

#NIAM15
national
IMMUNIZATION
awareness month



A HEALTHY START
begins with on-time vaccinations.



A Healthy Start: Birth to Age 6

CONTENTS

Introduction • 2

Vaccine Information • 7

About Measles • 5

Vaccine Safety • 11

Vaccines give parents the safe, proven power to protect their children from serious diseases. Parents can provide the best protection by following the recommended immunization schedule – giving their child the vaccines they need, when they need them.

Babies receive vaccinations that help protect them from 14 diseases by age 2. It is very important that babies receive all doses of each vaccine, as well as receive each vaccination on time. After age 2, children are still recommended to receive a yearly flu vaccine and will be due for additional vaccine doses between 4 and 6 years of age. Getting all of the recommended vaccines is one of the most important things parents can do to protect their children's health. If a child falls behind the recommended immunizations schedule, vaccines can still be given to “catch-up” the child before adolescence.

When children are not vaccinated, they are at increased risk for disease and can spread disease to others in their play groups, child care centers, classrooms and communities – including babies who are too young to be fully vaccinated, and people with weakened immune systems due to cancer and other health conditions. Child care settings and schools are highly susceptible to outbreaks of infectious diseases because students can easily spread illnesses to one another as a result of poor hand washing, uncovered coughs and dense populations.

Vaccines give parents the safe, proven power to protect their children from 14 serious diseases before they turn 2 years old.

- Vaccinating your children according to the recommended schedule is one of the best ways you can protect them from 14 harmful and potentially deadly disease like measles and whooping cough (pertussis) before their second birthday.
- Children who don't receive recommended vaccines are at risk of 1) getting the disease or illness, and 2) having a severe case of the disease or illness. You can't predict or know in advance if an unvaccinated child will get a vaccine-preventable disease, nor can you predict or know how severe the illness will be or become.
- Vaccines don't just protect your child. Immunization is a shared responsibility. Families, health care professionals and public health officials must work together to help protect the entire community – especially babies who are too young to be vaccinated themselves.
- Most parents choose the safe, proven protection of vaccines and are vaccinating their children according to the recommended immunization schedule. Estimates from a CDC nationally representative childhood vaccine communications poll (July 2014 online poll) suggest that most people are vaccinating according to schedule or are intending to do so.
- In fact, 88.9% of parents reported that they are vaccinating according to schedule or are intending to do so.
- Most young parents in the U.S. have never seen the devastating effects that diseases like measles or whooping cough (pertussis) can have on a family or community. It's easy to think of these as diseases of the past. But the truth is they still exist.
- Many vaccine preventable diseases are only a plane ride away. For example, measles is still common in many parts of the world. The disease is brought into the United States by unvaccinated travelers who are infected while in other countries. When measles gets into communities of unvaccinated people in the U.S. (such as people who refuse vaccines for religious, philosophical or personal reasons), outbreaks are more likely to occur.

- Since measles was declared eliminated in the United States in 2000, the annual number of people reported to have measles ranged from a low of 37 people in 2004 to a high of 668 people in 2014. In 2014 there were 23 outbreaks affecting 668 people from 27 states.
- This year, measles continues to affect the United States with over 178 cases reported as of June 26, 2015. Most of the reported measles cases occurred in people who were not vaccinated or who did not know whether they were vaccinated.
- Outbreaks of whooping cough (pertussis) have also occurred in the United States over the past few years. There are many factors contributing to the recent increase in whooping cough, but getting vaccinated is the best way to prevent whooping cough and its complications.

Vaccines are recommended throughout our lives. Following the recommended schedule offers the best protection.

