

DTaP (Diphtheria, Tetanus, Pertussis) Vaccine: *What You Need to Know*

Many vaccine information statements are available in Spanish and other languages. See www.immunize.org/vis

Hojas de información sobre vacunas están disponibles en español y en muchos otros idiomas. Visite www.immunize.org/vis

1. Why get vaccinated?

DTaP vaccine can prevent **diphtheria**, **tetanus**, and **pertussis**.

Diphtheria and pertussis spread from person to person. Tetanus enters the body through cuts or wounds.

- **DIPHThERIA (D)** can lead to difficulty breathing, heart failure, paralysis, or death.
- **TETANUS (T)** causes painful stiffening of the muscles. Tetanus can lead to serious health problems, including being unable to open the mouth, having trouble swallowing and breathing, or death.
- **PERTUSSIS (aP)**, also known as “whooping cough,” can cause uncontrollable, violent coughing that makes it hard to breathe, eat, or drink. Pertussis can be extremely serious especially in babies and young children, causing pneumonia, convulsions, brain damage, or death. In teens and adults, it can cause weight loss, loss of bladder control, passing out, and rib fractures from severe coughing.

2. DTaP vaccine

DTaP is only for children younger than 7 years old. Different vaccines against tetanus, diphtheria, and pertussis (Tdap and Td) are available for older children, adolescents, and adults.

It is recommended that children receive 5 doses of DTaP, usually at the following ages:

- 2 months
- 4 months
- 6 months
- 15–18 months
- 4–6 years

DTaP may be given as a stand-alone vaccine, or as part of a combination vaccine (a type of vaccine that combines more than one vaccine together into one shot).

DTaP may be given at the same time as other vaccines.

3. Talk with your health care provider

Tell your vaccination provider if the person getting the vaccine:

- Has had an **allergic reaction after a previous dose of any vaccine that protects against tetanus, diphtheria, or pertussis**, or has any **severe, life-threatening allergies**
- Has had a **coma, decreased level of consciousness, or prolonged seizures within 7 days after a previous dose of any pertussis vaccine (DTP or DTaP)**
- Has **seizures or another nervous system problem**
- Has ever had **Guillain-Barré Syndrome** (also called “GBS”)
- Has had **severe pain or swelling after a previous dose of any vaccine that protects against tetanus or diphtheria**

In some cases, your child’s health care provider may decide to postpone DTaP vaccination until a future visit.

Children with minor illnesses, such as a cold, may be vaccinated. Children who are moderately or severely ill should usually wait until they recover before getting DTaP vaccine.

Your child’s health care provider can give you more information.



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4. Risks of a vaccine reaction

- Soreness or swelling where the shot was given, fever, fussiness, feeling tired, loss of appetite, and vomiting sometimes happen after DTaP vaccination.
- More serious reactions, such as seizures, non-stop crying for 3 hours or more, or high fever (over 105°F) after DTaP vaccination happen much less often. Rarely, vaccination is followed by swelling of the entire arm or leg, especially in older children when they receive their fourth or fifth dose.

As with any medicine, there is a very remote chance of a vaccine causing a severe allergic reaction, other serious injury, or death.

5. What if there is a serious problem?

An allergic reaction could occur after the vaccinated person leaves the clinic. If you see signs of a severe allergic reaction (hives, swelling of the face and throat, difficulty breathing, a fast heartbeat, dizziness, or weakness), call **9-1-1** and get the person to the nearest hospital.

For other signs that concern you, call your health care provider.

Adverse reactions should be reported to the Vaccine Adverse Event Reporting System (VAERS). Your health care provider will usually file this report, or you can do it yourself. Visit the VAERS website at www.vaers.hhs.gov or call **1-800-822-7967**. *VAERS is only for reporting reactions, and VAERS staff members do not give medical advice.*

6. The National Vaccine Injury Compensation Program

The National Vaccine Injury Compensation Program (VICP) is a federal program that was created to compensate people who may have been injured by certain vaccines. Claims regarding alleged injury or death due to vaccination have a time limit for filing, which may be as short as two years. Visit the VICP website at www.hrsa.gov/vaccinecompensation or call **1-800-338-2382** to learn about the program and about filing a claim.

7. How can I learn more?

- Ask your health care provider.
- Call your local or state health department.
- Visit the website of the Food and Drug Administration (FDA) for vaccine package inserts and additional information at www.fda.gov/vaccines-blood-biologics/vaccines.
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Haemophilus influenzae type b (Hib) Vaccine: What You Need to Know

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1. Why get vaccinated?

Hib vaccine can prevent *Haemophilus influenzae* type b (Hib) disease.

Haemophilus influenzae type b can cause many different kinds of infections. These infections usually affect children under 5 years of age but can also affect adults with certain medical conditions. Hib bacteria can cause mild illness, such as ear infections or bronchitis, or they can cause severe illness, such as infections of the blood. Severe Hib infection, also called “invasive Hib disease,” requires treatment in a hospital and can sometimes result in death.

Before Hib vaccine, Hib disease was the leading cause of bacterial meningitis among children under 5 years old in the United States. Meningitis is an infection of the lining of the brain and spinal cord. It can lead to brain damage and deafness.

Hib infection can also cause:

- Pneumonia
- Severe swelling in the throat, making it hard to breathe
- Infections of the blood, joints, bones, and covering of the heart
- Death

2. Hib vaccine

Hib vaccine is usually given in 3 or 4 doses (depending on brand).

Infants will usually get their first dose of Hib vaccine at 2 months of age and will usually complete the series at 12–15 months of age.

Children between 12 months and 5 years of age who have not previously been completely vaccinated against Hib may need 1 or more doses of Hib vaccine.

Children over 5 years old and adults usually do not receive Hib vaccine, but it might be recommended for older children or adults whose spleen is damaged or has been removed, including people with sickle cell disease, before surgery to remove the spleen, or following a bone marrow transplant. Hib vaccine may also be recommended for people 5 through 18 years old with HIV.

Hib vaccine may be given as a stand-alone vaccine, or as part of a combination vaccine (a type of vaccine that combines more than one vaccine together into one shot).

