

Pfizer and AstraZeneca vaccines provides strong protection, according to a preliminary study.



General practitioner displaying empty vials of the Pfizer and AstraZeneca vaccines in Berlin in April. Credit...Fabrizio Bensch/Reuters

Early results from a British vaccine study suggest that mixing different brands of vaccines can provoke a protective immune response against Covid-19. In the trial, volunteers produced high levels of antibodies and immune cells after getting one dose of the Pfizer-BioNTech vaccine and one dose of the AstraZeneca-Oxford shot.

Administering the vaccines in either order is likely to provide potent protection, Matthew Snape, a vaccine expert at the University of Oxford, said at a news conference on Monday. “Any of these schedules, I think could be argued, would be expected to be effective,” he said.

Dr. Snape and his colleagues [began the trial](#), called Com-COV, in February. In the first wave of the study, they gave 830 volunteers one of four combinations of vaccines. Some got two doses of either Pfizer or AstraZeneca, both of which have been shown to be effective against Covid-19. Others got a dose of AstraZeneca, followed by one of Pfizer, or vice versa.

For the first wave of volunteers, the researchers waited four weeks between doses. Studies have found that the AstraZeneca vaccine provides stronger protection if the second dose is delayed for [up to 12 weeks](#), so the researchers are also running a separate 12-week trial which should deliver results next month.

The researchers found that volunteers reported more chills, headaches and muscle pain than people who get two doses of the same vaccine. But the side effects were short-lived. Dr. Snape and his colleagues then drew blood to measure the immune response in the volunteers. They found that [those who got two doses of Pfizer-BioNTech produced levels](#)

of antibodies about 10 times as high as those who got two doses of AstraZeneca. Volunteers who got Pfizer followed by AstraZeneca showed antibody levels about five times as high as those with two doses of AstraZeneca. And **volunteers who got AstraZeneca followed by Pfizer reached antibody levels about as high as those who got two doses of Pfizer.**

Dr. Snape said that the differences would most likely narrow in the volunteers who get a second dose after 12 weeks, when the AstraZeneca vaccine has had more time to strengthen its effects.

The study also found that using different vaccines produced a higher level of immune cells primed to attack the coronavirus than did giving two doses of the same vaccine. Dr. Snape said it wasn't clear yet why mixing had that advantage. "It's very intriguing, let's say that much," he said.

Dr. Snape and his colleagues have begun a similar trial, adding vaccines from Moderna and Novavax to the list of possibilities.

For now, he said, the best course of action remains getting two doses of the same vaccine. Large clinical trials have clearly demonstrated that this strategy reduces the chances of getting Covid-19. "Your default should be what is proven to work," Dr. Snape said.

But there are many cases in which that may not be possible. Vaccine shipments are sometimes delayed because of manufacturing problems, for example. Younger people in some countries have been advised not to get a second dose of AstraZeneca because of concerns about the small risk of developing blood clots. In such situations, it's important to know whether people can switch to another vaccine.

"This provides reassuring evidence that should work," Dr. Snape said.

— *Carl Zimmer*