

## what to expect.

# Vaccine Myths: Separating Fact from Fiction



Childhood vaccines have been studied extensively, proven safe and effective, and saved hundreds of millions of children, yet myths continue to spread. This fact sheet outlines the latest evidence-based vaccine information so you can make the best decisions for your child.

### Myth

**Babies get too many vaccines at one time**

### Fact

**Your baby's immune system can handle multiple vaccines at once**

Studies have shown that clustering childhood vaccines does not overwhelm a baby's immune system or lead to any health or development delays. Vaccines are studied alone and in combination to make sure they're safe and effective. Providing multiple vaccines at once can minimize your child's discomfort and save you time and money from additional doctor visits. Skipping or delaying vaccines increases your child's risk of developing dangerous infections. The dosages and timeline are determined to ensure the vaccines are most effective. If you're off schedule, talk to your child's provider about catching up.

### Myth

**Doctors push vaccines just to make money**

### Fact

**Pediatricians barely break even and many lose money on vaccines**

Doctors have large upfront costs for vaccines, their administration, and their specialized storage requirements. Health insurance companies don't always fully reimburse them for these expenses. So if profit isn't the motive, why do pediatricians offer vaccines? Because they truly care about your baby's health, and they know that vaccines are one of the safest and most effective ways to keep all children protected from serious diseases. They believe in vaccination as a vital public health service. In the long run, it also saves families money because it keeps kids healthy and out of the hospital.

### Myth

**Vaccines cause autism and sudden infant death syndrome (SIDS)**

### Fact

**There is no credible scientific evidence that vaccines cause autism or SIDS**

In 25 years of research involving millions of children around the world, scientists have found no evidence that vaccines cause or increase the risk for autism spectrum disorder. There is also no evidence linking specific vaccines like MMR, or vaccine components or ingredients, to autism. Numerous studies have also confirmed that vaccines do not cause SIDS. In fact, research indicates that vaccinating your baby may actually reduce the risk of SIDS by 50%.

### Myth

**Vaccines are more dangerous than the diseases they protect against**

### Fact

**These diseases are significantly more dangerous than vaccines**

Childhood vaccines have been so successful that most people have never seen the diseases they protect against. But these illnesses can cause devastating outcomes and children are the most vulnerable. Choosing to rely on natural immunity exposes your baby to severe illness, hospitalization, permanent disability, chronic disease, and even death. Vaccination has a profound effect on preventing these tragedies. For example, the rate of invasive pneumococcal disease has declined 95% in children under 5 since the vaccine was introduced in 2000. While not all vaccines give 100% immunity, they can help you get less sick if you do catch the illness.

### Myth

**Vaccines contain harmful ingredients**

### Fact

**Large respected studies have found vaccine ingredients to be safe**

Every vaccine ingredient has been extensively tested for safety. Numerous studies confirm that ingredients like formaldehyde, aluminum, and preservatives are present only in trace amounts in certain vaccines, often less than what people encounter daily. They pose no danger at these levels. The amount of aluminum a baby would receive from vaccines in the first six months of life is less than that they would receive from breast milk or formula in that same time frame. Speak with your doctor if you're concerned about rare allergies to ingredients like gelatin or egg protein.

## What are vaccines?

Vaccines (also called immunizations) are little lessons for your baby's immune system. They can be shots (injections) or liquids taken by mouth that teach your baby's body to recognize certain viruses and bacteria and fight them off before they can cause harm.

Vaccines contain a killed or weakened germ or just a part of a germ that cannot cause the disease. But they do give just enough information to stimulate the immune system to create antibodies that protect against infections. Vaccines are the safest and most effective way to protect your baby from dangerous infections.

## Why do babies need vaccines?

Babies' immune systems are new to fighting germs. That makes them especially vulnerable to infections and more likely to suffer complications that can lead to hospital stays and even death if they catch something serious. Vaccines have been proven to save lives and are key to protecting your little one.

## Why are we still researching vaccines?

The work of protecting children and adults from dangerous infections is never finished. Viruses and bacteria are clever little shape-shifters that mutate or evolve over time. That means vaccines must stay one step ahead to remain effective. Researchers are continually creating new vaccines, improving existing ones, and finding ways to make them easier to administer.

## What are clinical trials?

Clinical trials are medical research studies that test new vaccines and medicines for safety and effectiveness. They are essential for better vaccines and disease prevention. Participation is always optional. This research plays a big role in helping advance science.

## How are pediatric vaccines developed?

Vaccines typically take many years to develop — a rigorous process that ensures vaccines are safe and effective for children. Safety testing begins when a vaccine is first developed and goes on for as long as the vaccine is available.

Steps 1 & 2

### Discovery and laboratory testing

Researchers uncover possible vaccine candidates in a lab. Next, researchers test for safety and the desired immune response.

### Testing in humans (clinical trials)

Each phase must show safety and effectiveness before moving on. Researchers test vaccines in adults before they are tested in children.

- Phase 1** Small groups of participants
- Phase 2** Hundreds of participants
- Phase 3** Thousands of participants

Step 3

### Approval

Step 4

Experts and federal agencies review trial results and the manufacturing processes before approval. The FDA licenses a vaccine only if:

- 1) It's safe and effective
- 2) The benefits outweigh the risks

### Continuous monitoring

Vaccine safety monitoring systems are in place to continually track vaccines for as long as they're given to children. The FDA inspects manufacturing facilities regularly to ensure quality and safety.

Step 5

## what to expect.

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Compliments of Pfizer Inc. What to Expect has developed this guide with support from Pfizer Inc.