



COVID-19 Vaccines While Pregnant or Breastfeeding

Updated Oct. 20, 2022

What You Need to Know

- COVID-19 vaccination is recommended for all people aged 6 months and older. This includes people who are pregnant, breastfeeding, trying to get pregnant now, or those who might become pregnant in the future. This also includes infants ages 6 months and older born to people who were vaccinated or had a COVID-19 infection before or during pregnancy.
 - If you are [pregnant or were recently pregnant](#), you are more likely to get very sick from COVID-19 compared to people who are not pregnant. Additionally, if you have COVID-19 during pregnancy, you are at increased risk of complications that can affect your pregnancy and developing baby.
 - Getting a COVID-19 vaccine can help protect you and your baby from serious health problems from COVID-19.
 - People who are pregnant should [stay up to date](#) with their COVID-19 vaccines, including getting a COVID-19 booster shot when it's time to get one.
- [Evidence](#) continues to build showing that:
 - COVID-19 vaccination during pregnancy is safe and effective.
 - COVID-19 vaccines are not associated with fertility problems in women or men.

People who are Pregnant

Although the overall risks are low, if you are [pregnant or were recently pregnant](#), you are

- More likely to get very sick from COVID-19 compared to people who are not pregnant. People who get very sick from COVID-19 may require hospitalization, admission to an intensive care unit (ICU), or use of a ventilator or special equipment to breathe. Severe COVID-19 illness can also lead to death.
- At increased risk of complications that can affect your pregnancy and developing baby. For example, COVID-19 during pregnancy increases the risk of delivering a preterm or stillborn infant.



Getting a [COVID-19 vaccine](#) can protect you and others around you from getting very sick from COVID-19, and keeping you as healthy as possible during pregnancy is important for the health of your baby.

CDC recommends COVID-19 vaccines for everyone aged 6 months and older, including people who are pregnant, breastfeeding, trying to get pregnant now, or those who might become pregnant in the future. This recommendation includes getting boosters when it is time to get one.

CDC recommendations align with those from [professional medical organizations](#) [serving people who are pregnant](#), including the:

- [American College of Obstetricians and Gynecologists](#) [serving people who are pregnant](#) ,
- [Society for Maternal Fetal Medicine](#) [serving people who are pregnant](#) , and
- [American Society for Reproductive Medicine](#) [serving people who are pregnant](#) .

Safety and Effectiveness of COVID-19 Vaccination during Pregnancy

Evidence continues to build showing that COVID-19 vaccination before and during pregnancy is safe, effective, and beneficial to both the pregnant person and the baby. The benefits of receiving a COVID-19 vaccine outweigh any potential risks of vaccination during pregnancy. Below is a brief summary of the growing evidence:



- **COVID-19 vaccines do not cause COVID-19, including in people who are pregnant or their babies.** None of the [COVID-19 vaccines](#) contain live virus. They cannot make anyone sick with COVID-19, including people who are pregnant or their babies. [Learn more about how vaccines work.](#)
- **Data on the safety of receiving an mRNA COVID-19 vaccine (Moderna or Pfizer-BioNTech), before and during pregnancy are reassuring.**
 - Data from vaccine [safety monitoring systems](#) have not found any safety concerns for people who received an mRNA COVID-19 vaccine late in pregnancy or for their babies.¹⁻⁶
 - Scientists have not found an increased risk for miscarriage among pregnant people who received an mRNA COVID-19 vaccine just before or during early pregnancy (before 20 weeks of pregnancy).^{2-4,7}
 - 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.^{4,7-9}
 - A Chicago study has shown that vaccination of pregnant people 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.¹⁰
 - The monitoring of the effect of COVID-19 vaccination during pregnancy is ongoing. CDC will continue to follow people vaccinated during all trimesters of pregnancy to better understand any effects of the vaccine on pregnancies and babies.
- **Data show that receiving an mRNA COVID-19 vaccine during pregnancy reduces the risk of severe illness and other health effects from COVID-19 for people who are pregnant.** Recent studies compared people who were pregnant and received an mRNA COVID-19 vaccine with pregnant people who did not. Scientists found that COVID-19 vaccination was effective at reducing the risk of getting very sick from COVID-19.⁹⁻¹⁵ One study that looked at people who were hospitalized during pregnancy found that most were not vaccinated.¹⁶ Other studies have shown that by reducing the risk of severe illness in pregnant people, COVID-19 vaccination might also help prevent stillbirths.¹⁷
- **Vaccination during pregnancy builds antibodies that can help protect the baby.** Much like people who are not pregnant, when people who are pregnant receive an mRNA COVID-19 vaccine, their bodies build antibodies against COVID-19. Antibodies made after pregnant people received an mRNA COVID-19 vaccine have been found in their baby's umbilical cord blood. This means COVID-19 vaccination during pregnancy can help protect babies against COVID-19 by passing


antibodies from the mother to her baby. More data are needed to determine how these antibodies may provide protection to the baby.¹⁷⁻¹⁹