Hib vaccine may be given at the same time as other vaccines.

3. Talk with your health care provider

Tell your vaccination provider if the person getting the vaccine:

- Has had an **allergic reaction after a previous dose of Hib vaccine**, or has any **severe, life-threatening allergies**

In some cases, your health care provider may decide to postpone Hib vaccination until a future visit.

People with minor illnesses, such as a cold, may be vaccinated. People who are moderately or severely ill should usually wait until they recover before getting Hib vaccine.

Your health care provider can give you more information.



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4. Risks of a vaccine reaction

- Redness, warmth, and swelling where the shot is given and fever can happen after Hib vaccination.

People sometimes faint after medical procedures, including vaccination. Tell your provider if you feel dizzy or have vision changes or ringing in the ears.

As with any medicine, there is a very remote chance of a vaccine causing a severe allergic reaction, other serious injury, or death.

5. What if there is a serious problem?

An allergic reaction could occur after the vaccinated person leaves the clinic. If you see signs of a severe allergic reaction (hives, swelling of the face and throat, difficulty breathing, a fast heartbeat, dizziness, or weakness), call **9-1-1** and get the person to the nearest hospital.

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Polio Vaccine:

What You Need to Know

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1. Why get vaccinated?

Polio vaccine can prevent **polio**.

Polio (or poliomyelitis) is a disabling and life-threatening disease caused by poliovirus, which can infect a person's spinal cord, leading to paralysis.

Most people infected with poliovirus have no symptoms, and many recover without complications. Some people will experience sore throat, fever, tiredness, nausea, headache, or stomach pain.

A smaller group of people will develop more serious symptoms that affect the brain and spinal cord:

- Paresthesia (feeling of pins and needles in the legs),
- Meningitis (infection of the covering of the spinal cord and/or brain), or
- Paralysis (can't move parts of the body) or weakness in the arms, legs, or both.

Paralysis is the most severe symptom associated with polio because it can lead to permanent disability and death.

Improvements in limb paralysis can occur, but in some people new muscle pain and weakness may develop 15 to 40 years later. This is called "post-polio syndrome."

Polio has been eliminated from the United States, but it still occurs in other parts of the world. The best way to protect yourself and keep the United States polio-free is to maintain high immunity (protection) in the population against polio through vaccination.

2. Polio vaccine

Children should usually get 4 doses of polio vaccine at ages 2 months, 4 months, 6–18 months, and 4–6 years.

Most **adults** do not need polio vaccine because they were already vaccinated against polio as children. Some adults are at higher risk and should consider polio vaccination, including:

- People traveling to certain parts of the world
- Laboratory workers who might handle poliovirus
- Health care workers treating patients who could have polio
- Unvaccinated people whose children will be receiving oral poliovirus vaccine (for example, international adoptees or refugees)

Polio vaccine may be given as a stand-alone vaccine, or as part of a combination vaccine (a type of vaccine that combines more than one vaccine together into one shot).

Polio vaccine may be given at the same time as other vaccines.



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3. Talk with your health care provider

Tell your vaccination provider if the person getting the vaccine:

- Has had an **allergic reaction after a previous dose of polio vaccine**, or has any **severe, life-threatening allergies**

In some cases, your health care provider may decide to postpone polio vaccination until a future visit.

People with minor illnesses, such as a cold, may be vaccinated. People who are moderately or severely ill should usually wait until they recover before getting polio vaccine.

Not much is known about the risks of this vaccine for pregnant or breastfeeding people. However, polio vaccine can be given if a pregnant person is at increased risk for infection and requires immediate protection.

Your health care provider can give you more information.

4. Risks of a vaccine reaction

- A sore spot with redness, swelling, or pain where the shot is given can happen after polio vaccination.

People sometimes faint after medical procedures, including vaccination. Tell your provider if you feel dizzy or have vision changes or ringing in the ears.

As with any medicine, there is a very remote chance of a vaccine causing a severe allergic reaction, other serious injury, or death.

5. What if there is a serious problem?

An allergic reaction could occur after the vaccinated person leaves the clinic. If you see signs of a severe allergic reaction (hives, swelling of the face and throat, difficulty breathing, a fast heartbeat, dizziness, or weakness), call **9-1-1** and get the person to the nearest hospital.

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Hepatitis B Vaccine:

What You Need to Know

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1. Why get vaccinated?

Hepatitis B vaccine can prevent **hepatitis B**. Hepatitis B is a liver disease that can cause mild illness lasting a few weeks, or it can lead to a serious, lifelong illness.

- **Acute hepatitis B infection** is a short-term illness that can lead to fever, fatigue, loss of appetite, nausea, vomiting, jaundice (yellow skin or eyes, dark urine, clay-colored bowel movements), and pain in the muscles, joints, and stomach.
- **Chronic hepatitis B infection** is a long-term illness that occurs when the hepatitis B virus remains in a person's body. Most people who go on to develop chronic hepatitis B do not have symptoms, but it is still very serious and can lead to liver damage (cirrhosis), liver cancer, and death. Chronically infected people can spread hepatitis B virus to others, even if they do not feel or look sick themselves.

Hepatitis B is spread when blood, semen, or other body fluid infected with the hepatitis B virus enters the body of a person who is not infected. People can become infected through:

- Birth (if a pregnant person has hepatitis B, their baby can become infected)
- Sharing items such as razors or toothbrushes with an infected person
- Contact with the blood or open sores of an infected person
- Sex with an infected partner
- Sharing needles, syringes, or other drug-injection equipment
- Exposure to blood from needlesticks or other sharp instruments

Most people who are vaccinated with hepatitis B vaccine are immune for life.

2. Hepatitis B vaccine

Hepatitis B vaccine is usually given as 2, 3, or 4 shots.

Infants should get their first dose of hepatitis B vaccine at birth and will usually complete the series at 6–18 months of age. **The birth dose of hepatitis B vaccine is an important part of preventing long-term illness in infants and the spread of hepatitis B in the United States.**

Children and adolescents younger than 19 years of age who have not yet gotten the vaccine should be vaccinated.

