

When Do Children and Teens Need Vaccinations?

Age	HepB Hepatitis B	DTaP/Tdap Diphtheria, tetanus, pertussis	Hib <i>Haemophilus influenzae</i> type b	Polio	PCV Pneumococcal conjugate	RV Rotavirus	MMR Measles, mumps, rubella	Varicella Chickenpox	HepA Hepatitis A	HPV Human papillo- mavirus	MCV4 Meningococcal conjugate	Influenza							
Birth	✓																		
2 months	✓ (1–2 mos)	✓	✓	✓	✓	✓													
4 months	✓ ¹	✓	✓	✓	✓	✓													
6 months	✓ (6–18 mos)	✓	✓ ²	✓ (6–18 mos)	✓	✓ ²						✓ ³ (given each fall or winter to children ages 6 mos–18 yrs)							
12 months		✓ ⁴ (15–18 mos)	✓ ² (12–15 mos)		✓ ⁵ (12–15 mos)	✓ ⁵ (12–15 mos)	✓ ⁵ (12–15 mos)	✓ ⁵ (12–15 mos)	✓ ⁵ (12–15 mos)	✓✓ (2 doses given 6 mos apart at age 12–23 mos)									
15 months																			
18 months																			
19–23 months	Catch-up ⁵	Catch-up ⁵	Catch-up ⁵ (to 5 years)	Catch-up ⁵	Catch-up ⁵ (to 5 years)		Catch-up ⁵	Catch-up ⁵											
4–6 years		✓		✓			✓	✓											
7–10 years		Catch-up ⁵	Catch-up ⁵						Catch-up ⁵										
11–12 years		✓ Tdap			Catch-up ⁵			Catch-up ⁵	Catch-up ⁵		✓✓✓ ⁶	✓							
13–18 years		Catch-up ⁵ (Tdap/Td)								Catch-up ^{5,6}	Catch-up ^{5,7}								

- Your infant may not need a dose of HepB at age 4 months depending on the type of vaccine that your healthcare provider uses.
- Your infant may not need a dose of Hib vaccine or RV vaccine at age 6 months depending on the type of vaccine that your healthcare provider uses.
- One dose is recommended for most people. Children younger than age 9 years who are receiving influenza vaccine for the first time, or who received only 1 dose in the previous season (if it was their first vaccination season), should receive 2 doses spaced at least 4 weeks apart this season.
- This dose of DTaP may be given as early as age 12 months if it has been 6 months since the previous dose.

- If your child's vaccinations are delayed or missed entirely, they should be given as soon as possible.
- All girls and women age 11 through 26 years should be vaccinated with 3 doses of HPV vaccine, given over a 6-month period. Boys and men age 11 through 26 years may also be vaccinated with one of the HPV vaccines (Gardasil) to reduce their likelihood of getting genital warts. The vaccine may be given to children as young as age 9 years.
- If you have a teenager who is enrolling in college and planning to live in a dormitory and who hasn't previously been vaccinated against meningococcal disease, they should be vaccinated now.

Please note: Some children may need additional vaccines. Talk to your healthcare provider.

Vaccine-Preventable Diseases and the Vaccines that Prevent Them

Diphtheria (Can be prevented by DTaP vaccine)*

Diphtheria is a very contagious bacterial disease that affects the respiratory system, including the lungs. Diphtheria can be passed from person to person by direct contact with droplets from an infected person's cough or sneeze. When people are infected, the diphtheria bacteria produce a toxin (poison) in the body that can cause weakness, sore throat, low-grade fever, and swollen glands in the neck. Effects from this toxin can also lead to swelling of the heart muscle and, in some cases, heart failure. In severe cases, the illness can cause coma, paralysis, and even death.

Haemophilus influenzae type b (Can be prevented by Hib vaccine)

Hib disease is caused by bacteria called *Haemophilus influenzae* type b. The disease is very serious for children younger than age 5, especially infants. Hib is spread from person to person by direct contact, or by contact with respiratory droplets from an infected person's cough or sneeze. Hib is most commonly spread by people who have the bacteria in their noses and throats but who are not sick. Hib can cause meningitis—an infection around the brain and spinal cord—which can lead to life-long disability, mental retardation, or death. Hib can also cause epiglottitis (infection in the throat) and pneumonia (infection in the lungs). All these infections can be life threatening.

Hepatitis A (Can be prevented by HepA vaccine)

Hepatitis A is an infection in the liver caused by a virus. The virus is spread primarily person-to-person through the fecal-oral route. In other words, the virus is taken in by mouth from contact with objects, food, or drinks contaminated by the feces (stool) of an infected person. Symptoms include fever, tiredness, loss of appetite, nausea, abdominal discomfort, dark urine, and jaundice (yellowing of the skin and eyes). An infected person may have no symptoms, may have mild illness for a week or two, or may have severe illness for several months that requires hospitalization. In the U.S., about 100 people a year die from hepatitis A.

Hepatitis B (Can be prevented by HepB vaccine)

Hepatitis B is an infection of the liver caused by a virus. It spreads through contact with blood or other body fluids, for example, from sharing personal items, such as toothbrushes or eating utensils. Hepatitis B causes a flu-like illness with loss of appetite, nausea, vomiting, rashes, joint pain, and jaundice. The virus stays in the liver of some people for the rest of their lives and can result in severe liver diseases, including fatal cancer.

