

Mandatory Vaccinations in the United States

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More and more parents today are making the decision not to vaccinate their children. While vaccinations go against some parents' religious and personal beliefs, others are worried that vaccines will cause more harm than good. Parents are misinformed and undereducated on the topic of vaccinations, and though they are entitled to their opinions, vaccinations are necessary for growing children. Without vaccinations, not only is disease spreading, but innocent children are dying every day. It is for this reason that the United States should mandate vaccinations for children from birth to age six in order to maintain their health, protect the public, and ensure the well-being of future generations.

The purpose of a vaccine is to build up the body's natural immunity to infectious organisms, otherwise known as viruses. A virus is an organism that enters the human body and multiplies within its cells. The multiplication of the organism results in the infection of the cells, causing disease. It is the responsibility of the immune system to recognize these foreign agents and produce antibodies to fight against them. When a person is vaccinated, a weakened version of the infectious organism is injected into the body. The immune system registers that there is a foreign agent present in the body and creates antibodies. These antibodies build up a person's tolerance to the virus so that they have a better chance of fighting off the infectious organisms if they are exposed to them in the future (Centers for Disease Control [CDC], 2015, p. 1). To mandate childhood vaccination would mean that a federal law would be put in place to require all children living in the United States, from birth to age six, to receive all pediatrician-recommended vaccinations, regardless of the religious or personal beliefs of the child's parents. The only exception to this law would be for children with severe allergies or other medical complications that would be affected by vaccination.

The first reported vaccination dates back to 1798 when Edward Jenner, a physician and scientist, infected healthy humans with cowpox pus. This followed an earlier method practiced by John Fewster called variolation. This involved scratching smallpox pus into the skin of healthy individuals. When done correctly, it carried a mortality rate of only two percent, but subjects were often highly infectious. Jenner's vaccination, in contrast, was highly effective. When strongly applied, the vaccination was extremely successful in eradicating smallpox from large populations (Jetsy & Williams, 2011, p. 1). Today, methods of vaccination are similar but much safer. Extensive research has been conducted since Jenner's report and doctors are much more knowledgeable about how to properly and safely vaccinate. Still, while there is no proof to show any negative effects of vaccinations, parents choose not to vaccinate their children.

A main problem is that parents are not well educated on the subject of vaccination. While some parents do not vaccinate because of religious or personal beliefs, many others fear that vaccination will harm their child. Most of this fear stems from research done by a single man. In 1998, Andrew Wakefield, a former doctor, published a research paper that noted a relationship between childhood vaccinations and autism ("MMR vax," 2011, p. 1). This paper discussed changes that occurred in 12 children who were supposedly healthy prior to receiving their vaccinations. After being vaccinated, children showed some signs and symptoms of autism, such as diarrhea and abdominal pain (Ziv, 2015, p.12). Once this research got out to the public, parents began to panic. Many decided that it was best for their children not to be vaccinated, thus leaving them without any protection from deadly diseases. As controversy over Wakefield's research stirred, suspicion about the accuracy of his findings grew. Many other doctors and scientists were having a hard time believing Wakefield's findings because no one else could replicate his results (Ziv, 2015, p. 13). This pushed many to further examine his study for

inconsistencies. In the end, evidence was found to show that Wakefield had falsified his research. One journalist, Brian Deer, looked deep into Wakefield's study of the 12 children. Deer found that "no single case was 'free of misrepresentation or undisclosed alteration'..." ("MMR vax", 2011, p. 1). Wakefield fabricated information from each of his 12 subjects. Other research found that Wakefield had paid children for blood samples at his son's birthday party and "subjected children to intrusive procedures that were not clinically indicated..." ("Lancet editors fully retract Wakefield paper," 2010, p. 1). These findings, along with the fact that no replication of Wakefield's results could be produced, proved that Wakefield's conclusions were fraudulent. Still, to this day, parents worry that vaccinations will cause their children to develop disorders like autism and ADHD.