- A recent small study found that at 6 months old, the majority (57%) of infants born to pregnant people who were vaccinated during pregnancy **had detectable antibodies against COVID-19**, compared with 8% of infants born to pregnant people who had COVID-19 illness during pregnancy.²⁰
- **Recent data show that completing a two-dose primary mRNA COVID-19 vaccine series during pregnancy can help protect babies younger than age 6 months from hospitalization due to COVID-19.** In these reports, the majority of babies hospitalized with COVID-19 were born to pregnant people who were not vaccinated during pregnancy.^{21, 22}
- **Another study found that receiving a booster dose with an mRNA COVID-19 vaccine during pregnancy significantly increased the levels of antibodies found in umbilical cord blood.** This means that getting a COVID-19 booster during pregnancy can help further protect babies against COVID-19.²⁴
- **No safety concerns were found in animal studies.** Studies in animals receiving a COVID-19 vaccine before or during pregnancy found no safety concerns in pregnant animals or their babies.

More clinical trials on the safety of [COVID-19 vaccines](#) and how well they work in people who are pregnant are underway or planned. Vaccine manufacturers are also collecting and reviewing data from people in the completed clinical trials who received a vaccine and became pregnant during the trial.

CDC's [v-safe After Vaccination Health Checker](#) is a voluntary smartphone-based tool that provides quick and confidential health check-ins via text messages and web surveys so you can quickly and easily share with CDC how you or your dependent feel after getting a COVID-19 vaccine.


If you enroll in v-safe and report that you are pregnant at the time of vaccination or after vaccination, CDC's v-safe [COVID-19 Vaccine Pregnancy Registry](#) staff* may contact you. If you have symptoms or health problems that concern you at any time following COVID-19 vaccination, please contact your healthcare provider.

*[Abt Associates](#)  has been contract by CDC to contact participants of CDC's v-safe COVID-19 Vaccines Pregnancy Registry.

Talk to Your Healthcare Provider

If you are pregnant, talk to your healthcare provider about COVID-19 vaccination. While such a conversation might be helpful, it is not required before vaccination. You can receive a COVID-19 vaccine, including a [booster shot](#), without any additional documentation from your healthcare provider.

Common Questions about Vaccination during Pregnancy

[What are the long-term effects on the baby when a person gets a COVID-19 vaccine during pregnancy?](#) 

Scientific studies to date have shown no safety concerns for babies born to people who were vaccinated against COVID-19 during pregnancy.^{1-4, 6, 10, 17} Based on how these vaccines work in the body, experts believe they are unlikely to pose a risk for long-term health effects. CDC continues to monitor, analyze, and disseminate information from people vaccinated during all trimesters of pregnancy to better understand effects on pregnancy and babies.

[When during pregnancy should a person get a COVID-19 vaccine?](#) 

CDC and professional medical organizations, including the American College of Obstetricians and Gynecologists and the Society for Maternal-Fetal Medicine, recommend COVID-19 vaccination at any point in pregnancy, as well as booster doses when it is time to get one. COVID-19 vaccination can protect you from getting very sick from COVID-19. Keeping yourself as healthy as possible during pregnancy is important for the health of your baby.

Which COVID-19 vaccine should pregnant people receive?



You can choose to get either an mRNA COVID-19 vaccine (Moderna or Pfizer-BioNTech) or Novavax COVID-19 vaccine. The J&J/Janssen COVID-19 vaccine is authorized for use only in [certain limited situations](#).

Can pregnant people get a COVID-19 vaccine at the same time as other vaccines?



Children, teens, and adults, including pregnant people, may get a COVID-19 vaccine and other vaccines, including a flu vaccine, at the same time.

IF YOU ARE PREGNANT AND HAVE QUESTIONS ABOUT COVID-19 VACCINE

If you would like to speak to someone about COVID-19 vaccination during pregnancy, you can contact MotherToBaby whose experts are available to answer questions in English or Spanish by phone or chat. This service is free and confidential. To reach MotherToBaby:

- Call 1-866-626-6847
- Chat live or send an email [MotherToBaby](#)

People who are Breastfeeding

CDC recommends that people who are breastfeeding get vaccinated and stay [up to date](#) with their COVID-19 vaccines, including getting a COVID-19 [booster shot](#) when it's time to get one.

