

# Vaccines: to be or not to be?



**ASSIGN  
BUSTER**

Vaccines: To Be or Not To Be? Ryleigh Grace—this is the name of my beautiful 8-month-old cousin. Looking at her, one would never be able to tell that she was born with a serious, life-threatening condition called meningitis. As a result, Ryleigh's home for the first month of her life became the Cooper hospital's ICU. However, this scare was not enough to convince her parents to allow Ryleigh to receive her routine childhood vaccinations, which would prevent other dangerous ailments she may encounter in the future. Ryleigh's parents, however, are not the only ones with this state of mind. In today's society, occurrences like this one are happening on a daily basis. The percentage of parents refusing their children receiving immunizations is increasing drastically. Due to the success of vaccinations, "the perception that susceptibility to and morbidity and mortality from vaccine-preventable diseases are no longer a concern" (Ragan 1) has been promoted. Therefore, parents who have been exposed to stories of the oppositional outcomes vaccines have caused, they view immunizations as more of a threat.

Although it is true that routine childhood vaccinations do pose possible risks of adverse effects, the benefits prove immunizations far more beneficial than disadvantageous. These benefits not only involve safety, but also deal with direct and societal costs of vaccines. The first vaccine came about around 200 years ago. It was created by Edward Jenner as a treatment for smallpox. At the time, smallpox was the culprit of the death of millions; so, Jenner postulated that by injecting a much milder form of the disease (cowpox), the body would build up immunity to smallpox. By doing this, he invented the technique of vaccination, which is defined in the article as, "injecting a dead or mild form of a virus or bacteria into the body in order to stimulate production of antibodies that will protect a patient in case of accidental

infection later" (Lee 1). Today, smallpox is almost nonexistent in the United States. In the 1950's, another vaccination was founded by Dr. Jonas Salk that virtually wiped out the disease polio. Since then, several other vaccines have been created. When a vaccine is created, it must go through a 4-phase process before it is approved. These 4 phases include using participants to measure adverse effects and effectiveness. Once approved, the vaccine is monitored by the FDA, The Vaccine Safety Datalink Project, and the Vaccine Adverse Events Reporting System (" Plain Talk" 19). This ensures the safety of the vaccines. Regarding the vaccines created, the diseases they protect against include Hepatitis A and B, Rotavirus, Diphtheria, Tetanus, Pertussis, Haemophilus influenzae type b (Hib), Pneumococcal disease, measles, mumps, Rubella, Meningococcal disease, Human papillomavirus (HPV), and influenza. If contracted, Hepatitis A and B can both cause liver infection, disease and cancer. Individuals infected with these diseases are contagious and can easily pass it to another person (A through simply touching an object, putting the infectious substance on it, and B, through blood or other bodily fluids). Hepatitis A vaccine has no known adverse effects. However, there have been reports of severe allergic reactions to the Hepatitis B vaccine. This reaction occurred in approximately 1 in 1.1 million doses (" Plain Talk" 25). Rotavirus is also easily spread. Symptoms that accompany the disease are high fever and vomiting, which is followed by diarrhea. An excess amount of diarrhea can lead to the child becoming extremely dehydrated due to the loss of body fluids, which can lead to hospitalization. When dealing with diarrhea in infants and young children, Rotavirus was the number one cause until the vaccine was created. No serious adverse reactions have been reported for this vaccine (" Plain Talk" 25). Diphtheria is

known to cause breathing and heart problems, coma, paralysis, and death. Before the vaccine to this disease was created, it caused approximately 15,000 deaths per year. Severe allergic reactions to this vaccine occur in 1 out of 1 million. Like Diphtheria, the vaccine for Tetanus, or lockjaw, has resulted in a 1 out of 1 million severe allergic reaction. This disease, which can cause muscle spasms, breathing problems, and death, was responsible for 180 deaths per year before the vaccine became readily available. Pertussis, better known as whooping cough, causes severe coughing spells that can lead to pneumonia, seizures, brain damage and death. Cases have decreased 89.4% since the vaccine has been widely used ("Plain Talk" 5). 1 in 16,000 doses are accompanied by a fever greater than 105 degrees, 1 in 1,000, prolonged crying for three or more hours, and seizures have occurred in every 1 out of 14,000 doses. Although this vaccine has higher amounts of adverse effects, before the vaccine was available, 200,000 cases were reported each year. Of those 200,000, 8,000 cases resulted in death. Hib, which used to be the leading cause of bacterial meningitis, has decreased 99.8% ("Plain Talk" 5). Along with meningitis, it can cause brain damage, infections of the joints, skin, and blood, and death. There have been no reported effects to the vaccine. A common reoccurrence with all of these vaccines is the rarity of severe reactions they present. Even Pertussis, which has higher rates of adverse effects, proves to be beneficial in that it cut the number of cases of infected children substantially. The outcomes of actually obtaining the infections are much more dangerous than that which could accompany the vaccine for each. Douglas Barasch further proves this in his article, How Safe Are Kids' Vaccines?. Barasch begins, "There's a proven link...between the DPT vaccination (now being replaced by a lower-risk

