

Disease and Vaccines: Just the Facts

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## Table of Contents

Thesis: A decision to vaccinate or not to vaccinate should be reached after receiving clear, unbiased information, including the pros and cons of each argument.

Acknowledgement

Abstract

Introduction

Section I – Background

A Brief History of Vaccines

Anti-Vaccinationists

Section II – Vaccines and Statistics

CDC Recommended Vaccine Schedule

Hepatitis B

Rotavirus

Diphtheria

Tetanus

Pertussis

DPT Vaccine

Haemophilus Influenza Type B

Pneumococcal Disease

Polio

Influenza

Measles

Mumps

Rubella

MMR Vaccine

Varicella (Chickenpox)

Hepatitis A

Disease and Vaccine Summary (Chart)

### Section III – Should I Vaccinate?

What are the ingredients in the vaccines and are they harmful?

What is a healthy immune system?

What does the immune system have to do with vaccinating a child?

What are the long-term effects of vaccines?

Why would my doctor and the government tell me to vaccinate if these vaccines are so harmful?

Did vaccines eradicate or diminish the diseases and what happens if we stop vaccinating?

What are my legal rights?

Conclusion

Personal Note

End Notes

Works Cited

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### Abstract

A decision to vaccinate or not to vaccinate should be reached after receiving clear, unbiased information, including the pros and cons of each argument.

With the vast amount of data available on vaccines, I could not find a neutral, unbiased information source. The information was skewed to the writer's opinion, either pro vaccine or anti vaccine. Government statistics were found wanting and sometimes even contradictory as they promoted fear and bias. Those opposing vaccination used incendiary language and scare tactics as well.

The purpose of this study is to look at the documented facts obtained through verifiable numbers available through government statistics. After looking at the statistics, we will attempt to answer some frequently asked questions considering those numbers.

Sections II and III of this study will be used as a guide for parents looking for answers to the question: Should I Vaccinate?

Marilyn Greenman

A decision to vaccinate or not to vaccinate should be reached after receiving clear, unbiased information, including the pros and cons of each argument.

### Introduction

A 2010 national survey found that while eighty-eight percent of parents follow the CDC recommended vaccine schedule, over half, fifty-four percent are concerned about vaccines (Colorado Children's Immunization Coalition).

When you Google the word "vaccine," you will find over 40 million entries. Information floods our homes from news outlets, the Internet and government organizations about vaccines. One day we hear about victims of vaccines gone wrong; and the next day we hear about the pandemonium that will occur unless there is one hundred percent vaccination compliance. Some families are torn about whether or not to vaccinate, and look to trusted organizations or family members to help make such important decisions. Other young families do not know that such a controversy exists and they will follow the paths of their parents and/or health care providers.

The world has changed since the 1950's when a child would receive one polio vaccine at school. In the 1970's seven vaccinations were recommended and at this writing in 2012 the Centers for Disease Control-CDC-recommends a schedule of sixty-two vaccines by the time a child reaches twelve years of age (CDC/2012 Recommended Immunizations). We can no longer rely on what our parents did or even the recommendations of trusted professionals. We must conduct our own investigation in order to protect our families and ourselves.

The American author Lillian Hellman is quoted as saying, "Nobody outside a baby carriage or a judges chambers believes in an unprejudiced point of view" (Rozakis 75). It is commonly accepted that everyone is biased. The problem arises when the bias is not recognized or acknowledged (Rozakis 78). Finding unbiased material in the vaccine controversy is more difficult

than one might imagine. The decision to vaccinate or not to vaccinate should come after much consideration has been given to trusted, unbiased facts in conjunction with the family health history of the person being vaccinated.

This study has attempted to present unbiased statistics on the vaccines recommended by the CDC for age's birth through six years old. We will look at the specific disease, the recommended vaccine available, and the conclusions found through the data in an unbiased, neutral format.

## Section I

### Background

#### A Brief History of Vaccination:

It is believed that as early as 1000 A. D. humanity was attempting to create a method to pass immunity to disease from one person to another. Documentation shows that the son of a Chinese statesman was inoculated against small pox by pulverizing smallpox scabs and blowing them in his nostrils. It was also found that inoculation could be achieved by scratching matter from a smallpox sore into the skin of someone trying to protect themselves against the disease (Bollman).

Disease has always been a black spot on cultures and populations. Epidemics have been known to destroy entire towns or villages. An epidemic creates fear and much heartache, taking its toll both emotionally and physically. We have many recorded epidemics through the centuries. A smallpox epidemic wiped out 8,000 children in Goa, India in 1545. In 1625, the French found the Indians in North America hostile because of the sickness-smallpox-they observed. When the French came in to a village, the entire village would be "utterly exterminated" (Bollman). In 1699,

yellow fever was the demon that visited Charleston and Philadelphia in the Colonies. Fatalities were high in both cities and life nearly came to a halt (Bollman).

Smallpox continued to take its toll in the eighteenth century in Boston, New York, and Philadelphia. In 1751, London recorded 3,538 smallpox deaths for the year. In 1776, 5,000 of the 10,000 Continental Army soldiers in Quebec contracted smallpox (Bollman).

Smallpox was also used in the American Revolution as a weapon of war. The American forces believed that recently inoculated civilians were sent into the soldier's camp to spread the disease. John Adams wrote: "The smallpox is ten times more terrible than the British, Canadians and Indians together" (Bollman). Epidemics of yellow fever, cholera, measles and smallpox continued through the eighteenth and nineteenth centuries, creating fear, chaos and grief in every corner of the civilized world.

Inoculation was tried for centuries. It had long been a common practice in India, Africa and China. It was well known that people who had survived smallpox were immune to the disease. One of the many problems with inoculation was the procedure also transmitted other diseases such as syphilis and tuberculosis to the otherwise healthy individual, sometimes causing death through the newly transported disease (Bollman).

This practice of inoculation continued well into the eighteenth century and spread through Europe. It became the accepted practice of physicians throughout Europe; and although two to three percent of the persons died, the rate of death was reported to be ten times lower than the death toll of the disease (Bollman). Inoculation was accepted in the American colonies as well and George Washington ordered his entire troops inoculated in 1777 (Riedel).

In the mid eighteenth century, Edward Jenner was born into this world of epidemics and inoculation. He is said to have had a keen interest in science and nature, and apprenticed to a country surgeon in 1762 at age 13 in Sodbury England. During this time, it is reported that he

overheard a dairymaid say, “I shall never have an ugly pockmarked face” (Reidel). It was a common belief at this time that dairymaids were immune to smallpox.

Jenner left his apprenticeship at 21 and went to London and became an understudy of John Hunter who was on staff at St. George’s Hospital. It is reported that Hunter was a famous surgeon as well as a respected biologist, anatomist and experimental scientist. This relationship with Hunter continued to inspire Jenner and he carried out experiments on human blood while continuing his interest in the natural sciences. At the end of two years, Jenner returned to Berkeley England to practice medicine and appeared to establish a reputation for the promotion of medical knowledge (Reidel).

It was not until many years after his initial encounter with the dairymaid in Sodbury that Jenner began experimenting with the idea that cowpox, the disease that dairymaids sometimes incur, protected against the disease smallpox. He began his first experiment by inoculating an 8-year old boy with the fresh cowpox lesions of a dairymaid named Sarah Nelms. The boy developed mild fever and discomfort in the pit of the arm, but on the tenth day he was much better. In July 1796, he inoculated the boy again with fresh cowpox lesions and this time no signs of the disease developed and Jenner concluded that protection was complete (Reidel). This was not the beginning of clinical, double blind test trials to say the least, but in the late 1700’s, this seemed to be good enough for many.

The difference in what Jenner did and what had been done for centuries was that instead of using the material of the actual smallpox virus, Jenner used matter from the lesions of a different disease. Though he suspected that the diseases were similar, his experiment was a new undertaking, scientifically speaking. There are reports of others, farmers mostly, who were inoculating their

families with cowpox pustules, but no scientific reports had been written or submitted to the proper authorities (Reidel).

Jenner did submit a paper on his findings to the Royal Society in England detailing his experiment and it was promptly rejected. But Jenner was persistent and continued to promote his theory and searched for volunteers to vaccinate (Reidel).

Jenner also began to try to get others to support his ideas. He would send supplies of vaccines to all of his medical acquaintances and many did support his ideas. He also conducted a survey that confirmed many of his theories. Stefan Reidel, MD, PhD, in "Edward Jenner and the History of Smallpox and Vaccination," makes the statement, "Despite errors, many controversies and chicanery, the use of vaccination spread rapidly in England, and by the year 1800, it had also reached most European countries." Reidel uses mild language compared to those who are opposed to vaccinations.

At least one contemporary of Jenner's called his vaccination program a delusion:

It has never saved a single life, but that it has been the cause of so much disease, so many deaths, such a vast amount of utterly needless and altogether undeserved suffering, that it will be classed by the coming generation among the greatest errors of an ignorant and prejudiced age, the foulest blot on ...our century.

qtd. Alfred R Wallace, Chapter VI 1898 193 (OShea 28).

Dr. Tim O'Shea, in his 2012 book, Vaccination Is Not Immunization, states that Jenner's findings had an "utter lack of science behind [his] original claim of immunity from vaccines, recklessness in producing smallpox vaccine and [a] number of deaths and disfiguring cases from his injections " (18,19). O'Shea documents in his book that Jenner was not a physician. O'Shea says Jenner bought his medical degree for 15 pounds; and he did not produce any type of clinical trial;

and that James Phipps, the original patient died at age 20 having been inoculated with the vaccine each year (90). Clearly there were no parent watch groups or government oversight committees in the late eighteenth century. Looking back at history, some see gross errors in Jenner's methods and motivation. Without argument, he can be credited with coining the word vaccinate, from the Latin the word vaccinia for cowpox, instead of variolation which was the common term used to identify the procedure (Reidel).

Whether the science of vaccination was conducted properly or not, vaccinating became popular with governments, as well as with any one who could afford to keep up with times or who was brave enough to experiment with own their bodies.

The 1800's brought new ideas about vaccines. In 1810, an Italian physician, Gennaro Galbiati introduced the idea that using cow serum was safer and more efficient than human transference. In the mid nineteenth century a method to obtain the cow serum was instituted. A healthy calf was inoculated with cowpox and the serum was extracted from the calf. This serum was brought to the United States by Boston physician, Henry Austin Martin. He called the serum "true animal vaccine material." In 1813, the United States established the U.S. Vaccine Agency, and Congress required the U.S. Post Office to carry mail weighing up to 0.5 oz. for free if it contained smallpox vaccine material (Bollman). With a safe, consistent supply of serum, and free availability, the smallpox vaccine was now easily accessible in the United States.

Epidemics of various diseases continued throughout the nineteenth century causing fear and grief. Louis Pasteur was born during the mid nineteenth century. Although several other people were instrumental in the ideas leading up to Pasteur's discoveries, along with the invention of the specialized instruments needed for injections, Pasteur is traditionally considered the next major influence to further develop the technique of vaccination, (Bollman).

Pasteur's work in microbiology led him to develop the philosophy of germ theory. This is the concept that germs and bacteria cause disease. This theory leads to the conclusion that a vaccine or drug can be found to eradicate every disease through the elimination of germs and/or bacteria. Pasteur's vaccine procedure claimed to rid a patient of the bacteria or germ that caused a disease, initially for anthrax and rabies, and later other diseases. His discovery would allow treatment of an infected patient, and create immunity for a person who had not been infected. Inoculation was the hope of immunizing against the disease. Pasteur's method proclaimed to treat the disease as well. Pasteur actually adopted the name vaccine as a generic term in honor of Jenner's discovery (Bollman).

A brief history of vaccines would not be complete without information about polio in the twentieth century and the man famous for his part in the vaccine story. In 1952 there were 57,628 polio cases reported in the United States, with more than 21,000 of them paralytic cases. This heightened parents' fears of the disease and focused public awareness on the need for a vaccine. Jonas Salk and his team, with the support of the National Foundation for Infantile Paralysis, began its first tests on humans with their killed-virus polio vaccine. The subjects were resident children in institutions for the disabled and retarded. Salk tested vaccines for all three strains of polio, some in combination, and some on their own. Their findings showed that vaccine recipients produced antibodies to the virus type in the vaccine that they were given. Salk's results provided some evidence on which to base larger trials (Bollman).

In 1954 the United States Vaccine Advisory Committee approved a double-blind trial and 1.3 million children took part in the test. Some of the children were vaccinated with the Salk vaccine, some with placebo and some with neither. In 1955, Dr. Thomas Francis, M.D. announced in a press conference that the Salk vaccine was 80 to 90 percent effective and the United States government

licensed the vaccine the same day. Just a few weeks after announcing success of the trials, an Idaho doctor reported a case of paralytic polio in a recently vaccinated girl. Over the next few weeks, similar reports trickled in to local health authorities. All involved a disturbing detail: paralysis began in the vaccinated arm, rather than in the legs as was more common. The U.S. Surgeon General suspended the polio vaccination program in order to investigate the safety of all six manufacturers' vaccines. The review concluded that 11 people died from the vaccine and hundreds were paralyzed. Though the cause of the disaster was never proven, it is suspected that the deaths resulted in a failure to completely kill the Type 1 virus strain. (Bollman)

A committee of researchers and public health officials made several changes to the production methods in order to address the problems. They required manufacturers to test larger samples of each vaccine lot, to lengthen the time the vaccine was treated with formaldehyde, to use filters that would remove clumps of virus that might resist chemical inactivation, and to test the vaccine after bottling. The vaccination program resumed, although some declined to participate (Bollman).

There were other problems with the Salk vaccine including the amount of time it took to create the immunity in the patient's system; infection at the injection site; and the potential transmission of non-human virus, since diseased monkey kidneys were used to produce the polio vaccines. Some of these issues were solved with a vaccine created by Albert Sabin (Bollman).

Sabin's vaccine used the live poliovirus that was highly diluted (attenuated). It was also taken orally. Sabin's vaccine provided protection for only Type 1 polio, but the other two strains were later created. Sabin's vaccine is what is most used today (Bollman).

Other men in the nineteenth and twentieth centuries contributed much to the vaccine journey. They were lauded by some and rebuked by others. But as technology and information improved, vaccinating became the religion and battle cry for those promoting the belief that the world is better

because of vaccination. It also became the religion and the battle cry for those who believe that vaccination is a scourge on humanity and will probably be the downfall of society, as we know it.

