

# Your Child's Immunizations

Babies are born with protection against some diseases because their mothers pass antibodies (proteins made by the body to fight disease) to them before birth. Breastfed babies continue to get more antibodies in breast milk. But in both cases, the protection is temporary.

Immunization (vaccination) is a way to create immunity to (protection from) some diseases. Sometimes this is done by using small amounts of a killed or weakened germ that causes the disease. Other times the vaccine is simply a small piece of the germ, such as a protein or a piece of its genetic material.

Germs can be viruses (such as the measles virus) or bacteria (such as pneumococcus). Vaccines stimulate the immune system to react as if there were a real infection. It fends off the "infection" and remembers the germ. Then, it can fight the germ if it enters the body later.

## What Are the Types of Vaccines?

There are a few different types of vaccines:

- **Attenuated (weakened) live germs:** These are used in some vaccines such as in the measles, mumps, and rubella (MMR) and chickenpox vaccines.
- **Killed (inactivated) germs:** These are used in some vaccines, such as in the flu shot or the inactivated poliovirus vaccine.
- **Toxoid vaccines:** These contain an inactivated toxin (harmful chemical) made by the germ. For example, the diphtheria and tetanus vaccines are toxoid vaccines.
- **Conjugate vaccines:** These contain small pieces of the germ combined with proteins that help trigger a strong immune response. Many commonly used vaccines are made this way, including those that protect against hepatitis B, HPV, whooping cough, and meningitis.
- **mRNA (messenger RNA) vaccines:** These use a piece of the germ's RNA, which is part of its genetic material. Some of the COVID-19 vaccines are this type.

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 lower the number of shots a child gets. This has been shown to be very safe. From the day a baby is born, their immune system is exposed to countless germs every day. A few more in a combination vaccine is very easy for the immune system to handle.

## What Vaccines Do Kids Need?

The following vaccinations and schedules are recommended by the AAP. Some variations are normal, and recommendations change as new vaccines are developed. Your doctor will talk to you about the right vaccinations and schedule for your child.

## Recommended vaccinations:

- Chickenpox (varicella) vaccine
- Diphtheria, tetanus, and pertussis (DTaP) vaccine
- Hepatitis A (HepA) vaccine
- *Haemophilus influenzae* type b (Hib) vaccine
- Hepatitis B (HepB) vaccine
- Human papillomavirus (HPV) vaccine
- Influenza (flu) vaccine
- Measles, mumps, and rubella (MMR) vaccine
- Meningococcal (MenACWY, MenB) vaccines
- Pneumococcal (PCV13, PPSV23) vaccines
- Polio (IPV) vaccine
- Rotavirus (RV) vaccine
- COVID-19 vaccine
- Dengue vaccine

## Vaccine Concerns

Some parents may hesitate to have their kids vaccinated. They have questions or worry that a child might have a serious reaction or get the illness the vaccine prevents. But the components of vaccines are weakened or killed. In some cases, only parts of the germ are used. So they're unlikely to cause any serious illness.

Some vaccines may cause mild reactions, such as soreness where the shot was given or a fever. But serious reactions are rare. The risks of vaccinations are small compared with the health risks of the diseases they're intended to prevent.

Immunizations are one of the best ways to protect your family from contagious diseases.

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