# Your questions about the COVID-19 vaccine, answered

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Editor's note: Following the initial publication of this piece, we solicited reader input and addressed new concerns raised.

The COVID-19 pandemic has resulted in millions of infections and hundreds of thousands of deaths in the U.S., yet we understand the reasons many people haven't been vaccinated are complicated.

We've observed that growing political polarization and misinformation has discouraged millions from getting vaccinated. But other factors stand in the way, such as concerns about what's in the vaccines and whether they're safe and effective.

While the virus is constantly changing and research into the infections among vaccinated people is ongoing, two things are clear: COVID-19 kills and the vaccines prevent hospitalizations and deaths.

What follows are common concerns expressed by those who have not been vaccinated.

Breakthrough cases: They happen, but you're far more protected

### 'I don't need the vaccine.'

I already had COVID-19, so I have natural immunity and don't need the vaccine.

Because you already had COVID-19, your body <u>may have</u> produced antibodies against the coronavirus spike protein to fight off infection and recover from the disease. While you may have some protection against the virus, it doesn't mean you're protected against reinfection and severe illness and death as a result. Your case may not have been that bad, but there's no

guarantee that you'd have a mild case if you get reinfected. The virus is changing constantly, and the antibodies you developed might not hold up against different mutations of the virus such as the more contagious delta variant that now accounts for the vast majority of COVID-19 cases in the U.S. It is also not clear how long natural immunity lasts. Some researchers have found that it lasts several months. Other researchers have found that those previously infected with COVID-19 could continue to develop antibodies for a lifetime, but they still recommend getting vaccinated because the vaccines offer stronger protection than natural immunity alone. For example, a recent study out of Kentucky of people who previously recovered from COVID-19 found that those who weren't vaccinated were twice as likely to get reinfected. Getting vaccinated is the best way to ensure that you're protecting yourselves and others from COVID-19.

More: Infected with COVID-19 in the past? You still need the vaccine, experts say

# If vaccinated people can still get and spread COVID-19, I don't see why I need to get vaccinated.

Those who are vaccinated can still get COVID-19 and they can still infect others, but the vaccines have proven to offer protection from serious illness and death. Nothing's perfect, but a combination of vaccination, wearing masks and physical distancing all help lower the probability of infection. The numbers bear that out. Those who are vaccinated are significantly less likely to be hospitalized and die from the disease compared with those who are not vaccinated.

- Unvaccinated people were 29 times more likely to be hospitalized with COVID-19 than vaccinated people, a <u>recent CDC study out of Los Angeles showed</u>.
- Unvaccinated people were 11 times more likely to die of COVID-19, a recent <u>CDC study</u> conducted in states and counties across the U.S. showed.
- By early September, more than 176 million people in the U.S. were fully vaccinated against COVID-19, and only a small share had breakthrough cases that led to hospitalization and death. As of Sept. 7, 11,440 patients with COVID-19 breakthrough infections were hospitalized and 2,675 died, according to reports received by the CDC from 49 U.S. states and territories. The vast majority of hospitalizations and deaths were among people 65 or older.
- A <u>Kaiser Family Foundation</u> analysis published in late July looked at data from 23 states and Washington, D.C. and found that almost all COVID-19 hospitalizations and deaths more than 90% were among the unvaccinated or those who hadn't been fully vaccinated.

If you're vaccinated and get infected, think of how much easier it will be to live with a mild case of COVID-19 that might keep you home for a few days than to land in the hospital for weeks or die.

Even though some vaccinated people have still gotten COVID-19, that does not mean the vaccines are useless. Breakthrough infections are often less severe and don't result in hospitalization and death as often as COVID-19 cases among the unvaccinated. While you may feel fine with accepting the risk of getting COVID-19, your decision has an impact on the health of other people. Getting vaccinated lowers your chance of getting COVID-19, limiting the opportunity for the virus to spread, replicate and mutate into deadlier and more contagious variants.

# I'm young and healthy, so I'm not worried about getting COVID-19.

Most COVID-19 deaths have occurred among older people. If you're young and healthy, you could get infected and recover. But you might not. Your immune response alone might not be sufficient to protect against severe illness and death. The vaccines work by giving your body the ability to recognize the virus that causes COVID-19 and fight infection. COVID-19 is deadly and many young and healthy people have died from COVID-19. Being young and healthy doesn't mean you'd be spared from a deadly virus. Even if you're infected and get a mild case of COVID-19, you might develop lasting symptoms such as fatigue, loss of smell or taste and sleep problems, among others. Your asymptomatic or mild case could also lead you to infect others who might not be so lucky. Even populations once thought to be less susceptible to COVID-19 are now vulnerable in the face of the highly contagious delta variant. The COVID-19 vaccines have not yet been approved for children under 12 years old, and the delta variant has facilitated a surge in hospitalizations among children. The number of children hospitalized with COVID-19 recently hit a record high. While deaths from COVID-19 are still rare among children, they have been increasing in recent weeks, according to a review of state-level data by the American Academy of Pediatrics and the Children's Hospital Association.

