



Facts About the COVID Vaccine

Our lives recently seem to be all about controversy, and in my conversations with people, they are all feeling a little daffy due to information overload. As a result, I thought I would offer a few thoughts about the COVID vaccine.

COVID vaccine concept understood since 1970

The concept of mRNA (COVID vaccine is mRNA based) has been understood since I took basic high school biology in 1970. It is only recently that we have the technology to use mRNA in the form of a vaccine.

mRNA is stabilized in a microscopic oil drop (hence the other ingredients listed in the vaccine), otherwise it would not be taken up by the cells. The mRNA then causes the cell to make proteins from the virus. These proteins, isolated by themselves, are not infectious and cannot cause disease. The mRNA cannot enter the nucleus of the cell and therefore cannot alter the DNA of the cell as has been suggested by some (DNA is only contained in the nucleus).

Reaction to vaccine is body's immune system revving up

The reaction to the vaccine (soreness, low grade fever, muscle aches) is the body's immune system revving up, it is not an infection.

The proteins from the virus are recognized by our lymphocytes and they build specific antibodies to attack the protein and degrade it. When a true infection comes into the body, after vaccination, the lymphocytes remember the protein from the vaccine and can immediately mount an antibody defense and kill the virus before it has time to cause disease.

Polio vaccine was also a scientifically engineered product

Vaccines have been around for more than 1000 years (there is evidence of vaccine use for smallpox as early as 1,000 CE). The first vaccine created in a laboratory was Pasteur's 1879 vaccine for chicken cholera. Major scientific developments occurred in the 1950's with the polio vaccine. Everyone "of a certain age" is aware of the devastating effects of polio, but what most do not know is the majority of people with polio infections were asymptomatic or had only mild symptoms (similar to COVID) and could spread the virus. But if you got the paralytic form, you could have temporary or permanent paralysis of localized areas, or diffusely, including paralysis of respiratory muscles requiring a ventilator (iron lung in the old days). It was the devastating effects of the minority of cases that led to the need for vaccination and prevention. In 1988, there were 350,000 cases of polio paralysis globally. Because of the vaccine, that was reduced to 112 cases in 2019. If you had the original polio vaccine, you had a live attenuated virus that actually did cause infection, but without the hallmarks of the disease, to stimulate immunity. This was a scientifically engineered product. We still vaccinate for polio because it has not been eradicated worldwide. Would any reasonable person advocate for the elimination of polio vaccination?

COVID infection can cause long-term effects

COVID causes mild or asymptomatic disease in the majority of infected people. However, 1 - 3% die and mortality can be up to 20% in high-risk populations (0.3% die with the flu). More frighteningly, it can cause long term impairment through infection of essentially any or all organ systems, or even more devastating, through the body's attempts to fight the infection that go haywire (cytokine storm). Long term adverse effects of the disease have been estimated to affect between 10 to 75% of infected symptomatic individuals, lasting for months (possibly for life, we just don't know as the infection is only one year old).

Avoiding the vaccine results in the following risks:

1. Eliminating the opportunity for herd immunity, which causes businesses to stay closed, schools not to open and you to stay isolated.
2. Infecting others who cannot get vaccinated due to comorbidities or severe allergies.
3. Contracting the true infection results in adverse risks of 10,000 to 1,000,000 times greater than the vaccine. As of January, there have been 400,000 deaths due to the infection and only rare severe allergic reactions to the vaccine (all of whom recovered based on reports from early January). According to the CDC, the risk of anaphylaxis is 11.1 cases per million doses. To use similar numbers, the risk of death is 10,000 - 30,000 cases per 1 million symptomatic infections (1 - 3 %).
(<http://dx.doi.org/10.15585/mmwr.mm7002e1>)

When I was offered the vaccine, I ran as fast as I could to get it, just like my granddaughter runs (reluctantly) to get her polio, mumps, measles, diphtheria, tetanus, hepatitis vaccines and many others. You have had many of these vaccines as well, with the presence of incredibly low side effect risks. Does anyone who was protected from these diseases now wish they had not been vaccinated? Do the people who contracted these diseases and suffered severe consequences wish they had been vaccinated? (The answer would be "YES!")

Please help yourself and your community and participate in keeping yourself and the larger population healthy and protected.

Bruce W. Peek, M.D., FACC
Member, Board of Directors
Verde Valley Caregivers Coalition