.1	21.2	8.6
Nausea	8.9	7.0	13.9	7.7

Moderna Covid Arm is a rare, red area up to about 6 inches in diameter around your injection site following the first Moderna injection. You may get swollen glands in your arm pit as well. It may be tender and itch. It can occur even a week after your injection. It is harmless and you should still get your second shot.

Myth: The vaccine is a biological force field that keeps the virus from getting into my body.

FACT: The proper overriding message is that not a single death (due to COVID-19) has occurred (including in those infected with UK or South Africa strains) and that severe disease has occurred in fewer than 5 of more than 150,000 vaccinees in all clinical trials to date evaluating all 5 approved (or soon to be approved) US vaccines. This finding has been validated in real life in Israel, where no

deaths have occurred in over 500,000 persons receiving the Pfizer-BioNTech COVID-19 Vaccine in a country with very high infection rates.

- According to the Israeli Ministry of Health, of 428,000 Israelis who had received their second dose of the Pfizer vaccine, a week later only 63 (0.014%) were infected and no deaths occurred.

So no it is not a force field but, even if the virus get into your body after you are exposed the vaccines have astonishingly high rate (approaching 100%) of keeping you out of the hospital, off a ventilator and **out of the morgue**.

COVID-19 VaxFacts #5

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Do all vaccines give the same degree of immunity: I want to answer this in another way.

Are all the Covid-19 Vaccines the same? The answer to that is NO. There are currently 5 vaccines that are either Emergency Use Authorized (EUA), Pfizer and Moderna, under consideration for EUA, Johnson and Johnson or expected to request EUA shortly, Oxford/AstraZeneca and Novavax. The common theme is that these 5 all target the spike protein on the Coronavirus. A good summary of the vaccine technologies from the New York Times can be found at:

<https://www.nytimes.com/interactive/2021/health/how-covid-19-vaccines-work.html>

Pfizer and Moderna are very similar and are known as messenger RNA (mRNA) vaccines and are the first of their kind. This mRNA enters cells at the injection site but does not enter the nucleus of the cells where our own DNA resides. RNA tends to be less stable than DNA and that is one of the reasons they require storage at such cold temperatures. These vaccines report 95% efficacy.

AstraZeneca and Johnson and Johnson (J&J) are called viral vector vaccines and this technology is based on decades of research and J&J already has a fully licensed vaccine of this type for Ebola. This is also the technology used to make the Sputnik V Russian vaccine. AstraZeneca is reporting 82.4% and J&J 72% efficacy. Sputnik V is reporting 92% efficacy. These vaccines use another virus

that cannot replicate in your body to deliver DNA into your cells that has been modified to get your cell to make spike proteins to which your immune system will make antibodies to protect you from getting ill with COVID-19.

Novavax is the last of the five under Phase 3 trials in the US. Their approach is a little different but has already been used to make vaccines against the flu and HPV. Their reported efficacy is 89%. They use a modified virus to infect a moth and get it to make the spike protein and then collect the spikes and aggregate them into nanoparticles that get injected with an adjuvant that helps rev up your immune system to produce an even more robust response. Adjuvants have been used for decades.

No matter which vaccine you get you can still get COVID-19 virus in your body if you are exposed. Between the time you are exposed and the time your immune system reacts to get rid of it you could infect ours.