Royal College of Obstetricians & Gynaecologists

COVID-19 vaccines, pregnancy and breastfeeding

These Q&As were updated on Friday 7 May 2021 and will be reviewed as new information and advice emerges. For general information on pregnancy and COVID-19 visit our main Q&A page.

Key messages

- The latest advice from the Joint Committee on Vaccination and Immunisation (JCVI) is that COVID-19 vaccines should be offered to pregnant women at the same time as the rest of the population, based on their age and clinical risk group. Women should discuss the benefits and risks of having the vaccine with their healthcare professional and reach a joint decision based on individual circumstances.
- You should not stop breastfeeding in order to be vaccinated against COVID-19.
- Women trying to become pregnant do not need to avoid pregnancy after vaccination and there is no evidence to suggest that COVID-19 vaccines will affect fertility.
- Having a COVID-19 vaccine will not remove the requirement for employers to carry out a risk assessment for pregnant employees, which should follow the rules set out in this government guidance.
- See our statement in response to change in guidance around the Oxford AstraZeneca vaccine

Resources to help with decision making

If you are pregnant and have been offered a COVID-19 vaccine, the decision whether to have the vaccination is your choice. You may find the following resources helpful:

- Information leaflet and decision aid on COVID-19 vaccination in pregnancy
- UK Teratology Information Service (UKTIS) monograph on non-live vaccination in pregnancy
- Public Health England information for women of childbearing age, currently pregnant, planning a pregnancy or breastfeeding

Q. Which pregnant women are being offered a COVID-19 vaccine?

The JCVI updated their advice on 16 April 2021 and are now advising that all pregnant women should be offered the COVID-19 vaccine at the same time as the rest of the population, based on their age and clinical risk group.

Previously their advice was that pregnant women at high risk of exposure to the virus or with high risk medical conditions should consider having a COVID-19 vaccine in pregnancy (priority groups 1, 2, 4 and 6).

As of 16 April, COVID-19 vaccination is offered to the following groups of pregnant women:

- Those with high risk medical conditions who have a greater risk of severe illness from COVID-19
- Health or social care workers – who are at very high risk of catching COVID-19
- Individuals considered at high risk of COVID-19 because of health and personal factors that include age, ethnicity, BMI and underlying health conditions (this includes pregnant women in priority group 6)
- Women diagnosed with gestational diabetes in pregnancy or pregnant women with a BMI of more than 40
- Individuals aged 45 or over

As COVID-19 vaccines are made available to younger people in the general population, they will also be made available to pregnant women in those age groups.

The benefits and risks of COVID-19 vaccination in pregnancy should be discussed on an individual basis. The discussion should include acknowledgement that, while there is no known risk associated with giving other non-live vaccines to pregnant women, there are no specific data as yet about the safety of COVID-19 vaccination in pregnancy.

If you are eligible for and have been offered a COVID-19 vaccine, the decision whether to have the vaccination in pregnancy is your choice. Make sure you understand as much as you can about COVID-19 and about the vaccine and discuss your options with a trusted source like your doctor or midwife.

Q. I am a pregnant healthcare worker and have been offered a COVID-19 vaccination, what should I do?

Since 31 December 2020, pregnant women who are frontline health or social care workers, including carers in a residential home, have been able to discuss the option of vaccination. This is because the risk of exposure to COVID-19 may be higher, even if they have a low risk of experiencing complications if they are otherwise well.

If you are eligible for and have been offered a COVID-19 vaccine, the decision whether to have the vaccination in pregnancy is your choice.

The risks and benefits of vaccination will need to be assessed on an individualised basis. This may include factors such as your ethnicity, whether you are overweight or obese, any underlying health conditions you may have as well as occupational exposure and ability to socially distance at work.

Public health advice is that, until further data are available, those who are vaccinated should continue to observe all current guidance and transmission reduction measures, including social distancing and the wearing of personal protective equipment (PPE).