Adults who were not vaccinated previously and want to be protected against hepatitis B can also get the vaccine.

Hepatitis B vaccine is also recommended for the following people:

- People whose sex partners have hepatitis B
- Sexually active persons who are not in a long-term, monogamous relationship
- People seeking evaluation or treatment for a sexually transmitted disease
- Victims of sexual assault or abuse
- Men who have sexual contact with other men
- People who share needles, syringes, or other drug-injection equipment
- People who live with someone infected with the hepatitis B virus
- Health care and public safety workers at risk for exposure to blood or body fluids
- Residents and staff of facilities for developmentally disabled people
- People living in jail or prison
- Travelers to regions with increased rates of hepatitis B



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- People with chronic liver disease, kidney disease on dialysis, HIV infection, infection with hepatitis C, or diabetes

Hepatitis B vaccine may be given as a stand-alone vaccine, or as part of a combination vaccine (a type of vaccine that combines more than one vaccine together into one shot).

Hepatitis B vaccine may be given at the same time as other vaccines.

3. Talk with your health care provider

Tell your vaccination provider if the person getting the vaccine:

- Has had an **allergic reaction after a previous dose of hepatitis B vaccine**, or has any **severe, life-threatening allergies**

In some cases, your health care provider may decide to postpone hepatitis B vaccination until a future visit.

Pregnant or breastfeeding people should be vaccinated if they are at risk for getting hepatitis B. Pregnancy or breastfeeding are not reasons to avoid hepatitis B vaccination.

People with minor illnesses, such as a cold, may be vaccinated. People who are moderately or severely ill should usually wait until they recover before getting hepatitis B vaccine.

Your health care provider can give you more information.

4. Risks of a vaccine reaction

- Soreness where the shot is given or fever can happen after hepatitis B vaccination.

People sometimes faint after medical procedures, including vaccination. Tell your provider if you feel dizzy or have vision changes or ringing in the ears.

As with any medicine, there is a very remote chance of a vaccine causing a severe allergic reaction, other serious injury, or death.

5. What if there is a serious problem?

An allergic reaction could occur after the vaccinated person leaves the clinic. If you see signs of a severe allergic reaction (hives, swelling of the face and throat, difficulty breathing, a fast heartbeat, dizziness, or weakness), call **9-1-1** and get the person to the nearest hospital.

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Pneumococcal Conjugate Vaccine: *What You Need to Know*

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1. Why get vaccinated?

Pneumococcal conjugate vaccine can prevent pneumococcal disease.

Pneumococcal disease refers to any illness caused by pneumococcal bacteria. These bacteria can cause many types of illnesses, including pneumonia, which is an infection of the lungs. Pneumococcal bacteria are one of the most common causes of pneumonia.

Besides pneumonia, pneumococcal bacteria can also cause:

- Ear infections
- Sinus infections
- Meningitis (infection of the tissue covering the brain and spinal cord)
- Bacteremia (infection of the blood)
- Anyone can get pneumococcal disease, but children under 2 years old, people with certain medical conditions or other risk factors, and adults 65 years or older are at the highest risk.

Most pneumococcal infections are mild. However, some can result in long-term problems, such as brain damage or hearing loss. Meningitis, bacteremia, and pneumonia caused by pneumococcal disease can be fatal.

2. Pneumococcal conjugate vaccine

Pneumococcal conjugate vaccine helps protect against bacteria that cause pneumococcal disease. There are three pneumococcal conjugate vaccines (PCV13, PCV15, and PCV20). The different vaccines are recommended for different people based on their age and medical status.

PCV13

- **Infants and young children** usually need 4 doses of PCV13, at ages 2, 4, 6, and 12–15 months.
- **Older children (through age 59 months)** may be vaccinated with PCV13 if they did not receive the recommended doses.
- **Children and adolescents 6–18 years of age** with certain medical conditions should receive a single dose of PCV13 if they did not already receive PCV13.

PCV15 or PCV20

- **Adults 19 through 64 years old** with certain medical conditions or other risk factors who have not already received a pneumococcal conjugate vaccine should receive either:
 - a single dose of PCV15 followed by a dose of pneumococcal polysaccharide vaccine (PPSV23), or
 - a single dose of PCV20.
- **Adults 65 years or older** who have not already received a pneumococcal conjugate vaccine should receive either:
 - a single dose of PCV15 followed by a dose of PPSV23, or
 - a single dose of PCV20.

Your health care provider can give you more information.



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3. Talk with your health care provider

Tell your vaccination provider if the person getting the vaccine:

- Has had an **allergic reaction after a previous dose of any type of pneumococcal conjugate vaccine (PCV13, PCV15, PCV20, or an earlier pneumococcal conjugate vaccine known as PCV7), or to any vaccine containing diphtheria toxoid (for example, DTaP), or has any severe, life-threatening allergies**

In some cases, your health care provider may decide to postpone pneumococcal conjugate vaccination until a future visit.

People with minor illnesses, such as a cold, may be vaccinated. People who are moderately or severely ill should usually wait until they recover.

Your health care provider can give you more information.

4. Risks of a vaccine reaction

- Redness, swelling, pain, or tenderness where the shot is given, and fever, loss of appetite, fussiness (irritability), feeling tired, headache, muscle aches, joint pain, and chills can happen after pneumococcal conjugate vaccination.

Young children may be at increased risk for seizures caused by fever after PCV13 if it is administered at the same time as inactivated influenza vaccine. Ask your health care provider for more information.

People sometimes faint after medical procedures, including vaccination. Tell your provider if you feel dizzy or have vision changes or ringing in the ears.

As with any medicine, there is a very remote chance of a vaccine causing a severe allergic reaction, other serious injury, or death.

5. What if there is a serious problem?

An allergic reaction could occur after the vaccinated person leaves the clinic. If you see signs of a severe allergic reaction (hives, swelling of the face and throat, difficulty breathing, a fast heartbeat, dizziness, or weakness), call 9-1-1 and get the person to the nearest hospital.

For other signs that concern you, call your health care provider.

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Hepatitis A Vaccine:

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1. Why get vaccinated?

Hepatitis A vaccine can prevent **hepatitis A**.

