

# COVID-19 Vaccine & Pregnancy

Evidence about the safety and effectiveness of COVID-19 during pregnancy has been growing. These data suggest that the benefits of receiving a COVID-19 vaccine outweigh any known or potential risks from vaccination during pregnancy.

## What are the benefits of vaccination during pregnancy?

Immunizations, including COVID-19, are an important part of routine prenatal care. The Centers for Disease Control and Prevention (CDC) recommends everyone 6 months of age and older talk to a trusted health care provider about COVID-19 vaccine, including pregnant women.

The Society for Maternal Fetal Medicine (SMFM) and the American College of Obstetricians and Gynecologists (ACOG) strongly recommend that pregnant women be vaccinated against COVID-19, in addition to influenza, RSV, and pertussis.

Throughout the COVID-19 pandemic, pregnant women were at increased risk for severe illness from COVID-19. Prior to February 14th, 2022, there were 2,376 pregnant women infected with COVID-19 in North Dakota. Eighty-three of those cases were hospitalized, and one individual passed away. Seventy-eight (94%) of these severe cases were unvaccinated.

## What are the COVID-19 vaccine recommendations for pregnant women?

The Advisory Committee on Immunization Practices (ACIP) recommends shared clinical decision making for the use of the 2025-2026 COVID-19 vaccines for all people ages 6 months and older in the United States. This includes all adults 65 years and older and an emphasis for those 6 months through 64 years who are at an increased risk for severe COVID-19 disease according to [CDC's list](#) of COVID-19 risk factors. It's important to note that this list includes pregnant and recently pregnant women.

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## What do the experts recommend?

- The [American College of Obstetricians & Gynecologists \(ACOG\)](#) strongly recommends that all eligible persons greater than 5 years of age, including pregnant and lactating women, receive a COVID-19 vaccine.
- The [Society for Maternal-Fetal Medicine](#) recommends that pregnant and lactating women be vaccinated against COVID-19
- Maternal care experts want the best outcomes for their patients, and that means both a healthy parent and a healthy baby. Data from hundreds of thousands of reporting individuals have shown that the COVID-19 vaccine is both safe and effective when administered during pregnancy. The same data have been equally reassuring when it comes to infants born to vaccinated individuals. Moreover, COVID-19 vaccines have no impact on fertility. Pregnant women and those planning to become pregnant should feel confident in choosing vaccination to protect themselves, their infants, their families, and their communities.

### **If you are pregnant and become infected with COVID-19, you're at an increased risk of adverse pregnancy outcomes.**

Compared to unvaccinated women who never tested positive for COVID-19 during their pregnancy, unvaccinated pregnant women who have been infected with COVID-19 during pregnancy or at time of birth are at a [higher risk](#) of:

- Preterm delivery
- Giving birth to infants with lower birthweight
- Stillbirth
- A newborn's admission into the Intensive Care Unit (ICU).

In [data](#) published by the CDC, researchers found the COVID-19 vaccine to be 58% effective against COVID-19 associated emergency department and urgent care encounters for pregnant women.

Infants aged less than 6 months are at increased risk for severe COVID-19 disease but are not yet eligible for COVID-19 vaccination and these infants depend on maternal antibodies for protection. Infants less than 6 months of age are hospitalized for COVID-19 at higher rates than all groups except adults 75 years and older. Vaccination during pregnancy provides passive immunity to the infant, protecting them from [symptomatic COVID-19](#) and [hospitalization from COVID-19](#) in the first few months of life before they can be vaccinated. During the 2023–2024 respiratory virus season, mothers of [less than 5% of infants](#) hospitalized for COVID-19 were vaccinated during pregnancy. Maternal COVID-19 vaccination during pregnancy results in [significantly greater antibody](#) persistence in infants when compared to infants whose mother experienced infection during pregnancy without vaccination. This means that when a pregnant woman chooses to be vaccinated they are not only choosing to protect themselves but also their baby.

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### **If you are pregnant, you are at increased risk for severe illness from COVID-19.**

Compared to non-pregnant women with COVID-19 who are the same age, pregnant COVID-19 women are at [higher risk](#) of:

- Developing respiratory complications
- Being admitted into the ICU
- Requiring life support measures – such as a ventilator or a heart-lung machine (ECMO)
- [Dying of COVID-19](#).
- [Data](#) from a COVID-19 related surveillance network in the U.S. indicates that 34.3% of all COVID-19 associated hospitalizations between March 1, 2020, through September 30, 2022 were among pregnant women.
- Among SARS-CoV-2-positive pregnant women admitted to the hospital during April 2024–March 2025 with COVID-19-related symptoms on admission, [half had no underlying conditions](#) and most (92%) had no record of COVID-19 vaccination since July 1, 2023

### **Evidence regarding the effectiveness of COVID-19 vaccination during pregnancy continues to grow.**

COVID-19 vaccines are proving to be effective at reducing the rates of severe COVID-19 in pregnant women, and there have not been increased rates of adverse events from COVID-19 vaccines in mother and baby, including no associations with preterm births or [miscarriages](#).

- [Preliminary findings](#) show that safety and efficacy of COVID-19 vaccines are similar to those observed in non-pregnant individuals. Additionally, [research](#) out of Israel has indicated that Pfizer’s vaccine is effective at preventing infection of SARS-CoV-2, the virus that causes COVID-19, in pregnant women.
- Research has further suggested that during pregnancy, mothers may provide some level of [protection against COVID-19 to neonates](#). Additionally, breastfeeding mothers who have received a COVID-19 vaccine can share antibodies through breast milk which [help provide protection for infants against the disease](#). This is especially important as infants less than 6 months of age have the [second highest hospitalization rate](#) behind adults 75 years and older.
- [Research](#) also suggested that vaccinated pregnant women were less likely to develop moderate to severe Omicron COVID-19 than their unvaccinated counterparts. Pregnant women with moderate to severe COVID-19 also were more likely to have a preterm or caesarean birth than those with a mild infection. Pregnant women with moderate to severe COVID-19 also delivered a greater proportion of babies admitted to the neonatal ICU.
- [Research](#) further showed that during the first 6 months of the Omicron variant circulating, COVID-19 during pregnancy was associated with an increased risk of severe disease and death for pregnant women, especially those who were symptomatic and unvaccinated.

