

Is Novavax, the latecomer COVID vaccine, worth the wait?

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Erin Kissane, a co-founder of the COVID Tracking Project, rolled up her sleeve for the Novavax COVID-19 vaccine in mid-October soon after it was finally recommended in the United States. Like many people

with autoimmune diseases, she wants to protect herself from a potentially devastating COVID infection.

Kissane's autoimmune arthritis seems to make her susceptible to unusual [vaccine](#) side effects. After getting an mRNA booster last year, her joints ached so painfully that her doctor prescribed steroids to dampen the inflammation. She still considers the mRNA vaccines "miraculous," knowing COVID could be far worse than temporary aches.

Nonetheless, when the pain subsided, she pored through studies on Novavax's shot, a vaccine that is based on proteins rather than mRNA and has been used since early 2022 in other countries. Data from the United Kingdom found that people more frequently reported temporary reactions—like low fevers, fatigue, and pain—as their [immune system](#) ramped up in the days following booster vaccination with Moderna's mRNA vaccine versus the one by Pfizer. And those boosted with Novavax's had fewer complaints than either of those. That finding was corroborated in an analysis of international data published last year.

Such studies have driven people with long COVID and [chronic fatigue syndrome](#) (also known as myalgic encephalomyelitis, or ME/CFS) to seek out Novavax, too, since the FDA and the Centers for Disease Control and Prevention greenlighted Novavax's vaccine—updated to protect against recent omicron coronavirus variants—about three weeks after recommending updated mRNA vaccines in September.

Waiting paid off for Kissane, whose arm was briefly sore. "It was a dramatically different experience for me," she said. "I hope that plays out for others."

Another group who waited on Novavax are biologists who geek out over its technology. When asked why he opted for Novavax, Florian Krammer, a virologist at the Icahn School of Medicine at Mount Sinai,

replied on X, formerly known as Twitter: "Because I am [a] vaccine nerd, I like insect cell produced vaccines."

Whereas mRNA vaccines direct the body to produce spike proteins from the coronavirus SARS-CoV-2, which then train a person's immune system to recognize and fight the virus, Novavax simply injects the proteins. These proteins are grown within moth cells in a laboratory, while other protein-based shots use cells from mammals. And Novavax has said that a special ingredient derived from the bark of Chilean soapbark trees enhances the vaccine's power.

Research suggests that the Novavax vaccine is about as safe and effective as the mRNA shots. Its main disadvantage is arriving late to the scene. Vaccine uptake has plummeted since the first shots became widely available in 2021. Nearly 70% of people got the primary vaccines, compared with fewer than 20% opting for the mRNA COVID boosters released last year. Numbers have dwindled further: As of Oct. 17, only 5% of people in the United States had gotten the latest COVID vaccines, according to the Department of Health and Human Services.

Daniel Park, an epidemiologist at George Washington University, said low rates might improve if people who felt lousy after their last mRNA shots gave Novavax a try. It protects against severe illness, but researchers struggle to specify just how effective this and other vaccines are, at this point, because studies have gotten tricky to conduct: New coronavirus variants continuously emerge, and people have fluctuating levels of immunity from previous vaccines and infections.

Still, a recent study in Italy suggests that Novavax is comparable to mRNA vaccines. It remained more than 50% effective at preventing symptomatic COVID four months after vaccination. Some data suggests that mixing and matching different types of vaccines confers stronger protection—although other studies have found no benefit.

Given all this, Park held out for the Novavax vaccine on account of its potentially milder side effects. "Between a demanding full-time job and two young kids at home, I wanted to stay operational," he said. His arm was sore, but he didn't have the 24-hour malaise accompanying his last mRNA shot.

Most people don't strike a fever after mRNA shots. Even when they do, it is brief and therefore far less detrimental than many cases of COVID. In fact, most reactions are so minor that they're hard to interpret. During clinical trials on mRNA vaccines, for example, up to a third of people in the placebo group reported fatigue and headaches after injection.

People with ME/CFS and long COVID—a potentially debilitating condition that persists months after a COVID infection—have responded to COVID vaccinations in a wide variety of ways. Most participants with long COVID in an 83-person Canadian study said their levels of fatigue, concentration, and shortness of breath improved following vaccination. Inflammatory proteins that have been linked to long COVID dropped as well.

However, larger studies have yet to corroborate the hopeful finding. Jennifer Curtin, a doctor who co-founded a telehealth clinic focused on long COVID and ME/CFS, called RTHM, said vaccines seem to temporarily aggravate some patients' conditions. To learn how Novavax compares, she posted polls on X in late October asking if people with long COVID or ME/CFS felt that their symptoms worsened, improved, or stayed the same after Novavax. Most replied: unchanged.

"It's not scientific, but we need to figure it out since these folks don't want to get COVID," Curtin said. "My patients are all wondering about what vaccine to get right now."

Adding to the uncertainty, the rollout of Novavax and mRNA vaccines

has been bumpy as pharmacies struggle to predict demand and insurance companies figure out how to reimburse providers for the shots. Unlike previous vaccine offerings, these options are no longer fully covered by the federal government. A testament to this season's struggle to get vaccinated is that at least one do-gooder has created an online tool to find open appointments for Novavax.

Buoyed by anecdotes of relief from others with long COVID, Hayley Brown, a researcher at the Center for Economic and Policy Research who has the condition, opted for Novavax recently. Unfortunately, her symptoms have flared. She said a temporary discomfort will still be preferable to risking another infection. "As someone with long COVID, the idea of getting COVID again is terrifying."

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