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Vaccines in Infancy

What are vaccines?

Vaccines (aka immunizations) are given to that teach the immune system how to recognize and fight certain germs (viruses or bacteria) — *before* those germs can cause serious illness. When a baby gets a vaccine, a tiny and harmless piece of the germ is introduced. The baby's immune system then learns how to respond: it builds up the defenses (like antibodies) and memory so it can respond fast if the real germ ever shows up. Vaccines are safe and effective and have been rigorously studied.

Why are they important?

- Babies and young children are especially vulnerable to certain diseases — some of which can be serious, or cause hospitalization, long-term problems, or even death. Vaccines protect them early.
- Following the recommended vaccine schedule ensures your baby gets protection when they need it most. Delaying or skipping vaccines may leave a gap in protection.
- Vaccines don't just protect *your baby* — they help protect other children, newborns, or people whose immune systems are weak (and who can't get certain vaccines).

Why does my baby need "so many shots at once?"

It can feel overwhelming when your baby has multiple vaccines in one visit. Here's why this happens — and why it makes good sense.

1. **Timing matters.** The schedule (tested extensively and approved by the AAP [American Academy of Pediatrics] and CDC) is designed so that vaccines are given at ages when babies are most vulnerable, and at intervals when the immune system will respond best. Because young babies may get exposed to certain germs early in life, the schedule aims to give protection *before* exposure happens.
2. **Babies are exposed to countless germs every day.** From the moment of birth, a baby is in contact with many bacteria and viruses in the environment. Studies show that even if an infant were given 10 or more vaccines at one visit, the number of antigens (the parts of germs that stimulate the immune system) in those vaccines is *much, much smaller* than the number of antigens babies encounter naturally via daily exposure. In fact, the idea that many vaccines "overwhelm" a baby's immune system has been thoroughly studied and shown to be inaccurate.
3. **Multiple doses build strong protection**. Some vaccines require more than one dose (a "series") so the immune system has time to build up strong, lasting protection. Spacing out doses farther than recommended delays when your baby is fully protected. Giving several vaccines in a single visit is safe and we feel confident that the child's immune system can handle and respond appropriately.
4. **The schedule is based on the best evidence**. Experts (like the Advisory Committee on Immunization Practices [ACIP], the CDC, and the AAP) review scientific research on illnesses, immune responses, safety, and timing. The recommended schedule is carefully crafted to give the most benefit with the least risk.

Why the Hepatitis B Vaccine Matters for Newborns

Many parents hesitate about the Hepatitis B vaccine, thinking the virus only spreads through sexual contact or shared needles. While those are common routes, Hepatitis B can spread other ways, including spreading from mother to baby during birth.

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Reference: American Academy of Pediatrics (AAP), HealthyChildren.org

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Why the Hepatitis B Vaccine Matters for Newborns

Even though all pregnant moms are screened before delivery, some have an "occult infection" — meaning the virus is present but not detected on standard tests. Studies show this occurs in about 6% of mothers who test negative. If a baby is exposed at birth, up to 90% will develop chronic Hepatitis B, which can lead to serious liver disease, the need for a transplant, or even death later in life**. That's why the Hepatitis B vaccine given within the first 24 hours after birth is so important.** It acts as a safeguard — protecting your baby even if an undetected infection is present. This information isn't meant to create fear, but to reassure you that this first vaccine is a simple, safe, and powerful step in protecting your baby's lifelong health.

What is the recommended schedule?

The timing of vaccinations is crucial for ensuring their effectiveness. We follow the CDC and AAP recommended vaccine schedule because it is the schedule that has been most extensively researched. The vaccine schedule for the first 12 months is as follows:

- **Birth: Hepatitis B**
- **2 months: Pentacel (includes DTaP, Hib, and IPV), PCV15, Rotavirus (oral)**
- **4 months: Pentacel (includes DTaP, Hib, and IPV), PCV15, Rotavirus (oral)**
- **6 months: Pentacel (includes DTaP, Hib, and IPV), PCV15, Rotavirus (oral), Influenza (annually)**
- **12-15 months: MMR, Varicella, Hepatitis A, Hib, PCV13**

Hepatitis B: A virus that can be passed from mom to baby through birth. Though mom is screened during pregnancy, false negative results can occur. Because hepatitis B infection is so devastating for an infant, we always recommend this.

Pentacel: Contains DTaP (Diphtheria, tetanus, and pertussis), IPV (poliovirus), and Hib (Haemophilus influenza b). These help prevent diphtheria, tetanus, whooping cough, polio, meningitis, pneumonia, and ear infections.

PCV 15: Pneumococcal conjugate vaccine helps prevent pneumonia, meningitis, ear infections, and sinus infections.

Rotavirus: Oral vaccine that protects again infection causing severe diarrhea, vomiting, fever, and dehydration.

Hep A: Hepatitis A is an infection of the liver that is contracted by eating or drinking food/water that is contaminated. Common in the US.

MMR: Stands for measles, mumps, and rubella. Though rubella is very rarely seen in the US, measles outbreaks do regularly occur in the US. Mumps is also occasionally still seen in the US.

Varicella: Varicella is the vaccine for prevention of chicken pox. Though uncommon, chicken pox outbreaks do still occur in the US. Once you have contracted chicken pox, you have a risk of getting shingles later in life.

What if I still have concerns?

We understand that parents may have questions or concerns about vaccines, and we welcome the opportunity to discuss them openly and respectfully during office visits—without pressure or judgment. Our vaccine recommendations are based on decades of rigorous research and the guidance of trusted pediatric immunology experts. For thoughtful reading at home, we recommend these two helpful documents to support informed decision-making.

- Vaccine Concerns: Answers to our most common parent FAQ's
- Your Local Epidemiologist: Childhood Vaccinations – Top 12 Questions Answered

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