Clinical trials for the COVID-19 vaccines currently used in the United States did not include people who were breastfeeding. Therefore, limited data are available on the

- Safety of COVID-19 vaccines in people who are breastfeeding
- Effects of vaccination on the breastfed baby, and
- Effects on milk production or excretion

Available data on safety of COVID-19 vaccination while breastfeeding indicate no severe reactions after the first or second dose, neither in the breastfeeding person nor the breastfed child.²⁵ There has been no evidence to suggest that COVID-19 vaccines are harmful to either people who have received a vaccine and are breastfeeding or to their babies.²⁶

COVID-19 vaccines cannot cause COVID-19 in anyone, including pregnant people and their babies. None of the COVID-19 vaccines contain live virus. Vaccines are effective at preventing COVID-19 in people who are breastfeeding. Recent reports have shown that breastfeeding people who have received mRNA COVID-19 vaccines have antibodies in their breastmilk, which could help protect their babies. More data are needed to determine what level of protection these antibodies might provide to the baby.^{20, 23-31}

[CDC also recommends COVID-19 vaccines for children aged 6 months and older.](#)

People Who Would Like to Have a Baby

CDC recommends that people who are [trying to get pregnant now or might become pregnant in the future](#), as well as their partners, get vaccinated and stay [up to date](#) with their COVID-19 vaccines, including getting a COVID-19 booster shot when it's time to get one. COVID-19 vaccines are not associated with fertility problems in women or men.³²

Vaccine Side Effects

Side effects can occur after receiving any of the available COVID-19 vaccines, especially after the second dose for vaccines that require two doses, or after a [booster](#).

People who are pregnant have not reported different side effects from people who are not pregnant after vaccination with mRNA COVID-19 vaccines (Moderna and Pfizer-BioNTech vaccines). ^{1,9}

- Fever during pregnancy, for any reason, has been associated with adverse pregnancy outcomes.
- Fever in pregnancy may be treated with acetaminophen as needed, in moderation, and in consultation with a healthcare provider.
- Learn more at [Possible Side Effects After Getting a COVID-19 Vaccine](#).

Although rare, some people have had severe allergic reactions after receiving a COVID-19 vaccine. Talk with your healthcare provider if you have a history of allergic reaction to any other vaccine or injectable therapy (intramuscular, intravenous, or subcutaneous).

Key considerations you can discuss with your healthcare provider include:






- The benefits of vaccination
- The unknown risks of developing a severe allergic reaction
- If you have an allergic reaction after receiving a COVID-19 vaccine during pregnancy, you can receive treatment for it.

To find COVID-19 vaccine locations near you: Search [vaccines.gov](#), text your ZIP code to 438829, or call 1-800-232-0233.


Related Pages

› [Allergic Reactions](#)


For Healthcare and Public Health















- [Considerations for the Use of COVID-19 Vaccines Currently Available in the U.S.](#)
- [COVID-19 Vaccination among Pregnant People](#)
- [Management of Anaphylaxis after COVID-19 Vaccination](#)
- [ACOG Vaccine Confidence Training](#) 
- [ACOG Recommendations for Vaccinating Pregnant People](#) 
- [ACOG Practice Advisory: COVID-19 Vaccination Considerations for Obstetric-Gynecologic Care](#) 
 - [ACOG video about COVID-19 vaccines for people who are pregnant](#) 
- [COVID-19 Clinical and Professional Resources](#)
- [Clinic Poster: Protect yourself and your baby from COVID-19](#)
- [Clinic Poster: Protect yourself and your baby from COVID-19 \(Español\)](#) 






More Information

[Mother to Baby: Information for people who are pregnant of breastfeeding](#) 

References

1. Shimabukuro TT, Kim SY, Myers TR, et al. Preliminary Findings of mRNA Covid-19 Vaccine Safety in Pregnant Persons. *N Engl J Med*2021; 384:2273-2282. DOI: <https://doi.org/10.1056/NEIMoa2104983>  .