- Vaccines offer the best-known protection against many devastating illnesses. Following the recommended immunization schedule is the best way to ensure your children are protected from deadly diseases.
- Vaccines require multiple doses for several reasons. Depending on the vaccine, multiple doses may be needed to build high enough immunity to prevent disease, boost immunity that has faded over time, help to make sure people who did not get immunity from a first dose are protected, or protect against germs that change over time, such as the flu.
- Children do not receive any known benefits from following schedules that delay vaccines. We do know that delaying vaccines puts children at known risk of becoming ill with vaccine-preventable diseases. Infants and young children who follow immunization schedules that spread out shots – or leave out shots – are at risk of developing diseases during the time that shots are delayed.
- If a young child falls behind the recommended schedule, parents and health care professionals should use the catch-up immunization schedule to quickly get the child up to date, reducing the amount of time the child is left vulnerable to vaccine-preventable diseases.

Talk to your doctor or other healthcare professional to make sure your children get the vaccinations they need when they need them.

- Health care professionals are parents' most trusted source of information about vaccines for their children. They play a critical role in supporting parents in understanding and choosing vaccines.

- Parents are encouraged to talk to their health care professionals about their vaccine-related questions and concerns. Parents who want more information about vaccines can learn more at CDC's vaccine website for parents: www.cdc.gov/vaccines/parents/
- Families who need help paying for childhood vaccines should ask their health care professional about the Vaccines for Children program, which provides vaccines at no cost to eligible children who do not otherwise have access to recommended childhood vaccines.
- Parents should check their child's immunization records to make sure they are up to date on all recommended vaccinations. Parents with questions are encouraged to talk with their child's health care professional to see if any catch-up doses are needed.

Vaccines are very safe.

- Vaccines are thoroughly tested before licensing and carefully monitored after they are licensed to ensure that they are very safe.
- Vaccines are among the safest and most cost-effective ways to prevent disease. They not only protect vaccinated individuals but also help protect entire communities by preventing and reducing the spread of infectious diseases.
- Currently the United States has the safest, most effective vaccine supply in its history. The country's long-standing vaccine safety system ensures that vaccines are as safe as possible.

(More about vaccine safety on page 11.)

Protecting your children from preventable diseases will help keep them healthy and in school.

- Vaccines are among the safest and most cost-effective ways to prevent disease.
- When a child comes down with a disease such as whooping cough, chickenpox or the flu, he or she may miss a lot of school while recovering. Somebody will need to stay home to provide care and make trips to the doctor.
- Schools are a prime venue for transmitting vaccine-preventable diseases, and school-age children can further spread disease to their families and others with whom they come in contact.

About Measles

Measles is a serious respiratory disease caused by a virus.

- Measles starts with a fever. Soon after, it causes a cough, runny nose, and red eyes. Then a rash of tiny, red spots breaks out.
- It starts at the head and spreads to the rest of the body. The rash can last for a week, and coughing can last for 10 days.

Measles is highly contagious.

Measles spreads through the air when an infected person coughs or sneezes. It is so contagious that if one person has it, nine out of 10 people around him or her will also become infected if they are not protected.

- You can get measles just by being in a room where a person with measles has been, even up to two hours after that person has left.
- An infected person can spread measles to others even before he or she develops symptoms – from four days before they develop the measles rash to four days afterward.

Measles can be serious.

Measles can cause serious health complications, such as pneumonia or encephalitis, and even death.

- Children younger than 5 years of age and adults older than 20 years of age are at high risk of getting a serious case of measles.
- About one in four unvaccinated people in the U.S. who get measles will be hospitalized.
- One out of every 1,000 people with measles will develop brain swelling (encephalitis).
- One or two of 1,000 people with measles will die, even with the best care.

Measles Outbreaks

Measles cases continue to be brought into the United States by people who get infected while in other countries.

- Since 2000, when measles was declared eliminated from the U.S., the annual number of people reported to have measles ranged from a low of 37 people in 2004 to a high of 668 people in 2014.
- The majority of importations of measles into the U.S. come from U.S. residents. When we can identify vaccine status, almost all are unvaccinated.
- Anyone who is not protected against measles is at risk of getting the disease anywhere (school, work, the gym, etc.) in the United States and any time of the year, as well as while traveling internationally.

