MILLER'S REVIEW *of* CRITICAL VACCINE STUDIES

400 Important Scientific Papers *Summarized* for Parents and Researchers

Neil Z. Miller

Foreword by
Gary Goldman, PhD

"I recommend this book to any parent who has questions about vaccines and wants to be factually educated to make informed decisions."
—Gabriel Cousens, MD, MD(H), DD

Praise for…

400 Important Scientific Papers Summarized for Parents and Researchers

"*Miller's Review of Critical Vaccine Studies* confirms that the truth is stubborn and eventually wins out. In the worldwide and U.S. debate between fact-based vaccine science and pharmaceutical, political, and media driven pseudoscience, we now have a powerful document that makes it clear to any parent or sincere scientist that vaccines are not only inadequate and unsafe but actively disrupt normal immune, neurological, and brain development. Vaccines increased rates of acute and chronic diseases, allergies, asthma, seizures, attention deficit disorder, autoimmune ailments, type 1 diabetes, autism, hospitalizations, sudden infant death, and a variety of other adverse health conditions. With these facts, it is no wonder that the U.S., which has the highest vaccine requirements, has the highest amount of sick and chronically ill children in the industrialized world. In addition, this book summarizes research on the ecology of microorganisms showing them being altered by vaccines toward a more health-endangering outcome. The phenomenon of 'strain replacement' has created more virulent and vaccine-resistant pathogens (similar to antibiotic resistant bacteria and tuberculosis, which are causing fatalities). This book is so precise and exciting in addressing the vaccine controversy that I read it in one evening. Neil Miller did an extraordinarily masterful job in gathering these vaccine facts, highlighting the moral and ethical issues that are being raised. I recommend this book to any parent who has questions about vaccines and wants to be factually educated to make informed decisions."

—Rabbi Gabriel Cousens, MD, MD(H), DD

"Researcher and author, Neil Miller, scoured and summarized published studies on vaccines for you, the reader. Nowhere else can one find such an organized and concise compilation of research on vaccines. Not only does Miller have a deep understanding of science and the issues at hand, he has made this book easy to reference and cite. Truly, there is no other guide out there quite like it. For everyone who contacts me in the future seeking scientific evidence about vaccines, I will recommend *Miller's Review of Critical Vaccine Studies*."

—Toni Bark, MD, MHEM, LEED AP, previous Director of the pediatric ER at Michael Reese Hospital

"Neil Miller's book is a tour de force and a clarion voice championing the cautionary principle: '*When in doubt, minimize risk.*' Tragically, this is a wisdom entirely lost on our elected representatives due to the persuasive lobbyists of Big Pharma. In these pages, you have powerful and unambiguous data which exposes the myriad problems with vaccinations, as well as with government officials who force these unproven and dangerous injections into vulnerable defenseless infants — and soon, if recent legislation is not reversed, into all American citizens. Many scientists alive today know that

something is, indeed, rotten in the state of our medical industrial complex. We scientists and scientifically-oriented medical doctors rely upon peer-reviewed scientific literature, but too often that treasure trove is compromised by blatant conflicts of interest. Now, Mr. Miller has studiously sifted through the literature and revealed the truth of the matter. At present, criticisms leveled against opponents of vaccinations are insubstantial ad hominem personal attacks. Let's talk science. Read this book. The truth will keep you and your children protected."

—Bradford S. Weeks, MD

"If you trust vaccines to protect you without harm, then you need to read this book. Miller provides a multitude of peer-reviewed scientific articles showing the gaping chinks in the alleged 'vaccines are safe and effective' dogma. If, after having read the information herein, you still believe vaccines should be forcibly administered to all children, or that you should blindly consent to all vaccines recommended for adults, your decision will forever remain a mystery to me."