2. Zauche LH, Wallace B, Smoots AN, et al. Receipt of mRNA COVID-19 vaccines and risk of spontaneous abortions. *New Engl J Med* Published online September 8, 2021; DOI: <https://doi.org/10.1056/NEJMc2113891> 
3. Kharbanda EO, Haapata J, DeSilva M, et al. Spontaneous Abortion Following COVID-19 Vaccination During Pregnancy. *JAMA*. Published online September 8, 2021. DOI: <https://doi.org/10.1001/jama.2021.15494> 
4. Lipkind HS, Vazquez-Benitez G, DeSilva M, et al. Receipt of COVID-19 Vaccine During Pregnancy and Preterm or Small-for-Gestational-Age at Birth — Eight Integrated Health Care Organizations, United States, December 15, 2020–July 22, 2021. *MMWR Morb Mortal Wkly Rep* 2022;71:26–30. DOI: <https://dx.doi.org/10.15585/mmwr.mm7101e1> 
5. Moro PL, Olson CK, Clark E, et al. Post-authorization surveillance of adverse events following COVID-19 vaccines in pregnant persons in the vaccine adverse event reporting system (VAERS), December 2020 – October 2021. *Vaccine*. Published online April 12, 2022. DOI: <https://doi.org/10.1016/j.vaccine.2022.04.031> 
6. Sadarangani M, Soe P, Shulha HP, et al. Safety of COVID-19 vaccines in pregnancy: a Canadian National Vaccine Safety (CANVAS) network cohort study [published online ahead of print, 2022 Aug 11]. *Lancet Infect Dis*. 2022;S1473-3099(22)00426-1. doi:10.1016/S1473-3099(22)00426-1
7. Magnus MC, Gjessing HK, Eide HN, et al. Covid-19 Vaccination during Pregnancy and First-Trimester Miscarriage. *New Engl J Med* 2021; 385:2008-2010. DOI: <https://doi.org/10.1056/NEJMc2114466> 
8. Fell DB, Dhinsa T, Alton GD, et al. Association of COVID-19 Vaccination in Pregnancy With Adverse Peripartum Outcomes. *JAMA*. 2022;327(15):1478-1487. DOI: <https://doi.org/10.1001/jama.2022.4255> 
9. Badell ML, Dude CM, Rasmussen SA, Jamieson DJ. Covid-19 vaccination in pregnancy. *BMJ*. 2022;378:e069741. Published 2022 Aug 10. doi:10.1136/bmj-2021-069741
10. Ruderman RS, Mormol J, Trawick E, et al. Association of COVID-19 Vaccination During Early Pregnancy With Risk of Congenital Fetal Anomalies. *JAMA Pediatr*. 2022;176(7):717-719. doi:10.1001/jamapediatrics.2022.0164
11. Goldshtein I, Nevo D, Steinberg DM, et al. Association Between BNT162b2 Vaccination and Incidence of SARS-CoV-2 Infection in Pregnant Women. Published online July 12, 2021. DOI: <https://doi.org/10.1001/jama.2021.11035> 
12. Dagan N, Barda N, Biron-Shental T, et al. Effectiveness of the BNT162b2 mRNA COVID-19 vaccine in pregnancy. *Nat Med*. Published online September 7, 2021. DOI: <https://doi.org/10.1038/s41591-021-01490-8> 
13. Theiler RN, Wick M, Mehta R, et al. Pregnancy and birth outcomes after SARS-CoV-2 vaccination in pregnancy. *Am J Obstet Gynecol* 2021 Nov; 3(6): 100467
14. Morgan JA, Biggio JR, Martin JK, et al. Maternal Outcomes After Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) Infection in Vaccinated Compared With Unvaccinated Pregnant Patients. *Obstetrics & Gynecology*: January 2022 – Volume 139 – Issue 1 – p 107-109. DOI: <https://doi.org/10.1097/AOG.0000000000004621> 
15. Stock SJ, Carruthers J, Calvert C, et al. SARS-CoV-2 infection and COVID-19 vaccination rates in pregnant women in Scotland. *Nat Med*(2022). DOI: <https://doi.org/10.1038/s41591-021-01666-2> 
16. Sekkarie A, Woodruff R, Whitaker M, et al. Characteristics and treatment of hospitalized pregnant women with Coronavirus Disease 2019, COVID-19 [published online ahead of print, 2022 Aug 12]. *Am J Obstet Gynecol MFM*. 2022;100715. doi:10.1016/j.ajogmf.2022.100715
17. Prasad, S., Kalafat, E., Blakeway, H. et al. Systematic review and meta-analysis of the effectiveness and perinatal outcomes of COVID-19 vaccination in pregnancy. *Nat Commun* 13, 2414 (2022). <https://doi.org/10.1038/s41467-022-30052-w>
18. Yang YJ, Murphy EA, Singh S, et al. Association of Gestational Age at Coronavirus Disease 2019 (COVID-19) Vaccination, History of Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) Infection, and a Vaccine Booster Dose With Maternal and Umbilical Cord Antibody Levels at Delivery. *Obstetrics & Gynecology*: 2021. DOI: <https://doi.org/10.1097/AOG.0000000000004693> 
19. Nir O, Schwartz A, Toussia-Cohen S, et al. Maternal-neonatal transfer of SARS-CoV-2 immunoglobulin G antibodies among parturient women treated with BNT162b2 messenger RNA vaccine during pregnancy. *Am J Obstet Gynecol* 2022; 4(1): <https://doi.org/10.1016/j.ajogmf.2021.100492> 
20. Gray KJ, Bordt EA, Atyeo C, et al. Coronavirus disease 2019 vaccine response in pregnant and lactating women: a cohort study. *Am J Obstet Gynecol*. Published online March 25, 2021. DOI: <https://doi.org/10.1016/j.ajog.2021.03.023> 
21. Shook LL, Atyeo CG, Yonker LM, et al. Durability of Anti-Spike Antibodies in Infants After Maternal COVID-19 Vaccination or Natural Infection. *JAMA*. Published online February 07, 2022. DOI: <https://doi.org/10.1001/jama.2022.1206> 
22. Halasa NB, Olson SM, Staat MA, et al. Vaccine Effectiveness Against COVID-19 Hospitalization in Infants <6 Months of Age from Maternal mRNA COVID-19 Vaccination — United States, July 2021– January 2022 *MMWR Morb Mortal Wkly Rep* 2022;71: 264–270. DOI: <https://dx.doi.org/10.15585/mmwr.mm7107e3> 