Childhood Vaccine Recommendation

The best protection against measles is MMR vaccine. MMR vaccine provides long-lasting protection against all strains of measles. Make sure you're up to date on MMR and other vaccinations.

- Children should receive two doses of MMR vaccine – the first dose at 12 through 15 months of age, and the second dose 4 through 6 years of age. Giving the second dose of the vaccine earlier is allowed at any time as long as it is at least 28 days after the first dose.
- Unless they have evidence of measles immunity, college and other students, health care personnel, and international travelers need two appropriately spaced doses and other adults need one dose. Ask your health care provider if you have questions about whether you need MMR vaccine.
- People who received two doses of MMR vaccine as children according to the U.S. vaccination schedule are considered protected for life.
- For those who travel internationally, CDC recommends that all U.S. residents older than 6 months be protected from measles and receive MMR vaccine, if needed, prior to departure.

Vaccine Safety and Side Effects

The MMR vaccine has a long record of safety. FDA and CDC continually monitor MMR vaccine safety. While MMR vaccines are safe, side effects can occur. The most common side effects are mild (redness, swelling, tenderness). Serious side effects are extremely rare.

Vaccine Information

Check the childhood immunization schedule for all recommended vaccines from birth through age 6: [/www.cdc.gov/vaccines/schedules/easy-to-read/child-easyread.html](http://www.cdc.gov/vaccines/schedules/easy-to-read/child-easyread.html). A second immunization schedule is available for preteens and teens, which includes information for children age 7 to 10 who may be behind schedule: www.cdc.gov/vaccines/schedules/easy-to-read/preteen-teen.html

Here are key points about some of the vaccines that are recommended for children from birth to 6 years old.

Hep B	Hib	Flu	Varicella
RV	PCV13	MMR	Hep A
DTaP	IPV		

Hep B vaccine protects against hepatitis B.

Doctors recommend children get three doses of the hepatitis B shot for best protection.

Typically, children need one dose at each of the following ages: birth, 1 through 2 months, and 6 through 18 months.

- Hepatitis B is spread by contact with bodily fluids.
- Symptoms: There may be no symptoms, or there may be fever, headache, weakness, vomiting, jaundice (yellowing of skin and eyes), joint pain.
- Complications: chronic liver infection, liver failure, liver cancer.

RV vaccine protects against rotavirus.

Doctors recommend children get two or three doses of the vaccine (depending on the brand of vaccine) for best protection. Babies should get the first dose at 2 months of age. For both vaccine brands, babies get a second dose at 4 months. If getting RotaTeq, babies need a third dose at 6 months.

- This vaccine is a liquid that is swallowed, and is not given in the form of a shot.
- The virus is in the stool (feces) of people who are infected with the virus. It is spread by hands, diapers, or objects like toys, changing tables, or doorknobs that have a small amount of the stool on them. The disease commonly spreads in families, hospitals, and child care centers.
- Symptoms: diarrhea, fever and vomiting.
- Complications: severe diarrhea, dehydration.

DTaP vaccine protects against diphtheria, tetanus, and pertussis (whooping cough).

Doctors recommend children get five doses of the DTaP vaccine for best protection. Children need one dose at each of the following ages: 2 months, 4 months, 6 months, 15 through 18 months, and 4 through 6 years. If a child falls behind schedule on this vaccine series, he or she will be given the Tdap vaccine if he or she is older than 6 years old when completing the series. DTaP is not licensed for children over 6 years of age. Tdap provides protection against the same diseases as DTaP.