Because children are not fully grown, neither are their immune systems. This leaves them completely exposed to viruses and heightens their chances of infection. Those who do not get vaccinated are prone to serious illness and even death. They become living incubi for viruses to flourish. It has been estimated that routine childhood immunization of children born in the year 2009 prevented nearly 42,000 premature deaths and an astounding twenty million cases of disease. The CDC then went on to estimate that 732,000 deaths of U.S. children and 322 million cases of childhood illnesses were prevented due to vaccination between the years 1994 and 2014. In addition, the American Academy of Pediatrics claimed that most childhood vaccinations are 90% to 99% effective in preventing disease (Chemerinsky & Goodwin, 2016, p. 599-600). At the same time that doctors estimated the amount of deaths that were prevented due to vaccination, a large number of children died because they were not vaccinated. During the flu season of 2007-2008, a total of 88 influenza-related pediatric deaths were reported to the CDC. Out of the 88 children, only 6 were known to be completely vaccinated (Peebles, Dhara, Brammer, Fry &

Finelli, p. 26-27). These numbers show the real-life effects of not vaccinating children. This was not the worst of it though. In the following years, during the 2009-2010 flu season, a confirmed 344 influenza-associated pediatric deaths were reported (Mustaquim et. al., 2010, p. 1). This is almost four times as many deaths as the 2007-2008 flu season. Had many more children been vaccinated during these two seasons, the mortality rate would be significantly lower. These findings prove that the only way to ensure the health of children is to vaccinate them.

Unvaccinated children pose a threat to others around them, especially children who are too young to be vaccinated, those who cannot be vaccinated due to medical complications, and the elderly. When unvaccinated children get sick, their immune systems have no way of protecting them. Instead, they go around spreading their disease to others who are susceptible and a deadly chain of events unfolds. In 2014, it was reported that forty-two people in connection with Disneyworld had been exposed to measles. Most of the victims of this disease were children who were too young to be vaccinated or whose parents had chosen not to vaccinate them. In just over a month, the outbreak spread beyond California to several nearby states, including Utah, Washington, and Oregon. It took over a year for the outbreak to end, with no new reported cases of infection after April of 2015. It is estimated that 147 people within the United States were infected during this outbreak overall. Though there were no deaths, this was the worst reported outbreak of measles in California in twenty-four years (Chemerinsky & Goodwin, 2016, p. 590-591). This outbreak shows just how easy it is for disease to be spread and while there were no deaths in this case, other cases were deadly. During the flu season of 2007-2008, 39 of the 88 children who died had high-risk medical conditions that prevented them from being vaccinated (Peebles et. al., 2011, p. 27). These children relied on healthy children to be vaccinated in order to help build up what is known as herd immunity. As explained by Peebles et. al. (2011):

A population that is appropriately vaccinated against highly infectious diseases is a common good to the very society of which its members are a part...Maintaining this common good requires that all vaccine-eligible individuals be vaccinated...Ultimately, as more individuals behave in a manner that fails to consider the common good, there is a detrimental effect on the overall well-being of the group. (p. 274).

This is exactly what occurred for the children who could not be vaccinated. More and more healthy children were not vaccinated, so the overall immunity of society was at an all-time low. Unfortunately for the high-risk children, the negligence of parents who decided not to vaccinate their own children cost them their lives. This example is only one of many in which children and others who could not be vaccinated, whether it was due to medical conditions or age, have died because of the carelessness of their counterparts. These cases further prove why it is necessary for children to receive vaccinations.

The health of future generations relies solely on the built-up immunity that is passed down to them. When children are not vaccinated, their immune systems do not build up immunity to preventable diseases. Unvaccinated children then grow up to have children of their own and without immunity, their children are put at a greater risk of contracting disease. According to the CDC (2015), "Passive immunity is provided when a person is *given* antibodies to a disease rather than producing them through his or her own immune system." This is what occurs from mother to child through the placenta (p. 1). The mother, who has gained immunity to certain diseases via vaccination, passes this immunity down to her child. Passive immunity is crucial to protecting infants as it lasts several weeks to several months, during the time period in which they are too young to be vaccinated. If children who are unvaccinated grow up and do not have any built up immunity to pass on to their offspring, their children are at a much higher risk of contracting

disease. Another way to protect the health of future generations is through mass vaccination, which can help eradicate nearly all cases of specific, life-threatening diseases. The CDC (2015) states:

Before the middle of the last century, diseases...struck hundreds of thousands of infants, children and adults in the U.S...As vaccines were developed and became widely used, rates of these diseases declined until today most of them are nearly gone from our country. Nearly everyone in the U.S. got measles before there was a vaccine, and hundreds died from it each year. Today, most doctors have never seen a case of measles. (p. 1).

