

Covid-19 vaccine myths: These reasons for not getting a shot don't hold up.

By [Holly Yan](#), CNN

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(CNN)Americans have an easy way to crush Covid-19 -- one that would let more businesses fully reopen safely, reduce the need for masks and help prevent [more dangerous variants](#) from emerging.

But many don't want to get vaccinated as myths and misunderstandings spread. As of mid-July, less than 60% of eligible Americans ages 12 and up [have been fully vaccinated](#).

That's a big problem for several reasons:

-- [Unvaccinated people are 'variant factories,' infectious diseases expert says](#)

More than 97% of people now entering the hospital with Covid-19 are not vaccinated, the director of the US Centers for Disease Control and Prevention said in mid-July. They include [children and young, previously healthy adults](#). (More on that later.)

-- Unless more people get vaccinated, we may never [reach herd immunity](#).

-- The longer people stay unvaccinated, the more chances a virus has to mutate. And if the mutations are significant, they could lead to [more troubling strains that might evade vaccines](#).

-- ['Long Covid' is real](#). Even young athletes have suffered [brain fog, chest pains and shortness of breath months after infection](#).

[Clinics nationwide are treating 'long Covid' complications](#)

"Even for young people who consider their risk of severe Covid to be low, the long-term consequences can be quite serious," said Dr. Francis Collins, director of the National Institutes of Health. But rampant myths and unnecessary concerns stand in the way.

Here are some of the most popular arguments for not getting vaccinated and why doctors want to set the record straight:

“I don't want to get Covid-19 from the vaccine”

It's literally impossible to get Covid-19 from any of the vaccines used in the US because none of them contains even a piece of real coronavirus.

Here's [how each vaccine was made](#).

“We don't know what the long-term side effects are”

Any adverse side effects from vaccines almost always "show up within the first two weeks, and certainly by the first two months," said Dr. Ashish Jha, dean of the Brown University School of Public Health. That's why he and many other health experts asked the US Food and Drug Administration to wait at least two months after trial participants had been inoculated before considering whether to give emergency authorization to Covid-19 vaccines.

[Don't freak out if you get these side effects from a Covid-19 vaccine. They can actually be a good sign](#)

"If there were going to (be) problems ... they would become apparent within two months of people getting vaccinated," he said. "That's what the FDA waited for."

The most serious vaccine side effects in history have all been caught within six weeks, said Dr. Paul Offit, director of the Vaccine Education Center at the Children's Hospital in Philadelphia and a member of the FDA's Vaccines and Related Biological Products Advisory Committee. "I would say, please tell me what vaccine has ever been shown to cause a long-term side effect that was not picked up in the first two months," said Offit, a co-creator of the rotavirus vaccine who has studied vaccinology for more than four decades. "The smallpox vaccine could cause inflammation of the heart muscle. The oral polio vaccine was a rare cause of polio -- it occurred in roughly 1 in 2.4 million doses. ... The yellow fever vaccine is a rare cause of ... yellow fever. All those occurred within six weeks of getting a dose," he said.

[Almost 1/3 of people with 'mild' Covid-19 have nagging symptoms months later](#)

There may be very rare side effects that aren't immediately found in clinical trials. But that's due to the extreme rarity of those side effects -- "not because it's a long-term problem," Offit said. "Sometimes you're not going to pick it up initially because it's extremely rare, so you aren't going to pick up a one-in-a-million risk in a trial of 44,000 people," he said. Pfizer/BioNTech and Johnson & Johnson had about 44,000 participants in each of their trials. Half the volunteers got

vaccinated, and the other half got placebos. The Moderna trial had about 30,000 participants, with half receiving vaccines and half receiving placebos. And because [coronavirus is highly contagious](#) -- killing [more than half a million Americans](#) and leaving [many survivors with long-term complications](#) -- you're much better off getting the vaccine.

”I've already had Covid-19, so I don't need to be vaccinated”

Even if you've had coronavirus, you should still get vaccinated because the immunity you get from vaccination will likely be longer or stronger than the immunity you got after getting infected, health experts say.

[When should you get the vaccine if you've already had Covid-19?](#)

"That's true for a number of vaccines -- the human papillomavirus (HPV) vaccine induces immunity better than natural infection. The tetanus vaccine does," Offit said.

When it comes to the two-dose vaccines -- those from Pfizer/BioNTech and Moderna -- people who've already had coronavirus should still get both doses, emergency medicine physician Dr. Leana Wen said.

Those vaccines were studied in people taking both doses, and that's what experts know to be effective. It's not clear how long protection after just one dose might last.

"We also don't know how long protection will last after having coronavirus, so you should still be (fully) vaccinated," Wen said.

'The vaccine might hurt my fertility'

This is pure nonsense, Offit said. There's no evidence that people have lost any fertility because of the Covid-19 vaccines. The rumor apparently started with the myth that the coronavirus spike protein, which is mimicked when you get a vaccine, also mimics the protein on the surface of placental cells, Offit said.