- **Diphtheria** is spread through the air and direct contact with an infected person.
 - Symptoms: sore throat, mild fever, weakness, sore glands in neck
 - Complications: swelling of the heart muscle, heart failure, coma, paralysis, death
- **Tetanus** is spread from exposure through cuts in the skin.
 - Symptoms: stiffness in jaw, neck and abdominal muscles, difficulty swallowing, muscle spasms, fever
 - Complications: broken bones, breathing difficulty, death
- **Pertussis (whooping cough)** is spread through the air and direct contact with a person who was whooping cough.
 - Symptoms: severe cough, low-grade fever, runny nose, apnea (pause in breathing) in infants
 - Complications: pneumonia (infection in the lungs), rib fractures, death

Hib vaccine protects against *Haemophilus influenzae* type b (Hib).

Doctors recommend children get three or four doses of the Hib vaccine for best protection. Children need one dose at each of the following ages: 2 months, 4 months, 6 months (for some brands), and 12 through 15 months.

- *Haemophilus influenzae* type b is a bacteria spread through the air and direct contact with a person who has Hib.
- Types of Infection: The most common severe types of Hib disease are infections of the lungs (causing pneumonia), blood (causing bacteremia), and covering of the brain and spinal cord (causing meningitis).
- Symptoms: Symptoms of pneumonia can include fever, cough, shortness of breath or chills, among others.
- Symptoms of bacteremia can include fever, chills, excessive tiredness, or pain in the belly, among others. Symptoms of meningitis can include fever, headache, stiff neck, nausea, or vomiting, among others.
- Complications: brain damage, hearing loss, loss of limbs, death

PCV13 vaccine protects against pneumococcal disease.

Doctors recommend children get four doses of the pneumococcal vaccine for best protection. Children need one dose at each of the following ages: 2 months, 4 months, 6 months, and 12 through 15 months.

- Pneumococcus is a bacteria spread through the air and direct contact with an infected person.
- Types of Infection: Pneumococcus bacteria can lead to infections of the lungs (causing pneumonia), covering of the brain and spinal cord (causing meningitis), blood (causing bacteremia), ears, and sinuses.
- Symptoms of pneumonia can include fever, chills, difficulty breathing, or chest pain, among others. Symptoms of meningitis can include fever, headache, stiff neck, or confusion, among others. Symptoms of bacteremia can include fever, chills, or low alertness. Symptoms of middle ear infections can include ear pain, a red, swollen ear drum, fever, or sleepiness. Symptoms of sinus infections can include headache, stuffy or runny nose, or facial pain or pressure, among others.
- Complications: brain damage, hearing loss, loss of limbs, death.

IPV vaccine protects against polio.

Doctors recommend children get four doses of the polio vaccine (also called IPV) for best protection. Children need one dose at each of the following ages: 2 months, 4 months, 6 through 18 months, and 4 through 6 years.

- Polio is spread through the air, by direct contact with a person who has polio, and through oral/nasal secretions.
- Symptoms: There may be no symptoms, or there may be sore throat, fever, nausea, headache.
- Complications: paralysis, death.

Flu vaccine protects against influenza.

Doctors recommend children get the flu vaccine every year starting when they are 6 months old. Some children 6 months through 8 years of age may need two doses for best protection.

- Influenza is spread through the air and direct contact with a person who has influenza.
- Symptoms: fever, muscle pain, sore throat, cough, extreme fatigue.
- Complications: pneumonia (infection in the lungs).

MMR vaccine protects against measles, mumps, and rubella.

Doctors recommend that children get two doses of the MMR shot for best protection. Children need one dose at each of the following ages: 12 through 15 months and 4 through 6 years. Infants 6 months to 11 months old need one dose of MMR vaccine before traveling abroad.

- **Measles** is spread through the air and direct contact with a person who has measles.
 - Symptoms: rash, fever, cough, runny nose, pinkeye
 - Complications: encephalitis (brain swelling due to infection) pneumonia (infection in the lungs), death
- **Mumps** is spread through the air and direct contact with a person who has mumps.
 - Symptoms: swollen salivary glands (under the jaw), fever, headache, tiredness, muscle pain
 - Complications: meningitis (infection of the covering around the brain and spinal cord), encephalitis (brain swelling), inflammation of testicles or ovaries, deafness
- **Rubella (German Measles)** is spread through the air and direct contact with a person who has rubella.
 - Symptoms: Children infected with rubella virus sometimes have a rash, fever, swollen lymph nodes.
 - Complications: very serious in pregnant women – can lead to miscarriage, stillbirth, premature delivery, birth defects

Varicella vaccine protects against chickenpox.

