With 3 COVID vaccines approved, is there a 'best' shot?

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Americans love to have choices, and now there are three COVID-19 vaccines approved for use in the United States.

But infectious disease experts say that all three protect strongly against severe COVID-19, so there is only one criteria to use in deciding which vaccine is the best.

"There is a single best vaccine. It's the one that's available to you today," said Dr. William Schaffner, a professor of infectious disease with the Vanderbilt University Medical Center in Nashville, Tenn. "Roll up your sleeve. Get it."

The two-dose Pfizer and Moderna vaccines were the first to be included in the nation's vaccine rollout, with the one-dose Johnson & Johnson vaccine just approved by federal regulators last weekend.

But some have questioned whether the Johnson & Johnson (J&J) vaccine is a "second-best" vaccine, comparing how it performed in clinical trials versus the two-dose messenger RNA vaccines from Moderna and Pfizer.

Two doses of the Pfizer and Moderna vaccines were about 95% effective against cases of symptomatic COVID-19. A single shot of the J&J vaccine had a total effectiveness of about 66% against moderate to severe COVID-19 cases.

However, all three vaccines offer strong protection against the most serious and life-threatening effects of COVID-19, the symptoms that cause people to die or require mechanical ventilation and treatment in an intensive care unit, said Dr. Greg Poland, founder of the Vaccine Research Group at the Mayo Clinic, in Rochester, Minn.

"If we take death and hospitalization [into account], all three vaccines are essentially equal and as close to 100% as we can measure," Poland said.

"If you say to me, "Doc, what I really care about is I do not want my wife to die of this, I don't want her to have a severe illness, I don't want her hospitalized, I do not want her on a ventilator'—I would say you are in luck," Poland continued. "Pick any one of the three and it's basically 100%."

Schaffner added, "If you're trying to distinguish between these vaccines, it's like asking was Babe Ruth or Lou Gehrig the better ball player. You want to compare their batting averages? Give me a break. They're all great."

J&J vaccine not 'next-best' choice

Further, the Johnson & Johnson vaccine is proven effective against the new South African COVID-19 variant, since part of its clinical trial was conducted in that country and in Latin America, Poland noted.

The Moderna and Pfizer vaccines only were tested against the original strain of COVID-19, and the

new variants are posing some limited challenge to the protection those vaccines confer.

"I'm not sympathetic with the idea that it's a next-best vaccine," Poland said of the J&J vaccine.

Even the 66% clinical trial effectiveness of the J&J vaccine against all symptomatic COVID-19 is nothing to sneeze at, said Dr. Abhijit Duggal, a critical care specialist at Cleveland Clinic, in Ohio.

"Those numbers are much, much better than anything you would usually see with the influenza vaccine," Duggal noted.

Flu vaccines typically provide 40% to 60% effectiveness, according to the U.S. Centers for Disease Control and Prevention.

Infectious disease experts have good reason to want to beat down any notion that the J&J vaccine is second-rate.

The vaccine has advantages that will make it much easier to distribute to places in the United States that are more remote or are not as well-served by health care.

Want a choice of vaccines? Not happening anytime soon

All three vaccines work by using genetics to trick human immune cells into producing incomplete replicas of the spike protein that the COVID-19 coronavirus uses to invade the body and cause illness. The Pfizer and Moderna vaccines do this by directly delivering messenger RNA (mRNA) into the cells, which then pass on the order to produce the COVID-19 spike protein.

But mRNA is very fragile, so the vaccine must be kept frozen until right before it's administered, explained Rick Kennedy, co-director of the Vaccine Research Group at the Mayo Clinic, in Rochester, Minn.

The J&J vaccine is much more hardy because it's delivered via a common cold virus that's been genetically altered to deliver the spike protein DNA into human cells, Kennedy said. This type of vaccine only needs to be kept refrigerated, not frozen, and so is much easier to transport and store.

"All these viral particles act like Trojan horses. Each viral particle will be able to get into one cell, and it's got the viral DNA. That gets changed into RNA, and then the RNA tells the cell to produce spike protein," Kennedy said of the J&J vaccine. "So at the very end you get the same effect. Those cells are producing virus spike protein and your immune system's learning to recognize it."

The J&J vaccine also only requires a single dose for effective protection, making it much easier to vaccinate larger numbers of people.

It's going to be rare for some weeks to come that a person will have a choice between the three vaccines, Schaffner said. Health care providers will get a supply of one of the three, and that's what will be available to their patients.

"Certainly in the beginning and for quite a while, some providers will have Moderna, some will have Pfizer and others will have Johnson & Johnson," Schaffner said. "There may come a time where in two or three weeks some people will figure out who's got which vaccine and they will go to those locations in order to get the vaccine. But I don't think very many providers will offer a choice."

People living in medically underserved areas should get whatever COVID-19 vaccine comes their way, experts said, because it's impossible to know when another chance will roll around.

Duggal said, "If you are being offered a vaccination, you don't want to wait for an alternative. It might be months before you can get back into the rotation for getting the vaccination, and that increases your risk of getting the infection and getting severe disease. If your physician's offering the vaccination, go ahead and get it done."

More information: The U.S. Food and Drug Administration has more about COVID-19 vaccines.