—Robert Jay Rowen, MD, Founder of Medical Freedom in USA, former member of Alaska State Medical Board, Board Eligible (Previously Certified) in Family and Emergency Medicine

"When I graduated from medical school, the Dean told my class, 'We have just taught you the most up-to-date medical information. Unfortunately, at least 50% of what we taught you was wrong. It is your job to go out in the world and figure out which part was right and which was wrong.' I think the Dean may have underestimated the wrong part. *Miller's Review of Critical Vaccine Studies* shatters the often-repeated statement that 'vaccines are safe and effective for everyone.' This book should be required reading for every doctor, medical student and parent. Reading this book will allow you to make better choices when considering vaccination."

—David Brownstein, MD, Medical Director, Center for Holistic Medicine, West Bloomfield, MI

"In medical school, we are trained that vaccines are safe and effective and to ignore adverse reactions listed in the manufacturers' vaccine inserts since it is just jargon from lawyers. Then we are given the vaccine schedule to implement and we have our patients read a one-page form that minimizes any risk so we can call this informed consent. Neil Miller's book gives a great review of studies showing the other side. In order to give proper informed consent, we must know the benefits *and risks*. I hope that with the awareness of actual risks, in which we are just at the tip of the iceberg thanks to cognitive dissonance, we can at least better risk-stratify our most vulnerable patients so we can decrease collateral damage while trying to satisfy the desire to 'protect the greater good.'"

—Cammy Benton, MD, ABIHM

"Although all published studies must be carefully examined for reliability, *Miller's Review* offers a significant sample (n = 400) of investigations likely to crack the blissful consensus of governmental agencies concerning the supposed benefits of 'immunization' considered as a *whole* (rather than as a series of distinct pharmaceutical products requiring complex *individual* assessments to objectively determine their benefits, hazards and cost). Vaccines are promoted as an all-out offensive, mainly for the greatest advantage of the manufacturers and their professional obligees: agency experts, academics, and health professionals in their majority."

—Marc Girard, MD, MSc, independent consultant for the pharmaceutical industry

"This is a well-researched work that raises a number of important considerations about our current vaccination practices. Through studies with commentaries, the reader is led on a journey that bypasses the typical myopic view our society has toward vaccines."

—Brandon Horn, PhD, JD, LAc, Chief Academic Officer, American University of Complementary Medicine

"*Miller's Review of Critical Vaccine Studies* is the most comprehensive and coherent accumulation of peer-reviewed research on vaccine issues and natural immunity I have ever come across. A must read for parents, teachers, doctors and other healthcare providers."

—Dr. Tyson Perez, pediatric chiropractor

Miller's Review of Critical Vaccine Studies

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Neil Z. Miller

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Miller's Review of Critical Vaccine Studies

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by Neil Z. Miller

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Warning/Disclaimer/Disclosure

- The information in this book — *Miller's Review of Critical Vaccine Studies* — is for educational and informational purposes only, and is not intended to be a substitute for medical care and advice. Licensed health practitioners are available for that purpose.

- The author has endeavored to accurately summarize scientific papers that are critical of vaccines. However, errors can occur. Therefore, readers are urged to verify all of the data and references in this book.

- Some of the information presented in this book may conflict with data presented elsewhere. Therefore, readers are encouraged to seek professional guidance in evaluating contradictory, complex or confusing information. If you are pregnant or have other special conditions requiring medical attention, consult with your physician.

- *Miller's Review of Critical Vaccine Studies* is not endorsed by vaccine manufacturers, the American Academy of Pediatrics, the FDA, CDC or any other federal, state or "official" organization. For official information about vaccines, contact vaccine manufacturers, the FDA, CDC and World Health Organization.

- Vaccine recommendations change rapidly. Immunization schedules are periodically revised. Therefore, the FDA and CDC should be consulted for the most up-to-date information regarding who should or should not receive vaccines, at what ages, and the number of doses.

- *Miller's Review* does not recommend for or against vaccines. Parents and other concerned people are responsible for making those decisions. The information in this book tends to find faults with vaccines, therefore readers are advised to balance the data presented here with data presented by "official" sources of vaccine information, including vaccine manufacturers, the FDA, CDC and World Health Organization.