Anti-Vaccinationists:

As we have seen thus far, anti-vaccinationists have been around since Jenner began promoting his theories in the eighteenth century. Those opposed to vaccinations were especially opposed to the mandating of vaccines (Bollmann/Anti-vaccination).

As vaccination became more accepted, governments began promoting vaccination and began passing mandatory acts initiated to protect the people. Quarantines were enforced to isolate carriers as well (Bollmann/Anti-vaccination).

In the United Kingdom the Vaccination Act of 1853 required:

“1. That every child, whose health permits, shall be vaccinated within three, or in case of orphanage within four months of birth, by the public vaccinator of the district, or by some other medical practitioner” (Vaccination Act)

2. Parents were to be notified at birth that vaccination was a requirement for newborns.

3. Every medical practitioner must notify proper authorities with a certificate of registration stating that they performed the proper vaccination.

4. Parents or guardians to be fined one pound if they fail or refuse to vaccinate. (Vaccination Act).

The Act of 1867 increased the age to 14 years of age and added additional penalties for refusal to cooperate. The laws were met with immediate resistance from citizens who demanded the right to control their own bodies, as well as their children's bodies. The Vaccination Act opponents formed the Anti-Vaccination League and the Anti-Compulsory Vaccination League and anti vaccine journals began to circulate (Bollmann/Anti-vaccination).

Anti-vaccinationists concerns ranged from the procedures used for inoculation, such as scoring the child's flesh and inserting lymph taken from someone who had been inoculated a week earlier, to the clergy who believed that it was unchristian because the material came from an animal. Others had a general distrust of the common medical practices of the time and specifically Jenner's theories about how the disease spread. As the government continued to develop mandatory vaccine policies, tension worsened as people objected because they believed it violated their personal liberty (Bollmann/Anti-vaccination).

One of the most famous anti-vaccination demonstrations was in the town of Leicester England. Eighty to one hundred thousand opponents led a march complete with banners, a child's coffin and an effigy of Jenner. These types of demonstrations led to the development of a commission to study vaccines. The Vaccination Act of 1898 removed penalties for failure to vaccinate and included an exemption allowing parents who did not believe in the safety of the vaccine to refuse inoculation (Bollmann/ Anti-vaccination).

The same types of activities were occurring in the United States. Smallpox outbreaks led to mandatory vaccine campaigns and in turn anti-vaccine activity. The Anti-Vaccination Society of America was founded in 1879 after British anti-vaccinationist William Tebb visited the United States. Two other groups, the New England Anti Compulsory Vaccination League (1882) and the Anti-vaccination League of New York City (1885) were established. These groups instituted court battles to repeal mandatory vaccine laws in several states including California, Illinois and Wisconsin (Bollmann/Anti-vaccination).

In 1902, following a smallpox outbreak, the city of Cambridge, Massachusetts, mandated all city residents to be vaccinated against smallpox. A local resident Henning Jacobson refused vaccination on the grounds that the law violated his right to care for his own body. The city filed

Marilyn Greenman

charges against him. Jacobson lost his court battle locally, but appealed to the U.S. Supreme Court. In 1905 the Court found in the state's favor, ruling that the state could enact compulsory laws to protect the public in the event of a communicable disease. This was the first U.S. Supreme Court case concerning the power of states in public health law (Bollmann/Anti-vaccination). Protection of the public has continued to be the policy of the U.S. Supreme Court as well as lower courts. Whenever a case is brought before the Supreme Court, their rule has favored the mandate of vaccination for the protection of all citizens. Local legislation is primarily the process used for individual, medical or religious exemptions (Bollmann).

More recently, the vaccine controversy stems from specific responses to certain vaccines and/or vaccine related accidents and illnesses. In the mid 1970s, an international controversy over the safety of the diphtheria, tetanus and pertussis-DTP-vaccine erupted in Europe, Asia, Australia, and North America. In the United Kingdom-UK, a report from a London hospital alleged that 36 children suffered neurological conditions following DTP vaccination. Information about the controversy was broadcast throughout the media. An advocacy group, The Association of Parents of Vaccine Damaged Children -APVDC, was vocal in explaining the potential risks and consequences of DTP. Vaccination rates began to decrease when the public became aware of potential risks. The Joint Commission on Vaccination and Immunization-JCVI, an independent advisory committee in the UK, conducted an investigation and reported the vaccine to be safe. Nonetheless, negative response from the public continued, in part because the medical profession was reluctant to recommend the immunization (Bollmann).

Additionally, a physician and vaccine opponent, Gordon Stewart, published a series of case reports linking the DPT vaccine to neurological disorders. In response, the JCVI launched the National Childhood Encephalopathy Study-NCES. This comprehensive study identified every

child between 2 and 36 months hospitalized in the UK for neurological illness, and assessed whether or not the immunization was associated with increased risk. NCES results indicated that the risk was very low, and this data supported a national pro-immunization campaign (Bollmann/Anti-vaccinationists).

The study actually states:

Data from the first year of the National Childhood Encephalopathy Study were reviewed to see whether any relation was apparent between pertussis vaccination and brain disease. Three hundred and eighty-seven cases of encephalitis and other specified neurological conditions in which the children were admitted to hospital were reported, of which 267 satisfied the study criteria. Control children were matched for age with the index cases, and medical and immunisation histories were reviewed. Few of the index cases had been vaccinated within 28 days before admission to hospital, so that no close association between vaccination and brain disease existed in most cases. The number of children who had recently been immunised was too small for any statistically useful conclusion to be reached about the risk associated with pertussis vaccine. The study is continuing (Miller D).

In light of the great amount of weight this study held on the subject, this writer finds the lack of real statistics uncomfortable. The article does not contain a specific number of children who received vaccines in the previous 28 days. Only the word “few” is used when describing the children who had been vaccinated in the past 28 days. This oversight makes it impossible to calculate the statistical probability of adverse reactions in children who had been vaccinated.

Members of the APVDC continued to argue in court for recognition and compensation, but were denied both, due to the lack of evidence linking the DTP immunization with harm (Bollmann).

Numerous books and documentaries continued to arise during the 1980's and 1990's. In the UK, concerned and angry parents formed victim advocacy groups. But groups and medical organizations, like the Academy of Pediatrics and the Centers for Disease Control and Prevention (CDC) were stronger in the United States. Lawsuits against vaccine manufacturers and increased vaccine prices caused some companies to stop making the DTP vaccine, but the overall controversy did not affect immunization rates in the United States as much as it did in the UK (Bollmann/Anti-vaccinationists). The rate of DPT vaccinations in the United States did drop in the ten-year period from 1970 to 1979 from approximately 70 percent to approximately 65 percent (Orenstein).

Twenty-five years after the DTP argument, the Measles, Mumps and Rubella (MMR) vaccine stirred controversy in England. A British doctor Andrew Wakefield questioned a possible relationship between a bowel disease, autism, and the MMR vaccine (Bollmann/ Anti-vaccinationists). Wakefield found that autistic children had a severe bowel disorder. A molecular biologist working with Wakefield found the measles virus from the vaccine in the gut of "75 of 91 patients with a histologically confirmed diagnosis of ileal lymphonodular hyperplasia and enterocolitis. These patients tested positive for measles virus in their intestinal tissue compared with 5 of 70 control patients" (Uhlmann). Questions about the safety of the vaccine spread.

Later Wakefield was accused of conflict of interest and the original journal that published Wakefield's information retracted the article. Wakefield was disgraced and struck from the

Marilyn Greenman

medical register in Great Britain (Bollmann/Anti-vaccinationists). Some anti-vaccinationists believe that Wakefield's information, hypothesis and findings were accurate. They would like his findings either proven true or false through a scientific study (O'Shea 142-145). The discrediting of his reputation did neither.

A major blow to activists came in 2010 when the Supreme Court agreed to hear the case involving a lawsuit by the parents of Hannah Bruesewitz, 18, who suffered seizures after her third dose of a DTP vaccine. The parents said the vaccine contained toxins that caused the seizures; and that Hannah had suffered developmental problems since receiving the vaccine. The parents sued the vaccine manufacturer, Wyeth, now owned by Pfizer Inc. (Fox).

Normally, such cases are referred to a program that compensates people harmed by vaccines. The National Childhood Vaccine Injury Act of 1986 established the program, the National Vaccine Injury Compensation Program-VICP. According to the VICP website:

The VICP was established to ensure an adequate supply of vaccines, stabilize vaccine costs, and establish and maintain an accessible and efficient forum for individuals found to be injured by certain vaccines. The VICP is a no-fault alternative to the traditional tort system for resolving vaccine injury claims that provide compensation to people found to be injured by certain vaccines. The U. S. Court of Federal Claims decides who will be paid. Three Federal government offices have a role in the VICP: the U.S. Department of Health and Human Services; the U.S. Department of Justice; and the U.S. Court of Federal Claims (VICP).

As stated above, Congress passed the law to prevent repeated lawsuits against vaccine manufacturers so that no manufacturer is liable for injuries in order to protect the supply of and access to vaccines.

The question before the court was whether suits over the design of a vaccine may bypass the vaccine compensation system. The VICP compensates victims due to vaccine related injuries. The VICP does not recognize autism as an injury caused by vaccination (VICP). The Bruesewitz's were attempting to bypass the VICP and go directly through the court system, which could in turn get recognition for autism with VICP.

On February 22, 2011, by a vote of 6-2, the Supreme Court ruled that vaccine manufacturers are shielded from product-liability suits that allege defects in the design of a vaccine (Kendall). The courts have remained steady in their rulings over two centuries that the government does have the right and power to mandate vaccines as part of the protection of masses. The anti-vaccinationist, Dr. Tim O'Shea quotes Jim Turner, "to force vaccines on an entire population of children when it is known that some of them will be killed and some of them will be injured by doing so, but insisting that it's still good for the whole group is a bad moral policy" (217).

The battle continues and though the times have changed, beliefs and emotions run high on the controversy of whether to vaccinate or not. There appears to be no answer, at least through the court system in the near future for those who are opposed to vaccinating.

## Section II

### Vaccines and Statistics

Section II will include a description of each vaccine, the disease or diseases it states to immunize against, and the occurrence and statistical chance of getting the disease. The diseases are presented in the order of recommended vaccinations by the CDC from birth through six years old. Each disease section will also include the possible adverse effects of the vaccine and the statistical percentage of having an adverse effect as well as the ingredients in a specified vaccine.

I have attempted to use the year 2009 as a baseline. This year has the most current data available for the majority of the vaccines. However, there are some deviations. When the data for 2009 is unavailable or not verifiable, I chose the year closest to 2009 and adjusted the other data accordingly. The population of the United States in 2009 was approximately 305 million (U.S. News Staff). Unless otherwise noted this figure is used to calculate the percentage of the “chance you will get the disease.”

The CDC estimates that approximately 10 million children, less than one year old, receive vaccines each year (VAERS). This is the base number used to calculate the percentage of adverse reactions. The calculations used are taken from the reported Vaccine Adverse Effects Reporting System –VAERS-for age’s birth through twelve months.

VAERS is a national vaccine safety surveillance program sponsored by the FDA and CDC. VAERS collects information about the side effects that people experience after receiving a vaccination. If you have been injured by a vaccination, you can file a claim with The Vaccine Compensation Program-VICP, which is also overseen by the FDA and CDC. There are many ailments that VICP does not recognize as vaccine reactions i.e., autism.

More than one vaccine is available for most of the diseases listed. For simplicity, I chose one vaccine for each disease except as noted. A few of the vaccines are a combination of more than one vaccine. I chose to apply a single vaccine when possible. For example, the MMR and DTP vaccines are most commonly injected as a combination vaccine, so I included them in combination. The hepatitis B vaccine can be combined with the Haemophilus influenza type B, as well as other combination injections, or hepatitis B can be given separately. I chose to include each of these vaccines separately.

One brand of the vaccine was randomly chosen to provide the ingredients and the adverse

effects listed on the package insert of the product. This insert is the information provided to the recipient of the vaccine, or the parents/guardians of a child who receives the vaccine, and is available from their health care provider.

Although many of the package inserts contain the statement, “this product is made without any preservatives,” some of the ingredients listed are considered preservatives in other industries, specifically formaldehyde, and sodium chloride.

Treatments, both allopathic and holistic, are given for each disease, although this is in no way a substitute for treatment or advice from a health care practitioner. The information is merely provided to recognize the danger of the disease or the lack of risk it affords a patient.

Following is the CDC’s recommended schedule of vaccinations (CDC/2012 recommended Immunization).

#### CDC Recommended Vaccine Schedule for Birth Through Twelve Years Old – 2012

Birth:	HepB	1 Vaccine
1-2 Months	HepB	1 Vaccine
2 Months	DTP, IPV, HiB, PCV, RV	7 Vaccines
4 Months	DTP, IPV, HiB, PCV, RV	7 Vaccines
6 Months	DTP, PCV, HiB, RV	6 Vaccines
6 Months-12 Yrs.	Influenza (yearly)	12 Vaccines
6-18 Months	HepB, IPV	2 Vaccines
12-15 Months	MMR, HiB, PCV, Varicella	6 Vaccines
12-23 Months	HepA (twice)	2 Vaccines
15-18 Months	DTP	3 Vaccines
4 – 6 Years	DTP, MMR, IPV, Varicella	8 Vaccines

Marilyn Greenman

11-12 Years Tdap, HPV (3 doses), MCV4

7 Vaccines

Total

62 Vaccines

HepA-Hepatitis A, HepB- Hepatitis B, DTP–Diphtheria/Tetanus/Pertussis, PCV-Pneumococcal Disease, HiB-Haemophilus Influenza, RV-Rotavirus, IPV-Polio, MMR-Measles/Mumps/Rubella, Tdap-Diphtheria/Tentanus/Pertusis (adolescent), HPV-human papillomavirus, MCV4- Meningococcal

### HepB – Hepatitis B

#### **Description of Hepatitis B:**

Hepatitis B is an infectious hepatitis caused by the Hepatitis B virus -HBV. There are two possible phases of the disease: acute and chronic. Acute refers to an infection that is cured and usually resolved in a few weeks to months. A small number of people develop a very severe, life threatening form of acute hepatitis called fulminant hepatitis. Chronic refers to an infection that lasts longer than six months. Once the infection becomes chronic, it is possible the patient cannot be cured (Nettleman).