[Fighting misinformation and getting vaccinated are critical to ending this pandemic](#)

"So the false notion was that when you're making an immune response to the SARS-CoV-2 spike protein, you also were inadvertently making a response to a placental protein -- which would then make you less likely to be fertile," Offit said. "So it's all nonsense. It's not true."

The US Centers for Disease Control and Prevention also said there's no link between any vaccines and fertility. "If you are trying to become pregnant now or want to get pregnant in the future, you may receive a COVID-19 vaccine when one is available to you," [the CDC says](#).

"There is currently no evidence that any vaccines, including COVID-19 vaccines, cause fertility problems." The benefits of getting vaccinated if you're pregnant or trying to become pregnant far outweigh the risks, because [pregnancy puts a person at higher risk for severe Covid-19 illness](#). And some research suggests Covid-19 [vaccines provide some level of protection to newborns](#).

“It's none of your business if I don't get vaccinated”

Refusing the Covid-19 vaccine actually impacts a lot of people -- yourself, your loved ones, even the country as a whole. "When people say, 'What do you care? You're vaccinated. I'm going to choose not to be vaccinated. You're vaccinated, so you're good'" -- that makes three false assumptions, Offit said.

"First of all, [the vaccines aren't 100% effective.](#)" So even if your friends and family are vaccinated, but you're not vaccinated, you can still carry and spread the virus to your loved ones.

[How to speak to someone who's hesitant to get vaccinated](#)

And as Americans go back to crowded bars, concerts, sporting events and movie theaters, the need for mass vaccination becomes even more important.

Second, it's a mistake to think everyone who wants a vaccine can just get one. "Some people are on cancer chemotherapy. They can't be vaccinated -- they depend on the herd to protect them," Offit said. So many of the most [vulnerable Americans are counting on fellow Americans to get vaccinated.](#)

"And third, by not being vaccinated, or being part of a reasonably sized group of people who are choosing not to get the vaccine, you're allowing the virus to continue to replicate. When it's allowed to continue to replicate, it will create mutations, which could then cause variants that are completely resistant to the immunity induced by natural infection or immunization."

In other words: Failing to get a vaccine could make the vaccines less effective. And that could ruin everyone's vaccinations -- throwing the country backward in this pandemic.

“I'm young and healthy, so I don't need to get vaccinated”

It's critical for young, healthy people to get vaccinated, Collins and other doctors say. Here's why:

Young people can get long-term Covid-19 complications.

Young, healthy people have turned into Covid-19 "long-haulers," suffering [chronic fatigue, chest pain, shortness of breath and brain fog](#) months after their infection.

[Study: 7 in 10 people hospitalized for Covid-19 haven't fully recovered five months after discharge](#)

A study this year found that [30% of people who had Covid-19 still had symptoms up to nine months after infection.](#)

"Covid-19 doesn't have to kill you to wreck your life," said Dr. Jonathan Reiner, professor of medicine and surgery at George Washington University.

Young people can be easy transmitters of coronavirus.

There have been multiple [Covid-19 outbreaks at youth summer camps](#). And with the [more contagious Delta variant](#) spreading, hospitals in less-vaccinated states [are seeing more children and teens hospitalized with Covid-19](#).

[Some children's hospitals see a surge in rare Covid-19 complication MIS-C](#)

"This year's virus is not last year's virus," said Dr. Catherine O'Neal, an infectious disease specialist at Our Lady of the Lake Regional Medical Center in Baton Rouge, Louisiana.

"It's attacking our 40-year-olds. It's attacking our parents and young grandparents. And it's getting our kids." In mid-July, O'Neal's Covid-19 unit had more patients in their 20s who were previously healthy, she said. In Missouri, "people in their [late teens and even early 20s are being hospitalized](#) and needing the use of ventilators," said Katie Towns, acting director of Springfield-Greene County Health Department.

Young adults can be victims of their strong immune systems.

Doctors have noticed some young, previously healthy patients suffer from Covid-19 [cytokine storms](#). That's basically when someone's immune system overreacts -- potentially causing severe inflammation or other serious symptoms. "We've certainly seen people come into our hospital, very young people (in their early 20s) ... need to be put on [ECMO](#), which is basically a heart-lung machine, for days or even weeks because they come in with [cardiomyopathy](#), which is a response to a cytokine storm," Reiner said.

“These vaccines only have emergency use authorization, not full FDA approval”

It's true that the Pfizer/BioNTech, Moderna and Johnson & Johnson vaccines have emergency use authorization from the FDA and not full approval yet. But that's only because not enough time has passed to show how long the vaccines stay effective, Offit said.

[Pfizer's Covid-19 vaccine is still highly effective after six months \(and counting\)](#)

"Frankly, the only real difference was in length of follow-up," he said. "Typically, you like to see efficacy for a year or two years." But with Covid-19 vaccines, "you couldn't do that. You couldn't do a one- or two- or three-year study ... because the virus was [killing hundreds of thousands of people](#). So we wanted to get it out there."

