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## **CHILDHOOD IMMUNIZATIONS: BENEFITS AND RISKS**

By Arnold Ronning, MD

Today's medical focus is "wellness and prevention." One of the greatest success stories in the area of prevention is the childhood immunization program. It is not an exaggeration to say that vaccines for tetanus, polio, and the like have saved millions of children throughout the world.

And yet, many parents wonder if the ever-increasing number of shots given to children isn't too much of a good thing. The media, especially television, added fuel to the controversy through their coverage of the "possible link of vaccines" to autism and the like. When fear of the disease being prevented is replaced by fear of possible side effects, immunization rates fall, and these illnesses, once extremely rare, begin to resurface.

This article will address some of the questions that parents ask me about vaccines.

### **1. Does the MMR (Measles, Mumps, and Rubella) vaccine cause autism?**

There is *no evidence* that shows a link between autism and the MMR vaccine. Recent news stories show parents who tearfully claim their child was developing normally until they received their measles shot at about two years of age (the recommended time for the first of two boosters is actually between 12 and 15 months of age). However, just because two events occur during a similar time frame does not mean one caused the other.

To understand a possible link between autism and the MMR vaccine, it is necessary to look at two groups: those children who have received MMR, and those who have not. Then the two groups can be compared to see if the occurrence of autism was greater in one group than the other. A study in Denmark, that went from 1991 to 1998 and involved over 500,000 children, did just that. The findings showed no increased risk of autism or autistic-like behavior in vaccinated children compared to *unvaccinated* children. They also found no association between the timing of vaccination and the development of autism.

### **2. Is there really mercury in vaccines?**

NO. Thimerosal, or ethyl mercury, was a preservative used in vaccines up until about two years ago. It has been universally banned, and modern vaccines contain no mercury.

Also, don't worry about older children who received vaccines containing Thimerosal. The Environmental Protection Agency (EPA) established guidelines for determining a safe level of mercury exposure. The mercury they were concerned about was methyl mercury, which was used to prevent grain from

molding in the 1990's in Iraq. Many (thousands) mothers who ate the bread bore children with brain damage and other neurologic problems. But methyl mercury can cross a special membrane called the blood-brain barrier in the body and reach the brain and spinal cord. Ethyl mercury cannot. Also, when the EPA decided what would be a "toxic" level of mercury, they chose the lowest level at which it caused damage in the poor Iraqi children, and divided *that* number by 10 – just to be extra safe.

**3. Can the immune system really handle so many exposures at one time?**

It can. We are exposed to multiple "germs" every single day, and our immune systems respond quickly and effectively to the vast majority.

Furthermore, there are only 130 antigens (proteins which our bodies recognize as foreign) in the vaccines given today compared to the 3,200 antigens that a child was given through vaccines in 1960.

**4. If I choose not to have my child vaccinated, is it really that big a deal?**

Yes, it is. The number of cases of polio, measles, and other preventable diseases are low because of vaccines. That makes it easy to think your child is not at risk.

But you are depending on the good will of all your neighbors; that they *have* been vaccinated, and will not expose your child to a serious illness.

It takes shockingly few people refusing to participate (only about 1 in 100) to keep a disease alive and dangerous in the community. In 2000, a premature panic over the possible link of MMR to autism caused vaccine rates to plummet, and a spike in the measles rate. One hundred forty-eight children developed measles, and two of those children died.

When you make the decision whether or not to have your child receive the recommended vaccinations, remember all the other little boys and girls in the world along with your own.