Hepatitis A is a serious liver disease. It is usually spread through close, personal contact with an infected person or when a person unknowingly ingests the virus from objects, food, or drinks that are contaminated by small amounts of stool (poop) from an infected person.

Most adults with hepatitis A have symptoms, including fatigue, low appetite, stomach pain, nausea, and jaundice (yellow skin or eyes, dark urine, light-colored bowel movements). Most children less than 6 years of age do not have symptoms.

A person infected with hepatitis A can transmit the disease to other people even if he or she does not have any symptoms of the disease.

Most people who get hepatitis A feel sick for several weeks, but they usually recover completely and do not have lasting liver damage. In rare cases, hepatitis A can cause liver failure and death; this is more common in people older than 50 years and in people with other liver diseases.

Hepatitis A vaccine has made this disease much less common in the United States. However, outbreaks of hepatitis A among unvaccinated people still happen.

2. Hepatitis A vaccine

Children need 2 doses of hepatitis A vaccine:

- First dose: 12 through 23 months of age
- Second dose: at least 6 months after the first dose

Infants 6 through 11 months old traveling outside the United States when protection against hepatitis A is recommended should receive 1 dose of hepatitis A vaccine. These children should still get 2 additional doses at the recommended ages for long-lasting protection.

Older children and adolescents 2 through 18 years of age who were not vaccinated previously should be vaccinated.

Adults who were not vaccinated previously and want to be protected against hepatitis A can also get the vaccine.

Hepatitis A vaccine is also recommended for the following people:

- International travelers
- Men who have sexual contact with other men
- People who use injection or non-injection drugs
- People who have occupational risk for infection
- People who anticipate close contact with an international adoptee
- People experiencing homelessness
- People with HIV
- People with chronic liver disease

In addition, a person who has not previously received hepatitis A vaccine and who has direct contact with someone with hepatitis A should get hepatitis A vaccine as soon as possible and within 2 weeks after exposure.

Hepatitis A vaccine may be given at the same time as other vaccines.



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3. Talk with your health care provider

Tell your vaccination provider if the person getting the vaccine:

- Has had an **allergic reaction after a previous dose of hepatitis A vaccine**, or has any **severe, life-threatening allergies**

In some cases, your health care provider may decide to postpone hepatitis A vaccination until a future visit.

Pregnant or breastfeeding people should be vaccinated if they are at risk for getting hepatitis A. Pregnancy or breastfeeding are not reasons to avoid hepatitis A vaccination.

People with minor illnesses, such as a cold, may be vaccinated. People who are moderately or severely ill should usually wait until they recover before getting hepatitis A vaccine.

Your health care provider can give you more information.

4. Risks of a vaccine reaction

- Soreness or redness where the shot is given, fever, headache, tiredness, or loss of appetite can happen after hepatitis A vaccination.

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HPV (Human Papillomavirus) Vaccine: *What You Need to Know*

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1. Why get vaccinated?

HPV (human papillomavirus) vaccine can prevent infection with some types of human papillomavirus.

HPV infections can cause certain types of cancers, including:

- cervical, vaginal, and vulvar cancers in women
- penile cancer in men
- anal cancers in both men and women
- cancers of tonsils, base of tongue, and back of throat (oropharyngeal cancer) in both men and women

HPV infections can also cause anogenital warts.

HPV vaccine can prevent over 90% of cancers caused by HPV.

HPV is spread through intimate skin-to-skin or sexual contact. HPV infections are so common that nearly all people will get at least one type of HPV at some time in their lives. Most HPV infections go away on their own within 2 years. But sometimes HPV infections will last longer and can cause cancers later in life.

2. HPV vaccine

HPV vaccine is routinely recommended for adolescents at 11 or 12 years of age to ensure they are protected before they are exposed to the virus. HPV vaccine may be given beginning at age 9 years and vaccination is recommended for everyone through 26 years of age.

HPV vaccine may be given to adults 27 through 45 years of age, based on discussions between the patient and health care provider.

Most children who get the first dose before 15 years of age need 2 doses of HPV vaccine. People who get the first dose at or after 15 years of age and younger people with certain immunocompromising conditions need 3 doses. Your health care provider can give you more information.

HPV vaccine may be given at the same time as other vaccines.

3. Talk with your health care provider

Tell your vaccination provider if the person getting the vaccine:

- Has had an **allergic reaction after a previous dose of HPV vaccine**, or has any **severe, life-threatening allergies**
- Is **pregnant**—HPV vaccine is not recommended until after pregnancy

In some cases, your health care provider may decide to postpone HPV vaccination until a future visit.

People with minor illnesses, such as a cold, may be vaccinated. People who are moderately or severely ill should usually wait until they recover before getting HPV vaccine.

Your health care provider can give you more information.



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4. Risks of a vaccine reaction

- Soreness, redness, or swelling where the shot is given can happen after HPV vaccination.
- Fever or headache can happen after HPV vaccination.

People sometimes faint after medical procedures, including vaccination. Tell your provider if you feel dizzy or have vision changes or ringing in the ears.

As with any medicine, there is a very remote chance of a vaccine causing a severe allergic reaction, other serious injury, or death.

5. What if there is a serious problem?

An allergic reaction could occur after the vaccinated person leaves the clinic. If you see signs of a severe allergic reaction (hives, swelling of the face and throat, difficulty breathing, a fast heartbeat, dizziness, or weakness), call **9-1-1** and get the person to the nearest hospital.

For other signs that concern you, call your health care provider.

Adverse reactions should be reported to the Vaccine Adverse Event Reporting System (VAERS). Your health care provider will usually file this report, or you can do it yourself. Visit the VAERS website at www.vaers.hhs.gov or call **1-800-822-7967**. *VAERS is only for reporting reactions, and VAERS staff members do not give medical advice.*

6. The National Vaccine Injury Compensation Program

The National Vaccine Injury Compensation Program (VICP) is a federal program that was created to compensate people who may have been injured by certain vaccines. Claims regarding alleged injury or death due to vaccination have a time limit for filing, which may be as short as two years. Visit the VICP website at www.hrsa.gov/vaccinecompensation or call **1-800-338-2382** to learn about the program and about filing a claim.

