

"Myths" That Vaccine Opponents Use as Reasons To not Vaccinate

Many people feel that vaccines are the greatest single achievement of modern medicine; others disagree. Vaccine opponents ("anti-vaxxers") offer several reasons for their claims that vaccines are dangerous and therefore should not be given. The most common of these reasons are found below categorized as "myths" because this author believes that vaccines are not only not dangerous but, instead, miracles of modern medicine. Accompanying each myth is an explanation of why the author feels that it is illogical and therefore wrong.

Myth number one: Vaccines, combination vaccines (like the MMR and DPT), and multiple vaccines given at the same office visit cause autism.

Autism is a developmental disorder that appears early in childhood, usually before the age of three years. Its symptoms vary widely but individuals with this condition all have problems with their ability to communicate and interact with others. The number of children diagnosed with autism appears to be rising, but it is not clear as to the reason why. This trend could be due to the broader description of the characteristics now used to define autism which would allow for the inclusion of a larger number of individuals with it. It could be due to an increased awareness of the condition along with an increased ability to detect and report it and it could be due to an actual increase in the number of cases due to some change/changes in environmental conditions that is/are not yet fully understood. The rise in the number of cases of autism could also be a result of some combination of these possibilities.

The fear that vaccines cause autism has its foundation in a study done by Dr. Andrew Wakefield, a British surgeon and medical researcher. In 1998, *The Lancet*, one of the world's best known, oldest, and most respected medical journals, published a study done by Dr. Wakefield in which he implied that there was a link between the MMR (measles, mumps, and rubella) vaccine and autism. The ramifications of this study have since rocked medical and non-medical communities worldwide and done a great disservice to children and families everywhere. Dr. Wakefield's "research" has set progress in the field of vaccine-preventable diseases back by decades.

Following the publication of Dr. Wakefield's study, many parents panicked and refused to have their children vaccinated against measles. In the United Kingdom, measles outbreaks hospitalized hundreds and killed four children. In the United States, more cases of measles were reported in 2008 than in any other year since 1997. More than 90% of those infected had either not been vaccinated or their vaccine status was unknown.

Before measles immunization became available in 1963, nearly everyone in the United States caught the disease. Complications rates were high. Death from measles pneumonia and permanent brain damage from measles encephalitis were common. As many as 3 out of every 1000 persons died with an average of 450 measles-associated deaths reported each year between 1953 and 1963 (in the developing world, the rate was/is much higher, with death occurring in about one out of every 100 persons). Widespread use of the vaccine subsequently led to a greater than 99 per cent reduction in the number of measles cases in this country.

Although no longer common in the United States, measles remains a common illness in the developing world. According to the World Health Organization (WHO), nearly 900,000 measles-related deaths occurred among persons in developing countries in 1999. In populations that are not immune to measles, the disease spreads rapidly. If vaccinations against this disease were stopped, it is estimated that about 2.7 million measles deaths could be expected worldwide.

Measles is one of the most infectious diseases in the world and is frequently imported into the U.S. In the period between 1997-2000, most cases in this country were associated with international visitors or U.S. residents who were exposed to measles while traveling abroad. More than 90 percent of people who are not immune (been vaccinated or had the disease) will get measles if they are exposed to the virus. Most in this country are immune due to the widespread use of the vaccine. However, if we stop immunizing against measles, the disease will likely increase to pre-vaccine levels.

Dr. Wakefield's study involved twelve subjects. He reported that all twelve had been previously healthy with no underlying developmental problems. All twelve were reported to have developed autism following administration of the MMR vaccine. In his conclusion, Dr. Wakefield implied that there was a causal relationship between the MMR vaccine and autism.

While "anti vaxxers" are quick to site Dr. Wakefield's study as scientific evidence that the MMR vaccine causes autism, they are not so quick to tell the rest of the story...

- Dr. Wakefield's study was heavily criticized and renounced by many of his colleagues when it was first published.
- Dr. Wakefield was paid \$650,000 by a law firm that intended to sue vaccine manufacturers after the study was published. Can you say conflict of interest?
- Most of Dr. Wakefield's co-authors withdrew their names from the study after learning about the \$650,000 kickback.
- Five of the twelve subjects used in the study had developmental problems long before getting the MMR vaccine.
- The histories of all twelve subjects were inaccurate.
- Three of the subjects that Wakefield claimed to have developed autism after the shot did not actually have autism.
- Following publication of Dr. Wakefield's study, follow-up studies designed to check his findings were done by credible sources including the AAP and the CDC and none of the studies found any link between the vaccine and autism.
- Dr. Wakefield has been unable to reproduce his own results.