This evidence shows that widespread vaccination can help make diseases nearly nonexistent. A disease like the measles, which once was catastrophic and responsible for hundreds of deaths, is almost unheard of today. The CDC goes on to claim that, "...vaccinations are not just for protecting ourselves, and are not just for today...they also protect our children's children and *their* children by keeping diseases that we have almost defeated from making a comeback" (2015, p.1). For this reason, vaccinations should be made mandatory for children. It is important for them to build up immunity to diseases at a young age so that they can be part of the change. As more and more children are vaccinated, the chances that diseases will spread becomes less and less. This, in turn, makes the possibility for their own children to contract the same diseases nearly impossible. It is the responsibility of the youth of today to protect the children of tomorrow.

Many parents believe that mandating vaccination goes against their rights to freedom of religion and freedom to choose. However, many doctors and researchers agree that it is in the child's best interest to be vaccinated. Dr. Megan Gibson of the University of Louisville questioned if it was possible to allow religious exemptions to mandatory vaccines while still

protecting the health of the general population. Gibson addressed several possible solutions that have been posed in an attempt for religious exemptions and public health to coexist peacefully, including the idea to create different classes of children based on their parents' religious preferences. Gibson stated that this solution, among others, was no such solution at all. She claimed that classifying children according to their parent's belief violated the Fourteenth Amendment, which ensures all children's right to equal protection. This classification would potentially deny certain children from getting equal access to vaccinations. Gibson concluded that a parent's religious beliefs are irrelevant to a child's personal health needs and are in no way relevant to the best interest of the public (Gibson, 2016, p. 23-25). Parents are so invested in their own desires that they fail to acknowledge their children's basic human rights.

Parents also fear that vaccinating their children will cause autism or other forms of developmental regression, but do not acknowledge the fact that not vaccinating their children poses an even bigger threat; death. In 2013, physicians in Poland sought to prove that a specific vaccine did not negatively affect the cognitive development of children. This study aimed to prove wrong prior claims by Andrew Wakefield about the connection between vaccinations and the development of autism in children. Physicians studied 369 infants from the time that they received the MMR—measles, mumps, and rubella—vaccine up until their eighth year of life. They also studied infants who received only the measles vaccination for the same period of time. The results of this research study showed no significant differences in cognitive and intellectual development between the children who received the MMR vaccine and the single measles vaccine (Budzyn-Mrozek, Kieltyka, Majewska & Augustyniak, 2013, p. 2551). This study, along with many others that have taken place, further proves that Wakefield's theories were not only made up, but completely incorrect. Furthermore, it shows that parents who do not want to

vaccinate their children out of fear of harming them have no real argument to support these beliefs.

It is important that people, parents especially, become better informed on the positive effects of vaccination. Not only does vaccination prevent the spread of disease, but it protects children from becoming seriously ill and, in some cases, from dying. Not vaccinating children can cause other children and adults to become gravely ill. When less and less children are vaccinated, the health of the entire nation is put at risk. For these reasons, it is critical for the United States to mandate vaccinations for children from birth to age six in order to ensure their health, look after the public, and guarantee the well-being of generations to come.

References

Chemerinsky, E., & Goodwin, M. (2016). Compulsory Vaccination Laws are Constitutional. *Northwestern University Law Review*, 110(3), 589-615.

Compulsory Vaccination Laws are Constitutional argues that mandating childhood vaccinations is constitutional. It states that all 50 U.S. states should mandate childhood vaccination, regardless of parents' religious beliefs. The essay claims that no exceptions should be made to compulsory vaccination unless there is a medical reason. It is written by Erwin Chemerinsky, Dean of the University of California, Irvine School of Law, and Michele Goodwin, the Chancellor's Professor of Law at the University of California, Irvine School of Law.

The essay provides statistics that prove that vaccinations are necessary to ensuring children's health. It also offers evidence that shows how not vaccinating children led to serious, widespread health issues in the past. The author concludes that the religious affiliation and/or personal beliefs of parents should not interfere with the law. It is constitutional to enforce vaccination laws with no exceptions other than medical necessity.

Gibson, M. (2016). Competing Concerns: Can Religious Exemptions to Mandatory Childhood Vaccinations and Public Health Successfully Coexist?. *University Of Louisville Law Review*, 54(3), 527-551.