If you are a pregnant health or social care worker, having a vaccine will not change your occupational risk assessment. This includes not working in high-risk areas if you are 28 weeks pregnant and beyond, or if you have an underlying health condition that puts you at a greater risk of severe illness from COVID-19 at any gestation.

Q. What is the advice on going to work if I am pregnant and have been vaccinated?

According to the government's advice for pregnant employees, employers must carry out a risk assessment for pregnant employees taking into consideration the RCOG/RCM Guidance on Coronavirus in pregnancy. Employers are still required to carry out a risk assessment whether an employee has been vaccinated or not.

Q. Is COVID-19 vaccination safe and effective in pregnant women?

The large clinical trials which showed that COVID-19 vaccines are safe and effective did not include pregnant women. This means there is limited information about the effects of COVID-19 vaccination in pregnancy. A very small number of women became pregnant after they received the vaccine in a trial. There was no sign of problems, but the numbers are too small to be certain.

As the COVID-19 vaccines were not tested in pregnant women, we cannot say for sure that they work as well in pregnant women as they do in other adults. However, there is no reason to think that the vaccines will not protect pregnant women effectively against COVID-19. Similarly, there is no reason to think that the vaccine will have worse side-effects in pregnant women.

There is limited UK data on COVID-19 vaccination and pregnancy. However, robust real-world data from the United States – where around 90,000 pregnant women have been vaccinated mainly with mRNA vaccines, such as Pfizer-BioNTech and Moderna – have not raised any safety concerns.

Therefore, the JCVI advises that it is preferable for the Pfizer-BioNTech or Moderna mRNA vaccines to be offered to pregnant women in the UK, where available.

In non-pregnant individuals, the COVID vaccines are known to have mild and short-lasting side effects, such as a fever or muscle ache lasting a day or two. More recently, there have been reports of rare but serious blood clots after vaccination. Up to 31st of March 2021, over 20 million doses of the AstraZeneca vaccine had been given in the UK (to non-pregnant individuals). There have been 79 reports of serious thrombosis (blood clots) following vaccination, meaning that about four people have had these blood clots for every million doses of vaccine given. There is therefore an extremely low risk of the serious side effect of blood clots with this vaccine.

Regarding this, the JCVI has stated that "there are currently no known risk factors for this extremely rare condition, which appears to be an idiosyncratic reaction on first exposure to the AstraZeneca COVID-19 vaccine". This means that someone is not necessarily at higher risk of this serious side effect just because they have a higher risk of other blood clots, for example because they are pregnant. Because this side effect is so rare, however, and has not been reported in any pregnant women, we can't know the exact risk in pregnancy.

Q. How can you say the COVID-19 vaccines won't affect pregnancy when there isn't any data?

In the absence of data, we cannot be 100% sure that vaccines will not cause adverse events in pregnancy. However, this uncertainty needs to be weighed against the risk of COVID-19 in pregnancy.

COVID-19 vaccines do not contain ingredients that are known to be harmful to pregnant women or to a developing baby. Studies of the vaccines in animals to look at the effects on pregnancy have shown no evidence that the vaccine causes harm to the pregnancy or to fertility.

The COVID-19 vaccines that we are using in the UK are not 'live' vaccines and so cannot cause COVID-19 infection in you or your baby. Vaccines based on live viruses are avoided in pregnancy in case they infect the developing baby and cause harm. However, non-live vaccines have previously been shown to be safe in pregnancy (for example, flu and whooping cough). Pregnant women are offered other non-live vaccines, such as those against flu.

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Therefore, the JCVI advises that it is preferable for the Pfizer-BioNTech or Moderna mRNA vaccines to be offered to pregnant women in the UK, where available.

Q. What are the benefits of vaccination in pregnancy?

Vaccination is effective in preventing COVID-19 infection. More than half of women who test positive for COVID-19 in pregnancy have no symptoms at all but some pregnant women can get life-threatening illness from COVID-19, particularly if they have underlying health conditions.