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- [Studies](#) show that during 2022-2023 maternal vaccination had 54% effectiveness against hospitalization among infants ages 0-2 months. Protection fell to 35% for ages 0-5 months, showing that similarly to adults, vaccine protection wanes over time.
- Maternal COVID-19 vaccination during pregnancy results in [significantly greater antibody](#) persistence in infants when compared to infants whose mother experienced infection during pregnancy without vaccination.
- A [2023 meta-analysis](#) incorporating 862,272 individuals found that infants whose mothers receive an mRNA COVID-19 vaccine during pregnancy were 15% less likely to be born prematurely and 20% less likely to be admitted to a neonatal ICU than infants of unvaccinated mothers.
- A [nationwide study](#) in France compared infants whose mothers received COVID-19 vaccines in the first trimester of pregnancy to those that didn't. Researchers found that there was no increased risk of congenital malformations in the babies whose mothers received COVID-19 vaccine. Additionally, they found that the rate of stillbirth was the same in both groups.

#### **COVID-19 vaccines cannot give you or your baby COVID-19.**

- mRNA (Pfizer, Moderna) and protein subunit vaccine (Novavax) are not live virus vaccines.
- The COVID-19 vaccines do NOT contain ingredients that are known to be harmful to pregnant women or to the fetus.
- Many vaccines (e.g. tetanus, diphtheria, pertussis and flu) are routinely given in pregnancy and are safe.
- These vaccines do not alter human DNA. Therefore, mRNA and protein subunit vaccines cannot cause any genetic changes to an unborn baby.

#### [What are the risks of vaccination during pregnancy?](#)

#### **COVID-19 vaccines were not tested in pregnant women. However, real-world data continue to suggest that COVID-19 vaccines remain safe and effective.**

- The Moderna and Pfizer vaccines were tested in 30,000 to 40,000 people in clinical trials, and there were no serious side effects. However, these vaccines were not specifically tested in pregnant women. Some women did become pregnant during the study. No adverse events in vaccinated pregnant women have been reported from clinical trials.
- According to Johns Hopkins as of February 17, 2022, [more than 200,000](#) women who were pregnant received COVID-19 vaccines without any safety concerns.
- Research suggests that receiving a COVID-19 vaccine during pregnancy is [not associated with an increased risk of miscarriage](#).
- Data from [American](#), [European](#), and [Canadian](#) studies showed that vaccination with an mRNA COVID-19 vaccine during pregnancy was not associated with an increased risk for

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pregnancy complications, including preterm birth, stillbirth, bacterial infection of the placenta, and excessive maternal blood loss after birth.

- An [additional study](#) conducted in Sweden and Norway showed that the vaccination of pregnant women with mRNA COVID-19 vaccines was not associated with increased risks of neonatal adverse events in their infants.
- COVID-19 vaccine safety during pregnancy have been well established. There is [no evidence of increased risk](#) of negative maternal, pregnancy, or infant outcomes associated with vaccination.
- Patients can be counseled that side effects after vaccination include injection site pain, headache, fatigue, and fever, and that the rates of these side effects are [not higher](#) in pregnant individuals
- Data support the benefit of vaccination in [reducing pregnancy complications](#), such as severe maternal morbidity, preterm birth, and stillbirth
- Additionally, developmental, and reproductive toxicity (DART) studies, which use animal models, were conducted to ensure safety of vaccines prior to use in pregnant women.

**Results from DART studies:**

- Pfizer - studies completed in Europe have shown **no safety signals**
- Moderna - found **no safety concerns**

**People getting the vaccine could experience some side effects.**

- Side effects of COVID-19 vaccination in pregnant women are generally similar to those in non-pregnant women.
- Some people have no side effects. Yet many who have received a COVID-19 vaccine have reported some side effects following vaccination.
- Common side effects reported include injection site pain, fatigue, headache, muscle pain, joint pain, and fever.
- Side effects are a sign your immune system is working.
- Serious adverse events are extremely [rare](#) following COVID-19 vaccination.
- Cases of [myocarditis](#) have been identified following receipt of mRNA COVID-19 vaccines. Myocarditis has been seen most frequently in adolescent and young adult males within 7 days of their second mRNA COVID-19 vaccine.
  - Most cases of vaccine-associated myocarditis are mild and resolve spontaneously or with nonsteroidal anti-inflammatory drugs and no known deaths or cardiac transplants have occurred.

COVID-19 vaccines are being administered under the most intensive vaccine safety monitoring effort in the United States' history. These web-based platforms give CDC scientists information about the safety of COVID-19 vaccines in real time. If any vaccine safety issues—also called adverse events—are reported, CDC scientists can quickly study them and determine if there is a safety concern with a particular vaccine. Here are some of the tools that CDC uses to keep close tabs on the safety of COVID-19 vaccines:

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- [Vaccine Adverse Event Reporting System \(VAERS\)](#): VAERS is the national system that collects reports of adverse events that happen after vaccination.
- [Vaccine Safety Datalink \(VSD\)](#): VSD utilizes data from nine different health systems in the U.S. and compares health and vaccine safety outcomes of those vaccinated to those who are not to determine if the outcome is caused by the vaccine.

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