Influenza (Can be prevented by annual flu vaccine)

Influenza is a highly contagious viral infection of the nose, throat, and lungs. It spreads easily through droplets when an infected person coughs or sneezes and can cause mild to severe illness. Typical symptoms include a sudden high fever, chills, a dry cough, headache, runny nose, sore throat, and muscle and joint pain. Extreme fatigue can last from several days to weeks. Influenza

may lead to hospitalization or even death, even among previously healthy children.

Measles (Can be prevented by MMR vaccine)**

Measles is one of the most contagious viral diseases. Measles is spread by direct contact with the airborne respiratory droplets of an infected person. Measles is so contagious that just being in the same room after a person who has measles has already left can result in infection. Symptoms usually include a rash, fever, cough, and watery eyes. Fever can persist, reaching 104° F or higher, rash can last for up to a week, and coughing can last about 10 days. Measles can also cause pneumonia, seizures, brain damage, or death.

Mumps (Can be prevented by MMR vaccine)**

Mumps is an infectious disease caused by the mumps virus, which is spread in the air by a cough or sneeze from an infected person. A child can also get infected with mumps by coming in contact with a contaminated object, like a toy. The mumps virus causes fever, headaches, painful swelling of the salivary glands under the jaw, fever, muscle aches, tiredness, and loss of appetite. Severe complications for children who get mumps are rare, but can include meningitis (infection of the covering of the brain and spinal cord), encephalitis (inflammation of the brain), permanent hearing loss, or swelling of the testes, which can lead to sterility in men.

Pertussis (Whooping Cough) (Can be prevented by DTaP vaccine)*

Pertussis is caused by bacteria that spread through direct contact with respiratory droplets when an infected person coughs or sneezes. In the beginning, symptoms of pertussis are similar to the common cold, including runny nose, sneezing, low grade fever, and cough. After 1-2 weeks, pertussis can cause spells of violent coughing and choking, making it hard to breathe, drink, or eat. This cough can last for weeks. Pertussis is most serious for babies, who can get pneumonia, have seizures, become brain damaged, or even die. About two-thirds of children under 1 year of age who get pertussis must be hospitalized.

Pneumococcal Disease (Can be prevented by PCV vaccine)

Pneumococcal disease is a bacterial infection that invades the lungs, causing the most common kind of bacterial pneumonia. The bacteria are commonly found in many people's noses and throats and are spread by droplets when people who have the bacteria in their throats or noses cough or sneeze. People—especially children—often have the bacteria in their throats without being ill. In fact, the bacteria are present in about 25% of people. Why the bacteria suddenly invade the body and cause disease is unknown. The bacteria can invade both the bloodstream (bacteremia) and the brain (meningitis, that is infection of the covering of the brain and spinal cord). Symptoms include high fever, cough with chest pain and mucus, shaking chills, breathlessness, and chest pain that increases with breathing. Pneumococcal disease can result in hospitalization and even death.

Polio (Can be prevented by IPV vaccine)

Polio is caused by a virus that lives in an infected person's throat and intestines. It spreads through contact with the feces (stool) of an infected person and through droplets from a sneeze or cough. Symptoms typically include sudden fever, sore throat, headache, muscle weakness, and pain. In about 1% of cases, polio can cause paralysis. Among those who are paralyzed, up to 5% of children may die because they become unable to breathe.

Rotavirus (Can be prevented by RV vaccine)

Rotavirus is caused by a virus and is the most common cause of severe diarrhea among children. Rotavirus is spread primarily person-to-person through the fecal-oral route. In other words, the virus is taken in by mouth from contact with objects, food, or drinks contaminated by the feces (stool) of an infected person. Common symptoms of rotavirus include vomiting, watery diarrhea that lasts for 3-8 days, fever and abdominal pain. Approximately 55,000 children are hospitalized each year in the United States from severe diarrhea and vomiting caused by rotavirus.

Rubella (German Measles) (Can be prevented by MMR vaccine)**

Rubella is caused by a virus that is spread through coughing and sneezing. In children rubella usually causes a mild illness with fever, swollen glands, and a rash that lasts about 3 days. Rubella rarely causes serious illness or complications in children, but can be very serious in pregnant women. If a pregnant woman is infected, the result to the baby can be devastating, including miscarriage, serious heart defects, mental retardation and loss of hearing and eye sight.

Tetanus (Lockjaw) (Can be prevented by DTaP vaccine)*

Tetanus is caused by bacteria found in soil that enters the body through a wound, such as a deep cut. When people are infected, the bacteria produce a toxin (poison) in the body that causes serious, painful spasms and stiffness of all muscles in the body. This can lead to "locking" of the jaw so a person cannot open his or her mouth, swallow, or breathe. Complete recovery from tetanus can take months. Three of ten people who get tetanus die from the disease.

Varicella (Chickenpox) (Can be prevented by Varicella vaccine)

Chickenpox is caused by the varicella zoster virus. Chickenpox is very contagious and spreads very easily from infected people. It can spread from either a cough, sneeze. It can also spread by contact with virus particles that come from the blisters on the skin, either by touching them or by breathing in these virus particles. Typical symptoms of chickenpox include an itchy rash with blisters, tiredness, headache and fever. Chickenpox is usually mild, but it can lead to severe skin infections, pneumonia, encephalitis (brain swelling), or even death.

* DTaP is a combination vaccine that can prevent Diphtheria, Tetanus, and Pertussis

** MMR is a combination vaccine that can prevent Measles, Mumps, and Rubella.