In the later stages of pregnancy women are at increased risk of becoming seriously unwell with COVID-19. If this happens, it is about three times more likely that your baby will be born prematurely, which can affect their long-term health.

The benefits of vaccination include:

- reduction in severe disease for the pregnant woman
- reduction in the risk of prematurity for the baby
- potentially reducing transmission to vulnerable household members

Q. When in pregnancy can I have the vaccine?

The vaccine should work whatever the stage of pregnancy you are in. The JCVI advises that women do not need a pregnancy test before vaccination, and that women planning a pregnancy do not need to delay pregnancy after vaccination.

However, as COVID-19 has more serious complications in later pregnancy, some women may choose to delay their vaccine until after the first 12 weeks (which are most important for the baby's development) and plan to have the first dose at any time from 13 weeks onwards.

As pregnant women are more likely to be seriously unwell and have a higher risk of their baby being born prematurely if they develop COVID-19 in their third trimester (after 28 weeks), women may wish to have the vaccine before their third trimester.

Q. Does it matter which vaccine I have?

The latest information from JCVI advice published on 16 April 2021 advises that it is preferable for pregnant women in the UK to be offered the Pfizer-BioNTech or Moderna mRNA vaccines, where available.

This is because these vaccines have been given to around 90,000 pregnant women in the United States and the data have not raised any safety concerns.

Below is more information on the AstraZeneca vaccine. This information may be less relevant for pregnant women now that the JCVI recommends that the Pfizer-BioNTech or Moderna vaccines are offered in pregnancy, where available.

Following the updated JCVI advice issued on 8 April on the use of the AstraZeneca vaccine, the RCOG has considered the impact of this information for pregnant women and those undergoing fertility treatment.

If you have been offered COVID-19 vaccination, you should discuss the benefits and risks with a healthcare professional, including discussion of potential side effects. For pregnant women, those who have recently had a baby or those about to start – or who have started – fertility treatment, this discussion should cover the different types of vaccine available, and possible side effects including the extremely rare side effect of blood clots. The benefit/risk balance may be different for those who are healthy and receiving the vaccine as a health or social care worker, compared to those at increased risk of COVID-19 complications.

If a woman chooses to have a particular vaccine, for example to avoid vaccination with the Oxford AstraZeneca vaccine, then they should be able to choose to do so.

The JCVI statement noted: 'There are currently no known risk factors for this extremely rare condition, which appears to be an idiosyncratic reaction on first exposure to the AstraZeneca COVID-19 vaccine.' The advice to offer an alternative vaccine for those under 30 years old is based on the relative benefits and risks of the vaccine in each age group, as represented in the joint briefing slides.

Q. I have already had one dose of the AstraZeneca vaccine prior to or earlier in my pregnancy. I am now pregnant and due my second dose. What should I do?

If you have received a first dose of AstraZeneca vaccine, and subsequently become pregnant, you should be given the opportunity to discuss with your obstetrician, midwife or GP, your decision on whether to have your second dose. Current JCVI advice states: *'To date, there are no reports of the extremely rare thrombosis/thrombocytopenia events following receipt of the second dose of the AstraZeneca COVID-19 vaccine. All those who have received a first dose of the AstraZeneca COVID-19 vaccine should continue to be offered a second dose of AstraZeneca COVID-19 vaccine, irrespective of age. The second dose will be important for longer lasting protection against COVID-19.'*

There are no reported concerns with the AstraZeneca vaccine in pregnancy, but there is less experience in pregnancy with this vaccine than with the Pfizer and Moderna vaccines, which has led to the JCVI recommending a preference for Pfizer-BioNTech or Moderna.

There are no clear data on whether mixing different vaccines alters the efficacy or safety profile of the vaccines.

Currently you can choose whether to have the second dose of AstraZeneca in pregnancy (as typically given), or defer until after pregnancy - however a second dose is recommended to ensure maximum protection against COVID-19.

If you are unsure about receiving the second dose of AstraZeneca, you should arrange to speak to an obstetrician or midwife or GP and use the RCOG's decision aid on vaccination in pregnancy to support your choice.

