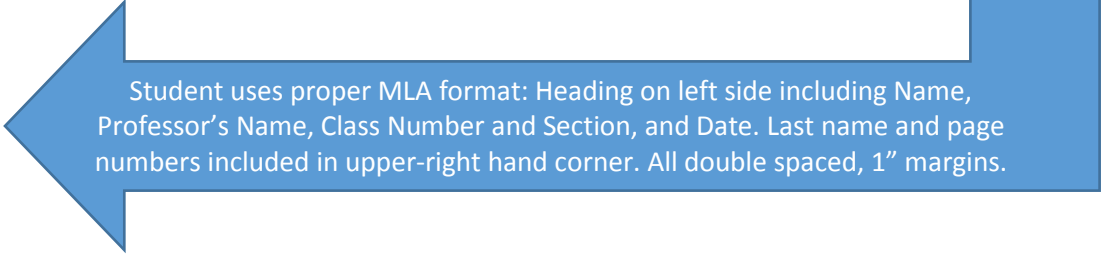


Jane Smith

Professor Johnson

English 104-00

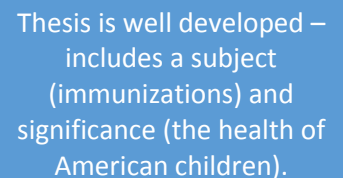
5 April 2015



Student uses proper MLA format: Heading on left side including Name, Professor's Name, Class Number and Section, and Date. Last name and page numbers included in upper-right hand corner. All double spaced, 1" margins.

Safe and Effective: The Importance of Childhood Vaccination

In January of 2015, at one of the most magical places on earth, Disneyland, an old scourge reared its ugly head. This unwelcome visitor, measles, infected dozens of young children throughout Southern California and Arizona, and new cases are still being reported today. Declared “essentially eradicated” by experts in 2000, this insidious bug is gradually making a comeback, thanks to the growing anti-vaccine movement that has taken a hold of the United States (Haberman). Most of the fuel for this movement is based on half truths and unsupported evidence, like the flawed Wakefield study in 1998 that declared the measles, mumps, and rubella (MMR) vaccine to be a major cause of autism (Haberman). As more and more parents decide to forgo vaccines for their children, deadly diseases such as measles, diphtheria, and whooping cough are beginning to creep out from their old hiding places and wreak havoc on American families. **Based on the excellent safety record of immunization and the evidence of the protection it provides, childhood vaccines should be required for almost all American children in order to keep these old childhood diseases from gaining a foothold in the United States.**



Thesis is well developed – includes a subject (immunizations) and significance (the health of American children).

11-12.RN.2.1

Vaccines have been used to combat illness for thousands of years. The process began with the ancient Chinese, who ground up smallpox scabs from the sick into a powder. This

powder was then injected into the veins of healthy people (Bloom, Canning, and Weston). However, it was not until the late eighteenth century that this process made its way to the western world. Edward Jenner, an esteemed physician and scientist, created the first official smallpox vaccine out of cowpox pus when he discovered that people who became ill with cowpox were later immune to smallpox. He published his findings in 1798, and thanks to his discovery, there are currently twenty-six diseases that are vaccine preventable (Bloom, Canning, and Weston).

While vaccines were considered experimental treatments during Jenner's lifetime, today they are considered tried and true, with very little reason for anyone to be skeptical of their safety or effectiveness. According to the Centers for Disease Control and Prevention, vaccines today are safer than ever before, thanks to a grueling process of testing, licensing, and monitoring. When a vaccine is first created, it must first be tested on animals, such as monkeys, guinea pigs, and mice. After observing the animals for any signs of adverse side effects, the vaccine is then given the go ahead to enter the second phase of testing involving people. All of the people involved in the study participate voluntarily, and they must demonstrate that they understand the potential risks of the trials. This second phase is divided into three trials, with each one increasing the number of test subjects involved until the vaccine is deemed to be safe and effective. This process can take several years (Vaccine).

After the vaccine is given the seal of approval, the manufacturer must apply to the Food and Drug Administration (FDA) for two licenses: one for the vaccine itself, and one for the manufacturing plant. The FDA then views all of the trial data provided to them and inspects the plant. They also go over important manufacturing guidelines to ensure the vaccine is produced in

The highlighted sentence is a quality topic sentence. This sentence ties the previous paragraph in with the main idea of this paragraph. Good topic sentences build consistency and logical organization for the reader to follow easily.