7. How can I learn more?

- Ask your health care provider.
- Call your local or state health department.
- Visit the website of the Food and Drug Administration (FDA) for vaccine package inserts and additional information at www.fda.gov/vaccines-blood-biologics/vaccines.
- Contact the Centers for Disease Control and Prevention (CDC):
 - Call **1-800-232-4636 (1-800-CDC-INFO)** or
 - Visit CDC's website at www.cdc.gov/vaccines.



Varicella (Chickenpox) Vaccine:

What You Need to Know

Many vaccine information statements are available in Spanish and other languages. See www.immunize.org/vis

Hojas de información sobre vacunas están disponibles en español y en muchos otros idiomas. Visite www.immunize.org/vis

1. Why get vaccinated?

Varicella vaccine can prevent **varicella**.

Varicella, also called “chickenpox,” causes an itchy rash that usually lasts about a week. It can also cause fever, tiredness, loss of appetite, and headache. It can lead to skin infections, pneumonia, inflammation of the blood vessels, swelling of the brain and/or spinal cord covering, and infections of the bloodstream, bone, or joints. Some people who get chickenpox get a painful rash called “shingles” (also known as herpes zoster) years later.

Chickenpox is usually mild, but it can be serious in infants under 12 months of age, adolescents, adults, pregnant people, and people with a weakened immune system. Some people get so sick that they need to be hospitalized. It doesn’t happen often, but people can die from chickenpox.

Most people who are vaccinated with 2 doses of varicella vaccine will be protected for life.

2. Varicella vaccine

Children need 2 doses of varicella vaccine, usually:

- First dose: age 12 through 15 months
- Second dose: age 4 through 6 years

Older children, adolescents, and adults also need 2 doses of varicella vaccine if they are not already immune to chickenpox.

Varicella vaccine may be given at the same time as other vaccines. Also, a child between 12 months and 12 years of age might receive varicella vaccine together with MMR (measles, mumps, and rubella) vaccine in a single shot, known as MMRV. Your health care provider can give you more information.

3. Talk with your health care provider

Tell your vaccination provider if the person getting the vaccine:

- Has had an **allergic reaction after a previous dose of varicella vaccine**, or has any **severe, life-threatening allergies**
- Is **pregnant** or thinks they might be pregnant—pregnant people should not get varicella vaccine
- Has a **weakened immune system**, or has a **parent, brother, or sister with a history of hereditary or congenital immune system problems**
- Is **taking salicylates** (such as aspirin)
- Has recently **had a blood transfusion or received other blood products**
- Has **tuberculosis**
- Has **gotten any other vaccines in the past 4 weeks**

In some cases, your health care provider may decide to postpone varicella vaccination until a future visit.

People with minor illnesses, such as a cold, may be vaccinated. People who are moderately or severely ill should usually wait until they recover before getting varicella vaccine.

Your health care provider can give you more information.



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4. Risks of a vaccine reaction

- Sore arm from the injection, redness or rash where the shot is given, or fever can happen after varicella vaccination.
- More serious reactions happen very rarely. These can include pneumonia, infection of the brain and/or spinal cord covering, or seizures that are often associated with fever.
- In people with serious immune system problems, this vaccine may cause an infection that may be life-threatening. People with serious immune system problems should not get varicella vaccine.

It is possible for a vaccinated person to develop a rash. If this happens, the varicella vaccine virus could be spread to an unprotected person. Anyone who gets a rash should stay away from infants and people with a weakened immune system until the rash goes away. Talk with your health care provider to learn more.

Some people who are vaccinated against chickenpox get shingles (herpes zoster) years later. This is much less common after vaccination than after chickenpox disease.

People sometimes faint after medical procedures, including vaccination. Tell your provider if you feel dizzy or have vision changes or ringing in the ears.

As with any medicine, there is a very remote chance of a vaccine causing a severe allergic reaction, other serious injury, or death.

5. What if there is a serious problem?

An allergic reaction could occur after the vaccinated person leaves the clinic. If you see signs of a severe allergic reaction (hives, swelling of the face and throat, difficulty breathing, a fast heartbeat, dizziness, or weakness), call **9-1-1** and get the person to the nearest hospital.

For other signs that concern you, call your health care provider.

Adverse reactions should be reported to the Vaccine Adverse Event Reporting System (VAERS). Your health care provider will usually file this report, or you can do it yourself. Visit the VAERS website at www.vaers.hhs.gov or call **1-800-822-7967**. *VAERS is only for reporting reactions, and VAERS staff members do not give medical advice.*

6. The National Vaccine Injury Compensation Program

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7. How can I learn more?

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Tdap (Tetanus, Diphtheria, Pertussis) Vaccine: *What You Need to Know*

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1. Why get vaccinated?

Tdap vaccine can prevent **tetanus, diphtheria, and pertussis**.

Diphtheria and pertussis spread from person to person. Tetanus enters the body through cuts or wounds.

- **TETANUS (T)** causes painful stiffening of the muscles. Tetanus can lead to serious health problems, including being unable to open the mouth, having trouble swallowing and breathing, or death.
- **DIPHTHERIA (D)** can lead to difficulty breathing, heart failure, paralysis, or death.
- **PERTUSSIS (aP)**, also known as “whooping cough,” can cause uncontrollable, violent coughing that makes it hard to breathe, eat, or drink. Pertussis can be extremely serious especially in babies and young children, causing pneumonia, convulsions, brain damage, or death. In teens and adults, it can cause weight loss, loss of bladder control, passing out, and rib fractures from severe coughing.

2. Tdap vaccine

Tdap is only for children 7 years and older, adolescents, and adults.

Adolescents should receive a single dose of Tdap, preferably at age 11 or 12 years.

Pregnant people should get a dose of Tdap during every pregnancy, preferably during the early part of the third trimester, to help protect the newborn from pertussis. Infants are most at risk for severe, life-threatening complications from pertussis.

Adults who have never received Tdap should get a dose of Tdap.