- Any headline or statement in this book claiming that a vaccine *caused* an unwelcome event indicates that it preceded the event and there is scientific evidence of its actual or contributing influence. Read the original paper for clarification of the authors' findings. The information in this book was composed in accordance with best fair use practices.

- This book is sold with the understanding that the author and publisher are not providing medical, legal or other professional advice. The author and publisher do not recommend for or against vaccines. All of the information in this book is taken from other sources and includes original citations. If you have questions, doubts, or concerns regarding any of the data in this book, go to the original source or consult with your doctor. Then

research this topic even further so that you may make wise and informed vaccine decisions.

Contents

Foreword

Gary Goldman, PhD

In modern times, unprecedented advances in the medical field — such as knee and hip replacements — have improved our quality of life. Emergency medical procedures have saved countless lives by restoring damaged or injured organs and tissues. When my three children were young, I believed that vaccines were a medical marvel as well, and they received their full complement of vaccines as prescribed by their physician according to the recommended vaccination schedule. So, when I was hired by the Los Angeles County Department of Health Services *(Acute Communicable Disease Control Unit)*, to help conduct epidemiological studies of varicella disease in the local community known as Antelope Valley (which consisted of approximately 300,000 residences principally in Palmdale and Lancaster, California), I was thrilled to participate. I would be working at one of three active surveillance sites funded by the Centers for Disease Control and Prevention (CDC) to study the impact of the newly recommended chickenpox vaccine, which was just being introduced into the U.S. child population. It was 1995, and with enthusiasm I reflected on the prospect that data from this research project would not only be helpful to the community in which my family and I resided, but also provide insight into how the CDC formulates national policies in connection with the chickenpox vaccine.

I served as an Epidemiology Analyst. All positive results and trends that I reported were quickly reviewed and subsequently published in medical journal articles whose authorship honored CDC officials, physicians serving as the co-principal investigators, the project director, myself, and the data collection assistants. By the end of five years, after widespread varicella

vaccination, our data demonstrated an 80% decline in varicella disease in the community. In addition, the chickenpox vaccine appeared to be safe. My performance reviews were outstanding and I was encouraged to contribute additional investigations that might lead to further publications.

By the end of 1999, long-term nurses in local schools were reporting cases of shingles (herpes zoster) occurring among children where previously such case reports had been extremely rare. Based on this observation, I recommended that shingles be added to our active surveillance project. The shingles case reports should have been collected from the start of the project since both chickenpox and shingles are caused by the same varicella zoster virus. After experiencing a case of chickenpox, the virus remains dormant until the body's cell-mediated immunity declines to a certain low level at which point the varicella zoster virus can reactivate as shingles. Each time an adult is exposed to a child having chickenpox, the adult receives an exogenous (external) immune boost that helps suppress or postpone the onset of shingles, thus serving as a free and valuable benefit to the adult that could yield a protective effect lasting many years.

My observation of a relationship between chickenpox and shingles was not new. In 1965, Dr. Hope-Simpson, serving as a physician in Cirencester, England, studied herpes zoster among the local population. [*Proc R Soc Med* 1965; 58: 9-20.] He was the first to propose the hypothesis that the rates, or incidence, of shingles in each age group were perhaps due to that group's exposure to cases of chickenpox. Using approximate incidence rates, the rate of shingles among children aged 1 to 10 years and among adolescents aged 11 to 19 years were the lowest, because so many in these age groups contracted chickenpox and had frequent re-exposure to the disease. During adulthood, the incidence of shingles quadrupled by age 50, due to older adults' diminishing exposure to children with chickenpox. Thus, while shingles was primarily thought of as increasing with the onset of old age, in reality, shingles increased as adults experienced fewer contacts with children infected with chickenpox, which in turn caused a decrease in subclinical

boosting. In a study of physicians who had frequent contact with children, findings demonstrated that the rate of shingles was one-fourth to one-eighth that of other adults in the same age-group in the general population that typically had less frequent exposure. [*Kansenshokagu Zasshi* 1995; 69(8): 908-12.]