Approximately ninety to ninety-five percent of adults are able to fight off the virus and are considered cured. Children are at a much higher risk for chronic infection. Up to ninety percent of infected children will develop chronic hepatitis B (Nettleman).

#### **Symptoms of Hepatitis B:**

Acute symptoms include loss of appetite, diarrhea and vomiting, tiredness, jaundice, pain in muscles, joints and stomach (CDC/Hepatitis B).

Chronic symptoms include the above, but may include no symptoms at all. Chronic infection may cause liver damage, cirrhosis, liver cancer, or death (CDC/Hepatitis B).

#### **How is Hepatitis B spread?**

Marilyn Greenman

Hepatitis B is spread through contact with the blood or other body fluids of an infected person. Those who are at risk are: a baby whose mother is infected; sex partners of people infected with hepatitis B; men who have sex with men; people who inject street drugs; people with more than one sex partner; people with chronic liver or kidney disease; people under 60 years old with diabetes; people with jobs that expose them to human blood or other body fluids; household contacts of people infected with hepatitis B; residents and staff in institutions for the developmentally disabled; kidney dialysis patients; people who travel to countries where hepatitis B is common; people with HIV infection (CDC/Hepatitis B).

#### **Rate of Occurrence of Hepatitis B in the United States:**

In 2009 a total of 3,371 acute cases of hepatitis B were reported nationwide. The highest rates were among persons aged thirty to thirty-nine years old (2.28 cases/100,000) and the lowest reported were children less than nineteen years of age (.06 cases/100,000) (CDC/Hepatitis B).

Based on a population in the United States of 305,000,000 in 2009, there is a .00006 percent chance of a child contracting hepatitis B before the of age of nineteen.

#### **Adverse Effects of the Hepatitis B Vaccine Energix:**

As reported in the insert directed at parents/guardians of the vaccine recipient, adverse reactions may include: dizziness, headache, fever, injection site erythema, injection site induration, injection site swelling, upper respiratory tract illnesses, blood and lymphatic system disorders: lymphadenopathy, anorexia, agitation, insomnia, somnolence, tingling, flushing, hypotension, abdominal pain/cramps, constipation, diarrhea, nausea, vomiting, rash, sweating, urticaria, back pain, myalgia, pain/stiffness in arm, shoulder or neck, chills, influenza-like symptoms, malaise, weakness, herpes zoster, meningitis, thrombocytopenia, allergic reaction, anaphylactoid reaction, anaphylaxis. An apparent hypersensitivity syndrome-serum sickness

like-of delayed onset has been reported days to weeks after vaccination, including: arthralgia/arthritis-usually transient, fever, and dermatologic reactions such as urticaria, erythema multiform, ecchymoses, and erythema nodosum, encephalitis, encephalopathy, migraine, multiple sclerosis, neuritis, neuropathy including hypoesthesia, paresthesia, Guillain-Barré syndrome and Bell's palsy, optic neuritis, paralysis, paresis, seizures, syncope, transverse myelitis, conjunctivitis, keratitis, visual disturbances, earache, tinnitus, vertigo, palpitations, tachycardia, vasculitis, apnea, bronchospasm including asthma-like symptoms, dyspepsia, alopecia, angioedema, eczema, erythema multiforme including Stevens-Johnson syndrome, erythema nodosum, lichen planus, purpura, arthritis, muscular weakness, injection site reactions, abnormal liver function tests (Energix 1351).

#### **Possibility of Adverse Effects from the Hepatitis B Vaccine:**

In 2009, 473 complaints were filed with (Vaccine Adverse Effects Reporting system) VAERS regarding the hepatitis B vaccine (CDC/Wonder<sup>1</sup>). There is a .005 percent chance a child under the age of one will have an adverse effect reported to VAERS after receiving a hepatitis B vaccination.

#### **Ingredients of Energix:**

Energix-B manufactured by Glaxosmithkline contains: non-infectious hepatitis B virus, aluminum hydroxide, no more than 5% yeast protein, sodium chloride, phosphate buffers- disodium phosphate dihydrate, sodium dihydrogen, phosphate dihydrate; latex in tip cap and plunger, formulated without preservatives (Energix 1349)

#### **Treatments for Hepatitis B:**

Allopathically, acute hepatitis B usually does not require medical treatment. If vomiting or diarrhea is persistent, restoration of electrolytes and fluids may be necessary. There are currently

no cures for chronic hepatitis B. There are seven drugs for adults and two for children that are being used to aid those with liver disease (Nettleman).

Alternatively, most holistic approaches focus on restoring the integrity of the liver. Detoxification of the liver along with a vegetarian diet prevents the liver from being overworked. Fresh vegetable juices, organic and chemical-free foods that replenish the liver are recommended. Supplements include vitamins C, B and E, selenium, SAMe and glutathione. Herbs such as milk thistle can reverse liver damage (Null 310). For specific treatments one should see a good naturopath or holistic doctor who is knowledgeable about the hepatitis B virus.

#### RV – Rotavirus

##### **Description of Rotavirus:**

Rotavirus is a viral infection that causes inflammation of the gastrointestinal lining causing severe watery diarrhea (CDC/A-Z Index). There are five species of the virus, A, B, C, D and E. This virus is considered the common cause of what is known as the stomach flu. By age five, most every child in the world has had some form of the virus. Every infection builds immunity to the strain involved until an adult is rarely affected. The virus has a distinct winter to spring season in the United States (Rotavirus).

##### **Symptoms of Rotavirus:**

Symptoms last from three to eight days and may include fever, abdominal pain, and runny diarrhea (Miller N. 72).

##### **How is Rotavirus Spread?**

Rotavirus is transmitted through the fecal-oral route. Contaminated hands, surfaces and objects are responsible for transmission. Hand washing is vital to keep from spreading the virus. Rotavirus is prevalent in countries with both high and low sanitary standards. The feces of an

Marilyn Greenman

infected person can contain more than 10 trillion infectious particles per gram while fewer than 100 of these are required to transmit infection to another person. Levels as high as one to five particles per gallon have been found in some United States water samples (Rotavirus).

**Rate of Occurrence of Rotavirus in the United States:**

No comprehensive data was available on the rate of occurrence of rotavirus since 2006 when the rotavirus vaccine was introduced. Using the data available in 2006 of 400,000 doctor visits in response to the virus and a population of 300,000,000, the chance of a child contracting rotavirus is .13 percent (CDC/A-Z Index) (Rosenberg).

**Adverse Effects of the Rotavirus Vaccine Rotarix:**

There is a controversy regarding the two vaccines Rotateq and Rotarix, which are the primary vaccines used at the time of this writing. Both vaccines were found to have DNA from PCV1, a bovine serum. Another vaccine, Rotashield, was removed from the market due to an elevated risk of intussusception, a painful condition of the bowels. The two vaccines currently used were both found to be safe by the FDA and CDC regardless of the bovine DNA (CDC/A-Z Index) (Vaccines, Blood & Biologics).

The following adverse reactions are listed in the insert of the product Rotarix manufactured by Glaxosmithkline: fussiness, cough, cold, irritability, runny nose, fever, loss of appetite, vomiting, diarrhea, and dehydration. Gastroenteritis occurred at a statistically higher incidence. Deaths: During the entire course of 8 clinical studies, there were 68 deaths following administration of Rotarix and 50 deaths following placebo administration. Other adverse reactions include intussusception-including death, Kawasaki Disease, hematochezia, gastroenteritis with vaccine viral shedding in infants with Severe Combined Immunodeficiency Disease, idiopathic thrombocytopenic purpura, and maladministration (Rotarix 1542-1543).

**Possibility of Adverse Effects from the Rotavirus Vaccine:**

There were a total of 1,357 reported adverse effects in 2009 from three vaccines (CDC/Wonder). The chance of reporting an adverse reaction from the rotavirus vaccine in 2009 was .002 percent.

**Ingredients of Rotarix:**

Glaxosmithkline manufactures Rotarix. It is a live, attenuated rotavirus vaccine derived from the human 89-12 strain, which belongs to G1P type. The rotavirus strain is propagated on Vero cells. The lyophilized vaccine contains amino acids, dextran, Dulbecco's Modified Eagle Medium-DMEM, sorbitol, and sucrose. DMEM contains the following ingredients: sodium chloride, potassium chloride, magnesium sulfate, ferric-III- nitrate, sodium phosphate, sodium pyruvate, D-glucose, concentrated vitamin solution, L-cystine, L-tyrosine, amino acids solution, L-glutamine, calcium chloride, sodium hydrogen carbonate, and phenol red. Porcine circovirus type1-PCV-1- is present. PCV-1 is not known to cause disease in humans. The liquid diluent contains calcium carbonate, sterile water, and xanthan. The diluent includes an antacid component-calcium carbonate-to protect the vaccine during passage through the stomach and prevent its inactivation due to the acidic environment of the stomach. One type of rubber tip may contain latex. Rotarix contains no preservatives (Rotarix 1543).

**Treatments for Rotavirus:**

Allopathically, treatment consists of support care and plenty of fluids. About one in forty children have to be hospitalized to receive intravenous fluid. Unlimited breast milk, if appropriate, and any commercially prepared solution such as Pedialyte is a good choice for older children (Stoppler).

Holistically, there are several homeopathic remedies that can be used to ease symptoms

including Arsenicum, Colocynthis or Podophyllin. Preventing dehydration is the most important consideration while waiting for the illness to run its course. If the diarrhea is caused by rotavirus, the child will be immune to the particular strain of the virus (Panos 135+).

#### DTP - Diphtheria/Tetanus/Pertussis

#### **Description of Diphtheria:**

Diphtheria is a bacterial upper respiratory tract illness (CDC/Diphtheria).

#### **Symptoms of Diphtheria:**

Sore throat, low fever, and a membrane covering the tonsils, pharynx, and/or nasal cavity are typical symptoms. Chills, fatigue, bluish skin coloration, hoarseness, cough, headache, difficulty swallowing, painful swallowing, difficulty breathing, and rapid breathing may also occur. Death occurs in five to 10 percent of cases. (CDC/Diphtheria).

#### **How is Diphtheria Spread?**

Diphtheria is a contagious disease spread by direct physical contact or breathing infected airways (CDC/Diphtheria).

#### **Rate of Occurrence of Diphtheria in the United State:**

There has not been a case of diphtheria in the United States since 2003. Prior to 2003 there were zero to five cases per year. There is zero percent chance of a child in the United States getting diphtheria (CDC/Diphtheria).

#### **Treatment of Diphtheria:**

Allopathic care of diphtheria includes antibiotics and prompt attention from a recognized health care provider (Doer).

Common holistic care includes a liquid diet, fasting on carrot juice or fresh citrus juices; and all the water you can drink until the throat is clean, and the phlegm and false membrane are

totally gone. Warm baths and an emetic is usually needed to empty the stomach of putrefying matter, otherwise high fevers will result. As the disease progresses, lobelia and bayberry bark tea can be given at any time to clean out the mucous membranes of the mouth and throat. Bayberry cleans the membrane and eliminates the odor. It is also healing and antiseptic. A very small amount of cayenne or ginger can be added as stimulants. Give an enema every morning and evening. This helps clean out toxins from the diphtheria germs. There should be at least 3-4 movements a day (Kellogg/Diphtheria).

In case of headaches, place cold compresses or ice bags to the head and neck. Apply hot and cold fomentations over the liver, stomach, kidneys, and spine to keep the circulation normal. This stimulates the lymphatic system, to help clean out toxins. Two high enemas daily is recommended. Each day, clean all clothing and bed linens. If properly cared for, the disease will end within 7-10 days (Kellogg/Diphtheria).

### **Description of Tetanus:**

Tetanus is an infection caused by bacteria that lives in the outdoors. It attacks the central nervous system causing painful and sometimes violent muscle contractions (CDC/Tetanus).

### **Symptoms of Tetanus:**

Symptoms include lockjaw, stiffness in the neck and abdomen, and difficulty swallowing. More advanced symptoms are severe muscle spasms, generalized tonic seizure-like activity, severe autonomic nervous system disorders. Complications include bone fractures, and abnormal heart rhythm. Death occurs in about 10-20% of cases, with the highest rates occurring among people over 60 (CDC/Tetanus).

### **How is Tetanus Spread?**

Tetanus is not spread person to person, but through a deep puncture wound or break in the

skin. It is often associated with stepping on a rusty nail. This is misleading as the nail only provides the puncture wound for the bacteria to invade the body. Because the bacteria is anaerobic and survives well in an environment that lacks oxygen, stepping on a nail (rusty or not) may result in a tetanus infection (Tetanus). If the tetanus bacteria are in the area and there is a deep puncture wound, it is possible to contract tetanus. There is no blood test to detect the presence of tetanus. (CDC/Tetanus).

### **Rate of Tetanus Occurrence in the United States**

In 2009, a total of 19 tetanus cases and 2 deaths were reported to the national tetanus surveillance system (Tiwari). The occurrence rate of tetanus is .000006 percent.

The writer changed the wording here from chance of contracting the disease to occurrence because of the method by which tetanus is spread.

### **Treatment for Tetanus:**

Allopathic treatment has two aims: limit growth and kill the tetanus bacteria. Antibiotics are recommended. Wound cleansing includes removal of any foreign objects or abscesses. Supportive measures include pain management, breathing support and fluids if necessary (Davis).

Holistic care recommends immediate and deep wound cleansing. The Encyclopedia of Alternative Medicine recommends castor oil as a natural remedy that can be used to clean out a wound and prevent tetanus. A cotton ball dunked in castor oil should be placed on the wound, and then fixed on the wound with a bandage. Castor oil has tremendous drawing power and can pull out rust and other infectious agents. The dressing should be changed every two hours the first day of treatment and twice a day for the next three days (Frick).

### **Description of Pertussis:**

Pertussis is a bacterial respiratory illness commonly known as whooping cough. It is a contagious disease caused by a type of bacteria called *Bordetella pertussis*. These bacteria attach to the cilia-tiny, hair-like extensions-that line the upper respiratory system. The bacteria release toxins, which damage the cilia and cause inflammation (CDC/Pertussis).