He stressed that the vaccines' EUA status doesn't mean they're less safe. As a member of the FDA vaccine advisory committee, Offit said the vaccines are reviewed with the same level of scrutiny as they would to get full approval. Offit said he's confident the vaccines will get full FDA approval. "The effectiveness and efficacy data in the Phase 3 trials and now in the real world ... is excellent," he said. Also, the vaccine trials showed "excellent cellular immune responses -- meaning so-called T helper cells." Offit said that's a good sign these vaccines give strong, long-lasting protection.

“My faith will protect me, so I don't need to get vaccinated”

Among religious groups in the US, "white evangelical Protestants stand out as [the most likely to say they will refuse to get vaccinated \(26%\)](#), with an additional 28% who are hesitant," according to a study this spring by the Public Religion Research Institute and Interfaith Youth Core.

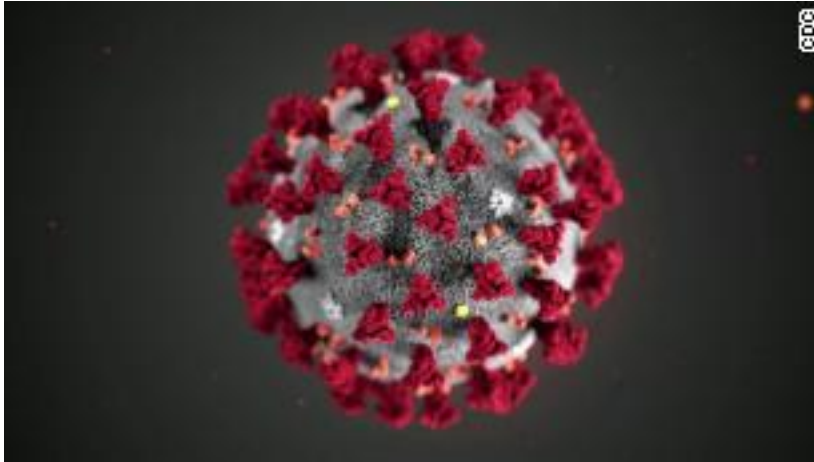


[Bishop who said "God is larger than" Covid-19 has died from coronavirus.](#)

Some experts say anti-Covid-19 vaccine sentiment among evangelicals is fueled by a [distrust in government, ignorance about how vaccines work and misinformation](#). "If you believe that God created us in his image, including being able to think and reason, we've been able to think and reason a lot of these diseases away" thanks to vaccination, Offit said. "We don't die from smallpox anymore. Children aren't permanently paralyzed by polio anymore in the United States. It's a good thing. That's because God gave us a brain to think and reason with. So use it." [Opinion: Covid-19 vaccines are an answered prayer for all faiths](#)

“I might not be able to afford a vaccine”

"It's all free. The government is paying for this," Offit said. This is one message public officials could do a better job explaining, he said. "I never hear them described as free, I think because it's always assumed that people know they're free," Offit said. But "maybe for all those commercials you see on TV ... they should make it clear you don't have to pay this." For those who might lack internet access, Offit said it'd be a good idea for state or local health departments to send flyers in the mail explaining when and how people can get vaccinated -- and reminding them it's free.



[Covid-19 medical bills have left many in debt](#)

The bottom line: Not getting vaccinated could set everyone back

If you want to protect yourself, your friends, your family and the economy, get vaccinated. Otherwise, you'll be part of the problem -- not the solution. "This virus is continuing to mutate," Offit said. "The thing I'm most worried about is that this virus will mutate to the point that immunity induced by natural infection or vaccination doesn't work at all. That's the most important reason to vaccinate."

[It's possible to reach herd immunity, then lose it. Repeatedly. Here's how you can help prevent that from happening](#)

The longer a virus circulates among unvaccinated people, the more opportunities it has to mutate. And if the mutations are significant, they can lead to more problematic variants -- including some that could partially or fully escape vaccine protection.

"It's already starting to happen," Offit said, citing [the B.1.351 and P.1 variants](#). While vaccines are still effective against those strains, "these variants have now started to escape from the immunity of natural infection or immunization. They don't completely escape, but they've started to escape." So the key to ending this pandemic isn't just getting vaccinated. It's getting vaccinated as soon as possible, before the virus mutates into variants that we can't control with our current vaccines.

"The vaccine is the most important pathway to ending this pandemic. That means we've got to get everyone in our country vaccinated," US Surgeon General Dr. Vivek Murthy said.

"Now what we've got to do is,

No. 1: Get the vaccine.

No. 2: Turn around and look at our family and friends and ask if they're going to get vaccinated.

If they need help, that's what we've got to do."

CNN's Ryan Prior, Richard Allen Greene and Megan Marples contributed to this report.

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