PARENTS PACK

MONTHLY UPDATES ABOUT VACCINES ACROSS THE LIFESPAN

FEATURE ARTICLE — MAKING VACCINE DECISIONS DURING PREGNANCY: WHAT TO KNOW

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Four vaccines are recommended during pregnancy: influenza (flu), COVID-19, Tdap and RSV. Some might wonder why certain vaccines are recommended during pregnancy. The answer is to protect babies, their moms or both. In some cases, the recommendation is focused on protecting the unborn baby. In other cases, the focus is on protecting the pregnant person because changes to the body during pregnancy increase the risk of experiencing severe disease if infected. In all cases, protection is the goal, so let's take a closer look at not only on whom the recommendation is focused but also the recommended timing regarding when these vaccines should be received and why it matters.

Influenza (flu)

Influenza vaccine is recommended for most people starting at 6 months of age, but it is particularly important during pregnancy because changes to the body during pregnancy, especially changes in the lungs, increase the risk of experiencing severe disease and complications if infected. Studies have shown that those who are pregnant are more likely to be hospitalized from influenza than those of the same age who are not pregnant.

If the baby will be born during influenza season, then receipt of this vaccine during pregnancy also helps protect the baby during the first months of life before they can be vaccinated against influenza. Specifically, if the maternal vaccination was administered at least two weeks before delivery, the baby is likely to have influenza-specific antibodies circulating in their blood from transfer across the placenta. Likewise, if the baby is breastfed, they will also get antibodies that way.

Vaccine timing considerations

Updated influenza vaccines typically arrive in late summer or early fall. Those in their third trimester should get the vaccine as soon as it is available, even if this means getting influenza vaccine in July or August. This allows time for the immune response to develop before delivery. As a result, the baby will be more likely to be protected in the first six months of life before they can get vaccinated; this is particularly important since they will remain vulnerable during a period when influenza is typically circulating.

Those in the first and second trimester should wait until the fall to receive their vaccine. Because influenza vaccine protection wanes throughout the course of influenza season, you may want to wait until at least October if influenza is not yet circulating in your community. Because it takes a couple of weeks for immunity to develop, you don't want to wait until disease levels are high, but you also want to ensure your own or your baby's protection during the middle of influenza season (depending on your due date). With this said, if you have an opportunity to be vaccinated in September, it is still better to get the vaccine a bit earlier than to take the chance of not getting vaccinated at all because even if antibody levels wane, other components of the immune response will offer some protection against severe disease.

COVID-19

Like influenza, COVID-19 vaccines benefit both mother and child. During pregnancy, those with COVID-19 are at increased risk of experiencing severe disease, including hospitalization. They are also at increased risk for preterm labor or stillbirth if infected.

Findings have also confirmed that, like influenza vaccination, receipt of the COVID-19 vaccine during pregnancy affords protection to the baby during the first six months of life before they can get their own vaccine. While COVID-19 has proven most dangerous for certain groups of adults, infants and young children can be hospitalized and die from COVID-19. Given that most people now have some immunity, the virus will target the most vulnerable people in a population. This is demonstrated by the fact that children less than 5 years of age, a group with abysmal COVID-19 vaccination rates, is the second most hospitalized group in the US (after the elderly). The difference between the elderly and young children when it comes to COVID-19 is that the elderly are highly vaccinated, but their immune systems aren't as good at protecting them from this virus, whereas for young children, the high rates of hospitalization are the direct result of low levels of immunity. Relying on maternal vaccination until 6 months of age and then having the baby immunized against COVID-19 could decrease hospitalizations among children.

Vaccine timing considerations

Updated COVID-19 vaccines typically arrive in the fall, but unlike influenza virus, which arrives seasonally, the virus that causes COVID-19 has continued to circulate year-round. If the latest version of COVID-19 vaccine has not been received, it can be given anytime during pregnancy, and the updated version should be received as soon as it becomes available in the fall, regardless of trimester of pregnancy.

See an infographic with a summary of this info:

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Tdap

Tdap vaccine protects against tetanus, diphtheria and pertussis (or whooping cough). The primary reason for the Tdap recommendation during pregnancy is to protect the baby from pertussis. Pertussis, represented by the "p" in Tdap, is a respiratory infection that causes severe bouts of coughing that can last for months. Young infants sometimes turn blue during these coughing spells as they struggle to breathe, and for some, this struggle becomes deadly.