### **Symptoms of Pertussis:**

Early symptoms include runny nose, low-grade fever, mild, occasional cough, and apnea — a pause in breathing in infants. After 1 to 2 weeks, severe coughing can begin. Distinguished from the common cold, pertussis can become a series of coughing fits that lasts for up to ten weeks. Infants sometimes have little or no cough at all. Pertussis is most dangerous for babies. More than half of infants younger than 1 year of age who get the disease must be hospitalized (CDC/Pertussis).

### **How is the Pertussis Spread?**

Pertussis is spread person to person by coughing or sneezing in close contact. The bacteria are then breathed in by the victim. The CDC warns that if the disease is circulating in the community, you can catch the disease even if you have been vaccinated (CDC/Pertussis).

### **Rate of Occurrence of Pertussis in the United States:**

There were 16, 858 cases of pertussis reported in the United States in 2009 (CDC/MMWR). There is .006 percent chance of contracting pertussis.

### **Treatment of Pertussis:**

Allopathic treatment for pertussis is antibiotics. Five days of treatment is recommended before returning to work or school. Frequent hand washing is encouraged to prevent the spreading of the disease to other family members. Maintaining a calm atmosphere is also considered helpful (Cunha).

Holistic approaches include homeopathic remedies such as drosera if gagging, retching or vomiting, following coughing fits. Cuprum is a good remedy if coughing episodes result in gasping for air or difficulty breathing and end in exhaustion. Traditional Chinese Medicine Herbs are effective herbal remedies at each stage to expel pathogenic factors, restore balance, and promote healing. Chinese herbal formulas for pertussis are custom-made for the individual child's constitution, symptoms, and stage of illness, so parents should seek out professional care with an experienced practitioner (Bartlett).

In 2003, the World Health Organization recognized the potential therapeutic effects of acupuncture on pertussis symptoms. Other holistic remedies are nutritional supplements such as vitamins A and C, beta-carotene, garlic, zinc and probiotics, which can help strengthen the immune system. Children should drink plenty of fluids-such as fruit and vegetable juices-to prevent dehydration, and avoid dairy products, which can exacerbate symptoms (Bartlett).

#### **Adverse Effects From the DPT Vaccine Infarix:**

Adverse effects from DPT vaccine include pain, redness, arm circumference increase, swelling, drowsiness, fever, loss of appetite, irritability, bronchitis, cellulitis, respiratory tract infection, lymphadenopathy, thrombocytopenia, anaphylactic reaction, hypersensitivity, encephalopathy, headache, hypotonia, syncope, ear pain, cyanosis, apnea, cough, angioedema, erythema, pruritus, rash, and urticaria (Infarix 1421-1422).

#### **Possibility of Adverse Effects from the DPT Vaccine:**

There are sixteen varieties of the DTP vaccine or combinations of two, three or more vaccines, including some with polio and hepatitis B (CDC/Wonder). The data retrieved was from one vaccine, which contained diphtheria, pertussis and tetanus. Thirteen reactions were recorded from birth to two years old. There is a .00001% chance of a child having an adverse

reaction reported to VAERS.

### **Ingredients in the DPT Vaccine Infarix:**

Infarix is a pediatric DTP vaccine manufactured by Glaxosmithkline. The formula contains diphtheria toxoid from bovine extract, tetanus toxoid from bovine extract, inactivated pertussis toxin, filamentous, hemagglutinin, pertactin, formaldehyde, aluminum hydroxide, sodium chloride, polysorbate 80, latex in the tip cap and a rubber plunger rubber. Infarix is formulated without preservatives (Infarix 1423).

### **Hib - Haemophilus Influenzae Type B**

#### **Description of Haemophilus Influenzae Type B:**

Haemophilus influenzae type b is an invasive bacterial disease affecting many organ systems. The most common types of invasive disease are pneumonia, occult febrile bacteremia, meningitis, epiglottitis, septic arthritis, cellulitis, otitis media, purulent pericarditis, and other less common infections such as endocarditis, and osteomyelitis (CDC/Haemophilus). Hib was mistakenly considered to be the cause of influenza until 1933, when it was recognized that the flu was a virus. Diagnosis requires fluid from a cerebral spinal tap to confirm the presence of the bacteria (Haemophilus).

#### **Symptoms of Hib:**

Symptoms may include fever, lethargy, vomiting and a stiff neck. Other symptoms are related to the secondary diseases (Haemophilus).

#### **How is the Hib Spread?**

Hib is spread through direct contact with nasal droplets from a direct carrier (CDC/Haemophilus).

#### **Rate of Occurrence of Hib in the United States:**

There were 4,975 cases of haemophilus type b recorded by the CDC in 2009 (CDC/ABCs).

The chance of contracting this disease is .002 percent.

#### **Adverse Effects from the Hib Vaccine:**

Adverse reactions according to the manufacturer's insert include, irritability, sleepiness, injection site pain/soreness, injection site erythema, injection site swelling/induration, unusual high-pitched crying, prolonged crying for less than four hours, diarrhea, vomiting, crying, pain, otitis media, rash, and upper respiratory infection. Additional adverse effects are early onset Hib disease and Guillain-Barré syndrome, lymphadenopathy, hypersensitivity, angioedema, febrile seizures and injection site abscess (Pedvax 2210-2211).

#### **Possibility of Adverse Effects of Hib Vaccine:**

There were 531 adverse effects reported to VAERS in children age's birth through 1 year in 2009 from one type of vaccine (CDC/Wonder). A person has .005 percent chance of an adverse reaction.

#### **Ingredients of PedvaxHIB:**

PedvaxHIB is manufactured by Merck. The ingredients listed in the Physicians Desk Reference and the product insert are: Haemophilus PRP, Neisseria meningitides OMPC, amorphous aluminum, hydroxyphosphate sulfate-previously referred to as aluminum hydroxide, sodium chloride, does not contain lactose or thimerosal (Pedvax 2209).

#### **Treatment for Haemophilus Influenza Type B:**

Allopathic treatment includes antibiotics and supportive care. Intravenous third-generation cephalosporin may be needed in invasive and serious cases (Devarjan). Oxygen therapy may also be required (Miller, N. 56).

Holistic treatments are specific to the disease that has manifested such as meningitis,

pneumonia, etc. Boosting the immune system with fresh juices and Echinacea is important for any immune support program. Goldenseal is a natural antibiotic and would be helpful. Find a naturopath or holistic physician for specific treatment. If there are no complications, recovery usually takes three weeks under a physician's care (Kellogg/Meningitis).

### PCV – Pneumococcal Disease

#### **Description of PCV:**

Pneumococcal disease is a bacterial infection caused by streptococcus pneumoniae. There are over 90 strains of pneumococcus bacteria, causing different types of pneumococcal disease such as PCV pneumonea, bacteremia, meningitis and otitis media (Miller, N. 59). At risk groups for getting PCV are: people over 65 years of age, the very young, people with certain health problems, people with weakened immune systems, and smokers (vaccines/pneumo). Most healthy children are not at risk (Miller, N. 59).

#### **Symptoms of PCV:**

Pneumococcal pneumonia may begin suddenly with a severe shaking chill, usually followed by high fever, cough, shortness of breath, rapid breathing, and chest pains. Other symptoms include nausea, vomiting, headache, tiredness, and muscle aches. Diagnosis is through blood, fluid or lung tests (Pneumococcal Pneumonia).

#### **How is Pneumococcal Disease Spread?**

The pneumococcal bacteria is in many people's noses and throats and is spread by coughing, sneezing, or contact with respiratory secretions (Pneumococcal Pneumonia).

#### **Rate of Occurrence of Pneumococcal Disease in the United States:**

No information could be found on nationwide occurrences of pneumococcal disease. A study was conducted in specific areas in ten states: California, Colorado, Connecticut, Georgia,

Maryland, Minnesota, New Mexico, New York, Oregon and Tennessee. The areas represented a population of 29, 206,528. There were 4,166 cases of pneumococcal disease reported. The chance of contracting pneumococcal disease according to this study is .01 percent (4,166/29,206,528) (CDC/ABCs/Streptococcus Pneumonia).

### **Adverse Effects of the PCV Vaccine Pneumovax 23:**

The most common adverse reactions, reported in less than ten percent of subjects vaccinated with Pneumovax 23 in clinical trials are: injection-site pain/soreness/tenderness, injection-site swelling/induration, headache, injection-site erythema, asthenia and fatigue, and myalgia. Other adverse reactions included chills, fever, diarrhea, dyspepsia, nausea, back pain, neck pain, and upper respiratory infection pharyngitis. Additional adverse reactions were cellulites, malaise, fever greater than 102 degrees Fahrenheit, warmth at the injection site, decreased limb mobility, peripheral edema in the injected extremity, nausea, vomiting, lymphadenitis, lymphadenopathy, thrombocytopenia in patients with stabilized idiopathic thrombocytopenic purpura<sup>3</sup>, hemolytic anemia in patients who have had other hematologic disorders, leukocytosis, hypersensitivity reactions including, serum sickness, angioneurotic edema, arthralgia, arthritis, paresthesia, radiculoneuropathy, Guillain-Barré syndrome, febrile convulsion, rash, urticaria, cellulitis-like reactions (Pneumovax 2232).

### **Possibility of Adverse Effects of the PCV Vaccine:**

There were 1,131 adverse reactions reported in children aged birth through two years old. Chances of an adverse reaction to the PCV vaccine are .01 percent (CDC/Wonder).

### **Ingredients in Pneumovax 23:**

Pneumovax 23 is manufactured by Merck. The liquid vaccine contains a mixture of purified capsular polysaccharides from *Streptococcus pneumoniae* types (1, 2, 3, 4, 5, 6B, 7F, 8,

9N, 9V, 10A, 11A, 12F, 14, 15B, 17F, 18C, 19F, 19A, 20, 22F, 23F, and 33F). It also contains isotonic saline solution containing 0.25% phenol as a preservative (Pneumovax 2231).

### **Treatment of Pneumococcal Disease:**

Allopathic treatment consists of treating patients with antibiotics on an outpatient basis. Infants and elderly patients, as well as those with a weakened immune system should possibly be hospitalized (Miller, N. 59).

Holistic treatment follows the same procedure as other bacterial infections specific to the disease that has manifested such as meningitis, pneumonia, etc. Boosting the immune system with fresh juices and Echinacea is important for any immune support program. Goldenseal is a natural antibiotic and would be helpful. Give only liquids for the first few days. Also, much rest is needed. Rinse out the nose with saltwater, gently taking it in and blowing it out. Gargle with saltwater; then repeat the rinsing and gargling with a goldenseal and myrrh mixture (Kellogg/Pneumonia). Consult a naturopath or holistic physician for specific treatment.

### **IPV – Poliovirus Vaccine Inactivated**

#### **Description of Polio:**

Poliomyelitis is an infectious viral disease caused by any of the three types of poliovirus. The viruses can cause two types of minor illnesses that do not involve the central nervous system-CNS, and a major illness involving CNS. This major poliovirus infection carries no symptoms with it (Poliomyelitis). The virus enters the central nervous system in about three percent of infections. When this occurs most patients will develop nonparalytic aseptic meningitis with symptoms of headache, neck, back, abdominal and extremity pain, fever, vomiting, lethargy and irritability. About one to five in 1,000 cases progress to paralytic disease, in which the muscles become weak, floppy and poorly controlled, and finally completely

paralyzed. This condition is known as acute flaccid paralysis. The virus lives in the throat and intestinal tract (CDC/Polio Disease).

**Symptoms of Polio:**

Symptoms are usually minor such as fever, fatigue, nausea, headache, flu-like symptoms, stiffness in the neck and back, and pain in the limbs. These symptoms often resolve completely. Approximately 95% of people infected with polio have no symptoms. Less than 1% of polio cases result in permanent paralysis of the limbs, most commonly the legs (CDC/Polio Disease).

**How is polio spread?**

Polio is spread person to person and only affects humans (CDC/Polio Disease). The disease is transmitted primarily via the fecal-oral route, through contaminated food or water. The virus is excreted through the feces during the initial incubation period. The ground and/or water is contaminated then the virus spreads to anyone ingesting the contaminated substances. It is occasionally transmitted via the oral-oral route. This is especially visible in areas with good sanitation and hygiene. At risk groups for polio include those experiencing immune deficiency, malnutrition, tonsillectomy, physical activity immediately following the onset of paralysis, skeletal muscle injury due to injection of vaccines or therapeutic agents, and pregnancy (Poliomyelitis).

**Rate of Occurrence of Polio on the United States:**

The last cases of naturally occurring paralytic polio in the United States were in 1979 (CDC/Polio Disease). There is zero percent chance of contracting polio in the United States.

The incidence of polio peaked in the early 1950's at a rate of 13.6 cases per 100,000 population. Today, in comparison, the cancer rate is 566.1 per 100,000 (Staff).

**Adverse Effects of the Polio Vaccine (IPV):**

Adverse reactions that occurred according to the package insert of the IPOL polio vaccine are: erythema, swelling, tenderness, fever above 102.2 Fahrenheit, irritability, tiredness, anorexia, vomiting, persistent crying, and Guillain-Barré Syndrome (IPOL).

**Possibility of Adverse Reactions to the Polio Vaccine:**

There were 187 adverse reactions reported to VAERS in 2009 in connection with the IPV vaccine in children age's birth to 1 year old (CDC/Wonder). There was .002 percent chance of having an adverse reaction reported to VAERS in 2009 involving all polio vaccines.

**Ingredients of the IPOL Vaccine:**

The IPOL vaccine is manufactured by Sanofi Pasteur. The ingredients listed in the product insert are: a sterile suspension of three types of poliovirus Type 1-Mahoney, Type 2 -MEF-1, and Type 3-Saukett. Each of the three strains of poliovirus is individually grown in Vero cells, a continuous line of monkey kidney cells. Formaldehyde, Neomycin, streptomycin and polymyxin B are used in the vaccine. The residual calf serum protein is less than 1 ppm in the final vaccine (IPOL).

**Treatments for polio:**

There is no cure for paralytic polio. But most people with a normal immune system are asymptomatic. Occasionally the infection can produce flu-like symptoms (Perlstein).

Allopathic treatment includes monitoring patients for progression to paralytic polio. Paralytic polio patients need to be monitored for advanced symptoms such as respiratory failure. Supportive measures such as pain management and drugs to treat urinary tract infections are appropriate when needed. Patients who recover from paralytic polio may require physical therapy, leg braces, or even orthopedic surgery to improve physical function (Perlstein).

