Vaccines for a Healthy Pregnancy
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Chapter I :: Introduction to Tutorial

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What are flu and whooping cough, and how do they affect pregnant women?

How can flu and whooping cough harm my baby?
What are flu and whooping cough, and how do they affect pregnant women?

Both Flu and whooping cough:

- Are highly contagious
- Affect your lungs, throat, nose and sinuses
- Flu can be more serious during pregnancy due to changes in your body and immune system
How can flu and whooping cough harm my baby?

Infants are at the greatest risk of severe complications from both flu and whooping cough, and here are two personal stories describing what can happen when a baby catches these diseases. These stories emphasize the importance of getting vaccinated against flu and whooping cough during pregnancy.

Influenza  The Story of Baby Ian

Courtesy: Families Fighting Flu
Whooping Cough: The Story of Baby Colin

Courtesy: Parents of Kids with Infectious Diseases (PKIDS)
Getting Vaccinated During Pregnancy: The Flu and Whooping Cough Shots

1. Why do I need to get vaccinated for flu and whooping cough during pregnancy?

2. What shots should I get and when?

3. What if I have had a few prenatal visits already and my doctor has not offered me either shot?
Why do I need to get vaccinated for flu and whooping cough during pregnancy?
For the Flu:
To protect against flu, pregnant women should get the inactivated flu shot, not the nasal spray form of the vaccine. The sooner you get the shot, the better. CDC recommends that the flu shot can be given at any point during pregnancy. The flu season in the United States runs from September – May. Flu shots are often available by September, and in some cases even in August. Whether you are pregnant at any point during flu season, or are planning to have your baby during flu season, it is important to get your vaccine.

For Whooping Cough:
The Tdap shot is the vaccine which protects you from whooping cough. While it’s safe to get Tdap any time during pregnancy, it’s best to wait until your second or third trimester (20 weeks or later) to make sure your fetus gets the most antibodies it can right before birth.

Can I get both shots at the same visit?
Yes! It is safe to both you and your fetus to get both shots at once.
What if I have had a few prenatal visits already and my doctor has not offered me either shot?

If your doctor has not explicitly offered or talked to you about the flu or Tdap shots, then you should ask about them. More and more OB/GYN practices are encouraging every patient---especially pregnant patients---to be up to date on their vaccines. Your doctor or nurse will be happy to answer your questions, address your concerns, give professional advice, and if possible, give you your shots!
Chapter IV :: Vaccine Safety During Pregnancy

1. Is it safe to receive the flu and whooping cough shots during pregnancy?

2. What is in each vaccine?

3. Are there any reasons I should not get either vaccine while pregnant?

4. How do I know the benefits of getting these shots outweigh the risks?

5. Are there any side effects to the vaccines I should know about?
Is it safe to receive the flu and whooping cough shots during pregnancy?

- Yes, both vaccines are safe and recommended during pregnancy
- There has been no observed increase in birth defects among babies born to moms who got the flu shot
- You cannot get the flu from the flu shot
2 What is in each vaccine?

Flu shot:
The flu shot that is recommended for pregnant moms is the inactivated flu shot that is given in your arm with a needle. This shot either contains inactivated split flu virus parts or inactivated viral subunits. It is these purified parts of the virus that your immune system recognizes and uses to make the antibodies needed to protect you from actually getting the flu.

The “nasal spray” version of the flu vaccine is not recommended during pregnancy because unlike the flu shot, this vaccine contains weakened live flu virus which has not been recommended for safe use in pregnant women.

Tdap:
The Tdap shot contains: toxoids from the tetanus and diphtheria bacteria, and inactivated toxin from the pertussis, or whooping cough, bacteria

The small doses of these toxoids are what your body needs to develop its immune defenses to the diseases themselves.
Do I need protection against tetanus and Diphtheria too?

You do. Tetanus, often referred to as “lock-jaw” is a bacterial disease which causes severe muscle spasms and stiffness. It can lead to severe cramping and tightening of muscles in the head and neck that result in an inability to open your mouth, swallow, or even breath.

Tetanus kills about 1 out of 5 people who are infected. Tetanus often enters the body through open wounds, so historically, it has been a major concern for both mom and baby during labor and delivery.

While not as severe as tetanus, diphtheria is a bacterial disease which can cause a thick membrane to cover the back of the throat. This can cause breathing problems, paralysis, heart failure, and even death.

The shots given to prevent both tetanus and diphtheria have been used safely for decades, and the Tdap vaccine which provides protection from tetanus, diphtheria and pertussis is safe to get during pregnancy.
Are there any reasons I should not get either vaccine while pregnant?

Sometimes there can be reasons for you to not get certain vaccines.

**For Flu:**
Before getting a flu shot, be sure to tell your doctor if:

- You have an allergy to eggs
- You have any other severe, life-threatening allergies
- You have ever had a severe reaction to the flu shot before
- You have ever had Guillain-Barre Syndrome (GBS)

Also, if you are moderately or severely ill when you try to get a flu shot, you should wait until you’re healthy before getting the flu shot. You may want to reschedule getting your shot.