For his efforts, Dr. Wakefield received the following rewards:

- The scientific community dismissed his study.
- *The Lancet* retracted his study.
- The British Medical Journal declared his study "fraudulent."
- The General Medical Council of England found Dr. Wakefield guilty of serious professional misconduct.
- Dr. Wakefield was stripped of his license to practice medicine. His title is now "Mr.", not "Dr."

Despite all of the evidence that Dr. Wakefield's study conclusion was wrong, its damage to public health has persisted. Nearly 40% of American families have either declined or delayed one or more vaccines because of a distrust they have for them that arose as a result of Dr. Wakefield's study. In 2011, one journal article described the vaccine-autism connection as, "The most damaging medical hoax of the last 200 years."

Myth number two: Thimerosal causes autism.

Thimerosal is a mercury-containing preservative found in multi-dose vials of vaccines. It is used to prevent the growth of germs within the vial that may have been accidentally placed there when a needle was introduced within the vial in order to withdraw a previous dose of medicine. For a detailed discussion regarding the relationship between thimerosal and autism (there is none), please click [here](#).

Myth number three: Vaccines cause and spread the very diseases they are designed to prevent.

A third reason that opponents to vaccines give for not vaccinating is that they believe that vaccines cause and spread the very diseases they are supposed to prevent. "Anti-vaxxers" base this argument mainly on their beliefs that recipients of the influenza (flu) vaccine develop the flu after being vaccinated against the flu. While it is true that recipients of the flu vaccine may develop a sore arm at the injection site along with a mild fever and a headache, and while it is true that the flu disease commonly involves muscle aches, fever, and headaches, the development of these symptoms following an influenza vaccine are simply common side effects to the vaccine. They are not a sign that the flu vaccine caused influenza. In fact, nothing could be farther from the truth. It is not only not likely that a person will develop the flu from the flu vaccine, it is actually impossible to develop the flu from the flu vaccine. The flu vaccine does not contain live influenza viruses; it is made from dead viruses. Dead viruses cannot multiply. In order for a vaccine to cause the disease it was designed to prevent, it would have to contain particles within it that could multiply.

Myth number four: Major illnesses like polio have disappeared so we don't need to vaccinate against them any more.

While it is true that the incidences of many major illnesses, like polio and measles, have markedly declined, only one major illnesses, smallpox, has disappeared from the Earth. As of April 14, 1978, no cases of smallpox have been reported to the World Health Organization (WHO) from anywhere in the world. This miracle is the result of an extensive worldwide

vaccination program carried out by the WHO. Despite the fact that no cases of the disease have been reported worldwide since 1978, the smallpox virus does still exist. Smallpox virus is kept in two approved laboratories--one at the CDC in Atlanta and one in a Russian facility in Siberia because of fears these two superpowers have that the smallpox virus could one day be used as a weapon for germ warfare. In this event, millions could die before a new batch of vaccine could be produced in the quantity needed to protect the world's citizens. Today, the only people that need to be vaccinated against smallpox are those that work with the smallpox viruses (or related viruses) in laboratories and those initial responders that would assist in responding to a smallpox outbreak. Otherwise, there is no need to routinely administer the vaccine against smallpox, but this is the ONLY disease that we no longer need to be vaccinated against.

Except for smallpox with its special scenario described above, the need for vaccinations against other deadly diseases for which vaccines are available still exists. While it is true that major illnesses like polio, diphtheria, measles, mumps, and rubella have all but disappeared in the United States (due to the effectiveness of our vaccine program), this is not the case in other parts of the world. Despite the availability of a safe and cost-effective vaccine against measles that works, nearly 900,000 measles-related deaths occurred among persons in developing countries in 1999, and 158,000 people died globally in 2011 from this disease. Polio cases have decreased from an estimated 350,000 cases in 1988, to 223 worldwide cases in 2012, but again, this miracle is a result of an effective global polio eradication program through use of the polio vaccine. Only three countries remained endemic for polio in 2012: Afghanistan, Nigeria, and Pakistan. To stop the polio vaccine now could, and likely would, spell disaster for the world. These important facts need to be kept in mind when one considers declining vaccines because, "The diseases no longer exist."