## We're all going to die someday anyway.

That's true. But COVID-19 is a highly contagious and deadly virus. If you get infected, it's not just your life on the line. You could infect family members, friends, colleagues or the person serving your dinner. Ask yourself: How would you feel if you knew that your decision not to get vaccinated meant that you infected someone you love who became ill or died as a result? Dying from COVID-19 is also an awful way to go. Breathing is hard and painful and ventilators and procedures to help COVID-19 patients are invasive and uncomfortable. Separated in ICUs, many who die from COVID-19 die isolated from their loved ones. Think of getting vaccinated as one of many small actions you already take to lower the risk of dying like putting on a seat belt. There's also a financial cost to severe illness, hospitalization and death. Hospitalization can cost thousands of dollars, leaving you or your loved ones facing a steep bill. If you help financially support your family and die, that could further create hardship for the people in your life.

### 'I'm concerned that the vaccine isn't safe or effective.'

#### I'm worried the vaccine will make me sick.

Some people who get vaccinated hardly feel anything, while others experience side effects that last a <u>few days</u> such as fatigue, muscle pain, chills, fever and nausea. The vaccines do not contain the coronavirus and you cannot get COVID-19 from the vaccines. Being sick for a few days can be disruptive, not to mention physically uncomfortable. You might have to miss work. It might be harder to take care of a child or an older relative. But getting vaccinated offers protection from serious illness and death from COVID-19. Think about how much more disruption ending up in the hospital or dying would cause. A few days of feeling under the weather isn't so bad in comparison.

# Two of the vaccines approved for emergency use haven't received full FDA approval. I'm worried they're not safe and effective.

The Pfizer vaccine recently received full FDA approval for people 16 years old and older. Two other vaccines authorized for emergency use — the Johnson & Johnson and Moderna vaccines — haven't received full FDA approval but are expected to soon. Vaccines approved for emergency use still undergo rigorous testing. When all three vaccines were approved for emergency use that meant that clinical trials showed that the vaccines were effective and safe. Emergency use authorization and full approval by the FDA follow similar processes. The main difference is that full approval takes longer since participants in vaccine studies have to be followed for longer. The mass uptake of vaccination has confirmed what trials on which emergency use authorization were based: The vaccines work and they're safe. Some cases of heart muscle inflammation have been detected and reported after vaccination and found to be very rare. Millions of Americans have gotten vaccinated since the first doses were administered almost a year ago without widespread problems.

# I'm concerned that getting the vaccine could impact my ability to get pregnant or my child's ability to get pregnant one day.

There isn't evidence that the COVID-19 vaccines make it harder to become pregnant. Vaccines actually help ensure a healthy pregnancy, which is why doctors recommend getting vaccinated if you're trying to get pregnant or want to in the future. One study looked at three groups of women: those vaccinated against COVID-19, those previously infected with COVID-19 and those who haven't been vaccinated or infected. It found no difference in pregnancy outcomes among the three groups.

### I'm pregnant and I'm worried that the vaccine isn't safe for me or the baby.

Following the recommendation of public health officials, many pregnant women have chosen to get vaccinated, while others have chosen not to out of a concern that the vaccine might not be safe. There isn't any evidence that getting vaccinated isn't safe for pregnant people while studies have shown that pregnant people are more likely to suffer serious illness from COVID-19 compared with those who aren't pregnant. Getting vaccinated protects against severe illness and death from COVID-19. Research has found that pregnant people with COVID-19 are more likely to suffer pregnancy complications and preterm birth. Recent studies show that people who have received mRNA COVID-19 vaccines (such as the Pfizer and Modern vaccines) and are breastfeeding have antibodies in their breast milk that might offer some protection to the baby.