version dubbed DTaP) and anaphylaxis, an allergic reaction that can be fatal" (Barasch 82). Barasch then goes on to say that although the possibility of a fatal reaction to the vaccine is there, it is very rare and that by contracting the actual disease and not just the effects of the vaccine, children are more prone to serious conditions such as brain damage. Deborah Lee also comments on the rarity of adverse effects of vaccines, saying, "chances of being injured in a car crash are about one in one thousand--a thousand times greater than the risk of death from a...vaccination" (Lee 1). From an economical standpoint, vaccinations also prove beneficial. This was proven in the article, *Economic Evaluation of the 7-Vaccine Routine Childhood Immunization Schedule in the United States, 2001*, which analyzed whether the direct and societal costs of routine vaccinations (accounting also for medical expenses due to adverse effects) are greater or less than the cost of not being vaccinated. The study found, "without a routine childhood vaccination program, the model estimated that in a cohort of 3,803,295 children, approximately 14.3 million cases of these diseases would occur, resulting in 33,564 deaths" (Zhou, et al. 1140). Respectively, \$9.9 billion and \$43.3 billion were the calculated net savings of the routine childhood vaccination program. Another aspect involved with vaccines deals with a theory called herd immunity. In *Vaccines in childhood: Strategies to address the concerns of parents*, Patti Ragan states, "Herd immunity protects children who are too young to be immunized, persons who are not fully immunized or did not have a sufficient immunologic response, and those who cannot be immunized because of medical contraindications" (Ragan 23). As the percentage of immunized children decreased, these people become at risk of these diseases if they're contracted by the children not vaccinated.

This will cause a risk of an epidemic of illness and disease. People's ignorance and lack of knowledge about vaccines has the potential to cause more problems than those of adverse effects. In conclusion, vaccines are some of the most extraordinary medical successes in the United States. They have saved millions of lives, as well as millions of dollars. When a parent allows their child to receive immunizations, it ensures not only the safety of their child, but also the safety of the community. Therefore, regardless of the adverse effects that have an extremely slight chance of occurring, to be should always be the answer when it comes to vaccines. Parent's need to stop letting their " Fear of disease...become fear of vaccines" (Ragan 22) and do what's right. Works Cited Barasch, Douglas S. " How Safe Are Kids' Vaccines?. " Good Housekeeping 231. 3 (2000): 82. MasterFILE Premier. Web. 20 Oct. 2012. Lee, Deborah and Rosalyn Carson-Dewitt. " Point: Vaccines Save Lives. " Points of View: Vaccines & Health Hazards (2011): 1-2. Points of View Reference Center. Web. 23 Oct 2012. " Plain Talk about Childhood Immunization, 6th Edition. " (2009): 5-47. ERIC. Web. 20 Oct. 2012. Ragan, Patti and Diane M. Duffy. " Vaccines in childhood: Strategies to address the concerns of parents. " CME 25. 10 (2012): 22-26. Journal of the American Academy of Physician Assistants. 19 Oct. 2012. Salmon A., Daniel, et. al. " Factors Associated With Refusal of Childhood Vaccines Among Parents of School-aged Children: A Case-Control Study. " Arch Pediatr Adolesc Med. 159. 5 (2005): 470-476. Journal of the American Medical Association. Web. 21 Oct. 2012. Zhou, Fangjun, et al. " Economic Evaluation of the 7-Vaccine Routine Childhood Immunization Schedule in the United States, 2001. " Arch Pediatr Adolesc Med 159. 12 (2005): 1136-1144. Journal of the American Medical Association. Web. 25 Oct. 2012.