After collecting two years of shingles case reports in the community, I observed that the incidence of shingles among unvaccinated children who had previously contracted chickenpox was unusually high, approaching the rate seen in adults. This was a foreboding result indicating that universal varicella vaccination could have the effect of increasing the incidence of shingles for a period of 50 or more years among adults who had a prior case of chickenpox — usually a benign case in their youth. Since about 25% of medical costs associated with the varicella zoster virus are due to varicella and about 75% are due to shingles, any increase in shingles would easily offset any cost benefit associated with a reduction in cases of chickenpox.

The CDC had justified its recommendation that all U.S. children receive a chickenpox vaccine based on the cost savings to society attributed to parents not having to stay home from work to care for their child with chickenpox. Further initial cost/benefit assumptions that justified varicella vaccination included, 1) a vaccine cost of $35, 2) one vaccine offering lifetime protection, and 3) no deleterious effects on the closely related shingles epidemiology. These assumptions all proved to be invalid. The current vaccine cost is approximately $100, a two-dose vaccination policy was instituted due to the occurrence of breakthrough varicella disease (vaccinated children were still contracting chickenpox), and recent research on herpes zoster incidence supports Dr. Hope-Simpson's hypothesis that exposures to chickenpox have a protective effect to suppress or prevent the reactivation of shingles in adults. [*Am J Epidemiol* 2013; 77(10): 1134-42.] Instead of stopping the universal varicella vaccination of children in the U.S., the CDC added a second booster dose for children and introduced a shingles vaccine for older adults (who previously received boosts to their

immunity at no charge by virtue of the annual outbreaks of chickenpox in their communities).

I prepared a paper for review and subsequent publication summarizing the first two years of shingles data. Such review was never forthcoming and I was instructed not to pursue any further investigation of shingles rates in the Antelope Valley. I did not want to become involved in research fraud, so I resigned after eight years of employment and sought to publish the other side of the research data that I felt was being suppressed. However, prior to having several papers published in the journal *Vaccine,* I received a notice from the Los Angeles County legal department to "cease and desist."

With the assistance of an experienced attorney, I overcame the CDC's objection that the data was confidential, and these studies were published. (Some of them are summarized in this book.) The CDC also improperly challenged the methodology that I used and results I derived. However, several years later they published a paper on herpes zoster using methodology similar to that specified in my papers that they had earlier criticized. The CDC presented herpes zoster incidence rates that closely compared to those I had published following my resignation. [*Vaccine* 2013 Mar 25; 31(13): 1683, Table 1.]

In marketing the varicella vaccine, the vaccine manufacturer used commercials highlighting that a child could die from chickenpox. The chance of this occurring is about the same as a child being struck by lightning. Unfortunately, vaccine research is largely financed by the pharmaceutical companies producing the vaccine or by health agencies that have conflicts of interest with these companies. (Studies that confirm such conflicts of interest are summarized in this book.) In addition, many CDC-sponsored studies, and other studies promoting vaccines, do not provide raw data to replicate the findings, which is a necessary component of science. Thus, published findings in medical journals and the positive claims associated with any given vaccine are often propaganda — one-sided promotions that fail to disclose any negative effects, which at times can be

significant. For example, a recent paper by Hooker and Kern et al. found evidence of malfeasance in CDC research purporting to show that thimerosal (a mercury-based preservative added to some vaccines) is safe. Although more than 165 studies examined thimerosal and found it to be dangerous, the CDC claims that it is safe and unrelated to autism. The CDC's claim that thimerosal is safe for use in vaccines and does not cause autism is based on just six studies that it sponsored. Four of the studies withheld important results from final publication and all of them are methodologically unsound. [*BioMed Research International* 2014; article ID 247218.] These tactics produce continual cycles of disease and treatment.