23. Halasa NB, Olson SM, Staat MA, et al. Maternal Vaccination and Risk of Hospitalization for Covid-19 among Infants. *N Engl J Med*. 2022;387(2):109-119. doi:10.1056/NEJMoa2204399
24. Munoz FM, Posavad CM, Richardson BA, et al. COVID-19 booster vaccination during pregnancy enhances maternal binding and neutralizing antibody responses and transplacental antibody transfer to the newborn. *medRxiv*. 2022 Jun 13 (Preprint) DOI: <https://doi.org/10.1101/2022.06.13.22276354>
25. Muyldermans J, De Weerd L, De Brabandere L, Maertens K, Tommelein E. The Effects of COVID-19 Vaccination on Lactating Women: A Systematic Review of the Literature. *Front Immunol*. 2022;13:852928. Published 2022 Apr 8. doi:10.3389/fimmu.2022.852928
26. Drugs and Lactation Database (LactMed) [Internet]. Bethesda (MD): National Library of Medicine (US); 2006-. COVID-19 Vaccines. [Updated 2022 Sep 19]. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK565969/>
27. Perl SH, Uzan-Yulzari A, Klainer H, et al. SARS-CoV-2-Specific Antibodies in Breast Milk After COVID-19 Vaccination of Breastfeeding Women. 2021;325(19):2013–2014. DOI: <https://doi.org/10.1001/jama.2021.5782> 
28. Kelly JC, Carter EB, Raghuraman N, et al. Anti-severe acute respiratory syndrome coronavirus 2 antibodies induced in breast milk after Pfizer-BioNTech/BNT162b2 vaccination. *Am J Obstet Gynecol*. 2021;225(1):101-103. DOI: <https://doi.org/10.1016/j.ajog.2021.03.031> 
29. Jakuszko K, Kościelska-Kasprzak K, Żabińska M, et al. Immune Response to Vaccination against COVID-19 in Breastfeeding Health Workers. *Vaccines*. 2021; 9(6):663. DOI: <https://doi.org/10.3390/vaccines9060663> 
30. Baird JK, Jensen SM, Urba WJ, et al. SARS-CoV-2 Antibodies Detected in Mother's Milk Post-Vaccination. *Journal of Human Lactation*. 2021;37(3):492-498. DOI: <https://doi.org/10.1177/08903344211030168> 
31. Charepe N, Goncalves J, Juliano M, et al. COVID-19 mRNA vaccine and antibody response in lactating women: a prospective cohort study. *BMC Pregnancy Childbirth* 2021;(21): 632. DOI: <https://doi.org/10.1186/s12884-021-04051-6> 
32. Zaçe D, La Gatta E, Petrella L, Di Pietro ML. The impact of COVID-19 vaccines on fertility-A systematic review and meta-analysis. *Vaccine*. 2022;40(42):6023-6034. Doi:10.1016/j.vaccine.2022.09.019

Last Updated Oct. 20, 2022