HEALTH BASICS

Babies and shots

An explanation of why babies receive vaccines and other injections, what to expect, and when to seek help.

WHAT IT IS
Vaccines and other injections given during infancy

WHERE IT COMES UP
Newborn care, checkups, vaccination visits, and some treatments

WHY IT MATTERS
Protection from serious infections and delivery of needed medicines

WHAT IT IS NOT
Not a disease or diagnosis

WHO TO ASK
Pediatric clinician, family clinician, nurse, or vaccination service

HOW IT IS CHECKED
Vaccination record and recommended schedule for age and health

Overview

"Shots" usually means vaccines given by injection. Vaccines train a baby's immune system to recognize and respond to certain infections. They are offered at planned ages because babies can be especially vulnerable to some infections and may need several doses to build reliable protection.

Not every shot is a vaccine. For example, the vitamin K injection offered after birth helps prevent serious bleeding caused by low vitamin K levels. Other injections may deliver medicines or be part of medical treatment.

Vaccination schedules differ by country. The right timing can also be affected by a baby's age, previous doses, health conditions, medicines, travel, or exposure to an infection. A vaccination record helps families and health services keep track.

This topic is not a disease or diagnosis. It describes how injections are used in infant care and what parents or caregivers may notice around an appointment.

How it works

Vaccines contain ingredients that show the immune system a harmless form or part of a germ. This material is called an antigen . It prompts the body to make an immune response without causing the infection in the usual way.

The immune system keeps a memory of that response. If the baby later meets the real germ, the body can respond faster. Protection is not always immediate, and some vaccines need more than one dose. Later doses can strengthen or extend the response.

Different vaccines work in different ways. Some contain inactivated germs, parts of germs, or genetic instructions that cannot reproduce. A smaller number contain weakened live germs. A clinician may need to consider this if a baby has an immune system condition or takes medicine that suppresses immunity.

Several vaccines may be given during one visit. Some are combined in a single injection. Recommended combinations and same-day vaccination have been studied so that protection can begin on time while limiting extra visits.

Vaccines may also be given by mouth. Rotavirus vaccine, for example, is an oral vaccine in countries where it is included in the infant schedule.

Why it matters for your health

Vaccination lowers a baby's chance of becoming seriously ill from the infections covered by the vaccines. No vaccine prevents every case, but vaccinated children who still become infected may have a lower risk of severe illness.

Timely doses matter because delaying them can leave a baby unprotected for longer. The recommended timing balances the age at which the immune system can respond with the age when exposure or complications may be more likely.

Vaccination also helps reduce the spread of infections. This can protect people who cannot receive certain vaccines or who may not develop a strong immune response.

The vitamin K shot has a different purpose. It provides vitamin K while a newborn's natural level is low, reducing the risk of vitamin K deficiency bleeding. It does not provide immunity against an infection.

What can go wrong

Most reactions after routine vaccination are short-lived. The injection site may be sore, red, or slightly swollen. A baby may be fussier, sleepier, less interested in feeding, or develop a fever.

The expected reactions differ by vaccine, so use the information provided at the visit rather than assuming every reaction is vaccine-related.

A fever can occasionally trigger a febrile seizure , which is a seizure associated with fever. Febrile seizures can occur with common childhood infections and, less often, after certain vaccinations. A first seizure always needs medical assessment.

A severe allergic reaction called anaphylaxis can occur after a vaccine or another injected medicine, but it is uncommon. Vaccination services keep equipment and medicines available to manage it. This is one reason you may be asked to remain nearby for a short observation period.

An administration error can involve the wrong vaccine, an incorrect interval, or incomplete documentation. Such an error does not automatically mean that harm has occurred. The vaccination service should review what was given, record it accurately, and explain whether another dose or follow-up is needed.

Missed or delayed doses may leave gaps in protection. Most vaccine series do not need to be restarted. A clinician can use an approved catch-up schedule based on the doses already received.