Following my work with the Los Angeles County Department of Health Services and the CDC, I continued to engage in vaccine research and discovered that my experience with the varicella vaccine was only the tip of the iceberg. In fact, if my children were born today, I would not permit them to be vaccinated. Vaccines with their associated adjuvants can cause serious long-term adverse effects in the form of autoimmune disorders and other chronic detrimental health conditions. Ongoing research continues to elucidate the complexities of the human immune system, providing an improved understanding of the biological mechanisms responsible for adverse vaccine reactions. In addition, the current childhood vaccination schedule is much more crowded than previous schedules, with infants receiving several vaccines during their pediatric well-baby visits. Multiple vaccines administered concomitantly may increase the risk of death. [*PloS One* 2011 Jan 26; 6(1): e16363; *Hum Exp Toxicol* 2012; 31(10): 1012-21.]

The National Library of Medicine has a multitude of studies that warn of these negative outcomes, including the possibility of vaccine-related fatalities which can sometimes be characterized as SIDS — sudden infant death syndrome. Detailed toxicological examinations of post-mortem brains and tissues, as well as other specialized investigations, have indeed documented vaccine-related deaths. Yet, there is a movement to make vaccination compulsory, removing all current vaccine exemptions, which

will effectively eliminate the doctrine of informed consent, essential for the preservation of human rights.

Rising healthcare costs are, in part, the result of biased scientific research that supports an ever-expanding list of required vaccines that, in reality, have a negative cost and health benefit. Such vaccines create a life-long stream of income flowing into the healthcare system treating all of the people who experience adverse vaccine reactions. About 30,000 reports of suspected adverse vaccine reactions are filed with the U.S. government every year and more than $3.1 billion has already been paid to compensate vaccine victims and their families.

Through independent analysis, it is possible to uncover the lies and deception emanating from the public relations propaganda produced by the vaccine manufacturers and healthcare institutions themselves. This book, *Miller's Review of Critical Vaccine Studies,* can assist the reader so that any decision to vaccinate or not is an informed one. The author, Neil Z. Miller, deserves high commendation for his boldness in providing research material in a format that can assist parents and other researchers in their investigation of vaccine truths while gaining a more circumspect understanding of tradeoffs associated with vaccine issues. This invaluable resource with its straightforward summaries of harmful effects that peer-reviewed published research on vaccines has revealed can positively impact the health and lives of millions of children, adolescents and adults.

Many people sincerely believe that all vaccines are safe, adverse reactions are rare, and no peer-reviewed scientific studies exist showing that vaccines can cause harm. A more reasonable perspective, however, is that while vaccines may contribute toward enhancing immunity against contracting specific diseases, they also are responsible for causing autoimmune disorders and other detrimental long-term effects that are rarely disclosed. This book — *Miller's Review of Critical Vaccine Studies* — provides the other side of the story that is not commonly told. It contains summaries of more than 400 important scientific papers to help parents and researchers enhance their understanding of vaccinations.

The studies in this book do not support vaccine safety and effectiveness. Instead, they provide scientific evidence of risks and detriments, confirming adverse side effects or tradeoffs associated with vaccination. For example, the vaccine might decrease the likelihood of contracting a contagious ailment while increasing the odds of developing a neurological disorder, immunological injury, or coronary heart disease. In addition, allergies, seizures, diabetes and thrombocytopenia (a life-threatening autoimmune disease that causes internal bleeding) are more likely in vaccinated populations. Vaccinated children may also be trading a reduced risk of infections for an increased risk of cancer.

Most of the scientific papers summarized in this book are peer-reviewed studies published in medical journals indexed by the U.S. National Library of Medicine (the world's largest medical library). They include meta-analyses, systematic reviews of the scientific literature, randomized placebo-controlled studies, cohort studies, case control studies, case series,

professional scientific commentary, and animal research. Nearly all of the studies provide crucial evidence of vaccine safety or immunity deficits.

Many of the studies summarized in this book were published in prestigious or high-impact journals such as the *Journal of the American Medical Association, New England Journal of Medicine, British Medical Journal, Annals of Medicine, Clinical Infectious Diseases, Emerging Infectious Diseases, Journal of Infectious Diseases, Journal of Internal Medicine, The Lancet, Pediatrics, Journal of Pediatrics, Pediatric Infectious Disease Journal, European Journal of Pediatrics, Vaccine, Epidemiology, American Journal of Epidemiology, European Journal of Epidemiology, International Journal of Cancer* and the *American Journal of Public Health*. Of course, this does not mean that studies published in highly-cited journals are more valuable than those published in lesser known journals. All studies must be scrutinized for potential strengths and weaknesses.