In the 1940's Dr. Benjamin Sadler suggested that if soft drinks and sugar were avoided,

very few cases of polio would occur. This information spread across the east coast and that summer there was very little polio on the east coast (Polio).

According to the Natural Encyclopedia, “sugar injures the nerves; calcium is needed by the nerves; highly acid substances remove calcium; phosphorous locks with calcium and carries it off, making it unavailable” (Polio). Therefore the first holistic treatment would be to eliminate all sugar from the diet.

Holistic treatment for polio should also include a diet high in protein and potassium. Fluid, calories and sodium should be increased due to fever. Helpful vitamins are B, C and A. Helpful herbs include prickly ash berries, wild cherry bark, valerian root, skullcap, goldenseal, black cohosh, red clover, catnip, and yellow dock. A strong immune system will keep the virus from invading the spinal fluid (Polio). Find a holistic practitioner for specific treatment.

## Influenza

### **Description of Influenza:**

Influenza is a viral respiratory infection. It can lead to other complications such as pneumonia in the elderly, the very young or those with a compromised immune system. There are three main types of flu viruses. Each can mutate from year to year so it is very difficult to develop a natural immunity to influenza (Miller, N. 83). For example, the 2011-2012 flu vaccine will protect against the three influenza viruses that researchers believe will be most common during the season. This includes an influenza A-H1N1-virus, influenza A -H3N2-virus, and an influenza B virus (CDC/Flu).

### **Symptoms of Influenza:**

Typical flu symptoms are fever, chills, cough, sore throat, runny or stuffy nose, body aches, headaches, and fatigue. Diarrhea and/or vomiting may be seen in children. A fever may

or may not accompany the flu. Symptoms usually last two to three days, but can occasionally last up to two weeks (CDC/Flu).

### **How is Influenza Spread?**

According to the CDC the flu virus is spread when a carrier sneezes, coughs or talks and droplets either land on a recipient or they are breathed in. Less often, the recipient can touch a surface or an object that has been contaminated by a carrier. Adults and children may be able to infect others before symptoms appear and up to seven days after they get sick (CDC/Flu).

### **Rate of Occurrence of Influenza in the United States:**

The CDC estimates that between 34 million and 67 million cases of the flu virus H1N1 occurred between April and November 2009. Hospitalization estimates are between 154,000 and 303,000 cases for the same reporting period, with between 7,070 and 13,930 H1N1-related deaths occurring. The CDC acknowledges that these figures are estimates and extrapolations of reported and non-reported incidences of the H1N1 flu virus. The CDC believes that for every reported case of H1N1, there were 79 unreported cases; and for every hospitalization reported, there may have been 2.7 cases. This was not the only type of seasonal flu experienced in 2009, but using the highest estimated number of cases, 67 million, the possibility of contracting the H1N1 type flu was approximately 22 percent (CDC/H1N1).

### **Adverse Effects from an Influenza Vaccine:**

Because the vaccines change from year to year to accommodate the latest flu type, the adverse reactions will also change. The adverse effects listed here are taken from the product Fluarix manufactured by Glaxosmithkline in the 2011 – 2012 formula.

In adults, the most common local adverse reactions and general adverse events observed with Fluarix were pain, redness and swelling at the injection site. Muscle aches, fatigue,

headache, arthralgia, shivering, and fever above 100.4 Fahrenheit were also present. Unsolicited adverse events that occurred in less than one percent of recipients of Fluarix and at a rate greater than placebo included upper respiratory tract infection, nasopharyngitis, diarrhea, influenza-like illness, vomiting, dysmenorrhea, headache, back pain, pain in extremity, pharyngolaryngeal pain, cough, fatigue, nausea, and injection site pruritus, injection site ecchymosis, injection site induration, malaise, rhinitis, musculoskeletal pain, neck pain, sweating, and anaphylaxis.

In children 5 years to less than 18 years of age, the most common, < 10%, local and general adverse events were similar to those in adults. In children 3 years to less than 5 years of age, the most common <10%, local and general adverse events included pain, redness, and swelling at the injection site, irritability, loss of appetite, and drowsiness.

Unsolicited adverse events that occurred in <10% of recipients of Fluarix 6 months to less than 18 years of age included upper respiratory tract infection, pyrexia, cough, vomiting, headache, rhinorrhea, diarrhea, pharyngolaryngeal pain, nasopharyngitis, otitis media, nasal congestion, upper abdominal pain, and upper respiratory tract congestion. Other adverse reactions include lymphadenopathy, tachycardia, vertigo, conjunctivitis, eye irritation, eye pain, eye redness, eye swelling, eyelid swelling, abdominal pain or discomfort, nausea, swelling of the mouth, throat, and/or tongue, asthenia, chest pain, chills, feeling hot, injection site mass, injection site reaction, injection site warmth, body aches, anaphylactic reaction including shock, anaphylactoid reaction, hypersensitivity, serum sickness, injection site abscess, injection site cellulitis, pharyngitis, rhinitis, tonsillitis, pain in extremity, convulsion, dizziness, encephalomyelitis, facial palsy, facial paresis, Guillain-Barré syndrome, hypoesthesia, myelitis, neuritis, neuropathy, paresthesia, asthma, bronchospasm, cough, dyspnea, respiratory distress, stridor, ngioedema, erythema, erythema multiforme, facial swelling, pruritus, rash, Stevens-

Johnson syndrome, urticaria, Henoch-Schönlein purpura, and vasculitis.

Immediate and presumably allergic reactions (e.g., hives, angioedema, allergic asthma, and systemic anaphylaxis rarely occur after influenza vaccination.) These reactions probably result from hypersensitivity to certain vaccine components, such as residual egg protein. Although Fluarix contains only a limited quantity of egg protein, this protein can induce immediate hypersensitivity reactions among persons who have severe egg allergies.

The 1976 swine influenza vaccine was associated with an increased frequency of Guillain-Barré syndrome-GBS. Evidence for a causal relation of GBS with subsequent vaccines prepared from other influenza viruses is unclear.

Neurological disorders temporally associated with influenza vaccination such as encephalopathy, optic neuritis/neuropathy, partial facial paralysis, and brachial plexus neuropathy have been reported. Microscopic polyangitis (vasculitis) has been reported temporally associated with influenza vaccination (Fluarix).

#### **Possibility of Adverse Effects from the 2009 Influenza Vaccine:**

There were two types of H1N1 influenza vaccines listed on the VAERS site for 2009. The National 2009 H1N1 Flu Survey showed that an estimated 46 million people -15.3% of the population-had been vaccinated against 2009 H1N1 flu through December 12, 2009 (CDC/H1N1/In The News). In age's birth through over 65, there were 9,614 reports came in regarding these two types of H1N1 flu vaccine (CDC/Wonder).

Of these, 130 were children less than one years old. The possibility of an adverse reaction being reported in a child less than one year old for either of these H1N1 vaccines was .001 percent. Due to vast estimations in reporting, these numbers are only given as an idea of the possible percentages.

**Ingredients in the Fluarix Influenza Vaccine:**

Fluarix is manufactured by Glaxosmithkline. This list of ingredients is listed in the parent insert for the 2011-2012 formula. Fluarix is a vaccine prepared from influenza viruses propagated in embryonated chicken eggs. Each of the influenza viruses is produced and purified separately. Each influenza virus solution is inactivated by the consecutive effects of sodium deoxycholate and formaldehyde leading to the production of a “split virus.” Each split inactivated virus is then suspended in sodium phosphate-buffered isotonic sodium chloride solution. Other ingredients include 45 micrograms hemagglutinin, octoxynol-10,  $\alpha$ -tocopheryl hydrogen succinate, and polysorbate 80. Each dose may also contain residual amounts of hydrocortisone, gentamicin sulfate, ovalbumin, formaldehyde, and sodium deoxycholate. The tip caps of the prefilled syringes may contain natural rubber latex. Fluarix is formulated without preservatives. Fluarix does not contain thimerosal (Fluarix).

**Treatments for Influenza:**

Allopathic treatment recommends home care for the majority of flu sufferers unless you are in a high-risk group. Increase fluids, take warm showers, get plenty of rest and treat symptoms with ibuprofen, cough suppressants and other over the counter remedies (Davis:Influenza).

There are anti-viral drugs available through prescription. These should be taken in the first few days of symptoms. They can make you feel better and shorten the time of the symptoms by one or two days (CDC/H1N1/Seasonal Flu).

Holistic treatment involves strengthening the immune system with vitamins such as C and bioflavonoid; getting plenty of rest; increasing fluids and eating a diet of alkaline fruits and vegetables. There are numerous homeopathic remedies to eliminate cold and flu symptoms.

Essential oils can help relieve congestion; and acupuncture can help speed recovery (Null 178).

If fever is present, consider it a friend instead of a symptom. Fever allows the body to burn up pathogens in order to rid them from the body. If a fever goes above 100 degrees Fahrenheit or lasts more than a few days, see a naturopath or holistic practitioner (Null 250).

### MMR – Measles, Mumps and Rubella

#### **Description of Measles:**

Measles is a contagious, viral disease that affects the respiratory system, the eyes and the skin. Its dangers mainly consist of potential complications such as pneumonia, encephalitis and ear infections (Chasnoff 20). Measles cells grow on the back of the throat and the lungs (CDC/measles/overview).

#### **Symptoms of Measles:**

Symptoms of measles are fever, runny nose, cough and a rash all over the body (CDC/Measles). A child who contracts measles will have a 102 – 104 degree Fahrenheit temperature, red watery eyes, a sensitivity to light and a hard, dry cough. On the fourth or fifth day a red rash appears and lasts four to seven days (Panos 182-183)

#### **How is Measles Spread?**

Measles is spread through an infected person coughing, sneezing or breathing on a victim. Measles is considered a very contagious disease. The virus can remain contagious for up to two hours after an infected person leaves a location. The CDC says that the virus can remain in the air for up to two hours (CDC/Measles).

#### **Rate of Occurrence of Measles in the United States:**

In 2000, measles was declared eliminated in the United States. But in 2011 from January 1 through June 17, 156 confirmed cases were reported to the CDC. It is the highest reported

number since 1996. One hundred and thirty six of these case were linked to either overseas travels or cases imported through visitors to this country. Twenty-six had at least one dose of MMR vaccine and at least one had received the complete MMR series. There were no reported deaths (CDC/Emergency)

I will deviate here again from the 2009 base and use 2011 figures since that is the most recent year we have statistics. There were 223 total confirmed measles cases in the United States in 2011 (WHO/Measles). The United States population in 2011 was approximately 312,000,000 (Rosenberg). The chance of contracting measles in 2011, even if traveling overseas unvaccinated, was .00007 percent.

### **Treatment for Measles:**

Allopathic treatment of measles includes treating the symptoms of measles with aspirin or acetaminophen to reduce fever and cough suppressants to ease a severe cough. Keep the child away from bright light. Light will not harm the eyes but it is an irritant. Drink extra fluids and rest (Chasnoff 244).

Holistic treatment includes 50 to 500 milligrams of vitamin C, in accordance with age, every one to two hours for the first twenty-four hours. Taper off dosage as patient improves, but continue large doses until all symptoms are gone. Support the immune system with nourishing food, no sugar or white flour, rest and plenty of fluids (Smith 55-56)

Other holistic treatments include herbs such as black cohosh and safflower (Pedersen 48+148). There are ten homeopathic remedies listed in the book Homeopathic Medicine at Home. Each remedy addresses specific symptoms in the different stages of the illness (Panos 182-183).

### **Description of Mumps:**

Mumps is a contagious viral disease that causes swelling of the saliva glands beneath the ear. The swelling can cause pain and discomfort. The most serious complication of mumps is encephalitis—swelling of the brain, which can be followed by hearing loss or deafness (Chasnoff 21). The most common complication is inflammation of the testicles in males who have reached puberty; rarely does this lead to fertility problems. Inflammation of the ovaries and/or breasts in females who have reached puberty is also possible (CDC/Mumps).

**Symptoms of Mumps:**

Symptoms included low-grade fever, loss of appetite, headache, and swelling of the salivary glands (Chasnoff 256).

**How is Mumps Spread?**

Mumps is spread by droplets of saliva or mucus from the mouth, nose, or throat of an infected person, usually when the person coughs, sneezes, or talks. Sharing items used by an infected person, such as eating utensils, may also spread the virus. In addition, the virus may spread when someone with mumps touches items or surfaces without washing their hands and someone else then touches the same surface and rubs their mouth or nose. Most mumps transmission likely occurs before the salivary glands begin to swell and up to 5 days after the swelling begins. It may take up to twenty-five days for symptoms to appear after a person has been exposed (CDC/Mumps/Transmission).

**Rate of Occurrence in the United States:**

There were 1,991 reported cases of mumps in 2009. There was .0007 percent chance of contraction mumps in 2009 (WHO/Mumps).

**Treatment for Mumps:**

There is no treatment, allopathically, at this time. Rest, fluids and over the counter

symptom relievers are advised (CDC/Mumps).

Holistic methods include plenty of water and fresh juices. Cool or warm compresses may be placed on the neck to reduce pain. Eliminate sugar, caffeine, alcohol, and acidic or spicy foods. Do not give aspirin to a child with a fever (Kellogg/Mumps). There are four homeopathic remedies to treat specific symptoms. It is recommended that an adult who has not had mumps and is exposed to a child with mumps take three doses of Rhus tox eight hours apart (Panos 185).

### **Description of Rubella:**

Rubella is sometimes called German measles. It is a contagious viral disease that produces mild, cold-like symptoms and a rash, which lasts two to three days (Chasnoff 110). This disease is not considered dangerous except when contracted by a pregnant woman. The CDC estimates that damage to the fetus occurs in twenty percent of pregnant women who contract the illness early in their pregnancy. Damage to the fetus may include deafness, cataracts, heart defects, mental retardation, and liver and spleen damage (CDC/Rubella).

### **Symptoms of Rubella:**

Rubella can produce symptoms of fever, runny nose, rash, sore throat and tenderness in the lymph nodes behind the ears and on the side of the neck. Occasionally joints may become swollen and painful (Miller N. 33).

### **How is Rubella Spread?**

Rubella is spread from an infected person through coughing or sneezing (CDC/Rubella).