Doctors recommend children get two doses of the chickenpox shot for best protection. Children need one dose at each of the following ages: 12 through 15 months and 4 through 6 years.

- Chickenpox is spread through the air and direct contact with a person who has chickenpox.
- Symptoms: rash, itching, tiredness, headache, fever.
- Complications: infected blisters, bleeding disorders, encephalitis (brain swelling due to infection), pneumonia (infection in the lungs).

Hepatitis A vaccine protects against hepatitis A.

Doctors recommend children get two doses of the hepatitis A shot for best protection. Children need the first dose at 12 through 23 months and the second dose 6 to 18 months after the first.

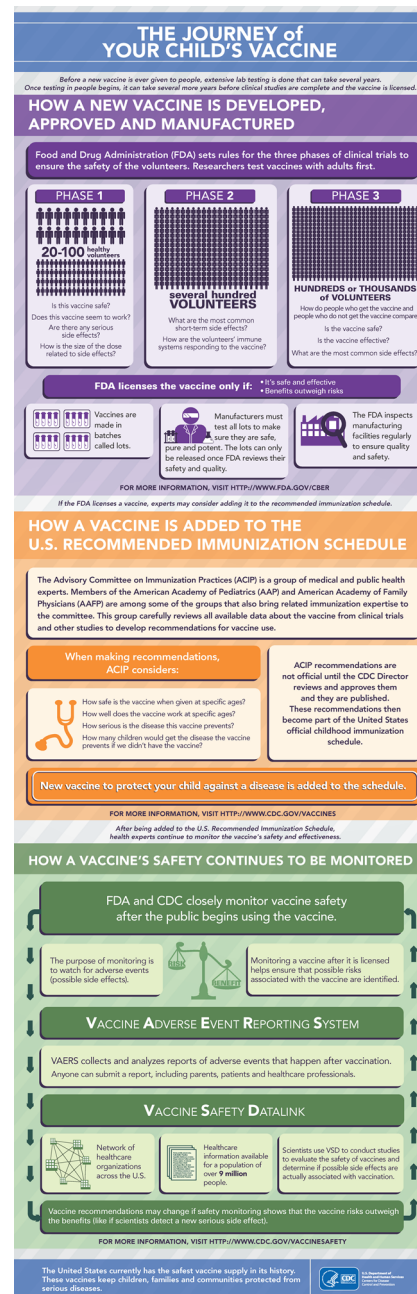
- Hepatitis A is spread through direct contact with a person who has hepatitis A and contaminated food or water.
- Symptoms: There may be no symptoms, or there may be fever, stomach pain, diarrhea, loss of appetite, fatigue, jaundice (yellowing of skin or eyes), dark urine
- Complications: liver failure, joint pain, kidney, pancreatic and blood disorders

Vaccine Safety

- All vaccines used in the United States extensive safety testing before they are the U.S. Food and Drug Administration
- FDA and CDC work with doctors and other professionals throughout the United States the safety of vaccines.
- Several systems are used to monitor the vaccines after they are licensed and being United States.
 - These systems can monitor side already known to be caused by well as detect rare side effects that identified during a vaccine's clinical
 - One of the systems used to monitor vaccines after they are licensed and United States is called the Vaccine Event Reporting System (VAERS).
 - VAERS accepts reports of adverse possible side effects) that occur after These reports come from health professionals, vaccine manufacturers, and the general public (vaccine recipients or their parents/guardians).