Get emergency help now if a baby develops trouble breathing, swelling of the face or throat, collapse, unusual unresponsiveness, or a seizure. Rapidly spreading hives with breathing problems or repeated vomiting can also signal a severe allergic reaction.

Seek prompt medical advice for a baby younger than 3 months with a rectal temperature of 38°C (100.4°F) or higher, even if the fever follows vaccination. Also seek advice if the baby is difficult to wake, is feeding poorly, has fewer wet diapers, or seems increasingly unwell.

Routine follow-up is appropriate for reactions that are not improving as expected, a persistent injection-site lump, questions about a possible side effect, or a missing or incorrect vaccination record.

What you can do

Before the appointment, bring the baby's vaccination record and a list of medicines, allergies, previous vaccine reactions, and health conditions. Tell the vaccination service if the baby has an immune system problem, recently received blood products, or is taking medicine that affects immunity.

Ask which products are being offered and what each one is for. It is reasonable to ask:

Comfort measures can reduce injection pain. Holding the baby securely, skin-to-skin contact,

breastfeeding before or during the injection, and calm soothing can help. A sweet-tasting solution may be used by trained staff for some procedures. Ask in advance about topical numbing medicine because it needs time to work and must be placed correctly.

Do not give pain or fever medicine before vaccination unless a clinician recommends it for your baby. Medicine choice and dose must be based on age, weight, health history, and the product being used.

After the visit, keep the written or electronic record. Note the vaccine or medicine, date, clinic, and any reaction. If a record is lost, the previous clinic, primary care service, or regional immunization registry may have a copy.

- Which vaccines or other injections are due today
- Which reactions are expected and how long they usually last
- What number to call if you have concerns
- When the next dose or visit is due

Common questions

Can a baby have several vaccines at one visit?

Yes, when they are recommended together on the relevant schedule. Giving vaccines during the same visit avoids delays and reduces the number of appointments. The clinician should still check the baby's history for precautions.

Does a mild cold mean vaccination must be delayed?

A minor illness, such as a mild cold without significant fever or worsening symptoms, is usually not a reason to delay routine vaccination. Moderate or severe illness may lead to postponement. The vaccination service can assess the baby on the day.

Can vaccines overwhelm a baby's immune system?

Babies respond to many unfamiliar substances every day. Recommended vaccines present a controlled set of antigens to the immune system. Combination vaccines can protect against several infections while reducing the number of injections.

Why are repeat doses needed?

The first dose may begin the immune response, while later doses strengthen it or help protection last. The number and timing of doses are specific to each vaccine.

What happens if a dose is late?

Arrange a record review rather than starting again yourself. A clinician can identify which

doses count and use the local catch-up schedule for anything still needed.

Can a baby breastfeed after shots?

Yes. Routine vaccination does not usually require a pause in breastfeeding. Breastfeeding can also provide comfort during and after an injection.

Is the newborn vitamin K shot a vaccine?

No. It is an injection of vitamin K that helps the blood clot normally. It does not train the immune system or protect against an infectious disease.

Sources

- Centers for Disease Control and Prevention. Child and Adolescent Immunization Schedule by Age . United States, 2025.
- Centers for Disease Control and Prevention. General Best Practice Guidelines for Immunization: Contraindications and Precautions . Advisory Committee on Immunization Practices.
- Centers for Disease Control and Prevention. Possible Side Effects from Vaccines . Vaccine Safety information.
- World Health Organization. "Reducing Pain at the Time of Vaccination: WHO Position Paper." Weekly Epidemiological Record . 2015;90:505-510.
- American Academy of Pediatrics Committee on Fetus and Newborn and Section on Anesthesiology and Pain Medicine. "Prevention and Management of Procedural Pain in the Neonate: An Update." Pediatrics . 2016;137(2):e20154271.
- Centers for Disease Control and Prevention. Epidemiology and Prevention of Vaccine-Preventable Diseases . 14th edition. "General Best Practice Guidance for Immunization." Public Health Foundation, 2021.