Infants are recommended to get a vaccine called DTaP. Like the Tdap vaccine given during pregnancy, DTaP also protects against tetanus, diphtheria and pertussis. Unfortunately, however, most infants will not be protected until they get three doses of DTaP, recommended at 2, 4 and 6 months of age. To afford protection during the gap between birth and receipt of the three doses of DTaP, the Tdap vaccine has been recommended during pregnancy (See "Vaccine timing considerations" for more details.). After receipt of the Tdap vaccine, maternal antibody levels against pertussis will increase and be shared with the infant through the placenta and in breast milk.

Earlier recommendations suggested "cocooning" the baby by ensuring that any teens and adults who would be around the baby get a dose of Tdap vaccine, but this recommendation was changed to focus on giving the vaccine during pregnancy when the data indicated that cocooning was not as effective as ensuring that maternal antibodies were passed to the baby.

Since immunity will be enhanced by receipt of the vaccine, the pregnant person will benefit from the vaccination as well, but as mentioned previously, the primary reason for this vaccination is to protect the baby.

Vaccine timing considerations

A dose of Tdap vaccine is recommended during every pregnancy between 27 and 36 weeks of gestation. This timing allows for the maternal immune response to develop and the antibodies to be transferred to the baby in the period after vaccination and before delivery.

Respiratory syncytial virus (RSV)

Like Tdap, the main reason for this vaccination is to protect the baby. Most adults have some immunity to RSV, so they may get cold-like symptoms if infected, but similar to COVID-19, this infection is most detrimental for young infants and older adults. Importantly, unlike COVID-19 and influenza, pregnancy does not increase a person's risk of experiencing severe disease if infected with RSV. For these reasons, this vaccine differs from each of the other vaccines recommended during pregnancy as the recipient does not gain much direct benefit.

This vaccine also differs from the other vaccines recommended during pregnancy because parents have a second option for protecting the baby. Instead of the pregnant parent getting the RSV vaccine, parents may decide to protect the baby with a monoclonal antibody, called nirsevimab (brand name: Beyfortus), which can be given up to 8 months of age. The timing of receipt depends on when the child is born relative to RSV season (See "Vaccine timing considerations.").

Some parents wonder which option is better, and that will be something that each family needs to decide for themselves. However, a few considerations may be helpful:

- **One not both** — Most infants will not gain an additional benefit from both a maternal vaccination and receipt of nirsevimab. Likewise, most insurances won't cover both. If the vaccine is given during pregnancy, and delivery occurs at least two weeks after the vaccination, the infant does not need nirsevimab.
- **Supply** — In 2023, when nirsevimab was first licensed, a shortage occurred. The result was that many babies could not get it. In 2024, supply was not an issue.
- **Side effects** — The clinical trials of a similar product for vaccination during pregnancy suggested that the vaccine could lead to premature births. The current vaccine has not been found to have this issue, but to reduce the chance of early labor resulting in untoward effects for the baby, receipt of the RSV vaccine is timed for later in pregnancy (See "Vaccine timing considerations."). Likewise, if a pregnant person develops fever (caused by anything, including a vaccine), they should be sure to take acetaminophen because a fever during pregnancy can harm an unborn baby. Other side effects of the vaccine can include pain at the injection site, tiredness, headache, nausea, diarrhea and muscle or joint pain. On the other hand, the product for infants causes pain, redness and swelling at the injection site and, in a small number of babies (about 1 of every 100 babies), a rash can develop.
- **Protection** — In clinical trials about 5 or 6 of every 10 babies were protected following receipt of the vaccine during pregnancy, and about 7 or 8 of every 10 babies were protected following receipt of the monoclonal antibody.
- **Vaccination status** — Individuals who received RSV vaccine during a previous pregnancy are not recommended to get another dose. Instead, their second infant would be recommended to receive nirsevimab.

Vaccine timing considerations

RSV season begins in most parts of the US around October and lasts until the spring, but you can check with your healthcare provider or local health department to confirm if this is the case in your area. This seasonality informs timing of either the vaccine given during pregnancy or infant receipt of nirsevimab:

- **Vaccine during pregnancy** — The vaccine should be given between 32 and 36 weeks of gestation if this gestational timing occurs between October and January. If you receive the vaccine and deliver less than two weeks later, the baby would not be considered protected and should get the monoclonal antibody. If you are between 32 and 36 weeks outside of the RSV season, the vaccine will not be offered. Your baby may be offered nirsevimab, depending on their age during the next RSV season.
- **Monoclonal antibody after birth** — If a baby is born during RSV season (and does not have the benefit of maternal antibodies), they should get a dose of nirsevimab either before leaving the hospital or within the first week of life. If it is not RSV season when a baby is born, they will be offered nirsevimab at the start of the next RSV season (usually around October) unless they have already reached 8 months of age. A subgroup of infants between 8 and 19 months of age will be offered nirsevimab during their second RSV season because they remain at increased risk for severe RSV.