### I think the vaccine poses a greater health risk than COVID-19.

Over 179 million people have been fully vaccinated in the U.S. The vaccinations have not caused widespread <a href="https://example.com/health-problems">health-problems</a> or <a href="https://example.com/death-people-have-been fully vaccinated">deaths</a>. COVID-19, on the other hand, has led to lasting health problems even among those who had a mild case and the disease has killed hundreds of thousands in the U.S. The vaccines significantly lower your chances of ending up in the hospital or dying. But your decision about whether to get vaccinated also has an impact on the health of others. If you're unvaccinated, you're more likely to get COVID-19 and infect others who could become severely ill and die. Increasing the number of vaccinated people also limits the opportunity for the virus to spread and mutate, giving rise to new variants that could lead to a deadlier and longer pandemic.

### 'I'm not in a rush to get vaccinated.'

# The process for approving the vaccine was rushed. I don't think we know enough about the lasting side effects of the vaccine.

The vaccines were developed quickly but the review of vaccines' safety was not rushed. The first COVID-19 cases in the U.S. were reported in <a href="Late January 2020">Late January 2020</a>. Less than a year later, the FDA approved the Moderna and Pfizer COVID-19 vaccines for emergency use and the Johnson & Johnson vaccine soon after. The FDA has an emergency use authorization process specifically for public health emergencies like the coronavirus pandemic, so health officials can rapidly approve vaccines to head off hospitalization and death. In order to be approved, the vaccines have to be shown to be safe and effective during clinical trials. Since the vaccines were approved, studies have continued to show that the vaccines are effective in preventing serious illness and death. Following any vaccination, long-term side effects are <a href="extremely rare">extremely rare</a>. Any side effects usually emerge within the first several weeks following vaccination, which is why the <a href="FDA required">FDA required</a> participants in clinical trials to be monitored for at least two months before granting emergency use authorization. The Centers for Disease Control and Prevention has tracked negative reactions

to the vaccine, which are very rare. Anaphylaxis after COVID-19 vaccination occurred in about two to five people per million vaccinated in the U.S., according to the CDC. The CDC and Food and Drug Administration have identified 45 confirmed reports of people who received the Johnson & Johnson vaccine who later developed thrombosis with thrombocytopenia syndrome. Other events after vaccination reported to the CDC are similarly rare and do not necessarily mean that the vaccine caused the health problem. Hundreds of millions of doses of COVID-19 vaccines have been administered without issue. Waiting might feel comforting, but it comes with increased risk of contracting COVID-19 and becoming seriously ill or dying. For months, millions of vaccinated Americans have been able to return to many pre-pandemic routines, knowing that when they do, they're not putting themselves or their vaccinated friends and family at great risk. The bigger the unvaccinated population, the more opportunities the coronavirus has to infect others, which allows the virus to continue mutating into more contagious and deadly variants. By choosing to get vaccinated, you'd be playing a role to help limit the number of opportunities the virus has to continue changing in ways that could lead to a longer, more deadly pandemic.

### I haven't gotten COVID-19 yet, so I'm not in a rush to get vaccinated.

You are one of millions of Americans who haven't contracted COVID-19. Others haven't been so lucky. There have been over 40 million COVID-19 cases in the U.S. and over 650,000 deaths. At hospitals around the country, doctors and nurses have shared stories of patients dying from COVID-19 who expressed regret that they didn't get vaccinated earlier. It might seem hard to find the time to get vaccinated, but waiting means increasing your chances of contracting COVID-19 and becoming hospitalized or dying. It also means increasing the chances that the pandemic will get worse and last longer. Unvaccinated people — who are more likely to get infected than those who aren't vaccinated — enable the virus to continue to change and become more contagious and deadly.

### 'I have concerns about what's in the vaccine.'

### I heard the vaccine was developed using tissue from aborted fetuses.

None of the vaccines contain fetal cells. Pfizer and Moderna didn't use cell lines derived from an aborted fetus to develop the vaccine but did use human fetal cells to test the vaccine's efficacy. The <u>U.S. Conference of Catholic Bishops says</u> that the vaccines' connection to the abortion "is very remote" and urged anyone concerned about getting vaccinated to see "an act of love" and "moral responsibility for the common good." Unlike the Pfizer and Moderna vaccines, the Johnson & Johnson vaccine was manufactured using a virus grown on a cell line that was derived from a fetus aborted in 1985. A single cell from the fetus was cloned to create the cell line. The <u>Catholic bishops conference says</u> that if given a choice, Catholics should choose Pfizer

or Moderna's vaccines but that it is morally acceptable to get any of the three vaccines available in the U.S.

The Pfizer and Moderna vaccines are mRNA vaccines, so they contain genetic material to produce the spike protein on the surface of the coronavirus. The vaccines do not contain the virus and won't alter your DNA. The vaccines also contain fat, salt and other chemical components. The Johnson & Johnson vaccine contains an adenovirus — commonly used in vaccines — to allow the body to produce the spike protein on the coronavirus. It also contains salt and some other chemical components. None of the COVID-19 vaccines available in the U.S. contain eggs, gluten, preservatives, latex, metals or microchips.