The scientific papers in this book are organized into 24 chapters. Each chapter contains several studies on a particular topic, such as aluminum adjuvants, pathogen evolution, sudden infant death, and healthcare workers who reject vaccines. Usually, there is one study per page although some pages contain two or three studies. At the top of each page is a headline. Next, there is a direct quote taken from the study. This is followed by the scientific citation. Finally, I use bullet points to summarize, in my own words, pertinent findings in the paper.

Many of the studies could have been included in other categories. For example, although there is a separate chapter on measles and MMR, there are numerous studies related to MMR in the chapters on allergies, seizures, thrombocytopenia, cancer, and vitamin A. If you are looking for information on a particular vaccine or subject that is not covered under a chapter heading, the index may be helpful.

Important findings from each scientific paper reviewed in this book are provided for quick reference and to counterbalance the many well-publicized studies touting the advantages of vaccination. I endeavored to

remain free from bias at all times, with one caveat — my goal was to summarize studies that shed light on poorly publicized and unpopular aspects of vaccination. For readers with a scientific background, I included risk ratios, odds ratios, relative incidence and other statistical measures when p-values achieved significance. Confidence intervals can be found in the original studies.

Some of the summarized studies have favorable conclusions toward vaccines although actual findings in the paper are critical of vaccines. Authors of research papers often put a positive spin on studies with undesirable findings. Also, the findings in some of the summarized studies may conflict with those in other studies. There are many reasons why studies on the same topic might have contrary results. Studies may be poorly designed or conducted by researchers with conflicts of interest that bias their findings. This topic is discussed in the final chapter.

I highly recommend reading the actual complete studies, which often contain supplementary figures, tables, data and discussions not included in my summaries. Some scientific papers are freely available from the medical journals that published them. Others are fee-based although an abstract of the paper is almost always available at no cost.

Studies that support vaccination are not included in this book. You can find supportive information by visiting official websites of the Centers for Disease Control and Prevention (CDC), the Food and Drug Administration (FDA), the World Health Organization (WHO), vaccine manufacturers, and by conducting your own search in medical journals. I encourage you to do your own careful research to better understand the benefits and risks of vaccination.

Neil Z. Miller

Medical Research Journalist

Vaccination Schedules

The four studies in this chapter investigated safety issues associated with recommended vaccination schedules. The first study analyzed the vaccination schedules of 34 developed nations and found a significant correlation between infant mortality rates and the number of vaccine doses infants receive. Developed nations that require the most vaccines tend to have the worst infant mortality rates.

The second study analyzed 38,801 reports of infants who had adverse events after receiving vaccinations. Infants who received the most vaccines concurrently were significantly more likely to be hospitalized or die, when compared to infants who received fewer vaccines concurrently.

The third study compared fully vaccinated children to under-vaccinated children (they did not receive all vaccines as recommended). Children who were undervaccinated the most had the fewest visits to a healthcare provider for upper respiratory illness and significantly lower rates of outpatient and emergency department visits, compared to on-time, fully vaccinated children.

In the fourth study, scientists administered age-adjusted pediatric vaccines to baby monkeys according to the complete U.S. recommended childhood vaccination schedule. The vaccinated primates had abnormalities in the region of the brain affecting social and emotional development, and a significant increase in total brain volume. An accelerated increase in total brain volume between 6 and 14 months of age is a consistent finding for many children with autism.

1.

Developed nations that require the most vaccines tend to have the worst infant mortality rates

"These findings demonstrate a counterintuitive relationship: nations that require more vaccine doses tend to have higher infant mortality rates. A closer inspection of correlations between vaccine doses, biochemical or synergistic toxicity, and infant mortality rates, is essential."