Competing Concerns questions if it is possible for religious exemptions to mandatory vaccinations to exist while protecting public health at the same time. The author details the history of and laws surrounding vaccination in the United States. It also discusses possible solutions that would allow religious exemptions and mandatory vaccinations to coexist. The article is written by Dr. Megan Gibson, who has both her B.A. and Ph.D. in Biology from the

University of Louisville. She is also a J.D. Candidate of the Brandeis School of Law at the University of Louisville.

The author concluded that all possible solutions mentioned in the article would not work. She provided a structured argument that stated that, according to the First Amendment, children have rights to vaccinations, regardless of their parents' views. She also provided a true story backed with statistics that show that when children are not vaccinated, viruses quickly spread and affect public health.

Hendrix, K. S., Sturm, L. A., Zimet, G. D., & Meslin, E. M. (2016). Ethics and Childhood Vaccination Policy in the United States. *American Journal Of Public Health*, 106(2), 273-278. doi:10.2105/AJPH.2015.302952

Ethics and Childhood Vaccination presents parent's views towards vaccination. The article takes into account religious, personal, and scientific views towards vaccination. It discusses how these views, along with parents choosing not to vaccinate their children, leads to a threat towards public health. The article was written by Kristin Hendrix, Lynne Sturm, Gregory Zimet, and Eric Meslin; all of the Indiana University School of Medicine.

The article presents insight on the way certain parents view vaccination and why they feel this way. It provides points of view that oppose that of provaccine supporters. The authors provide possible resolutions to the problems surrounding parents' choice and vaccination, such as more educational communication methods and cooperation between parents and physicians.

Jesty, R., & Williams, G. (2011). Who invented vaccination?. *Malta Medical Journal*, 23(2), 1-5.

Who Invented Vaccination provides information about several men who contributed to the invention of vaccination. It discusses three men's methods for creating and testing

vaccinations. It also includes information from critics who believe that one man is more responsible for the invention than the others. The article is written by Robert Jesty and Gareth Williams, Professor of Medicine, from the University of Bristol.

This article provides factual information about Edward Jenner, the man who is believed to be the prime person responsible for the invention of the vaccination. It discusses Jenner's methods for testing his hypothesis regarding vaccination. The article also mentions methods completed by two other men, Jesty and Fewster, who are responsible, in part, for this invention.

Kennedy, A. M., Brown, C. J., & Gust, D. A. (2005). Vaccine Beliefs of Parents Who Oppose Compulsory Vaccination. *Public Health Reports*, 120(3), 252-258.

Vaccine Beliefs presents the results and analysis of a survey taken by parents regarding their views on compulsory vaccination. The article aims to discover the reasons behind why some parents are opposed to vaccination. The article was written by Allison Kennedy, Cedric Brown, and Deborah Gust, all from the Epidemiology and Surveillance Division with the Centers for Disease Control and Prevention.

Results of the survey show that some parents are against vaccinations because they do not believe they are safe. The article provides statistics from the survey that show the number of parents who support and oppose vaccination. The article also presents sociodemographic information about the parents surveyed. The authors conclude that if parents are provided with more information about how vaccinations are safe and will benefit children's health, then less parents will oppose compulsory vaccination.

Lancet editors fully retract Wakefield paper. (Cover story). (2010). *Reactions Weekly*, (1288), 1.

Lancet Editors Fully Retract Wakefield Paper discusses the retraction of a paper published in *The Lancet*. The paper, written by Dr. Andrew Wakefield, describes research that points to a possible link between vaccination and autism. The article mentions a brief history of Wakefield's research and findings. This article was published on the online publication Reactions Weekly.

The article describes Andrew Wakefield's research and alleged findings. It explains Wakefield's method of research, including the number of children he studied and what he supposedly discovered about each of them. The article also details actions taken by Wakefield that show that his data cannot be trusted, including a specific action at his own child's birthday party. It mentions that Wakefield's methods and actions were unjust and unethical towards his subjects.

MMR vax/autism study deemed fraudulent. (2011). Reactions Weekly, (1334), 1.

