What is the difference between the different COVID-19 Vaccines?

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The past year has been nothing short of devastating. We have dealt with stay-at-home orders, loneliness, economic shutdown, unemployment, climbing death rates, and so much more. Social distancing has been the theme for 2020 and most likely will also be the theme for 2021. The COVID-19 pandemic has changed our world. It has taken lives and livelihoods and has changed how we work, how we go to school, how we interact with others, and how we view the world. The good news is that there is light at the end of the tunnel. As of April 2021, there are now three COVID-19 vaccines that have received emergency use authorization from the Food and Drug Administration for use in the United States. Each vaccine is a little different, but they all have the same goal of protecting you from COVID-19. As more and more people get vaccinated, we have a better chance of returning back to normal. Today, let's talk about the three different vaccines and what you should know about them.

These three vaccines that have received EUA in the United States were developed by Pfizer-BioNtech, Moderna and Johnson & Johnson.

Some key things to consider when getting them are that all three vaccines are extremely effective against COVID-19. Thus, you should get whichever one is available first and not worry about which company it was developed by. A difference between them is that The Pfizer and Moderna vaccines require two doses, while the Johnson & Johnson vaccine requires only one dose. The Pfizer and Moderna vaccines are mRNA vaccines, while the Johnson & Johnson vaccine is a viral vector vaccine (we will expand on this soon). Some other important differences can be seen on the following chart made by the CDC:

Vaccine Brand Name	Who Can Get this Vaccine [1]	How Many Shots You Will Need	When Are You Fully Vaccinated?
Pfizer-BioNTech	People 16 years and older	**2 shots** Given 3 weeks (21 days) apart [2]	2 weeks after your second shot
Moderna	People 18 years and older	**2 shots** Given 4 weeks (28 days) apart [2]	2 weeks after your second shot
Johnson & Johnson's Janssen	People 18 years and older	**1 shot**	2 weeks after your shot

Now let's talk a little bit about mRNA vs viral vectors.

mRNA: mRNA stands for messenger ribonucleic acid. In simple terms, it is instructions for your body on how to make a protein. This mRNA is not able to alter or modify a person's genetic makeup, or DNA, so the mRNA from a COVID-19 vaccine never directly enters the nucleus of the cell, which is where our DNA is kept. Instead, COVID-19 vaccines that use mRNA work with the body's natural defenses systems (the immune system) to safely develop protection (immunity) against the disease

viral vector: A gene code that is unique to COVID-19. These sorts of vaccines produce a spike protein and display it on the cell's surface. Once on the surface of the cell, it causes the immune system to begin producing antibodies and activating T-cells to fight off what it thinks is an infection. This protects us from the virus. \

Dr. Varga (M.D., chief physician executive at Hackensack Meridian Health) puts it this way: you should be open to receiving any vaccine that's available to you. "All three of the vaccines that received EUA are extremely effective against COVID-19," he says. "They each provide protection against severe COVID-19 illness and death. That's the most important thing."

He goes on to say that some people are concerned that the efficacy of the Johnson & Johnson vaccine is slightly lower than Pfizer and Moderna (66.3% vs 95%), but him and other experts have told the public not to worry one bit. Dr. Anthony Fauci, the White House Chief Medical Advisor, explained during an interview with NBC, "If you go to a place and you have J&J, and that's the one that's available now, I would take it," Fauci

said. “I personally would do the same thing. I think people need to get vaccinated as quickly and as expeditiously as possible.”

All in all, the bottom line is you should get the vaccine as fast as possible. “I really believe that people should not get caught up in one type of vaccine versus the other,” says Dr. Varga. “No matter which one you get, you should get the protection you’re looking for against this ugly virus.” He goes on to explain it with more familiar terms like the flu shot. To put it into perspective, the flu vaccine varies from 40-60% efficacy rate each year. “What we have here is three extremely effective vaccines that together, will help us ultimately defeat COVID-19. I encourage everyone to get vaccinated once you’re eligible.”

Learn more about COVID on the official CDC website!

Sources:

https://www.cdc.gov/vaccines/covid-19/index.html
https://www.astho.org/COVID-19/Vaccine-Comparison/