# COVID-19 Vaccine & Pregnancy

The CDC recommends staying up to date on COVID-19 vaccinations for all people ages 6 months and older, including people who are pregnant, breastfeeding, trying to get pregnant now, might become pregnant in the future, and their partners. 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), 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 and pertussis.

Throughout the COVID-19 pandemic, pregnant women have been shown to be 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 have been hospitalized, and one individual has passed away. Seventy-eight (94%) of these severe cases were unvaccinated.

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**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 a study published by the CDC, researchers found a pregnant women's primary COVID-19 vaccine series to be 61% effective against COVID-19 hospitalization among infants aged <6 months. This means that when a pregnant woman chooses to be vaccinated they are not only choosing to protect themselves but also their baby.

**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.

**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.
- The Pfizer and Moderna mRNA COVID-19 vaccines provide strong protection against COVID-19, especially severe illness, and death.
  - ➢ The CDC has stated that COVID-19 vaccines continue to provide protection against currently circulating variants in the U.S. and that virtually all COVID-19 hospitalizations and deaths are among those *who are unvaccinated.*
- 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

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have received a COVID-19 vaccine can share antibodies through breast milk which [help provide protection for infants against the disease](#).
- [Research](#) also suggests that vaccinated pregnant women are less likely to develop moderate to serious Omicron COVID-19 then 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 serious COVID-19 also delivered a greater proportion of babies admitted to the neonatal intensive care unit.
- [Research](#) further shows 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.

**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 have not yet been 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 4,000 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.
- As of February 18, 2021, [Pfizer has begun to enroll](#) pregnant women in a clinical trial to evaluate the safety and efficacy of their COVID-19 vaccine in this group and whether infants receive any protective antibodies from their mother.
- 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 in 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 pregnancy complications, including preterm birth, stillbirth, bacterial infection of the placenta, and excessive maternal blood loss after birth.

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- A Chicago study has shown that vaccination of pregnant women with a COVID-19 vaccine prior to and during the first trimester was not associated with an increased risk of birth defects detectable on prenatal ultrasound.
- 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.**
- 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.
  - Pregnant women who experience a fever should take Tylenol (acetaminophen).
- Side effects are more common after the second dose for two-dose series (Pfizer, Moderna).
- Side effects are a sign your immune system is working.
- Serious adverse events are extremely rare following COVID-19 vaccination.

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

The CDC recommends that all people ages 6 months and older stay up to date on their COVID-19 vaccinations. This includes those who are pregnant, trying to become pregnant, recently pregnant, who may become pregnant in the future, and their partners. This also includes infants ages 6 months and older born to women who were vaccinated or had a COVID-19 infection before or during pregnancy. Most individuals 5 years and older are considered up to date on COVID-19 vaccination if they have received just one 2023-2024 COVID-19 vaccine.

## 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

- The American Society for Reproductive Medicine (ASRM) has stated, "Patients who are pregnant or who are planning to become pregnant should become vaccinated against

COVID-19 with any of the available vaccines…Currently available data support the safety of vaccination against COVID-19 prior to pregnancy and during all stages of pregnancy."

- 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.

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