See the infographic:

www.cdc.gov/vaccines/parents/infographics/journey-of-child-vaccine.html



require licensed by (FDA).

health care to monitor

safety of used in the

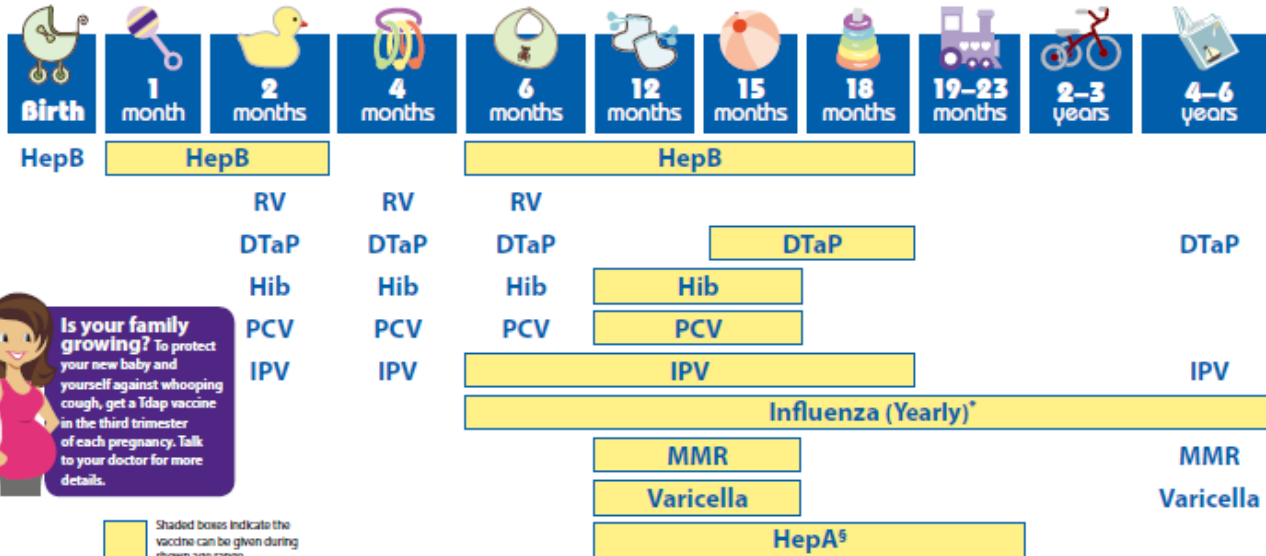
effects vaccines, as were not trials.

the safety of used in the Adverse

events (any vaccination.

Immunization Schedule

2015 Recommended Immunizations for Children from Birth Through 6 Years Old



NOTE: If your child misses a shot, you don't need to start over, just go back to your child's doctor for the next shot. Talk with your child's doctor if you have questions about vaccines.

FOOTNOTES:

- * Two doses given at least four weeks apart are recommended for children aged 6 months through 8 years of age who are getting an influenza (flu) vaccine for the first time and for some other children in this age group.
- § Two doses of HepA vaccine are needed for lasting protection. The first dose of HepA vaccine should be given between 12 months and 23 months of age. The second dose should be given 6 to 18 months later. HepA vaccination may be given to any child 12 months and older to protect against HepA. Children and adolescents who did not receive the HepA vaccine and are at high-risk, should be vaccinated against HepA.

If your child has any medical conditions that put him at risk for infection or is traveling outside the United States, talk to your child's doctor about additional vaccines that he may need.

SEE BACK PAGE FOR MORE INFORMATION ON VACCINE-PREVENTABLE DISEASES AND THE VACCINES THAT PREVENT THEM.

For more information, call toll free
1-800-CDC-INFO (1-800-232-4636)
or visit
<http://www.cdc.gov/vaccines>



U.S. Department of
Health and Human Services
Centers for Disease
Control and Prevention



American Academy
of Pediatrics



Check the childhood immunization schedule for all recommended vaccines:

www.cdc.gov/vaccines/parents/downloads/parent-ver-sch-0-6yrs.pdf