- With the exception of smallpox, deadly diseases for which effective vaccines are available still exist and they will make a resurgence worldwide if vaccinations against them are delayed or stopped.
- When a large number of parents in Great Britain withheld the measles vaccine from their children due to Dr. Wakefield's fraudulent study in which he claimed that there was a relationship between the MMR vaccine and autism, an epidemic of measles resulted that affected hundreds and killed four children.

- Epidemics of measles have occurred and are presently occurring in the United States due to the increasing number of parents who are refusing to vaccinate their children against measles.
- Epidemics of whooping cough (pertussis) have occurred and are presently occurring in the United States due to the increasing number of parents who are refusing to vaccinate their children against whooping cough.
- Central Florida (our backyard) is the tourist capital of the world.
- Terrorists in Pakistan and Afghanistan (two of the three countries in the world where polio still exists) are actively interfering in the administration of the polio vaccine as a part of their terrorist efforts.

Myth number five: Vaccines can overwhelm young children's undeveloped immune systems.

Some vaccine opponents claim that the immune system of a young child is too immature to process the information it "receives" from vaccines, and therefore it will become overwhelmed when "introduced" to these artificial, disease-causing antigens. What these pseudo-scientists don't seem to realize is that the immune system of a young child is coming face-to-face with potential disease-causing antigens thousands of times each day from the time they are born. They are constantly being exposed to foreign antigens simply by touching and playing with objects, eating, drinking, and putting their own hands and other objects in their mouth. Their immune systems are not being overwhelmed by these everyday activities. Even when exposed to multiple vaccines at the same time, a baby's body is being exposed to far fewer foreign antigens than they are every minute of their lives by simply "being a kid." Multiple scientific studies have dis-proven this objection.

Myth number six: I had the disease and I'm fine so why do we need to vaccinate against harmless diseases?

Many older people clearly remember when getting the chicken pox was simply a part of growing up. Prior to 1995, when routine use of the chicken pox vaccine first began in the United States, about 4 million people caught this illness each year. Of these, 10,000 were hospitalized and 100-200 died. Today, most young people, including many younger doctors, have never even seen a case of chicken pox. This author's two oldest children had chicken pox disease. His four youngest received the vaccine and never experienced this "rite of passage." I remember treating several cases of chicken pox each week prior to availability of the vaccine. I have seen one case in the last ten years. While it is true that the incidence of chicken pox is very low in the United States today (due to use of the vaccine), it doesn't mean that the disease is harmless. Just ask the families of the 100 people that died from chicken pox in 1992.

Myth number seven: The Bible teaches that we should not vaccinate.

I am not sure where, why, and how this myth started but it is a common reason given by "anti-vaxxers" to not vaccinate. Vaccines were not available during Biblical times because they had not yet been discovered so there is no way that the Bible could teach us to not vaccinate. Claiming that the Bible teaches us that vaccines are dangerous is like claiming that the Bible teaches us that automobiles and car seats are dangerous. While there are potential risks involved with vaccinations, there are also potential risks involved with riding in an automobile, swimming, cooking, cycling, ... ad nauseam? This doesn't mean that we shouldn't get in a car, cool off, eat, or exercise though.

Biblical scripture is the reason given by many "anti-vaxxers" when they are seeking a "religious exemption" from the state as a way to get around school-mandated vaccination requirements. In Florida, religious exemptions can be easily obtained regardless of one's true religious beliefs. One need only sign a form obtained from the Health Department stating that they have a religious conflict with the concept of vaccinating. No further documentation as to the person's actual religious beliefs is necessary. An atheist who has never attended church in his life, and in fact does not even know the location of a church in his own neighborhood can obtain a religious exemption to vaccinations with no problem.

Modern medicine is based on science. Parents should want it no other way. Volumes of scientific evidence exist as to the effectiveness and necessity of the vaccine programs

recommended by major health organizations in the United States including the American Academy of Pediatrics (AAP), the Centers for Disease Control and Prevention (CDC), The American Academy of Family Practitioners (AAFP), and the Advisory Committee for Immunization Practices (ACIP). No scientific evidence exists that these recommendations are dangerous. Yet, a growing number of parents refuse to vaccinate. These individuals base their beliefs on the pseudo-scientific myths detailed above. This is a dangerous approach to modern medicine. Please vaccinate your children. Their health and possibly their lives along with the health and lives of those around them depend on your decision.

“There are in fact two things, science and opinion; the former begets knowledge, the latter ignorance.”

Hippocrates (The Father of Modern Medicine)