Miller NZ, Goldman GS. **Infant mortality rates regressed against number of vaccine doses routinely given: is there a biochemical or synergistic toxicity?** *Hum Exp Toxicol* 2011; 30(9): 1420-28.

- The U.S. requires infants to receive 26 vaccine doses, the most in the world, yet 33 nations have better infant mortality rates.
- This study analyzed the vaccination schedules of 34 developed nations and found a significant correlation between infant mortality rates and the number of vaccine doses infants receive. Nations that require the most vaccines tend to have the worst infant mortality rates.
- Linear regression analysis showed a high statistically significant link between increasing vaccine doses and increasing infant mortality rates ($r = 0.992$).
- Developed nations that require the least number of infant vaccines tend to have the best infant mortality rates.

- Many third world nations have high vaccination rates (above 90%) and require their infants to receive a high number of vaccine doses but their infant mortality rates are poor.

- Infant mortality rates remain high in developing nations that cannot furnish clean water, proper nutrition, good sanitation, and better access to health care.

- There is evidence that a subset of infants may be susceptible to sudden infant death shortly after receiving vaccines. Some vaccine-related infant deaths may be reclassified by medical authorities as ordinary mortality concealing a link between vaccines and fatalities.

2.

Infants who receive the most vaccines have the worst hospitalization and death rates

"Since vaccines are given to millions of infants annually, it is imperative that health authorities have scientific data from synergistic toxicity studies on all combinations of vaccines that infants might receive. Universal vaccine recommendations must be supported by such studies. Finding ways to increase vaccine safety should be the highest priority."

Goldman GS, Miller NZ. **Relative trends in hospitalizations and mortality among infants by the number of vaccine doses and age, based on the Vaccine Adverse Event Reporting System (VAERS), 1990-2010.** *Hum Exp Toxicol* 2012; 31(10): 1012-21.

- This study was designed to determine a) whether infants who receive several vaccines simultaneously rather than fewer are more likely to be hospitalized or die, and b) whether younger infants are more likely than older infants to be hospitalized or die after receiving vaccines.

- This study analyzed 38,801 reports of infants who had adverse events after receiving vaccinations. The reports were accessed from the FDA's Vaccine Adverse Event Reporting System (VAERS) database, 1990-2010.

- Infants who received 6, 7, or 8 vaccine doses were significantly more likely to be hospitalized when compared to infants who received 2, 3, or 4 vaccine doses ($r^2 = 0.91$). Younger infants were significantly more

likely than older infants to be hospitalized after receiving vaccines (r^2 = 0.95).

- Infants who received 5-8 vaccine doses were significantly more likely to die when compared to infants who received 1-4 vaccine doses (rate ratio, RR=1.5). Vaccinated infants under 6 months of age were significantly more likely to die than vaccinated infants aged 6 months to less than 1 year (RR = 3.0).

- Male infants were significantly more likely than female infants to die after receiving vaccines (RR = 1.4).

- The safety of combining multiple vaccines during a single physician visit as recommended by CDC guidelines was never affirmed in clinical studies.

3.

Fully vaccinated children are significantly more likely to require emergency care than under-vaccinated children

"Children who were under-vaccinated because of parental choice had significantly lower utilization rates of the emergency department and outpatient settings — both overall and for specific acute illnesses — than children who were vaccinated on time."

Glanz JM, Newcomer SR, et al. **A population-based cohort study of undervaccination in 8 managed care organizations across the United States.** *JAMA Pediatr* 2013 Mar 1; 167(3): 274-81.

- This study analyzed 323,247 healthcare records to compare children under 2 years of age who were fully vaccinated at CDC-recommended ages to children who were under-vaccinated (they did not receive all vaccines according to the recommended schedule).

- Children who were under-vaccinated the most had the greatest reductions in outpatient visits and healthcare utilization for upper respiratory illness, fever and pharyngitis when compared to on-time, fully vaccinated children (36% to 38% reductions).

- Children who were under-vaccinated because of parental choice had lower inpatient admission rates and significantly lower rates of outpatient and emergency department visits (incidence rate ratio, IRR = 0.94 and 0.91, respectively) compared to on-time, fully vaccinated children.