### **Rate of Occurrence of Rubella in the United States:**

There were three cases of rubella reported in 2009 according to the World Health Organization (WHO/Rubella). That means that your chance of getting rubella is .000001

percent. That is 1 millionth of a percent or 1 chance in 100 million.

### **Treatment of Rubella:**

The only treatment recommended by the CDC for rubella is vaccination. The disease is so mild that treatment is rarely needed except for support care (CDC/Rubella). I found no treatment for the disease contracted during pregnancy; and all treatments for the fetus were directed to the complications that came after birth (Rubella).

There are four specific homeopathic treatments to relieve symptoms. If a pregnant woman is exposed to rubella, she is to see a homeopathic practitioner and take Rubella nosode (Panos 183).

### **Adverse Effects of the MMR Vaccine MMRII:**

These are the adverse reactions of MMRII as indicated by the package insert given to a parent/guardian of the child who is to be vaccinated. “The following adverse reactions are listed in decreasing order of severity, without regard to causality: panniculitis, atypical measles, fever, syncope, headache, dizziness, malaise, irritability, vasculitis, pancreatitis, diarrhea, vomiting, parotitis, nausea, diabetes mellitus, thrombocytopenia, purpura, regional lymphadenopathy, leukocytosis anaphylaxis and anaphylactoid reactions have been reported as well as related phenomena such as angioneurotic edema-including peripheral or facial edema-and bronchial spasm in individuals with or without an allergic history. Arthritis, arthralgia, myalgia, arthralgia and/or arthritis-usually transient and rarely chronic-and polyneuritis are features of infection with wild-type rubella and vary in frequency and severity with age and sex, being greatest in adult females and least in prepubertal children. This type of involvement as well as myalgia and paresthesia, have also been reported following administration of Meruvax II. Chronic arthritis has been associated with wild-type rubella infection and has been related to persistent virus and/or viral antigen isolated from body tissues. Only rarely have vaccine recipients developed

chronic joint symptoms. Following vaccination in children, reactions in joints are uncommon and generally of brief duration. In women, incidence rates for arthritis and arthralgia are generally higher than those seen in children. Symptoms may persist for a matter of months or on rare occasions for years. In adolescent girls, the reactions appear to be intermediate in incidence between those seen in children and in adult women. Even in women older than 35 years, these reactions are generally well tolerated and rarely interfere with normal activities. Encephalitis, encephalopathy, measles inclusion body encephalitis, sub acute sclerosing panencephalitis, Guillain-Barré Syndrome, febrile convulsions, afebrile convulsions or seizures, ataxia, polyneuritis, polyneuropathy, ocular palsies, paresthesia. Experience from more than 80 million doses of all live measles vaccines given in the U.S. through 1975 indicates that significant central nervous system reactions such as encephalitis and encephalopathy, occurring within 30 days after vaccination, have been temporally associated with measles vaccine very rarely. In no case has it been shown that reactions were actually caused by vaccine. The Centers for Disease Control and Prevention has pointed out that a certain number of cases of encephalitis may be expected to occur in a large childhood population in a defined period of time even when no vaccines are administered. However, the data suggest the possibility that measles vaccines may have caused some of these cases. There have been reports of sub acute sclerosing panencephalitis –SSPE- in children who did not have a history of infection with wild-type measles but did receive measles vaccine. Some of these cases may have resulted from unrecognized measles in the first year of life or possibly from the measles vaccination. Based on estimated nationwide measles vaccine distribution, the association of SSPE cases to measles vaccination is about one case per million vaccine doses distributed. This is far less than the association with infection with wild-type measles, 6-22 cases of SSPE per million cases of measles. Cases of aseptic meningitis

Marilyn Greenman

have been reported to VAERS following measles, mumps, and rubella vaccination. Although a causal relationship between the Urabe strain of mumps vaccine and aseptic meningitis has been shown, there is no evidence to link Jeryl Lynn™ mumps vaccine to aseptic meningitis. Other adverse reactions include pneumonia pneumonitis, sore throat, cough, rhinitis, Stevens-Johnson syndrome erythema multiforme, urticaria, rash, measles-like rash, pruritus. Local reactions including burning/stinging at injection site, wheal and flare, redness-erythema- swelling, induration, tenderness, vesiculation at injection site, nerve deafness, otitis media, retinitis, optic neuritis, papillitis, retrobulbar neuritis, conjunctivitis, epididymitis, orchitis. Other: Death from various, and in some cases unknown causes has been reported rarely following vaccination with measles, mumps, and rubella vaccines; however, a causal relationship has not been established in healthy individuals” (MMRII 2168-2169).

#### **Possibility of Adverse Effects of the MMR Vaccine:**

The MMR vaccine is administered at 12 to 18 months of age. Due to the VAERS reporting parameters, I used a range of birth through 5 years. There were 2,379 reports submitted to VAERS in 2011 in the age parameter (CDC/Wonder). The possibility of reporting an adverse reaction in 2011 is .02 percent.

#### **Ingredients of the MMR Vaccine:**

M-M-R\* II (Measles, Mumps, and Rubella Virus Vaccine Live) manufactured by Merck is a live virus vaccine for vaccination against measles, mumps, and rubella. The measles virus is derived from Enders' attenuated Edmonston strain and propagated in chick embryo cell culture. The strain of mumps virus is propagated in chick embryo cell culture; and the strain of live attenuated rubella virus is propagated in WI-38 human diploid lung fibroblasts. The growth medium for measles and mumps is a buffered salt solution containing vitamins and amino acids

and supplemented with fetal bovine serum containing sucrose, phosphate, glutamate, and recombinant human albumin as stabilizer, and neomycin. The growth medium for rubella is a buffered salt solution containing vitamins and amino acids and supplemented with fetal bovine serum containing recombinant human albumin and neomycin. Sorbitol and hydrolyzed gelatin stabilizers are added to the individual virus harvests. Each dose of the vaccine is calculated to contain sorbitol, sodium phosphate, sucrose, sodium chloride, hydrolyzed gelatin, recombinant human albumin, fetal bovine serum, other buffer and media ingredients and approximately 25 mcg of neomycin. The product contains no preservatives (MMRII 2166-2167).

### Varicella – Chicken Pox

#### **Description of Varicella:**

Varicella is a contagious virus and a member of the herpes family. It is considered by many experts to be a harmless childhood disease. In fact, before the vaccine was available before 1995, some doctors would recommend a “chicken pox party” in order to expose a number of children to the disease because complication rates increase in adolescents and adults (Miller N. 52). The greatest complications are in adults and those with a compromised immune system such HIV or cancer patients. The CDC lists the following complications for chicken pox: dehydration, pneumonia, bleeding problems, infection or inflammation of the brain-encephalitis, cerebellar ataxia- bacterial infections of the skin and soft tissues in children including Group A streptococcal infections, blood stream infections –sepsis-toxic shock syndrome, bone infections, joint infections. Some people with serious complications from chickenpox can become so sick that they need to be hospitalized. Chickenpox can also cause death. Once someone has varicella they have permanent immunity (CDC/Chickenpox).

#### **Symptoms of Varicella:**

Symptoms include a blister-like rash, itching, tiredness, runny nose and fever. The rash can be uncomfortable for a few days (CDC/Chickenpox).

### **How is the Varicella Spread?**

Chickenpox is spread when an infected person coughs or sneezes on another. It can also be spread by touching or breathing in the particles that come from chickenpox blisters. Chickenpox can also be spread by people with shingles (CDC/Chickenpox).

### **Rate of Occurrence of Varicella in the United States:**

The CDC states, “data on the number of chickenpox... outbreaks that occur each year in the United States are limited. But, since the chickenpox vaccine was introduced, the number of outbreaks has gone down” (CDC/Chickenpox/Outbreak). Specifically, the CDC states that chickenpox decreased between 41 to 81 percent by 2009 (CDC/Chickenpox/Surveillance).

The statistics for the pre-vaccine year of 1994 is 4 million people contracted chickenpox. The population of the United States in 1994 was 265 million (ID). In 1994 a person would have had a 1.5 percent chance of contracting chickenpox. If we use the median of 61% decrease in 2009 the chance of getting chicken pox is .58 percent<sup>2</sup>.

### **Adverse Effects of the Varicella Vaccine in 2009:**

Adverse reactions for the vaccine Varivax manufactured by Merck as listed in the package insert are: pain/soreness at the injection site, swelling and/or erythema, rash, pruritus, hematoma, induration, varicella-like rash at injection site, varicella like rash-generalized. In addition, the most frequently, less or equal to one percent, reported adverse experiences, without regard to causality, are listed in decreasing order of frequency: upper respiratory illness, cough, irritability/nervousness, fatigue, disturbed sleep, diarrhea, loss of appetite, vomiting, otitis, diaper rash/contact rash, headache, teething, malaise, abdominal pain, other rash, nausea, eye

complaints, chills, lymphadenopathy, myalgia, lower respiratory illness, allergic reactions (including allergic rash, hives), stiff neck, heat rash/prickly heat, arthralgia, eczema/dry skin/dermatitis, constipation, itching. Pneumonitis has been reported rarely (<1%) in children vaccinated with Varivax; a causal relationship has not been established. Febrile seizures have occurred rarely (<0.1%); a causal relationship has not been established.

Adults and teens over 13 years old vaccinated with a two-dose series reported the following adverse reactions: injection-site complaints (soreness, erythema, swelling, rash, pruritus, pyrexia, hematoma, induration, numbness), varicella-like rash (injection site), and a varicella like rash-generalized. In addition, the most frequently ( $\geq 1\%$ ) reported adverse experiences, without regard to causality, are listed in decreasing order of frequency: upper respiratory illness, headache, fatigue, cough, myalgia, disturbed sleep, nausea, malaise, diarrhea, stiff neck, irritability/nervousness, lymphadenopathy, chills, eye complaints, abdominal pain, loss of appetite, arthralgia, otitis, itching, vomiting, other rashes, constipation, lower respiratory illness, allergic reactions-including allergic rash, hives-contact rash, cold/canker sore. As with any vaccine, there is the possibility that broad use of the vaccine could reveal adverse reactions not observed in clinical trials. The following additional adverse reactions have been reported since the vaccine has been marketed: anaphylaxis-including anaphylactic shock- and related phenomena such as angioneurotic edema, facial edema, and peripheral edema, aplastic anemia, thrombocytopenia-including idiopathic thrombocytopenic purpura, varicella-vaccine strain-, encephalitis, cerebrovascular accident, transverse myelitis, Guillain-Barré syndrome, Bell's palsy, ataxia, non-febrile seizures, aseptic meningitis, dizziness, paresthesia, pharyngitis, pneumonia/pneumonitis, Stevens-Johnson syndrome, erythema multiforme, Henoch-Schönlein purpura, secondary bacterial infections of skin and soft tissue, including impetigo and cellulites

and herpes zoster (Varivax 2333-2334).

### **Possibility of Adverse Effects with the Varicella Vaccine:**

There were 1187 reports of adverse reactions to VAERS in 2009 in ages birth through 2 years. (CDC/Wonder). A person would have .01 percent chance of having an adverse reaction reported to VAERS in 2009.

### **Ingredients in the Varicella Vaccine:**

Varivax is a live, attenuated varicella virus. The virus was initially obtained from a child with natural varicella, and then introduced into human embryonic lung cell cultures, adapted to and propagated in embryonic guinea pig cell cultures and finally propagated in human diploid cell cultures-WI-38. Further passage of the virus for varicella vaccine was performed at Merck Research Laboratories in human diploid cell cultures-MRC-5. Other ingredients are: sucrose, hydrolyzed gelatin, sodium chloride, monosodium L-glutamate, sodium phosphate dibasic, potassium phosphate monobasic, potassium chloride; residual components of MRC-5 cells including DNA and protein; and trace quantities of sodium phosphate monobasic, EDTA, neomycin, and fetal bovine serum. The product contains no preservatives (Varivax 2331).

### **Treatments for Varicella:**

Allopathically, healthy children will usually only need supportive home care such as acetaminophen for pain and fever, over the counter lotions such as calamine or oatmeal bath and over the counter antihistamines to control itching. Do not give aspirin, as it has been related to Reyes Syndrome (Webmd).

Healthy teens and adults usually have more severe symptoms, but can usually remain at home using the same supportive care as children (Webmd).

Antiviral medications are recommended for people with chickenpox who are more likely

Marilyn Greenman

to develop serious disease including those over 12 years of age, those with chronic skin or lung disease, anyone receiving steroid therapy, and some groups of pregnant women. Acyclovir is an antiviral medication licensed for the treatment of chickenpox (CDC/Chickenpox).

Holistic treatment includes homeopathic remedies such as antimonium crudum, antimonium tartaricum, pulsatilla, and rhus tox (Panos 184). Keep the diet sugar free mostly consisting of fruit juices mixed with brewer's yeast and protein powder. To prevent scarring from the pocks, keep the child's nails short and wear gloves or mittens at night. Apply pressure to the itch instead of scratching. Bathe often in oatmeal or starch baths. Apply vitamin E oil directly to the pustule. Calamine can be used also. A deep, warm, fifteen-minute bath at the beginning of the outbreak will bring the pox on more rapidly. Keep the head cool and the body from chill (Chickenpox).

## Hep A – Hepatitis A

### **Description of Hepatitis A:**

Hepatitis A is an infectious disease of the liver caused by the Hepatitis A virus. The time between infection and the appearance of the symptoms is between two and six weeks, and the average incubation period is 28 days. Hepatitis A infection does not result in chronic infection or chronic liver disease. Acute liver failure from Hepatitis A is rare, less than .05 percent. The risk of death from Hepatitis A greatly increases with age. The greatest chance of complications is in those over 50 years of age. Children usually suffer a much milder case usually lasting from one to three weeks. (Hepatitis A).

### **What are the Symptoms of Hepatitis A?**

There are no clinical symptoms in over 90% of infected children. Since the infection confers lifelong immunity, the disease is of no special significance to those infected early in life.

Symptoms of the infection are directly related to age, with over 80% of adults having symptoms. These include fatigue, fever, abdominal pain, nausea, loss of appetite, jaundice, dark amber urine, and clay-colored feces (Hepatitis A).

### **How is Hepatitis A Spread?**

Hepatitis A is commonly spread through person-to-person fecal-oral route. Common ways of spreading the disease are: when someone does not wash their hands after going to the bathroom and then touches food or other objects; when a caregiver does not properly wash their hands after changing a diaper or handling feces; having oral/anal sex; contaminated food or water, usually this is outside the United States where fruits, vegetables, ice, shellfish and water are contaminated (Hepatitis A).