# I'm seeing a lot of frightening stories coming from the CDC and FDA's vaccine safety monitoring program.

The CDC and FDA's Vaccine Adverse Reporting System monitors health problems that occur after vaccination. Anyone can submit a report to the database, and the CDC notes that the reports shouldn't be used to conclude that health problems reported to the system were caused by the COVID-19 vaccines. That's because a problem that comes after an event wasn't necessarily caused by the event. And the reports may include information that is "incomplete, inaccurate, coincidental or unverifiable," the CDC notes. The database was set up as an early warning system to ensure vaccine safety experts have reports of health problems from individuals, health care providers and vaccine manufacturers to evaluate potential safety concerns with the COVID-19 vaccines. That requires following up on the reports to request patient medical records to determine what happened. The CDC specifically encourages reporting health problems even when the cause is unclear because it allows health officials to take any action necessary to address possible safety concerns. In short, the database is not a log of health problems caused by the vaccine. But the information in the database has been used to spread misinformation about the vaccines, including claims that suggest or falsely assert that health problems reported in the system were caused by the vaccine. One viral claim that a 2-year-old died during a Pfizer COVID-19 vaccine trial came from a report in the database that was fabricated, Reuters reported. The report was removed from the database. And the database won't give you the big picture: hundreds of millions of Americans have received at least one dose of the COVID-19 vaccine without any significant concerns about the safety of the vaccine emerging. A very small share of vaccinated Americans have been hospitalized or died from COVID-19.

Inside Michigan schools: Why teacher, student vac

## Find a COVID-19 vaccine near you

**Text your ZIP code to 438829.** You'll receive an immediate response with a list of vaccination sites in your area, a number you can call if you need more help, and information on how you might get a free ride to the location using Uber or Lyft.

Search for vaccine locations by ZIP code. <a href="https://www.vaccines.gov/search/">https://www.vaccines.gov/search/</a>.

### Why and how we're covering this topic

#### Why we're doing this story

People have expressed many reasons for not getting vaccinated against COVID-19. Political polarization and misinformation have played their part, but there are other factors at play too. Some fear getting sick from the vaccine or haven't had COVID-19 yet and don't feel a sense of urgency to get vaccinated, for instance. We compiled this point-counterpoint piece to speak directly to the reasons why millions have chosen not to get vaccinated and answer questions or concerns people may have.

#### How we're doing this story

The studies referenced in this piece were undertaken or cited by the Centers for Disease Control and Prevention or analyze data provided by state and local health authorities around the country. We consulted with Dennis Yi Tenen and Rishi Goyal at Columbia University's Health Language Lab, which analyzes social media to understand the reasons for hesitancy, and polling by the Kaiser Family Foundation to develop the list of points. Then we worked with additional experts to write from a place of empathy to help people make an informed decision about the vaccine. They include Fred Vultee, an associate professor of journalism at Wayne State University; Karen Kelly-Blake, assistant director and associate professor in the Center for Bioethics and Social Justice and Department of Medicine at Michigan State University's College of Human Medicine, and Dr. Joshua Liao, an associate professor at University of Washington's School of Medicine and School of Public Health.

Following the initial publication of this piece, we solicited reader input and addressed new concerns raised and incorporated additional information based on the feedback we received. We are logging significant changes we make here:

- Added concern "I think the vaccine poses a greater health risk than COVID-19."
- Added that that long-term effects following any vaccination are extremely rare and that any side effects usually emerge within the first several weeks following vaccination.
- Added that the vaccines won't give you COVID-19.
- Added that those who previously had a case of COVID-19 that wasn't that bad have no guarantee they'd have a mild case if they are reinfected.

- Added that a healthy immune system may not be sufficient to protect against severe illness and death and that the vaccines work by instructing your body to recognize the virus that causes COVID-19 and fight infection.
- Added information that while those who are unvaccinated may feel fine with accepting the risk of getting COVID-19, their decision has an impact on the health of other people.

#### Did we succeed?

If you see yourself in this piece but the counterpoint did not sufficiently answer your concerns, or if your concern was not mentioned at all, please let us know by emailing <a href="mailto:chendrickson@freepress.com">chendrickson@freepress.com</a>. Likewise, if this piece helped you in any way, we'd like to know. We value this feedback and will use it to improve this article and inform future reporting.