Q. How is COVID-19 vaccination being monitored in pregnancy?

In the UK, healthcare professionals who meet a woman who has been vaccinated in pregnancy should ensure this is centrally recorded to their UK Obstetric Surveillance Service (UKOSS) reporter for the joint UKOSS/UKTIS study (for women vaccinated up to and including 31 March 2021).

Pregnant women who have been vaccinated (up to and including 31 March 2021) can report directly to UKTIS via their telephone line 0344 892 0909 (open 9-5pm Mon-Fri) or to:

- MHRA Yellow Card Vaccine Monitor

Another reporting mechanism for healthcare professionals is the PHE Inadvertent Vaccination in Pregnancy (VIP) system.

Work is ongoing to ensure that pregnancy status is recorded in the national vaccination programme to make sure pregnant women and their babies' outcomes can be followed up.

Q. Can I participate in a vaccine trial or vaccine study while I am pregnant?

There are currently plans for three trials of COVID-19 vaccines in pregnant women. As of mid-April 2021, none of these studies have started in the UK, so pregnant women cannot yet volunteer to be part of a trial of COVID-19 vaccines in pregnancy.

- A study is planned by the vaccine manufacturer Janssen, and is called HORIZON1. In that study, all the women who participate in the trial will receive the vaccine (no one will get a placebo). This study aims to recruit 400 women worldwide (including about 50 in the UK). The HORIZON1 study is currently paused while reports of rare blood clots with this vaccine are investigated.
- Another study is planned in the UK by the vaccine manufacturer Pfizer, and has already started in the US. Women who participate in this study will be randomly assigned to receive either the vaccine or a placebo (this is a randomised controlled trial, or RCT). The women who received the placebo will then be offered the vaccine once they give birth, so that all the women participating will have received the vaccine either in pregnancy or shortly after giving birth. It is hoped that the UK part of the trial will start in May 2021 at 14 sites across the country. The Pfizer study aims to include 4,000 women worldwide, including 235 women in the UK.
- There are plans for a pragmatic trial of different vaccines in pregnant women, and full details of that trial will be available shortly.

We will add more information on how to participate in these trials as it becomes available.

Q. Are breastfeeding women being offered COVID-19 vaccination?

The JCVI advice published on 30 December 2020 says there is no known risk in giving available COVID-19 vaccines to breastfeeding women.

Breastfeeding women will now be offered vaccination at the time when they become eligible.

Although there is lack of safety data for these specific vaccinations in breastfeeding, there is no plausible mechanism by which any vaccine ingredient could pass to your baby through breast milk. You should therefore not stop breastfeeding in order to be vaccinated against COVID-19.

Q. Should I have a COVID-19 vaccine if I plan to become pregnant?

The most recent JCVI advice says that women who are trying to become pregnant do not need to avoid pregnancy after vaccination.

If you are in one of the groups offered the vaccine, getting vaccinated before pregnancy will help prevent COVID-19 infection and its serious consequences. In some cases, women will need to make a decision about whether to delay pregnancy until after the vaccine becomes available to them.

The JCVI advice around vaccines in younger age groups should be followed for those who are planning to get pregnant. This is currently that non-pregnant individuals under the age of 30 without underlying health conditions should be offered an alternative to the AstraZeneca vaccine (if they are eligible for vaccination). Currently, the alternatives are the Pfizer-BioNTech vaccine and the Moderna vaccine. For non-pregnant individuals over the age of 30, or those with underlying health conditions that make them more susceptible to COVID-19, the JCVI recommends prompt vaccination, including with the AstraZeneca vaccine.

Q. I am currently trying to get pregnant. I have had the first dose of COVID-19 vaccination, should I delay pregnancy until after the second dose?

One dose of COVID-19 vaccination gives you good protection against infection, but it is thought that this is not long-lasting and may not protect you for the whole of pregnancy. If possible, we recommend that you complete the course of vaccination before you become pregnant.