11-12.W.3.1

a safe and consistent manner (Vaccine). When the FDA believes that the vaccine meets all of the necessary criteria, the licenses are then granted.

Despite being given the full blessing of the FDA, the vaccine must be continually monitored for safety for the benefit of the public. For every vaccine lot produced, a sample must be sent to the FDA to be inspected before it can be released. The FDA checks the sample for a laundry list of items, including purity, potency, safety, mislabeling, and environmental contaminants (Vaccine). All of this monitoring pays off in the end, however, as it means the risk of death or serious side effects for a young child are slim to none.

For the very small number of children who do experience severe complications from vaccines, there is a government program entitled the National Vaccine Injury Compensation Program that financially compensates those who are hospitalized or require ongoing medical treatment. **This program was put in place by Congress in 1986 under the National Childhood Vaccine Injury Act to alleviate public concern over vaccine safety (Vaccine).** Fortunately, the majority of children who receive vaccines experience no side effects at all, except for a little muscle soreness at the injection site. Less common side effects include swelling and redness at the injection site and a low grade fever. Serious complications such as systemic infection and death are extremely rare, with none reported for any of the current vaccines administered to children today (Vaccine Side Effects).

Another aspect pertaining to vaccine safety is the notion that vaccines cause autism in some children. This idea is one of the main arguments of the anti-vaccine movement against vaccines, and it happens to be a completely unfounded one. This concept is based on a flawed study performed by a British physician named Andrew Wakefield. In 1998, after observing a dozen children afflicted with autism-like symptoms and abdominal pain and bloating, Dr.

Including factual evidence based on documented research enhances this student's logical appeal to the audience.

11-12.RN.3.3

Wakefield concluded that the MMR vaccine caused autism in the children through gastrointestinal infection (Park). He believed that the vaccine altered the children's immune systems, allowing them to become susceptible to certain intestinal pathogens that produced severe infections. These infections then traveled to their brains and caused permanent damage. His findings, which were based on an extremely small sample, were later debunked by numerous epidemiological studies, and the British Medical Journal went so far as to call his research "fraudulent." He was later stripped of his medical license. Most doctors today say there is no proof whatsoever that any childhood vaccines cause autism (Haberman).

While the safety and effectiveness of vaccines are important for stopping the spread of infectious diseases, there are other less obvious benefits to getting vaccinated. Not only do vaccines protect against the diseases for which they were created to prevent, but they also protect against related illnesses (Vaccination). The MMR vaccine protects against **dysentery, bacterial pneumonia, malnutrition and keratomalacia**, which is a serious eye disorder caused by a vitamin A deficiency (Keratomalacia). Another vaccine, **the flu shot, prevents acute otitis media, also known as ear infections, in children** **thirty percent efficacy rate** (Vaccination). While not much is known about how or why these vaccines are so effective in preventing these illnesses, it just goes to show how incredibly beneficial vaccines are and why parents should not deny their children this basic service.

The diction, or word choice, suggests that this author is reaching out to a real audience within the medical community, perhaps those who might lobby for legislature requiring parents to vaccinate children.

11-12.W.3.1

There are also vaccines that can prevent cancer. The Hepatitis B vaccine can protect an individual from developing liver cancer, also known as hepatocellular carcinoma. The Hepatitis B virus destroys liver cells and is one of the main contributors to this type of cancer. The injection is also incurable, which makes it so important for children to receive the vaccine in the

first place. Another shot that can protect against cancer is the human papilloma virus (HPV) vaccine (Vaccination). While it is mainly designed for older children and teens, it has been proven to guard women from cervical cancer, which has an extremely high mortality rate. HPV causes cellular changes in a woman's cervix that can lead to cancer, and it is often transmitted through sexual contact. Therefore, it is imperative that a child or teen receive the vaccine before they become sexually active.

However, the most important reason why parents need to vaccinate their children is not necessarily to prevent a future cancer diagnosis, but to promote herd immunity in their community. Herd immunity occurs when a sufficient amount of people in a community are immune from deadly pathogens (Vaccination). The level of immunity required in any population to protect against disease is approximately ninety-five percent. When levels drop below this number, formerly dormant viruses like measles and whooping cough can awaken and create epidemics (Haberman). Herd immunity is mainly acquired artificially through vaccination, although it can also be acquired naturally when a person is infected with particular pathogen and then recovers (Garrey). Chickenpox is an example of naturally acquired immunity.