Also, **adults should receive a booster dose of either Tdap or Td** (a different vaccine that protects against tetanus and diphtheria but not pertussis) **every 10 years**, or after 5 years in the case of a severe or dirty wound or burn.

Tdap may be given at the same time as other vaccines.

3. Talk with your health care provider

Tell your vaccination provider if the person getting the vaccine:

- Has had an **allergic reaction after a previous dose of any vaccine that protects against tetanus, diphtheria, or pertussis**, or has any **severe, life-threatening allergies**
- Has had a **coma, decreased level of consciousness, or prolonged seizures within 7 days after a previous dose of any pertussis vaccine (DTP, DTaP, or Tdap)**
- Has **seizures or another nervous system problem**
- Has ever had **Guillain-Barré Syndrome** (also called “GBS”)
- Has had **severe pain or swelling after a previous dose of any vaccine that protects against tetanus or diphtheria**

In some cases, your health care provider may decide to postpone Tdap vaccination until a future visit.

People with minor illnesses, such as a cold, may be vaccinated. People who are moderately or severely ill should usually wait until they recover before getting Tdap vaccine.

Your health care provider can give you more information.



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4. Risks of a vaccine reaction

- Pain, redness, or swelling where the shot was given, mild fever, headache, feeling tired, and nausea, vomiting, diarrhea, or stomachache sometimes happen after Tdap vaccination.

People sometimes faint after medical procedures, including vaccination. Tell your provider if you feel dizzy or have vision changes or ringing in the ears.

As with any medicine, there is a very remote chance of a vaccine causing a severe allergic reaction, other serious injury, or death.

5. What if there is a serious problem?

An allergic reaction could occur after the vaccinated person leaves the clinic. If you see signs of a severe allergic reaction (hives, swelling of the face and throat, difficulty breathing, a fast heartbeat, dizziness, or weakness), call 9-1-1 and get the person to the nearest hospital.

For other signs that concern you, call your health care provider.

Adverse reactions should be reported to the Vaccine Adverse Event Reporting System (VAERS). Your health care provider will usually file this report, or you can do it yourself. Visit the VAERS website at www.vaers.hhs.gov or call 1-800-822-7967. *VAERS is only for reporting reactions, and VAERS staff members do not give medical advice.*

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Rotavirus Vaccine:

What You Need to Know

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Hojas de información sobre vacunas están disponibles en español y en muchos otros idiomas. Visite www.immunize.org/vis

1. Why get vaccinated?

Rotavirus vaccine can prevent **rotavirus disease**.

Rotavirus commonly causes severe, watery diarrhea, mostly in babies and young children. Vomiting and fever are also common in babies with rotavirus. Children may become dehydrated and need to be hospitalized and can even die.

2. Rotavirus vaccine

Rotavirus vaccine is administered by putting drops in the child's mouth. Babies should get 2 or 3 doses of rotavirus vaccine, depending on the brand of vaccine used.

- The first dose must be administered before 15 weeks of age.
- The last dose must be administered by 8 months of age.

Almost all babies who get rotavirus vaccine will be protected from severe rotavirus diarrhea.

Another virus called "porcine circovirus" can be found in one brand of rotavirus vaccine (Rotarix). This virus does not infect people, and there is no known safety risk.

Rotavirus vaccine may be given at the same time as other vaccines.

3. Talk with your health care provider

Tell your vaccination provider if the person getting the vaccine:

- Has had an **allergic reaction after a previous dose of rotavirus vaccine**, or has any **severe, life-threatening allergies**
- Has a **weakened immune system**
- Has **severe combined immunodeficiency (SCID)**
- Has had a type of bowel blockage called "**intussusception**"

In some cases, your child's health care provider may decide to postpone rotavirus vaccination until a future visit.

Infants with minor illnesses, such as a cold, may be vaccinated. Infants who are moderately or severely ill should usually wait until they recover before getting rotavirus vaccine.

Your child's health care provider can give you more information.

4. Risks of a vaccine reaction

- Irritability or mild, temporary diarrhea or vomiting can happen after rotavirus vaccine.

Intussusception is a type of bowel blockage that is treated in a hospital and could require surgery. It happens naturally in some infants every year in the United States, and usually there is no known reason for it. There is also a small risk of intussusception from rotavirus vaccination, usually within a week after the first or second vaccine dose. This additional risk is estimated to range from about 1 in 20,000 U.S. infants to 1 in 100,000 U.S. infants who get rotavirus vaccine. Your health care provider can give you more information.

As with any medicine, there is a very remote chance of a vaccine causing a severe allergic reaction, other serious injury, or death.



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5. What if there is a serious problem?

For intussusception, look for signs of stomach pain along with severe crying. Early on, these episodes could last just a few minutes and come and go several times in an hour. Babies might pull their legs up to their chest. Your baby might also vomit several times or have blood in the stool, or could appear weak or very irritable. These signs would usually happen during the first week after the first or second dose of rotavirus vaccine, but look for them any time after vaccination. If you think your baby has intussusception, contact a health care provider right away. If you can't reach your health care provider, take your baby to a hospital. Tell them when your baby got rotavirus vaccine.

An allergic reaction could occur after the vaccinated person leaves the clinic. If you see signs of a severe allergic reaction (hives, swelling of the face and throat, difficulty breathing, a fast heartbeat, dizziness, or weakness), call **9-1-1** and get the person to the nearest hospital.

For other signs that concern you, call your health care provider.

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Meningococcal ACWY Vaccine: What You Need to Know

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1. Why get vaccinated?

Meningococcal ACWY vaccine can help protect against **meningococcal disease** caused by serogroups A, C, W, and Y. A different meningococcal vaccine is available that can help protect against serogroup B.

Meningococcal disease can cause meningitis (infection of the lining of the brain and spinal cord) and infections of the blood. Even when it is treated, meningococcal disease kills 10 to 15 infected people out of 100. And of those who survive, about 10 to 20 out of every 100 will suffer disabilities such as hearing loss, brain damage, kidney damage, loss of limbs, nervous system problems, or severe scars from skin grafts.

Meningococcal disease is rare and has declined in the United States since the 1990s. However, it is a severe disease with a significant risk of death or lasting disabilities in people who get it.

