

# Vaccine Safety: Answers to Parents' Top Questions



As a parent, you want to make the best decisions to protect your child—staying informed will help. Your questions are important, and you deserve reliable information to support your decisions. If you want to learn more, ask your doctor for a “consultation visit”, or check out the websites at the end of this document.

## ARE VACCINES SAFE?

Yes. Vaccines are very safe<sup>1</sup>. In fact, experts including the American Academy of Pediatrics, the National Academy of Medicine and the World Health Organization agree that vaccines are even safer than vitamins. Millions of children and adults are vaccinated every year - safely. Thousands of people take part in clinical trials to test a vaccine before it is licensed by the Food and Drug Administration (FDA). After it's licensed, the Vaccine Adverse Events Reporting System (VAERS) helps track any health effect that happens hours, days, weeks or even months later. Anyone can report a possible side effect so that it can be studied. VAERS and other monitoring programs help ensure vaccines are safe.

## WHAT KIND OF SIDE EFFECTS SHOULD I KNOW ABOUT?

Any medicine can cause reaction in some people. The most common side effects from vaccines are swelling or tenderness at the injection site and fever. Serious allergic reactions are very rare, happening in about 1 person out of a million<sup>2</sup> shots given. If you are concerned about possible side effects, ask questions about what to expect. If you notice an unusual reaction hours or days after your child's immunizations, call the doctor's office for advice.

## WHY DO CHILDREN TODAY GET SO MANY IMMUNIZATIONS?

Thirty years ago, vaccines protected young children only from seven diseases. Today, we can protect them from at least 14 dangerous diseases because of medical advances. Many shots are also “boosters” of the same vaccine to give children the best protection possible.

## ARE DISEASES OF THE “OLD DAYS” STILL AROUND?

Yes. Pertussis (whooping cough) is still common in the U.S. Other diseases, such as measles and polio are circulating in other parts of the world.

It just takes one unimmunized traveler to bring a disease home from another country. If immunization levels drop, the rare cases we have in the U.S. could very quickly multiply - putting our children in danger.

## WHAT ABOUT HOLISTIC MEDICINE AND BREASTFEEDING?

Holistic medicines may be helpful for some conditions, but only vaccines provide specific immunity to diseases. Only vaccines have been scientifically proven to protect against whooping cough, measles, mumps, and other diseases.

Breastfeeding is very healthy for your baby, but breastfeeding alone cannot fully protect babies from diseases like whooping cough or measles. Also, antibodies passed on from moms to babies during pregnancy do not last beyond infancy.<sup>4</sup>

## WHAT ABOUT “NATURAL IMMUNITY”?

Some people think getting a disease is the “natural” way to trigger the body's immune response, but this comes at a risk—many vaccine-preventable diseases can have dangerous complications, like pneumonia, blindness, brain damage, and even death.

Vaccines safely trigger a natural immune response—but not the disease. Most vaccines are over 99% effective in preventing illness.

## IS IT SAFE FOR A CHILD'S IMMUNE SYSTEM TO HAVE MULTIPLE SHOTS?

Yes. Children are exposed to hundreds of viruses and bacteria<sup>5</sup> during normal activities like eating and playing. Getting vaccines is no extra burden on the immune system—even for babies<sup>6</sup>. Getting combination vaccines, like MMR (that protects against measles, mumps, and rubella), or getting multiple shots during one visit is very safe. Today's vaccines are more refined, so even though kids receive more vaccines, they receive far fewer antigens overall<sup>7</sup> (compared to their parents or grandparents).

## WHAT ABOUT KIDS WITH ALLERGIES OR OTHER HEALTH CONDITIONS?

Vaccines are safe for kids with most kinds of allergies<sup>8</sup>. Getting shots may be especially important for children with certain health problems who can get very sick if they catch a disease. If your child has an allergy or any health condition, talk with your doctor. The doctor can tell you if any vaccine should be postponed or avoided.

## WHAT ABOUT AUTISM?

While some parents first notice signs of autism at about the same time their child gets vaccinated, the two events are not related.

Dozens of scientific studies<sup>9</sup> have concluded that there is no link between vaccines and autism. The following organizations have issued statements saying that there is no connection between vaccines and autism:

- Autism Science Foundation
- American Academy of Pediatrics
- National Academy of Medicine
- Mayo Clinic
- National Institutes of Health
- World Health Organization
- National Center for Complimentary and Integrative Health

While the rates of autism continue to rise around the world, autism rates are no different in vaccinated and unvaccinated children.<sup>10</sup> Recent studies on autism suggest that children with autism have too many cells in a key area of the brain needed for communication, social and emotional development. This type of brain development occurs during the second trimester of the pregnancy—long before a child gets any vaccinations.<sup>11,12</sup>

## WHAT ABOUT GETTING SHOTS LATER OR SPREADING THEM OUT?

Skipping or delaying shots leaves your child at risk of catching serious diseases at younger ages - when these diseases are most dangerous.