### **Rate of Occurrence of Hepatitis A in the United States:**

Verifiable data was difficult to ascertain since Hepatitis A shows no symptoms and is a self-limiting disease with no medication or treatment necessary. A standard estimation of average cases per year by the CDC is approximately 10 per 100,000 per year. The latest specific data was 10.8 per 100,000 for years 1987 to 1997 (Bell). Using the population for 1997 of 267,636,000 (U.S. Census) at 10.8 per 100,000 cases, there would have been 28,904 cases of Hepatitis A in 1997. That would give a person .01 percent chance of contracting Hepatitis A in 1997. The CDC's latest estimation is 25,000 (CDC/The ABCs of Hepatitis) cases in 2007 (Demographics). These figures would lessen the chances of contracting Hepatitis A to .008 percent, but since these numbers are estimates and extrapolations, I hesitate to endorse the data.

### **Adverse Effects of the Hepatitis A Vaccine Havrix:**

The following adverse reactions were included in the package insert for the vaccine Havrix manufactured by Glaxosmithkline. An incidence rate of 1% to 10% of injections included:

anorexia, nausea, fatigue, fever greater than 99.5°Fahrenheit, induration, redness, and swelling of the injection site, malaise. An incidence of <1% of injections reported: pharyngitis, upper respiratory tract infections, lymphadenopathy insomnia, dysgeusia, hypertonia, photophobia, vertigo, abdominal pain, diarrhea, vomiting, pruritus, rash, urticaria, urthralgia, myalgia, injection site hematoma, creatine phosphokinase increased. General adverse reactions include pain, redness, swelling, irritability, drowsiness, loss of appetite, and fever. Serious adverse reactions included seizures, bronchial hyperreactivity and respiratory distress, rhinitis, thrombocytopenia, anaphylactic reaction, anaphylactoid reaction, serum sickness–like syndrome, convulsions, dizziness, encephalopathy, Guillain-Barré syndrome, hypoesthesia, multiple sclerosis, myelitis, neuropathy, paresthesia, somnolence, syncope, vasculitis, dyspnea, hepatitis, jaundice, angioedema, erythema multiforme, hyperhidrosis, congenital anomaly, musculoskeletal stiffness, chills, influenza-like symptoms, injection site reaction, and local swelling (Havrix 1392-1392).

#### **Possibility of Adverse Reactions from the Hepatitis A Vaccine:**

There were 1,182 adverse reactions reported VAERS in 2009 in ages birth through 5(CDC/Wonder). Hep A is recommended between age's 12 and 23 months. There was a .01 percent chance of an adverse reaction being reported to VAERS.

#### **Ingredients of the Hepatitis A Vaccine Havrix:**

Havrix is a sterile suspension of inactivated virus. The virus-strain HM175-is propagated in MRC-5 human diploid cells. Havrix contains the following excipients: aluminum hydroxide, amino acid supplement, phosphate-buffered saline solution and polysorbate 20. From the manufacturing process, Havrix also contains residual MRC-5 cellular proteins, formalin, neomycin sulfate, and an aminoglycoside antibiotic included in the cell growth media (Havrix

1393).

### **Treatment of Hepatitis A:**

There is no known treatment for Hepatitis A. Allopathic treatment includes avoidance of fatty foods and alcohol, rest and hydration (Hepatitis A).

Holistic practitioners will focus on restoring the integrity of the liver through detoxification, nutrition, and supplementation with vitamins C, E, B and selenium. Herbs such as milk thistle will help generate new liver cells. Ozone therapy has been shown to be effective as well (Null 307-309).

Following is a condensed chart of the diseases we have investigated. Included in the chart, are the vaccines, the symptoms of the diseases, how the diseases are spread, the chances of getting the disease, the chances of an adverse reaction as reported to VAERS, the ingredients in the vaccine and some possible treatments.



Vaccine Abbreviation	Disease	Symptoms	Spread By	Chance of Getting the Disease	Chance of Adverse Effect	Ingredients	Treatments
<b>Hep B</b>	Hepatitis B	May be no symptoms. Loss of appetite, diarrhea, tiredness, jaundice, pain in muscles, joints & stomach	Contact w/blood or body fluids	6 in 10MM	5 in 100K	HepB virus, aluminum hydroxide, yeast protein, sodium chloride, phosphate buffers, latex in tip cap	Allopathic-no treatment Holistic-detox liver, vitamins, herbs, diet
<b>RV</b>	Rotavirus	Diarrhea, fever, abdominal pain	Air, direct contact	13 in 10K	2 in 100K	RV virus, sorbitol, sucrose, sodium chloride, potassium chloride, magnesium sulfate, ferric nitrate, sodium phosphate, sodium pyruvate, D-glucose, vitamin solution, PCV-1, calcium carbonate, may contain latex	Allopathic-support care Holistic-homeopathy, fluids.
<b>DTP or DPT</b>	Diphtheria	Sore throat, fever, chills, fatigue, bluish skin tone, other	Air, direct contact	0	1 in 10MM	DPT viruses, filamentous, hemagglutinin, pertactin, formaldehyde, aluminum hydroxide, sodium chloride, polysorbate80, latex in tip cap	Allopathic-antibiotics Holistic-diet, herbs, vitamins, enema
	Tetanus	Lockjaw, muscle spasms, other	Puncture to the skin	6 In 100MM	1 in 10MM		Allopathic-antibiotics Holistic-deep wound care.

	Pertussis	Whooping cough, runny nose, fever, apnea, coughing fits	Air, direct contact	6 in 100K	1 in 10MM		Allopathic-antibiotics Holistic-homeopathy, Chinese medicine, acupuncture, vitamins fluids, diet.
<b>Hib</b>	Haemophilus Influenzae B	Fever, lethargy, vomiting & stiff neck	Air, direct contact	2 in 100K	5 in 100K	Hib virus, other, amorphous aluminum, aluminum hydroxide, sodium chloride.	Allopathic-antibiotics support care. Holistic immune system, diet goldenseal
<b>PCV</b>	Pneumococcal disease	Shortness of breath, rapid breathing & chest pains, other.	Air, direct contact	1in 10K	1 in 10K	23 strains of PCV, saline solution, phenol	Allopathic-antibiotics Holistic-immune suppo goldenseal, Echinacea diet, rest, nasal salt- water treatment, salt water gargle.
<b>IPV</b>	Polio	Fever, fatigue, nausea, headache, flu-like symptoms, stiff neck & back, pain in limbs	Fecal/Oral	0	1 in 10K	Poliovirus 1,2, 3; formaldehyde, Neomycin, streptomycin, polymyxinB, calf serum protein.	Allopathic-monitor, support care. Holistic diet, fluid, vitamins, her immune support.
<b>Flu</b>	Influenza	Fever, chills, cough, sore throat, aches, fatigue.	Air, direct contact	1 in 4	2 in 10K	Flu viruses, sodium deoxycholate, formaldehyde, sodium phosphate, sodium chloride, hemagglutinin, octoxynol10, a-tocopheryl hydrogen succinate, polysorbate80, hydrocortisone, gentamicin sulfate, ovalbumin, latex in tip caps.	Allopathic-support care Holistic-homeopathy, fluids, essential oils. Fever is a friend.

<b>MMR</b>	Measles	Fever, runny nose, cough, rash	Air, direct contact	7 in 10MM	2 in 10K	MMR viruses, buffered salt solution vitamins and amino acids, fetal bovine serum, sucrose, phosphate, glutamate, recombinant human albumin, neomycin, sorbitol, sodium phosphate, sucrose, sodium chloride, hydrolyzed gelatin.	Allopathic-aspirin, cough suppressant, fluids. Holistic-vitamin C, immune support, diet, herbs, homeopathy.
	Mumps	Fever, loss of appetite, headache, swelling of salivary glands.	Air, direct contact	7 in 10MM	2 in 10K		Allopathic-Supp relievers. Holistic-fluid diet, homeopathy,
	Rubella	Fever, runny nose, rash, tenderness in lymph nodes	Air, direct contact	1 in 100MM	2 in 10K		Allopathic-vaccine. Holistic-homeopathy
	Chickenpox	Blister-like rash, itching, tiredness, runny nose & fever	Air, direct contact	*15 in 1K	5 in 10K	Varicella virus, sucrose, hydrolyzed gelatin, sodium chloride, monosodium L-glutamate, sodium phosphate dibasic, potassium phosphate monobasic, potassium chloride, residual DNA & protein from MRC5, sodium phosphate monobasic, EDTA, neomycin, fetal bovine serum.	Allopathic-support care calamine, antihistamines. Holistic-homeopathic, diet, vitamin E oil, calamine
<b>HepA</b>	Hepatitis A	No signs or symptoms in 90% of children. Adult symptoms fatigue, fever, abdominal pain, nausea, loss of appetite, jaundice, dark amber urine, and clay-colored feces.	Personal contact. Contaminated food or blood.	**11 in 100K	8 in 1MM	HepA virus (inactive), aluminum hydroxide, amino acid supplement, phosphate-buffered saline solutions and polysorbate20, MRC5 cellular proteins, formalin, neomycin sulfate, aminoglycoside antibiotic.	Allopathic treatment-avoid fatty foods and alcohol, rest and fluids. Holistic-liver restoration diet and vitamins, milk thistle, ozone therapy

### Section III

#### Should I Vaccinate?

We have just looked at specific childhood diseases and the recommended vaccines for children from birth to six years old. As we have seen, the possibility of an adverse reaction is extremely low. When the manufacturers and government agencies promote the vaccine to the public by saying that the chance of adverse reaction is slight, they are giving the appropriate data and the data is factual. However, information that is not included that seems important to the decision process might be: how does the disease the vaccine is protecting you from affect you and how can the disease be treated? What are the chances of complications from the disease and does a child really need this vaccine to keep from getting the disease. Is the disease life threatening and are the risks of vaccination greater than or equal to the risk of the disease itself? The above chart, "Disease and Vaccine Summary," allows us to see how benign many of the diseases are. It also allows us to see the chances of getting the disease in conjunction with the chances of a potential adverse reaction. Even if there is another outbreak of a particular disease, we have treatments today that did not exist in the past. Most of these diseases are relatively easy to care for and offer few, if any, long-term adverse effects. Did vaccines eradicate or diminish the diseases and what happens if we stop vaccinating?

This data is beneficial but does it tell the whole story? Other questions that might surface are: What are all those ingredients in the vaccines and are they harmful? What is a healthy immune system and what does it have to do with vaccinating a child? What are the long-term effects of vaccines? Why would my doctor and the government tell me to vaccinate if these vaccines are so harmful? Did vaccines eradicate or diminish the diseases and what happens if we

stop vaccinating? What are my legal rights?

The answers to these questions will continue to offer more information to help answer; should I vaccinate?

### **What are the ingredients in the vaccines and are they harmful?**

We will look at one vaccine, Measles, Mumps and Rubella. It contains many of the ingredients of the other vaccines and it will give an adequate picture of what each ingredient contributes to the picture of the makeup of vaccines.

Measles live virus: A live virus, as reported by the CDC, is a living virus that will give immunity without causing the disease. A live virus will sometimes cause the symptoms of the disease and in some cases the virus can be passed to others (CDC/Smallpox).

Enders' attenuated Edmonston strain:

Enders' – considered the “Father of Vaccines.”

Attenuated – diluted or weakened

Edmonston – The 11-year-old boy that the virus was taken from in 1954 (Name That Strain).

Propagated in chick embryo cell culture: In order to remain a live virus, the cells must be transferred to a living organism. In this case, a chicken embryo is used (Measles Vaccine).

Mumps virus: A live virus attenuated and propagated in a chick embryo cell culture. The mumps virus was extracted, then weakened and grown in a chicken embryo.

Rubella virus: The rubella virus is propagated in WI-38 human diploid lung fibroblasts (MMRII). In 1961, the lung cells from an aborted three-month-old fetus were taken to create a batch of cells-diploid-that have been growing the rubella virus (Human Fetal...).

Sorbitol: A sugar substitute used in diet products such as mints, sugar-free gum and cough

Marilyn Greenman

syrups. It is also used in the cosmetic industry as a thickening agent. Side effects with even small amounts ingested can include: an aggravation of irritable bowel syndrome and other gastrointestinal conditions, resulting in severe abdominal pain (Sorbitol).

**Sodium phosphate:** A generic term for the salts in sodium hydroxide and phosphoric acid. These are often used as meat preservatives, common in canned meats. Oral sodium phosphates are used for bowel preparation for colonoscopy, but may carry a risk of kidney injury (Sodium Phosphates).

**Potassium phosphate:** Along with calcium, potassium phosphate is needed to maintain bones and teeth. It is used by the body to stockpile energy, filter wastes in the kidneys and produce the DNA and RNA in your genes, as well as regulate the body's use of other nutrients. It is also used to maintain and repair tissues and cells throughout the body (Hoyle).

A mixture of potassium phosphate and sodium phosphate is used to increase the effectiveness of an antibiotic, methenamine. The combinations will also help diminish rash and unusual odor associated with the build up of urinary ammonium (Hoyle).

Potential side effects of the ingestion of potassium phosphate include nausea, vomiting, diarrhea and abdominal pain. Life threatening allergic reactions to this product are possible. The combination of potassium phosphate and sodium phosphate can potentially produce side effects such as dizziness, loss of consciousness, rapid heartbeat, rash, abnormal bleeding or bruising, numbness, tingling, production of bloody or black stool, and severe diarrhea, nausea or vomiting (Hoyle).

**Sucrose:** Sucrose is table sugar. When ingested by humans, sucrose is broken down and rapidly absorbed into the bloodstream (Sucrose).

**Sodium chloride:** Many medications are diluted with sodium chloride (table salt). It is

considered a good medium to replace lost body fluids and salts. Side effects include nausea, vomiting, diarrhea, dry eyes, headache, drowsiness, dizziness, increased sweating, increased thirst, muscle weakness, restlessness, confusion and fever (Pfizer).

**Hydrolyzed gelatin:** This product is used as a suspending agent in capsules and suppositories, creating a smooth surface for ease in administering. Hydrolyzed gelatin begins as the collagen in animal bones. When processed, it is classified as a foodstuff. It contains proteins in the form of amino acids. There are no known side effects, but some religious customs may require knowledge of the animal species from which the collagen is extracted (Gelatin).