Anyone can get meningococcal disease. Certain people are at increased risk, including:

- Infants younger than one year old
- Adolescents and young adults 16 through 23 years old
- People with certain medical conditions that affect the immune system
- Microbiologists who routinely work with isolates of *N. meningitidis*, the bacteria that cause meningococcal disease
- People at risk because of an outbreak in their community

2. Meningococcal ACWY vaccine

Adolescents need 2 doses of a meningococcal ACWY vaccine:

- First dose: 11 or 12 year of age
- Second (booster) dose: 16 years of age

In addition to routine vaccination for adolescents, meningococcal ACWY vaccine is also recommended for **certain groups of people**:

- People at risk because of a serogroup A, C, W, or Y meningococcal disease outbreak
- People with HIV
- Anyone whose spleen is damaged or has been removed, including people with sickle cell disease
- Anyone with a rare immune system condition called “complement component deficiency”
- Anyone taking a type of drug called a “complement inhibitor,” such as eculizumab (also called “Soliris”[®]) or ravulizumab (also called “Ultomiris”[®])
- Microbiologists who routinely work with isolates of *N. meningitidis*
- Anyone traveling to or living in a part of the world where meningococcal disease is common, such as parts of Africa
- College freshmen living in residence halls who have not been completely vaccinated with meningococcal ACWY vaccine
- U.S. military recruits



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3. Talk with your health care provider

Tell your vaccination provider if the person getting the vaccine:

- Has had an **allergic reaction after a previous dose of meningococcal ACWY vaccine**, or has any **severe, life-threatening allergies**

In some cases, your health care provider may decide to postpone meningococcal ACWY vaccination until a future visit.

There is limited information on the risks of this vaccine for pregnant or breastfeeding people, but no safety concerns have been identified. A pregnant or breastfeeding person should be vaccinated if indicated.

People with minor illnesses, such as a cold, may be vaccinated. People who are moderately or severely ill should usually wait until they recover before getting meningococcal ACWY vaccine.

Your health care provider can give you more information.

4. Risks of a vaccine reaction

- Redness or soreness where the shot is given can happen after meningococcal ACWY vaccination.
- A small percentage of people who receive meningococcal ACWY vaccine experience muscle pain, headache, or tiredness.

People sometimes faint after medical procedures, including vaccination. Tell your provider if you feel dizzy or have vision changes or ringing in the ears.

As with any medicine, there is a very remote chance of a vaccine causing a severe allergic reaction, other serious injury, or death.

5. What if there is a serious problem?

An allergic reaction could occur after the vaccinated person leaves the clinic. If you see signs of a severe allergic reaction (hives, swelling of the face and throat, difficulty breathing, a fast heartbeat, dizziness, or weakness), call **9-1-1** and get the person to the nearest hospital.

For other signs that concern you, call your health care provider.

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7. How can I learn more?

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MMRV Vaccine (Measles, Mumps, Rubella, and Varicella): *What You Need to Know*

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Hojas de información sobre vacunas están disponibles en español y en muchos otros idiomas. Visite www.immunize.org/vis

1. Why get vaccinated?

MMRV vaccine can prevent **measles, mumps, rubella, and varicella.**

- **MEASLES (M)** causes fever, cough, runny nose, and red, watery eyes, commonly followed by a rash that covers the whole body. It can lead to seizures (often associated with fever), ear infections, diarrhea, and pneumonia. Rarely, measles can cause brain damage or death.
- **MUMPS (M)** causes fever, headache, muscle aches, tiredness, loss of appetite, and swollen and tender salivary glands under the ears. It can lead to deafness, swelling of the brain and/or spinal cord covering, painful swelling of the testicles or ovaries, and, very rarely, death.
- **RUBELLA (R)** causes fever, sore throat, rash, headache, and eye irritation. It can cause arthritis in up to half of teenage and adult women. If a person gets rubella while they are pregnant, they could have a miscarriage or the baby could be born with serious birth defects.
- **VARICELLA (V)**, also called “chickenpox,” causes an itchy rash, in addition to fever, tiredness, loss of appetite, and headache. It can lead to skin infections, pneumonia, inflammation of the blood vessels, swelling of the brain and/or spinal cord covering, and infection of the blood, bones, or joints. Some people who get chickenpox get a painful rash called “shingles” (also known as herpes zoster) years later.

Most people who are vaccinated with MMRV will be protected for life. Vaccines and high rates of vaccination have made these diseases much less common in the United States.

2. MMRV vaccine

MMRV vaccine may be given to **children 12 months through 12 years of age**, usually:

- First dose at age 12 through 15 months
- Second dose at age 4 through 6 years

MMRV vaccine may be given at the same time as other vaccines. Instead of MMRV, some children might receive separate shots for MMR (measles, mumps, and rubella) and varicella. Your health care provider can give you more information.

3. Talk with your health care provider

Tell your vaccination provider if the person getting the vaccine:

- Has had an **allergic reaction after a previous dose of MMRV, MMR, or varicella vaccine**, or has any **severe, life-threatening allergies**
- Is **pregnant** or thinks they might be pregnant—pregnant people should not get MMRV vaccine
- Has a **weakened immune system**, or has a **parent, brother, or sister with a history of hereditary or congenital immune system problems**
- Has ever had a **condition that makes him or her bruise or bleed easily**
- Has a **history of seizures**, or has a **parent, brother, or sister with a history of seizures**
- Is **taking or plans to take salicylates** (such as aspirin)
- Has recently had a **blood transfusion or received other blood products**
- Has **tuberculosis**
- Has **gotten any other vaccines in the past 4 weeks**

In some cases, your health care provider may decide to postpone MMRV vaccination until a future visit or may recommend that the child receive separate MMR and varicella vaccines instead of MMRV.

People with minor illnesses, such as a cold, may be vaccinated. Children who are moderately or severely ill should usually wait until they recover before getting MMRV vaccine.

Your health care provider can give you more information.