Nevertheless, allowing a child to become infected with measles or whooping cough in order to gain immunity is a bad idea, as these diseases, unlike chickenpox, can and do kill. For those people with compromised immune systems, it is almost a certain death sentence, and it is for them that herd immunity is so crucial. A person with a compromised immune system cannot receive vaccines, because the vaccine itself would likely make them sick, and possibly even kill them. These people include newborn babies, cancer patients, and the elderly (Haberman). For them, the immunity of others is the only barrier shielding them from deadly contagions, and in

This student has thoughtfully chosen to organize the main points from least powerful to most powerful in order to better reach each the audience.

11-12.W.3.1

this way, the choice to protect one's child from disease by vaccinating them is a choice to protect others as well.

Unfortunately, the anti-vaccine movement shows no signs of disappearing. As more parents choose not to vaccinate, the herd immunity levels in some communities have dropped far below safe levels, resulting in epidemics like the one in Anaheim, California, involving Disneyland. Some communities, such as Marin County in California, and Portland, Oregon, have kindergarten vaccine exemptions rates approaching sixty percent (Anti-Vaccine). This is a disaster where measles is concerned.

The measles virus is a highly infectious and sometimes fatal organism. It is spread both through the air and through physical contact. Some of its symptoms include a high fever, white spots in the mouth, vomiting, diarrhea, and a painful, blotchy, red rash that covers the entire body. In some cases, the virus can cause irreparable brain damage (Vaccination). One or two out of every one thousand people that are infected will die (Haberman). This is a sobering thought when one considers the massive population of the United States, and what could happen if the measles virus were to spread itself across the entire country. If a mass epidemic were to occur, inflated healthcare costs and widespread panic would be sure to follow (Bloom, Canning, and Weston).

Despite the need for high levels of herd immunity to combat such a disaster, there is still a bit of merit to the fears of some parents who are anti-vaccine. Serious complications due to vaccines are statistically rare, but for the parents of those children affected, the statistics mean nothing at all. In 1998, the FDA approved the use of the Rotashield vaccine to combat the rotavirus,

This student has addressed both sides of the argument to reduce bias and create a stronger ethical appeal in the rhetorical framework.

11-12.W.3.1

an organism that causes severe diarrhea in young children. However, just a year later, the FDA scrambled to withdraw the vaccine from the market after it was found to cause intussusception, a serious bowel condition, in between one and five thousand and one and ten thousand infants within two weeks of receiving the vaccine (Bloom, Canning, and Weston). Luckily, the quick action by the government of discontinuing the vaccine likely prevented many babies from falling victim to such a serious condition.

Unfortunately, the Rotashield incident has not been the only vaccine scare that the US has experienced in recent history. In April of 2008, a nine-year-old girl from Georgia with a preexisting cellular disease was made worse, due in part to the vaccines she had received when she was an infant. This particular case, which was verified by the US government, resulted in a serious brain disorder that manifested autism-like symptoms (Park).

However, this child happens to be the first child ever documented to have an illness directly attributed to vaccines. According to Dr. Tracey Lieu, director of the center for child healthcare studies at Harvard Medical School, “in rare instances, there could be some gene-vs.-exposure interaction that in theory could lead from the vaccine to autism” (Park). In other words, it may be a child’s genetic make up, and how that make up interacts with vaccines, that is to blame for autism in a small percentage of cases. Screening for genetic profiles that are associated with immune disorders would be an excellent way to prevent these rare and tragic illnesses (Park). Fortunately, there have been no other cases of autism-like illnesses directly linked to vaccines, presenting further proof that the risks of not vaccinating a child are still higher risks of vaccination.

Student has added quotations from source to address an opposing argument. The quote is introduced by a signal phrase (highlighted in blue) and integrated with correct punctuation. The quote has also been followed by an explanatory sentence, demonstrating the validity of the quote (highlighted in green).

11-12.W.3.1

At the end of the day, it is quite plain to see that vaccines are incredibly important for all US citizens. They are safe and effective, and have the added benefits of protection from viral related illnesses and cancer. The vaccination of healthy people also ensures the protection of those who are too fragile or too sickly to receive vaccines. There is no reason why vaccines should not be required for children with normal, healthy immune systems, for if more parents continue to forgo vaccines, more outbreaks resembling the Disneyland fiasco may result.

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 Entries are in alphabetical order with hanging indents. Entries are mostly error-free, conforming to current MLA guidelines.