

## **Pediatrics 5280: FAQ's and Advice on Vaccines**

Vaccinating your child is an important, personal family decision. All of us at Pediatrics 5280 believe in the value and safety of all vaccines and recommend that all children be vaccinated to prevent diseases that can have serious complications. Unfortunately, there is a lot of misinformation on the internet and in the media and it's hard to know what to believe. We've created this handout to answer some common questions and provide you with resources to learn more about vaccines.

### **1. How do we know vaccines are safe?**

All vaccines are approved by the Food and Drug Administration (FDA). In order to be approved, each vaccine must pass 4 phases of studies (called clinical trials) that look at safety and how well the vaccines work. This process takes on average about 15 years, and during the trials the vaccine is tested in thousands of (human) volunteers. Volunteers are closely monitored for at least a year to be sure they do not have any serious side effects. You may be skeptical about trusting the government to approve vaccines. But really, the FDA exists to protect consumers and it is in their best interest to be sure a new vaccine is safe. After a vaccine is approved by the FDA, there are two main organizations that constantly monitor vaccines to be sure they are safe.

The Vaccine Safety Datalink (VSD) is a partnership between the Center for Disease Control (CDC) and 9 large healthcare organizations. Information from millions of patients is reviewed every week, looking for trends surrounding vaccines. If there are concerns about a vaccine, the VSD can be used to investigate it further. For example, the VSD was used to prove that there is no increased risk of Guillain Barre Syndrome (a form of paralysis) after HPV vaccination in teens.

The Vaccine Adverse Events Reporting System (VAERS) is how healthcare providers and patients/parents can report suspected concerns about vaccines. Anyone can report a problem, and healthcare providers are legally required to report any adverse reactions a patient may experience. VAERS can be used to find patterns related to vaccines, and often the VSD is used to investigate these patterns. So, even after a vaccine has been approved by the FDA, safety is constantly monitored!

### **2. Should I be worried about preservatives and other ingredients in vaccines?**

Parents often have questions about ingredients in vaccines. One that comes up a lot is mercury. Mercury is a natural element found in air, soil and water. It was added to vaccines to keep bacteria and fungus from growing in the vaccine vials. There are different types of mercury: *Methyl* mercury is the "bad" mercury that can be found in fish and at high levels can be toxic. *Ethyl* mercury, also called Thimerosal, is much less harmful and is processed very quickly in the body. The FDA has never found any evidence that Thimerosal causes harm when it is in a vaccine. However, *Thimerosal is no longer used in any vaccines except the flu shot*. If you still have concerns about Thimerosal, we do offer a preservative free flu shot (no thimerosal) that you can request. If you have other questions about vaccine ingredients, please bring it up with your provider.

### **3. There are a lot more vaccines now - should I be worried about so many shots at once?**

A lot of parents worry that vaccines might overload their baby's immune system. However, your baby's immune system is much better than you might think! On any given day, your baby is exposed to literally thousands of germs (bacteria and viruses) just from living in the world, which your baby is able to handle without developing serious illnesses. Exposing your baby to five to eight different germs in the vaccines we give in a visit is a drop in the bucket! Although we give more vaccines than when you might have been a child, vaccines today contain much less "antigens" (or particles from bacteria or viruses) than older vaccines. For example, the smallpox vaccine contained around 200 antigens. The 14 recommended vaccines given in early childhood contain a total of 160 antigens *combined*! Over the years, we have gotten better at making more efficient vaccines, and the amount of antigen your baby is exposed to is very small.

#### **4. Do vaccines cause autism?**

No. Many families have heard stories about children “catching” developmental disorders such as Autism or Intellectual Disability (previously called Mental Retardation) from vaccines. This simply isn’t true. The safety monitoring systems discussed above (VAERS and VSD) have never found any link between vaccines and developmental disorders. The controversy around this issue was started by one small case report of 8 patients published in 1998. The study was later found to be a hoax and was retracted. The doctor who published it lost his license, and when other researchers tried to replicate the study, they did not find any correlation between vaccines and autism. Most recently, a study published in 2019 again found no link between vaccines and autism, even in siblings of children with autism.

#### **5. What’s so bad about delaying vaccines or using an alternate schedule?**

The vaccine schedule used in the United States (same in all 50 states) is created by the Advisory Committee on Immunization Practices (ACIP). ACIP members review rigorous scientific evidence each year and make changes to the schedule if needed. The schedule is created to protect kids at the age when they are most vulnerable to each disease, and to deliver the vaccine as soon as kids are developmentally able to create an effective immune response

Delaying vaccines just places your child at risk of getting a vaccine preventable illness for a longer period of time. Spacing out vaccines can create more office visits for you and your child. Office visits that include shots can be stressful for your child, so we try to minimize visits that contain shots by giving several at one time.

#### **6. What are the actual risks and side effects of vaccines?**

The most common side effects of all vaccines include: redness, swelling and pain at the site of the injection, fevers, fussiness, and sometimes a general “yuck” feeling (body aches, fatigue). Most of these symptoms last for 24-48 hours and you can treat your child with fever reducers to help them feel better. Some vaccines have other side effects (like a rash with the MMR or Chickenpox vaccine), so please talk with your provider about the vaccines your baby is receiving today.

#### **7. How much should we worry about vaccine preventable diseases?**

Many families don’t think their children will get vaccine preventable diseases, and therefore that vaccines are not important. However, there are outbreaks of vaccine preventable diseases every year, such as the recent measles outbreak in Washington State (2019). Measles can be a serious illness and can lead to dangerous complications including pneumonia (serious lung infection), long term immune suppression (low immunity), encephalitis (coma), blindness and death. Unfortunately, because of lower vaccine rates, diseases such as measles are becoming more common. Communities where many people are not vaccinated are the most likely to have outbreaks.

#### **8. I’d like some more information about vaccines.**

Here are some resources we know and trust to give accurate, scientifically backed information about vaccines. We’d also be happy to discuss your concerns with you during your visit.

-*Healthy Children* (by the American Academy of Pediatrics): [www.healthychildren.org](http://www.healthychildren.org), click on "immunizations" under safety and prevention

-*Children's Hospital of Philadelphia Vaccine Education Center*: [www.chop.edu/centers-programs/vaccine-education-center](http://www.chop.edu/centers-programs/vaccine-education-center)

-*Immunize for Good*: [www.immunizeforgood.com/](http://www.immunizeforgood.com/)

-*Immunization Action Coalition*: [www.immunize.org/](http://www.immunize.org/)

-*Center for Disease Control*: [www.cdc.gov/vaccines/index.html](http://www.cdc.gov/vaccines/index.html)