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Centers for Disease
Control and Prevention

4. Risks of a vaccine reaction

- Sore arm from the injection, redness where the shot is given, fever, and a mild rash can happen after MMRV vaccination.
- Swelling of the glands in the cheeks or neck or temporary pain and stiffness in the joints sometimes occur after MMRV vaccination.
- Seizures, often associated with fever, can happen after MMRV vaccine. The risk of seizures is higher after MMRV than after separate MMR and varicella vaccines when given as the first dose of the two-dose series in younger children. Your health care provider can advise you about the appropriate vaccines for your child.
- More serious reactions happen rarely, including temporary low platelet count, which can cause unusual bleeding or bruising.
- In people with serious immune system problems, this vaccine may cause an infection that may be life-threatening. People with serious immune system problems should not get MMRV vaccine.

If a person develops a rash after MMRV vaccination, it could be related to either the measles or the varicella component of the vaccine. The varicella vaccine virus could be spread to an unprotected person. Anyone who gets a rash should stay away from infants and people with a weakened immune system until the rash goes away. Talk with your health care provider to learn more.

Some people who are vaccinated against chickenpox get shingles (herpes zoster) years later. This is much less common after vaccination than after chickenpox disease.

People sometimes faint after medical procedures, including vaccination. Tell your provider if you feel dizzy or have vision changes or ringing in the ears.

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1. Why get vaccinated?

MMR vaccine can prevent **measles, mumps, and rubella**.

- **MEASLES (M)** causes fever, cough, runny nose, and red, watery eyes, commonly followed by a rash that covers the whole body. It can lead to seizures (often associated with fever), ear infections, diarrhea, and pneumonia. Rarely, measles can cause brain damage or death.
- **MUMPS (M)** causes fever, headache, muscle aches, tiredness, loss of appetite, and swollen and tender salivary glands under the ears. It can lead to deafness, swelling of the brain and/or spinal cord covering, painful swelling of the testicles or ovaries, and, very rarely, death.
- **RUBELLA (R)** causes fever, sore throat, rash, headache, and eye irritation. It can cause arthritis in up to half of teenage and adult women. If a person gets rubella while they are pregnant, they could have a miscarriage or the baby could be born with serious birth defects.

Most people who are vaccinated with MMR will be protected for life. Vaccines and high rates of vaccination have made these diseases much less common in the United States.

2. MMR vaccine

Children need 2 doses of MMR vaccine, usually:

- First dose at age 12 through 15 months
- Second dose at age 4 through 6 years

Infants who will be traveling outside the United States when they are between 6 and 11 months of age should get a dose of MMR vaccine before travel. These children should still get 2 additional doses at the recommended ages for long-lasting protection.

Older children, adolescents, and adults also need 1 or 2 doses of MMR vaccine if they are not already

immune to measles, mumps, and rubella. Your health care provider can help you determine how many doses you need.

A third dose of MMR might be recommended for certain people in mumps outbreak situations.

MMR vaccine may be given at the same time as other vaccines. Children 12 months through 12 years of age might receive MMR vaccine together with varicella vaccine in a single shot, known as MMRV. Your health care provider can give you more information.

3. Talk with your health care provider

Tell your vaccination provider if the person getting the vaccine:

- Has had an **allergic reaction after a previous dose of MMR or MMRV vaccine**, or has any **severe, life-threatening allergies**
- Is **pregnant** or thinks they might be pregnant—pregnant people should not get MMR vaccine
- Has a **weakened immune system**, or has a **parent, brother, or sister with a history of hereditary or congenital immune system problems**
- Has ever had a **condition that makes him or her bruise or bleed easily**
- Has recently had a **blood transfusion or received other blood products**
- Has **tuberculosis**
- Has **gotten any other vaccines in the past 4 weeks**

In some cases, your health care provider may decide to postpone MMR vaccination until a future visit.



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People with minor illnesses, such as a cold, may be vaccinated. People who are moderately or severely ill should usually wait until they recover before getting MMR vaccine.

Your health care provider can give you more information.

4. Risks of a vaccine reaction

- Sore arm from the injection or redness where the shot is given, fever, and a mild rash can happen after MMR vaccination.
- Swelling of the glands in the cheeks or neck or temporary pain and stiffness in the joints (mostly in teenage or adult women) sometimes occur after MMR vaccination.
- More serious reactions happen rarely. These can include seizures (often associated with fever) or temporary low platelet count that can cause unusual bleeding or bruising.
- In people with serious immune system problems, this vaccine may cause an infection that may be life-threatening. People with serious immune system problems should not get MMR vaccine.

People sometimes faint after medical procedures, including vaccination. Tell your provider if you feel dizzy or have vision changes or ringing in the ears.

As with any medicine, there is a very remote chance of a vaccine causing a severe allergic reaction, other serious injury, or death.

5. What if there is a serious problem?

An allergic reaction could occur after the vaccinated person leaves the clinic. If you see signs of a severe allergic reaction (hives, swelling of the face and throat, difficulty breathing, a fast heartbeat, dizziness, or weakness), call **9-1-1** and get the person to the nearest hospital.

For other signs that concern you, call your health care provider.

Adverse reactions should be reported to the Vaccine Adverse Event Reporting System (VAERS). Your health care provider will usually file this report, or you can do it yourself. Visit the VAERS website at www.vaers.hhs.gov or call **1-800-822-7967**. *VAERS is only for reporting reactions, and VAERS staff members do not give medical advice.*

6. The National Vaccine Injury Compensation Program

The National Vaccine Injury Compensation Program (VICP) is a federal program that was created to compensate people who may have been injured by certain vaccines. Claims regarding alleged injury or death due to vaccination have a time limit for filing, which may be as short as two years. Visit the VICP website at www.hrsa.gov/vaccinecompensation or call **1-800-338-2382** to learn about the program and about filing a claim.

7. How can I learn more?

- Ask your health care provider.
- Call your local or state health department.
- Visit the website of the Food and Drug Administration (FDA) for vaccine package inserts and additional information at www.fda.gov/vaccines-blood-biologics/vaccines.
- Contact the Centers for Disease Control and Prevention (CDC):
 - Call **1-800-232-4636** (1-800-CDC-INFO) or
 - Visit CDC's website at www.cdc.gov/vaccines.