There has been concern that it is possible to contract animal diseases such as transmissible spongiform encephalopathy-TSE-and bovine spongiform encephalopathy-BSE- through the consumption of bovine collagen, but an FDA study concluded that "...steps such as heat, alkaline treatment, and filtration could be effective in reducing the level of contaminating TSE agents; however scientific evidence is insufficient at this time to demonstrate that these treatments would effectively remove the BSE infectious agent if present in the source material" (Hydrolyzed Collagen)

**Recombinant human albumin:** Human albumin is the most abundant protein in the human body. It is produced in the liver and has many jobs including transporting hormones, fatty acids, and other compounds. It also buffers pH, and maintains osmotic pressure (Human Serum Albumin).

Recombinant means to alter the DNA. This translates recombinant human albumin as a serum taken from humans and altered to create a synthetic human serum (Recombinant DNA). Recombumin was developed as the answer to concerns of animal or human contamination, as well as the transmission of toxins, viruses or other contaminants. Recombumin is reputed to be

structurally the same as human serum albumin, but cultured in yeast (Roumeliotis). A small double blind study, of 530 participants, was performed and found that nine people showed some allergic reaction to the serum (Bosse). More studies will need to be done and documented to study the adverse effects.

**Fetal Bovine Serum:** Fetal Bovine Serum-FBS-is blood harvested from the fetus of a cow after the cow has been slaughtered for human consumption. The blood is processed through at least two sterilization processes. The end product is a clear yellow serum used for cell culture. Producers of FBS used in the medical industry are highly regulated (Feta Bovine Serum). This serum is used as a medium for cell growth. It adds the vital nutrients and culture medium needed for optimum cell growth. According to Biological Industries, “Attempts to replace serum entirely with serum-free medium have been met with only limited success” (Serum).

**Neomycin:** Neomycin is an antibiotic used as a topical preparation, such as Neosporin. It can also be given orally, where it is usually combined with other antibiotics. “It is not given intravenously, as neomycin is extremely nephrotoxic-causes kidney damage. The exception is when neomycin is included, in very small quantities, as a preservative in some vaccines - typically 0.025 mg per dose” (Neomycin).

**Other buffer and media ingredients:** It is possible that the United States allows the manufacturer to protect its proprietary rights by permitting the company to not list all ingredients (Ingredients). Others speculate that some of the ingredients such as Thimerisol-a mercury derivative- are still being used (O’Shea 41-42). This study was not able to verify any of these buffers or media ingredients. As we have seen, there are other questionable ingredients in many of the vaccines such as aluminum hydroxide, Thimerisol, excipients, adjuvants, formaldehyde, etc. The recipient or parent/guardian should become familiar with the ingredients in the specific

vaccine prior to vaccination. An informed decision is vital for lifetime wellness.

### **What is a healthy immune system?**

In several places in this study, I have used the term “healthy immune system” or “compromised or weak immune system.” In a very simplistic way, let’s look at what the immune system does and how vaccines might affect it.

The immune system is a network of cells, tissues and organs that are designed to defend the body against foreign invaders such as viruses, bacteria, microbes and other trespassers that can cause damage to the body. This system has a high level of communication involving millions of cells. The immune system is a complex and intricate system. It can remember and combat millions of enemies, while producing just the right chemical to wipe out an army of adversaries (Immune System Research).

The immune system’s ability to respond rapidly is dependent on the amount of and frequency of the abuse it undergoes, and the quality of nutrition it receives on a consistent basis. If the immune system has been attacked too frequently or it has run out of nourishment, it can become sluggish or even unresponsive. The system can and will steal from other body functions to protect its possessions. The immune system must be allowed to recover, or it will be unable to rally its forces and do its job (Donsbach 118).

When an invasion occurs in a healthy immune system, the body’s white blood cells-WBC-go to work and attack the intruder. The WBC encapsulates the toxic substances, tearing them down, and dragging them off. We can envision this like a war going on in the body. As the invaders appear, our soldiers come out fighting and do whatever is necessary to protect the castle (Donsbach 118).

During the battle, our temperature rises to assist in the vast amount of chemical reactions

that must take place in order for recovery. Fever is an important weapon also in destruction of the enemy, as most antigens cannot live in temperatures much above 97 degrees Fahrenheit (Donsbach 118)

While the battle is going on, we feel fatigued and weak. This is because the battle is fierce and very important to our well-being. After the WBC have killed all the enemies, another set of WBC help to build an antigen or immunity to this enemy so if they ever come back, the body will produce antibodies to quickly take care of the known invaders. The body may not see these bad guys for a long time, but if they do they will be ready to take care of the trespassers. This is what we call immunity (Donsbach 119).

There are many factors affecting the ability of the immune system to function at its highest level including genetics, being breastfed and being born into a sanitary, safe environment. But one of the biggest factors of the immune system's function depends on how many invasions or intruders it has to handle at one time. If we are constantly placing our bodies under stress, ingesting toxins, living on junk food, and not getting stimulation, the body will have to choose which battle to fight. The other battles will be allowed to create havoc in the body or the invaders will win the battle (Donsbach 120). This invites the question:

**What does the immune system have to do with vaccination?**

The principle of vaccination is to introduce a foreign substance into a subject so that the subject develops immunity to the virus or infection, without getting the symptoms of the disease; or at the very least reduce the duration and symptoms to slight or negligible.

In the natural world, a virus or bacteria invades the body through the mouth or nose, by putting contaminated hands to the mouth or breathing in viral particulates. It will continue through the body via the organs and systems, the normal pathways of ingestion. When the

vaccine is injected into the body, the virus is introduced into the system without going through the natural defense systems, which play a role in healing and immunity (O'Shea 44).

In the example of the MMR vaccine, the WBC soldiers are battling three viruses and nine specific foreign substances plus "other buffers and media ingredients" which have been injected into the blood stream. (In case of subcutaneous injections, this results in a similar foreign method of intake). The troops will rally and take care of all invaders, storing some, wiping out others. Then what happens when a cold virus or another bacteria is encountered? Back to work the WBCs go and the whole story begins again, or even simultaneously, if another virus or bacteria is naturally introduced. Even if all the toxins were removed from the vaccines, there would still remain the danger of viral overload. Viral overload is the total amount of viruses, microorganisms and toxins introduced to the bloodstream (O'Shea 46). The body is magnificent and complex, but it can only handle so much.

The MMR vaccine is typically recommended for a child at twelve to fifteen months. By that time, if a parent has followed the CDC recommended schedule, the child has already received thirty-six vaccines, each carrying at least one virus and all the other foreign substances we have talked about. Three vaccines list formaldehyde as an ingredient. At the very least the FDA considers formaldehyde a cancer-causing agent, and many consider even a minute amount of formaldehyde intolerable by the body (Example/FDA) (O'Shea 41).

### **What are the long-term effects of vaccines?**

The short answer is no one really knows. At this time no extensive scientific research has been systematically carried out to insure accurate or irrefutable results. There are many studies and many books that have been written that link vaccines to certain illnesses. There are many who are compiling data from the past and linking rises in diseases such as autism to the

increasing vaccines (Vaccine Articles). And for many, there is enough convincing evidence to cause concern. Some choose to investigate further and others choose not to vaccinate at all. But at this time, the government, including the Supreme Court will not look at any of the evidence as valid. They, the CDC, FDA, WHO, continue to release and promote the study of new vaccines while they encourage, and vehemently defend the use of these vaccines and mandate their use.

**Why would my doctor and the government tell to me vaccinate if vaccines are so harmful?**

There is much speculation and much has been written regarding this question. Profits by the manufacturers, medical schools and individuals; a conspiracy to dilute human DNA; and just plain ignorance are among the many theories. I will choose to respond by assuming that most of the participants in the vaccine industry, including doctors and pharmaceutical companies believe that they are doing the right thing for the people they are serving.

So why do doctors insist on vaccinating children? One answer is that doctors cannot warn you about what they do to know. As medical students, they have no reason to question the information taught. Older doctors may or may not have had reason to correlate adverse reactions to vaccine dates. The information provided by the Physicians Desk Reference reports the numerous adverse reactions possible, but the preface always includes the minute chance of having a reaction; and in fact after our investigation, we have seen the reactions reported to VAERS are very small.

There are more and more doctors accepting that there might be a danger and in turn more doctors are not vaccinating their own children. In a survey conducted in 2005, about ten percent of over 1,000 pediatricians and nonpediatricians polled, did not give their children a full schedule of recommended vaccines (Posfay-Barb). In a recent poll, fifteen percent of young doctors admit that they are starting to adopt a more individualized approach in direct response to parent's

vaccine safety issues (Mercola).

### **Did vaccines eradicate or diminish the diseases and what happens if we stop vaccinating?**

After reviewing the statistics that show a very slight chance of contracting a specific disease, one would like to know if vaccine campaign is the reason that some of these diseases are practically eliminated. This is another question that the vaccinationists, pro and con, are in deep disagreement about. The CDC takes credit for the elimination for elimination of smallpox, polio as well as the vast decline of the other diseases that have been reduced (CDC/Why). The anti-vaccinationists believe that such diseases are self-eliminating and that by the time the vaccines were introduced the disease was already on the decline. They believe that the vaccine did nothing to eliminate the disease and probably caused some new cases of diseases. (Miller N. 11) There have been many books and papers written on both sides of the argument. This research is not able to address the many facets of this conflict in this paper. And at this writing no conclusion is accepted by either group.

### **What are my legal rights?**

There are three types of exemptions you can use to avoid all vaccinations: religious, medical, and philosophical/conscientious. Eighteen states including Colorado allow all three exemptions to be used. All fifty states allow medical exemption, but some public health officials question or even deny a medical exemption unless it strictly follows the CDC guidelines. All but two states allow religious exemption (Phillips).

Vaccination proponents are constantly attacking these rights. Fortunately, there are many anti-vaccinationists pouring their lives into educating the public about the hazards of vaccinating. The Internet has made it possible for information to spread rapidly and anyone can use this medium to get their message out. There is also a watchdog organization, The National Vaccine

Information Center, (NVIC) which is dedicated to informing and investigating all aspects of vaccine information as well as supporting vaccine victims.

### Conclusion

This project has looked at the vaccines that are recommended for children from birth to six years of age. We have described the diseases that the vaccines are designed to control and the risks the vaccines carry. We also looked at the chances of getting the disease and the available treatments and cures.

We have looked at vaccines through the eyes of the CDC and the manufacturers as well as vaccination opponents. We have learned that vaccines are pharmaceutical products that carry a risk of injury or death, and that risk is greater for some than others.

We have looked at those who are opposed to vaccinations and discovered that until recently they were seen as irrational at best, and crazy at worst. Many vaccination critics do not reject immunization completely, but will look at the safety and efficacy of specific vaccines as I have attempted to do in this project.

We have looked at a simple view of the immune system to see how it works and how a vaccine might dilute its effectiveness. We have seen how statistically, the percentage of some short-term or long-term problems would increase with each of the sixty-eight vaccines recommended.

We have looked at treatments for each of the diseases and found that most childhood diseases can be treated easily with either a visit to a medical doctor or a holistic physician.

The CDC states, "A vaccine, like any medicine, could cause a serious reaction. But the risk of the vaccine causing serious harm or death is extremely small" (CDC/Hepatitis B Vaccine). It is clear that vaccinations do not cause problems for all who receive them. We have looked at

Marilyn Greenman

many statistics in this project and have seen that the government, doctors and manufacturers admit that some people have reactions. We can look at almost any item in the universe and wonder why some people have allergic reactions to something as ordinary as dust or strawberries, while others can smoke cigarettes and drink moon shine and live seemingly unaffected lives until they are well into their eighties and nineties.

We can ask: why do some children and adults react and why are others unaffected? Even long-term complications are seemingly unseen in millions of people who have received vaccines over decades. But the real question comes from those who suspect they have been harmed after receiving a vaccine. Those who have experienced the devastation of autism, attention deficit disorder, sudden infant death syndrome, cancer and other diseases believed to be caused from vaccinations must ask the question: Was it worth it? Their statistical average was 100%. They were vaccinated and something tragic happened. They may never know for sure if the vaccine caused the reaction, disease or syndrome, but they are left to deal with effects and consequences of their decision.

We have come a long way scientifically speaking, from rubbing infected smallpox scabs on our friends to cataloging DNA. Our struggles with germs, bacteria, disease and sickness will continue and there will be those who will fight for their beliefs and biases. Hopefully, whether through allopathic medicine or holistic means, a cure for today's devastating epidemics such as autism and cancer will be forthcoming. But it is our moral duty to investigate any and all substances that will affect our health and our family's well-being. Empowering ourselves with unbiased information is not only a right but also an obligation.

### A Personal Note

I began this project with my own bias against vaccination. Although I considered myself acutely aware of the hazards of the actual vaccine, I was unaware that the diseases they were protecting us from were so benign. The information regarding the epidemics and the percent of people who never experienced any symptom or phase of the disease, was in some ways comforting, discovering that not as many suffered as I once believed. I was also pleasantly surprised at the treatments available for each disease and relative ease of curing each of them with a side effect of complete immunity in many cases.

I do believe that the government, and related health organizations have gone too far to protect the population from some diseases that are relatively harmless. And I do wonder if those who have so invested their lives and livelihoods in the promotion of vaccination “therapy” would continue with their marketing if they knew that one of their loved ones was damaged by one of these vaccines.

With the amount of knowledge that I gained from this project, I now feel more passionate than ever that vaccination should not be imposed on any human being.

## Endnotes

<sup>1</sup> The CDC/Wonder website is the data retrieval system for the VAERS. Each disease, vaccine and age must be entered separately and each set of data is calculated separately. The specific web address for each of the data entered is unavailable. The data entered, unless otherwise noted is:

1. Age
2. All symptoms
3. The specific disease
4. All in each category;  
VAERS ID is blank
5. All Locations
6. Date Vaccinated -2009
7. Date Reported – 2009
8. Show totals; 2 decimal places; access time – 5 minutes.

<sup>2</sup> 4 million cases/265 million population in 1994 is equivalent to 4,603,773 cases/305 million population in 2009; decreased by 61% =  $1,795,472 / 305 \text{ million} = .58\%$

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