- Nearly half of the children in this study were under-vaccinated — a growing trend.
- About 13% of the children were under-vaccinated due to parental choice.
- All inpatient and emergency department visits between birth and 8 days of age were excluded from analysis although a hepatitis B vaccine is given to on-time, fully vaccinated children at birth.

4.

Baby monkeys that were given vaccines according to the U.S. vaccination schedule had abnormalities in the region of the brain affecting social and emotional development

"These results raise the possibility that multiple vaccine exposures during the previous 3-4 months may have had a significant impact on brain growth and development… [and] warrant additional research into the potential impact of an interaction between the MMR and thimerosal-containing vaccines on brain structure and function."

Hewitson L, Lopresti BJ, et al. **Influence of pediatric vaccines on amygdala growth and opioid ligand binding in rhesus macaque infants: a pilot study**. *Acta Neurobiol Exp* 2010; 70: 147-64.

- This study was designed to investigate structural and functional changes in the developing infant primate brain following administration of U.S. pediatric vaccines according to the recommended childhood schedule.

- In this study, 12 male infant rhesus macaques received the complete, age-adjusted childhood vaccine regimen. Four additional macaques, the control group, received saline injections. MRI and PET scans at 4 and 6 months of age were obtained from 9 of the vaccinated and 2 of the control animals.

- The MMR, DTaP, and Hib-vaccinated primates had significantly altered amygdala growth (associated with the development of social and

emotional behavior) compared to the unvaccinated primates.

- The vaccinated primates had a significant increase in total brain volume. An accelerated increase in total brain volume between 6 and 14 months of age is a consistent finding for many children with autism.

- Findings in this study suggest that vaccines may be associated with significant disturbances in brain growth and development.

Thimerosal (Mercury)

Thimerosal contains mercury. It is added to multi-dose vials of vaccines to prevent bacterial contamination when more than one needle is inserted into the vial. In the United States, infants and children received high quantities of mercury from several CDC-recommended vaccines that contained thimerosal — DTaP, hepatitis B and *Haemophilus influenzae* type b (Hib) — until about 2002 when thimerosal was removed from most vaccines.

Today, developed countries continue to inject significant quantities of mercury from thimerosal-containing influenza vaccines into pregnant women, infants and children. In developing nations, infants are still exposed to high quantities of mercury from several thimerosal-containing vaccines. This dubious practice continues because the World Health Organization (WHO) estimated that it saves about 15 cents per vaccine dose to manufacture 10-dose vials (with thimerosal) compared to single-dose vials without mercury [*Bull World Health Organ* 2003; 81(10): 726-31].

The studies in this chapter provide strong evidence that vaccines containing mercury significantly increase the risk of neurodevelopmental effects, including speech and sleep disorders, developmental delay, attention deficit disorder, premature puberty, mental retardation, and autism.

5.

Infants who received vaccines containing mercury had significantly increased odds of being diagnosed with an autism spectrum disorder

"The present study provides new epidemiological evidence supporting an association between increasing organic-mercury exposure from thimerosal-containing childhood vaccines and the subsequent risk of an autism spectrum disorder diagnosis."

Geier DA, Hooker BS, et al. **A two-phase study evaluating the relationship between thimerosal-containing vaccine administration and the risk for an autism spectrum disorder diagnosis in the United States.** *Transl Neurodegener* 2013 Dec 19; 2(1): 25.

- Thimerosal contains mercury. It is added to some vaccines as a preservative.

- This study was designed to evaluate the toxic effects of mercury in childhood vaccines. Phase I analyzed the Vaccine Adverse Event Reporting System (VAERS) database (which is jointly maintained by the CDC and FDA) for reports of autism spectrum disorders following DTaP vaccination.

- Phase II of this study analyzed the Vaccine Safety Datalink (VSD) database (created by the CDC) to identify children with and without an autism spectrum disorder diagnosis — the cases and controls — and then compared their infant exposures to mercury from hepatitis B vaccines.