MMR vax discusses how the 1998 paper written by Andrew Wakefield, which reports a connection between vaccinations and autism, is fraudulent. The article mentions that Wakefield's findings were disproved because no other scientists could recreate them. It also notes that all of the cases mentioned in Wakefield's paper were altered or misrepresented. This article comes from the online publication Reactions Weekly.

The article concludes that Wakefield's research and paper are "a deliberate fraud." The article provides examples of how Andrew Wakefield interfered with and lied about his findings. It also includes an expert's findings on the actions taken by Wakefield to forge the results of his research.

Mrozek-Budzyn, D., Kiełtyka, A., Majewska, R., & Augustyniak, M. (2013). Measles, mumps and rubella (MMR) vaccination has no effect on cognitive development in children – The results of the Polish prospective cohort study. *Vaccine*, *31*(22), 2551-2557.
doi:10.1016/j.vaccine.2013.03.057

The article *Measles, Mumps, and Rubella* details a study done by Polish doctors to see if there was a connection between vaccination and cognitive development in children. The article mentions that doctors tested if the three-part MMR vaccination affected children differently than the single vaccination. This study was conducted by Dorota Mrozek-Budzyn, Agnieszka Kiełtyka, Renata Majewska, and Malgorzata Augustyniak, who are all part of the Epidemiology and Preventive Medicine unit at Jagiellonian Univeristy Medical College in Krakow, Poland.

The article concludes that there is no negative correlation between the MMR vaccination and cognitive development in children. It provides information about the methods and materials used to test the hypothesis, as well as statistical results. The article also presents detailed data charts that prove that there is no connection between cognitive development and different vaccinations.

Mustaquim, D., Bishop, A., Epperson, S., Kniss, K., Blanton, L., Dhara, R., & ... Finelli, L. (2010). Update: Influenza Activity--United States, 2009-10 Season. *JAMA: Journal of The American Medical Association*, *304*(9), 957-960.

The article *Influenza Activity* presents the outcomes of the 2009-2010 flu season. It discusses surveillance and characterization of the virus, along with the number of new cases that were found that year. This article also includes mortality rates for adults and children due to the

influenza virus. The authors are affiliated with the Influenza Division of the Centers for Disease Control and Prevention.

The authors conclude that vaccinations are necessary to reduce the impact of vaccination. This article includes valuable statistics that show the horrible consequences that occur when people are not vaccinated. It also provides specific dates and locations to show how the virus affected real people from all over the country.

Peebles, P. J., Dhara, R., Brammer, L., Fry, A. M., & Finelli, L. (2011). Influenza-associated mortality among children - United States: 2007-2008. *Influenza & Other Respiratory Viruses*, 5(1), 25-31. doi:10.1111/j.1750-2659.2010.00166.x

Influenza-associated Mortality discusses the number of pediatric deaths that occurred during the 2007-2008 flu season. The article details an investigation done by the authors that questioned why the virus was so deadly. Author Patrick J. Peebles is a member of the Influenza Division of the Centers for Disease Control and Prevention, as well as The CDC Experience Applied Epidemiology Fellowship in Atlanta, Georgia. The other contributing authors are also members of the Influenza Division.

The article concludes that most of the children who died from the virus were unvaccinated. It provides specific information about the subjects who died, such as the type of bacterial organisms found in them and causes of death. It also includes statistics about the age of the subjects and how long each was ill.

The Centers for Disease Control and Prevention. (2016). Retrieved from <http://www.cdc.gov/>

The Centers for Disease Control and Prevention is a government agency under the Department of Health and Human Services. Its purpose is to protect people from health threats. This site gives definitions of key terms such as immune system, vaccination, and virus. It also provides statistics about how viruses affect people every day.

Ziv, S. (2015). A Deadly Shot in the Dark. *Newsweek Global*, 164(7), 12-15.

A Deadly Shot in the Dark provides information about Andrew Wakefield, the man behind fraudulent research that links autism to vaccination. The article notes that Wakefield's actions have caused many citizens to distrust vaccinations, while others still believe in his findings. According to the article, Wakefield still stands by his findings, though he has been charged for ethical misconduct. The article is written by Stav Ziv, a general assignment reporter for Newsweek.

The article utilizes expert opinions on the benefits of vaccinations to help disprove Wakefield's study. It also references specific studies done elsewhere that show no link between autism and vaccination. The article concludes that Wakefield falsified his findings and that vaccinations are necessary to children's health.