

Immunizations

Babies are born with protection against certain diseases because antibodies (proteins made by the body to fight disease) from their mothers were passed to them through the placenta. After birth, breastfed babies get the continued benefits of additional antibodies in breast milk. But in both cases, the protection is temporary.

Immunization (vaccination) is a way of creating immunity to certain diseases by using small amounts of a killed or weakened microorganism (virus or bacteria) that causes the particular disease.

Vaccines stimulate the immune system to react as if there were a real infection — it fends off the “infection” and remembers the organism so that it can fight it quickly should it enter the body later.

Types of vaccines

There are a few different types of vaccines:

- **Attenuated (weakened)** live viruses
- **Killed (inactivated)** viruses or bacteria
- **Toxoid vaccines** contain an inactivated toxin produced by the bacterium
- **Conjugate vaccines** (such as Hib) contain parts of bacteria combined with proteins

The American Academy of Pediatrics (AAP) recommends that kids get combination vaccines (rather than single vaccines) whenever possible. Many vaccines are offered in combination to help reduce the number of shots a child receives.

What vaccines your child needs

The following vaccinations and schedules are recommended by the AAP. Please note that some variations are acceptable and that changes in recommendations often occur as new vaccines are developed. Your doctor will determine the best vaccinations and schedule for your child.

Recommended vaccinations:

- Chickenpox vaccine
- Diphtheria, Tetanus and Pertussis vaccine (DTaP)
- Hepatitis A vaccine (HepA)
- Hepatitis B vaccine (HepB)
- Hib vaccine
- Human Papillomavirus (HPV) vaccine
- Influenza vaccine
- Measles, Mumps and Rubella vaccine (MMR)
- Meningococcal/Meningitis vaccine
- Pneumococcal vaccines (PCV, PPSV)
- Polio vaccine (IPV)
- Rotavirus (RV) vaccine

Vaccine concerns

Parents may hesitate to have their kids vaccinated because they're worried their children will have serious

reactions or get the illness the vaccine is supposed to prevent. But because the components of vaccines are weakened or killed — and in some cases, only parts of the microorganism are used — they're unlikely to cause any serious illness.

Vaccines may cause mild reactions, such as soreness where the shot was given or fever, but serious reactions are rare.

Immunization schedule

This schedule may vary depending upon where you live, your child's health, the type of vaccine and the vaccines available.

Birth

- **HepB:** Hepatitis B vaccine; recommended to give the first dose at birth, but may be given at any age for those not previously immunized.

1-2 months

- **HepB:** Second dose should be administered 1 to 2 months after the first dose.

2 months

- **DTaP:** Diphtheria, tetanus and acellular pertussis vaccine
- **Hib:** *Haemophilus influenzae* type b vaccine
- **IPV:** Inactivated poliovirus vaccine
- **PCV:** Pneumococcal conjugate vaccine
- **RV:** Rotavirus vaccine

4 months

- **DTaP**
- **Hib**
- **IPV**
- **PCV**
- **RV**

6 months

- **DTaP**
- **Hib**
- **PCV**
- **RV:** This third dose may be needed, depending on the brand of vaccine used in previous immunizations.

6 months and annually

- **Influenza (Flu):** The flu vaccine is recommended every year for children 6 months and older:
 - ♦ Kids younger than 9 who get the flu vaccine for the first time (or who have only had 1 dose before July 2019) will get it in 2 separate doses at least a month apart.
 - ♦ Those younger than 9 who have had at least 2 doses of flu vaccine previously (in the same or different seasons) will only need 1 dose.
 - ♦ Kids older than 9 only need 1 dose.

Immunizations (continued)

- ◆ The vaccine is given by injection with a needle (the flu shot) or by nasal spray. The nasal spray is only for healthy people ages 2 through 49. People with weakened immune systems or some health conditions (such as asthma) and pregnant women should not get the nasal spray vaccine.
- ◆ Kids 6 months to 5 years old are considered the group of kids who most need the flu vaccine, but updated guidelines now recommend that older kids and teens get it, too.
- ◆ It's especially important for high-risk kids to be vaccinated. High-risk groups include, but aren't limited to, kids younger than 5 years old, and those with chronic medical conditions, such as asthma, heart problems, sickle cell anemia, diabetes or human immunodeficiency virus (HIV).
- ◆ It can take up to two weeks after the shot is given for the body to build up immunity against the flu.

6-18 months

- **HepB**
- **IPV**

12-15 months

- **Hib**
- **MMR:** Measles, mumps and rubella (German measles) vaccine
- **PCV**
- **Chickenpox** (varicella)

12-23 months

- **HepA** Hepatitis A vaccine; given as 2 shots at least 6 months apart

15-18 months

- **DTaP**

4-6 years

- **DTaP**
- **MMR**
- **IPV**
- **Varicella**

11-12 years

- **HPV:** Human papillomavirus vaccine, given in 2 shots over a 6- to 12-month period. It can be given as early as age 9. For teens and young adults ages 15–26, it is given in 3 shots over 6 months. It's recommended for both girls and boys to prevent genital warts and certain types of cancer.
- **Tdap:** Tetanus, diphtheria and pertussis booster. Also recommended during each pregnancy a woman has.
- **Meningococcal vaccine:** A booster dose is recommended at age 16 too.

16–18 years

- **Meningococcal B vaccine (MenB):** The MenB vaccine may be given to kids and teens in 2 or 3 doses, depending on the brand. Unlike the meningococcal conjugate vaccine, which is recommended, the MenB vaccine is given at the discretion of the doctor.

Special circumstances

- **HepA** is also recommended for kids 2 years and older and adults who are at high risk for the disease. This includes people who live in, travel to, or adopt children from locations with high rates of hepatitis A; people with clotting disorders; and people with chronic liver disease. The vaccine also can be given to anyone who desires immunity to the disease, and is useful for staff at childcare facilities or schools where they may be at risk of exposure.
- **The MMR vaccine** can be given to babies as young as 6 months old if they will be traveling internationally. These children should still be given the recommended routine doses at 12–15 months and 4–6 years of age.
- **The flu vaccine** is especially important for kids who are at risk for health problems from the flu. High-risk groups include, but aren't limited to, kids younger than 5 years old and those with chronic medical conditions, such as asthma, heart problems, sickle cell disease, diabetes, or HIV.
- **The meningococcal vaccines** can be given to kids as young as 8 weeks old (depending on the type of vaccine) who are at risk of getting a meningococcal infection, such as meningitis. This includes children with certain immune disorders. Kids who live in (or will be traveling to) countries where meningitis is common, or where there is an outbreak, should also receive a vaccine.
- **Pneumococcal vaccines** also can be given to older kids (age 2 and up) who have conditions that affect their immune systems, such as asplenia or HIV infection, or other conditions, like a cochlear implant, chronic heart disease or chronic lung disease.