If you find out you are pregnant after you have had one dose of the vaccine (between doses), it is your choice to either have the second dose after the recommended interval, to wait until after 12 weeks of pregnancy (which are most crucial for the baby's development) or defer until after pregnancy. Your decision should take into account your personal exposures to and risks from COVID-19. You can discuss these risks with a doctor or your midwife, and you may want to use the RCOG and RCM decision tool to assist you in deciding what to do next.

Q. Does the COVID-19 vaccine affect fertility?

There is no evidence to suggest that COVID-19 vaccines will affect fertility.

There is no biologically plausible mechanism by which current vaccines would cause any impact on women's fertility. Evidence has not been presented that women who have been vaccinated have gone on to have fertility problems.

Likewise, the theory that immunity to the spike protein could lead to fertility problems is not supported by evidence. Most people who contract COVID-19 will develop antibody to the spike and there is no evidence of fertility problems in people who have already had COVID-19.

As more evidence becomes available on the safety of each vaccine (from following up people for longer), we will update our advice.

More information on COVID-19 vaccines, fertility and fertility treatment is available from the British Fertility Society (BFS) and Association of Reproductive and Clinical Scientists (ARCS).

Q. What if I find out I am pregnant after I have had the COVID-19 vaccine?

If you receive a dose of the vaccine before finding out you are pregnant, or unintentionally while you are pregnant, you should be reassured that it will not affect the vaccine's success and the risk of harm to your baby is very low.

If you find out you are pregnant after you have had one dose of the vaccine (between doses), it is your choice to either have the second dose after the recommended interval, to wait until after 12 weeks of pregnancy (which are most crucial for the baby's development) or defer until after pregnancy. Your decision should take into account your personal exposures to and risks from COVID-19. You can discuss these risks with a doctor or your midwife, and you may want to use the RCOG and RCM decision tool to assist you in deciding what to do next.

Q. Are vaccines normally used in pregnancy?

Pregnant women and women who are breastfeeding are already routinely and safely offered vaccines in pregnancy, for example to protect against influenza and whooping cough. Many of these vaccines also protect their babies from infection. These vaccines, like the COVID-19 vaccines, are non-'live' vaccines, which are generally considered safe in pregnancy. However, specific evidence regarding the safety of the COVID-19 vaccination in pregnancy is not yet available.

The RCOG and RCM, with leading academics across the UK, are calling on the UK government to fund research studies to establish the suitability of approved COVID-19 vaccines in pregnant and breastfeeding women. These pages will be updated as soon as we have any more information. We continue to urge pregnant women to follow government advice about social distancing, to get their free flu vaccination to protect them and their baby against flu in winter, and to get the whooping cough vaccine to protect their newborn baby.

Q. What should I do if I develop a reaction to the vaccine?

Like all medicines, vaccines can cause side effects. These are usually mild and do not last long. Very common side effects in the first day or two after your vaccine include: pain or tenderness in your arm where you had your injection, feeling tired and headaches, aches and chills.

You may also have flu like symptoms and experiences episodes of shivering or shaking for a day or two. If you develop a fever (your temperature is 38C or above) you can rest and take paracetamol, which is safe in pregnancy.

You can report any suspected side effects through the Yellow Card scheme, which allows the Medicines and Healthcare Regulatory Agency (MHRA) to monitor side effects and ensure vaccines are safe.

If you are concerned about your symptoms, you can contact your GP or maternity team for further advice.

There have been reports of an extremely rare clotting problem associated with people receiving the Oxford/AstraZeneca vaccine. If you experience any of the following from around 4 days to 4 weeks after vaccination you should seek medical advice urgently:

- a new, severe headache which is not helped by usual painkillers or is getting worse
- an unusual headache which seems worse when lying down or bending over or may be accompanied by:
    - blurred vision, nausea and vomiting
    - difficulty with your speech,
    - weakness, drowsiness or seizures
- new, unexplained pinprick bruising or bleeding
- shortness of breath, chest pain, leg swelling or persistent abdominal pain