

## Facts for Parents About Vaccine Safety

from the American Academy of Pediatrics

The AAP understands that parents may have concerns about vaccinating their children. Vaccines are one of the most successful medical advances of all time. Vaccine safety is an issue of great importance to the AAP and to pediatricians, who support ongoing research and increased funding in this area. In addition, the AAP supports further research into the causes of autism.

The following information is to help parents and caregivers to understand some of the common issues and questions surrounding this topic.

### WHAT IS AUTISM?

- Autism is not a specific disease, but rather a collection of disorders of brain development called "autism spectrum disorders," or ASDs.
- Studies show that the prevalence of autism has risen. The apparent increase in autism may be due to a combination of factors. For example, more and more behaviors and disorders are being included in the definition of ASD than in the past. Also, the public and the medical profession recognize these disorders more often.
- According to the Centers for Disease Control and Prevention (CDC), about 1 in 150 children have an ASD.
- Although many theories have been discussed, the cause or causes of autism are not known.
- Autism has a strong genetic basis. Currently about 10 percent of cases are connected with genetic conditions such as Fragile X or Prader-Willi syndromes. According to a January 2008 study, researchers have discovered another genetic mutation that could account for higher risk in another 1 percent of autism cases.
- More research is being done every year to try to identify the causes and improve efforts to prevent, diagnose and treat ASDs. The nation's top experts in pediatric neurology, genetics, and other fields are moving closer to answers about this group of disorders.
- Early diagnosis is crucial. Pediatricians should screen all children for ASDs at 18 and 24 months. They should also listen carefully to parents about their child's development. The AAP provides its members with comprehensive tools and education to assist them with both diagnosis and follow-up. Parents are the most reliable sources of information.

- When a child is diagnosed with an ASD, the child's family and caregivers should be given information and support. The child should be involved in autism intervention programs as early as possible to get the most benefit.

## WHAT IS MITOCHONDRIAL DISEASE?

A recent case that was awarded compensation through the federal Vaccine Injury Compensation Program involved a child with a mitochondrial disorder or mitochondrial disease. This case has raised questions about what environmental triggers might bring on or worsen autism-like symptoms in children with such disorders.

- Mitochondria produce the energy needed for cells to function normally. There are a number of genetic disorders that cause mitochondria to produce less energy than cells need. Symptoms of these disorders can be very mild or quite severe. In some of the disorders, symptoms do not develop for many years. Some of the rarer mitochondrial disorders affect the brain and cause worsening neurologic symptoms over time. In many cases, an event that requires more energy, such as an infection, fever or other illness, can lead to the development of symptoms.
- Although details of the case and the decision cannot be disclosed by the U.S. Department of Health and Human Services, the agency published a statement on March 3, 2008, which said: "HRSA (the Health Resources and Services Administration) has reviewed the scientific information concerning the allegation that vaccines cause autism and has found no credible evidence to support the claim."

According to the Centers for Disease Control and Prevention (CDC), this was a unique case and information about it has not been accurately characterized in the media and other public forums. It represents one special case and does not change the immunization recommendations for children in whom vaccines are otherwise recommended. More information is available at the CDC Web site: [www.cdc.gov](http://www.cdc.gov).

According to the United Mitochondrial Disease Foundation, "There are no scientific studies documenting that childhood vaccinations cause mitochondrial diseases or worsen mitochondrial disease symptoms. In the absence of scientific evidence, the UMDF cannot confirm any association between mitochondrial diseases and vaccines."

## WHAT ABOUT VACCINE SAFETY?

- Every physician is mandated to report adverse effects of vaccines to the Vaccine Adverse Event Reporting System (VAERS) so that the event may be studied further. Any adverse effects are acted upon immediately when there appears to be an association. For example, a Rotavirus vaccine that was found to be associated with an intestinal condition called intussusception was taken off of the market. The VAERS Web site is available at <http://vaers.hhs.gov/>

- From time to time, rumors circulate that thimerosal, a mercury-based preservative once used in several vaccines (and still used in some flu vaccine), could contribute to ASDs. However, valid scientific studies have shown there is no link. The American Academy of Pediatrics (AAP), the American Medical Association (AMA), the CDC, and the Institute of Medicine (IOM) agree that science does not support a link between thimerosal in vaccines and autism. For the IOM report, please go to <http://www.iom.edu/CMS/3793/4705/4717.aspx>
- Some parents are concerned about “combination” vaccines, which protect against more than one disease with a single shot. For example, the MMR vaccine protects against measles, mumps and rubella. These vaccines have been studied carefully and found to be safe. All vaccines contain antigens, which cause the immune system to do its work to fight (and protect the body from) infections. It is important to remember that children are exposed to many antigens during normal activities, such as playing outside or eating food, or when sick with an infection. Healthy children’s immune systems are equipped to handle these multiple exposures.

#### **WHY ARE VACCINES IMPORTANT?**

- It is most important that parents and pediatricians continue to rely on immunizations to protect all children from preventable—and potentially deadly—illnesses. Many vaccine-preventable diseases can have dangerous consequences, including seizures, brain damage, blindness, and even death. These diseases still exist even though many young parents today have never seen a case, due to the success of the nation’s current immunization program. Death and harm from chickenpox, measles, meningitis and other diseases are still a threat to children who are not protected.
- Some specifics: Before Hib vaccine became available, there were approximately 20,000 cases annually. Hib was the most common cause of bacterial meningitis in children in the U.S. Hib meningitis once killed 600 children each year in this country, and those who survived often had deafness, seizures and/or mental retardation.
- Measles is another example of a vaccine-preventable disease with serious consequences. Currently in the U.S., up to 20 percent of people with measles are hospitalized. This is one of the most infectious diseases in the world; if vaccinations were stopped, each year about 2.7 million deaths from measles worldwide could be expected. A recent outbreak of measles in San Diego, California, 11 children contracted measles and none had been vaccinated. This is the highest number of measles cases San Diego has seen in 17 years. It is believed to have started with a child who caught measles in Switzerland and then returned to the U.S.

- Likewise, it would only take one case of polio from another country to bring the disease back to the U.S. if people are not protected by vaccination.
- In order for vaccines to protect everyone, an estimated 85 to 95 percent of the population must be immunized. Studies have shown that children who are not immunized are more likely to become infected with measles and pertussis. Younger children often are the most vulnerable; 90 percent of deaths from pertussis are in infants younger than 6 months old.
- It is not advisable to skip or delay vaccines, as this will leave the child vulnerable to disease for a longer period of time. Parents should follow the immunization schedule provided by the CDC and its Advisory Committee on Immunization Practices, the AAP, and the American Academy of Family Physicians (AAFP) each year. This schedule is designed by experts to ensure maximum protection and safety for children at various ages. Parents should discuss any concerns with their child's pediatrician.
- Serious events occur more often from the actual infection or disease, rather than from the vaccine; therefore, the vaccine is much safer.

More information for parents and caregivers is available on the AAP Web site at the following links:

- On Autism:  
<http://www.aap.org/healthtopics/Autism.cfm>
- On Vaccines:  
<http://www.cispimmunize.org/>