**For Tdap:**
Before getting a Tdap shot, be sure to tell your doctor if:

- You have had a life-threatening allergic reaction after getting a dose of any shot for tetanus, diphtheria or pertussis.
- You have a severe allergy to any component of a vaccine.
- You have had a coma or seizures within 7 days after a dose of DTP or DTaP which are two other vaccines similar to Tdap
- You have epilepsy or other nervous system problem
- You had severe swelling or severe pain after a previous dose of a vaccine for tetanus, diphtheria or pertussis.
- You have had Guillain Barre Syndrome.

If you are moderately to severely ill on the day you are supposed to receive a Tdap shot, you should usually wait until you get better before getting a Tdap shot.
How do I know the benefits of getting these shots outweigh the risks?

For my baby?

Studies have shown that getting vaccinated for flu during pregnancy can reduce the likelihood that your baby will be born prematurely or of low birth weight. By protecting yourself from getting sick, you increase the chances your baby stays healthy and is born on time.

Protective antibodies that you produce to the shots have been shown to pass from your blood to the baby through your placenta or umbilical cord. Antibodies also pass through breastmilk which is extremely important for protecting your newborn before they are able to get shots themselves. Babies cannot receive their first whooping cough vaccine until they are 2 months old, and they cannot receive a flu vaccine until they are at least 6 months old. Protecting yourself through vaccination is the best way to protect your baby during their most vulnerable few months.

Seeing a baby suffer from whooping cough is terrible. The babies struggle to breathe through bouts of terrible coughing. Doing whatever you can to prevent your newborn from getting sick with whooping cough is important.
For me?

Flu can be a very serious disease if you get it during pregnancy. When pregnant, you are more likely to go to the hospital with severe complications from the flu than if you catch the flu when you are not pregnant. The flu can make you very sick for many days, resulting in fever, difficulty breathing, and appetite loss. All of these things can take a toll on your strength, and you need all the strength and nutrients you can get to make sure your baby grows properly.
Are there any side effects to the vaccines I should know about?

**Flu:**

The most common and mild side effects from the flu shot are very minor. These include:

- soreness, redness & swelling at the shot site
- cough
- fever
- headache
- red/itchy eyes
- fatigue
- itching

If any of the side effects listed above occur, they will happen soon after you get the shot and last 1 – 2 days.

Severe problems are very rare, but include life-threatening allergic reactions that occur within minutes to hours of getting the flu shot.
Tdap:

For a Tdap shot, **mild side effects** that are noticeable, but don’t interfere with activities include:
- Pain, redness, or swelling at the injection site
- Mild fever of at least 100.4°F (about 1 out of 100 adults)
- Headache (about 3 in 10 adults)
- Tiredness (about 1 in 4 adults)
- Nausea, vomiting, diarrhea, stomach ache (about 1 in 10 adults)
- Chills, body aches, sore joints, rash, or swollen glands. (uncommon)

**Moderate side effects** that may interfere with activities include:
- Pain at the site of the shot (about 1 in 100 adults)
- Redness or swelling (about 1 in 25 adults)
- Fever over 102°F (about 1 in 250 adults)
- Headache (about 1 in 300)
- Nausea, vomiting, diarrhea, stomach ache (about 1 in 100 adults)
- Excessive swelling of the arm where shot was given (up to about 3 in 100)

**Severe problems** that may require medical attention include:
- Swelling, severe pain, bleeding and redness in arm where shot was given (rare).

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**What if I have a severe reaction?**

Know that severe reactions are extremely rare. If they weren’t, doctors would not recommend women get these vaccines at all.

Severe allergic reactions to either vaccine would occur within a few minutes of either shot. Signs to look out for are difficulty breathing, weakness, hoarseness or wheezing, a fast heart beat, hives, dizziness, paleness, or swelling of the throat.

If you experience any of the above, call your doctor immediately or come in right away. Try to record the date and time of the unusual condition.
Vaccines for Your Baby

1. Introduction to childhood vaccines

2. Where can I find more information on childhood vaccines?
Introduction to childhood vaccines
Where can I find more information on childhood vaccines?
Thank you

Thank you for taking the time to learn more about the flu, whooping cough, and the importance of getting vaccinated during pregnancy. For further information, please send inquiries to momvax@emory.edu.

A special thanks to the following for their contributions to this tutorial:

- Emory University Preparedness and Emergency Response Research Center (Emory PERRC), CDC grant number 5-P01-TP000300
- Emory University Rollins School of Public Health, Information Services Video Production Team
- Biscuit Studios, Graphic Design & Production
- Saad B. Omer, MBBS MPH PhD (Principal Investigator), Walter A. Orenstein, MD (Co-investigator), Allison T. Chamberlain, MS (Study Coordinator), Katy Seib, MSPH (Senior Research Project Coordinator)
- Paula Frew, MPH (Co-investigator), PhD, Fauzia Malik, MSc, Marielysse Cortes
- Dr. Kevin Ault, Emory University School of Medicine, Co-investigator
- Dr. Lisa Flowers, Emory University School of Medicine
- Families Fighting Flu (www.familiesfightingflu.org)
- Parents of Kids with Infectious Diseases (www.pkids.org)

This work was supported by a grant from the Centers for Disease Control and Prevention (5P01TP000300) and funding from the Rollins School of Public Health, Emory University. The contents of this tutorial are solely the responsibility of the authors and do not necessarily represent the official views of the Centers for Disease Control and Prevention.

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