That's why most doctors follow the CDC's recommended immunization schedule, which is based on independent medical science review and updated each year. The schedule on the back of this fact sheet follows CDC's recommendations and helps you keep track of your child's immunizations.

Advice to spread out shots is not based on science<sup>13</sup>. Spreading out shot visits may make you feel more comfortable, but it's no help to your child. Research shows that getting several shots at the same visit is safe<sup>14</sup>. Spreading out shots may actually be more stressful for your child.

As a parent, you need to know the risks of skipping or delaying vaccines. So, talk to your doctor. Use reliable sources to make your decision.

### Be choosy about what you read. We recommend these trusted sites:

American Academy of Pediatrics  
[Aap.org/immunization](http://Aap.org/immunization)

Centers for Disease Control and Prevention (CDC)  
[Cdc.gov/vaccines](http://Cdc.gov/vaccines)

Children's Hospital of Philadelphia  
[Vaccine.chop.edu](http://Vaccine.chop.edu)

U.S. Dept. of Health and Human Services  
[Vaccines.gov](http://Vaccines.gov)

Mayo Clinic  
[Bit.ly/childVacQx](http://Bit.ly/childVacQx)

Parents of Kids with Infectious Diseases  
[Pkids.org](http://Pkids.org)

Vaccines: Calling the Shots (PBS documentary)  
[pbs.org/wgbh/nova/body/vaccines-calling-shots.html](http://pbs.org/wgbh/nova/body/vaccines-calling-shots.html)

WebMD  
[Webmd.com/children/vaccines/default.htm](http://Webmd.com/children/vaccines/default.htm)

1 Maglione MA et al. Safety of routine vaccines used by US children: A systematic review. *Pediatrics* 2014;134:2 377-379. Accessed August 4, 2014. <http://pediatrics.aappublications.org/content/early/2014/06/26/peds.2014-1079.full.pdf+html>.

2CDC. Vaccines & Immunizations- "Possible Side-Effects from Vaccines". Retrieved February 13, 2014 from <http://www.cdc.gov/vaccines/vac-gen/side-effects.htm>.

3CDC. Vaccines-Varicella Active Surveillance Project. <http://www.cdc.gov/VACCINES/stats-surv/vasp/default.htm#risk>. Retrieved January 16, 2014.

4Nates SV et al. Loss maternally derived measles immunity in Argentinian infants. *Pediatric Infect Dis J*. 1998 Apr;17(4):313-6. From: <http://www.ncbi.nlm.nih.gov/pubmed/9576386>.

5University of Utah Health Services. "Your Changing Microbiome". Retrieved on January 16, 2014 from <http://learn.genetics.utah.edu/content/microbiome/changing/>.

6Ofit, PA et al. Addressing Parents' Concerns: Do Multiple Vaccines Overwhelm or Weaken the Infants Immune System? *Pediatrics*. 2002 January; 109(1): 124-9.

7Childrens Hospital of Philadelphia. (2013). Vaccines and the Immunization system. Retrieved on January 16, 2014 from [http://www.chop.edu/service/vaccine-education-center/vaccine-safety/vaccines-and-immune-system.html#Do\\_vaccines\\_overwhelm](http://www.chop.edu/service/vaccine-education-center/vaccine-safety/vaccines-and-immune-system.html#Do_vaccines_overwhelm).

8Kids with Food Allergies. (2012). "Do immunizations contain food allergens?" Retrieved on January 16, 2014 from <http://www.kidswithfoodallergies.org/resourcespre.php?id=124>.

9American Academy of Pediatrics. (2013). Vaccine Safety: Examine the Evidence. Retrieved on January 16, 2014 from <http://www2.aap.org/immunization/families/faq/VaccineStudies.pdf>.

10 Madsen KM et al. A population-based study of measles, mumps, and rubella vaccination and autism. *N Engl J Med*. 2002 Nov 7;347(19):1477-82. <http://www.ncbi.nlm.nih.gov/pubmed/12421889>.

11 Chow ML et al. Age-dependent brain gene expression and copy number anomalies in autism suggest distinct pathological processes at young versus mature ages. *PLoS Genet*. 2012;8(3):e1002592. From: <http://www.ncbi.nlm.nih.gov/pubmed/22457638>.

12 Stoner, R. et al. Patches of Disorganization in the Neocortex of Children with Autism. *N Engl J Med*. 2014 Mar 27; 370:1209-1219. <http://www.nejm.org/doi/full/10.1056/NEJMoa1307491>.

13 Ofit, PA; and Moser, CA. The Problem with Dr. Bob's Alternative Vaccine Schedule. *Pediatrics*. 2009 January; 123 (1): 164-69.

14 National Academy of Medicine. Childhood immunization schedule and safety: Stakeholder concerns, scientific evidence, and future studies. January 2013. Accessed August 4, 2014. <http://www.iom.edu/Reports/2013/The-Childhood-Immunization-Schedule-and-Safety.aspx#sthash.BR3kPOeM.dpuf>.