

# **THE CHALLENGE TO MASS VACCINATION**

**By Barbara Loe Fisher**

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It is one of the most successful public relations stories of the last two centuries: the worldwide acceptance of mass vaccination to suppress infectious diseases. Yet the universal use of vaccines as a worthy goal that prevents needless suffering and benefits all mankind has begun to be challenged by a growing number of parents and physicians in the U.S., Canada and Europe. At the heart of the heated public debate is a challenge to the premise that mass vaccination with multiple vaccines safely and effectively controls diseases and improves individual and public health.

The voices of critics are heard in the living rooms of families whose children have been injured or have died from vaccine reactions, and in courtrooms and state legislatures, where parents are suing vaccine makers and challenging mandatory vaccination laws. At scientific conferences and in the pages of prestigious medical journals, researchers and physicians are risking their careers by discussing their research into vaccine side effects. On network TV, millions are watching parents, who say vaccines hurt their children, square off with mandatory vaccination proponents, who say vaccines rarely hurt anyone at all. And in Congress, federal legislators are trying to come up with a way to fix the broken federal Vaccine Injury Compensation Program (VICP) while others are holding investigative hearings into vaccine safety issues and conflicts of interest involving vaccine makers and federal health agencies. In the middle of this scientific, legal and political battle are defensive pediatricians backing parents into a corner and losing their trust and a booming pharmaceutical industry with billions of dollars invested in new vaccine development.

## **How It All Began**

It has been 207 years since British physician Edward Jenner acted on a hunch and scraped cowpox pus onto the arm of an eight-year-old boy. He theorized that a mild bout of cowpox would prevent a more virulent case of smallpox, and then convinced enough people he was right because his procedure was quickly adopted by physicians. But it failed in Jenner's own 11-month old son and lethal reactions were legendary.

One mother in England bitterly complained in 1883 about mandatory vaccination laws that allowed public health officials to issue a summons, threaten parents with imprisonment, and impose stiff fines for refusing to vaccinate their children. She said, "In no country has the cry of the mothers been allowed a hearing. They who see and realize that their children suffer from this practice have never been consulted as to its initiative or its continuance. If the will of the mothers could be made potent and effective, this cruel legislation would be at once and universally repealed."

The mothers prevailed in Victorian England and got mandatory vaccination laws repealed in that country, where vaccination remains voluntary today. But 19<sup>th</sup> century physicians in Europe and the U.S. quickly adopted and promoted Jenner's new procedure despite public protests. Physicians and politicians were desperate to keep epidemic diseases from invading the overcrowded, filthy cities of Europe and the New World. They failed to realize that eliminating the root causes of poor health — poverty, malnutrition, water contaminated by human and animal waste, spoiled food, and industrial

air pollution, among others — would help prevent the spread of many diseases. Today, effective public health measures such as improving sanitation, nutrition, living conditions, health education and access to affordable and convenient health care, especially in underprivileged populations, often take a back seat to achieving a 100 percent vaccination rate.

Health officials and doctors point to how successful mandatory mass vaccination policies have been in dramatically reducing the numbers of cases of once routine childhood diseases, such as measles. In 1965 before routine use of measles vaccine, there were more than 400,000 cases of measles reported in the U.S. By 1995 with nearly 95 percent of American children receiving measles vaccine, there were only 309 cases. Baby boomers, who lined up in school in 1955 for polio vaccinations, witnessed the eradication of polio from the western hemisphere in 1979. These impressive declines in childhood infectious diseases have made mass vaccination policies the cornerstone of government preventive health programs around the world.

## **The Paradigm Shift**

However, despite the millions of dollars that are committed by industry and government to touting the accomplishments and benefits of mass vaccination programs, cracks are appearing in the united front that the medical establishment has maintained for two centuries. In industrialized countries, dissatisfied patients and alternative health care proponents are questioning orthodox medicine's basic foundations, especially its heavy reliance on surgery and synthetic drugs. The proliferating numbers of vaccines are just one more target for increasingly well educated and Internet-savvy health care consumers, who are wary of the many magic bullets drug companies promote.

Where doctors once prescribed antibiotics for every sore throat and sniffle, prescription-dependent patients are now being blamed for new strains of antibiotic-resistant bacteria. A new drug promoted as a lifesaver today is sometimes pulled off the market tomorrow for killing those who took it. In the April 15, 1998 issue of the *Journal of the American Medical Association (JAMA)*, an analysis of drug side effects found that toxic reactions to correctly prescribed medications make more than two million Americans seriously ill every year and kill 106,000, putting the side effects of doctor-directed drug taking among the top 10 causes of death in the United States. Among children, antibiotics and vaccines cause more adverse reactions than any other prescribed medicines, according to a Canadian study presented at the American Academy of Allergy and Asthma in 1998. An analysis of Canadian data on more than 1,500 cases of drug reactions between 1985 and 1995 found that the antibiotics amoxicillin and ampicillin accounted for 24 percent of total adverse reactions, with vaccines coming in second at 19 percent.

As the over-drugged, over-vaccinated baby boomer generation comes of age, many are intuitively moving toward the notion that preventing illness and maintaining health requires better nutrition, more exercise, management of stress, adopting a positive attitude and a less toxic and medically intrusive approach. A 1998 survey in *JAMA* found 39 million Americans made more than 600 million visits to alternative health care practitioners in 1997, more than to primary care physicians. The patients paid most of the \$21.2 billion cost themselves because health insurance plans generally don't reimburse patients or have limited reimbursement for alternative health care, such as chiropractic. The patients wanted alternative therapies primarily to "prevent future illness from occurring or to maintain health and vitality."

Embracing the more spiritual concept of achieving better health through better living rather than through better chemistry, members of the ME generation — who challenged every institution and social convention as teenagers — continue to exercise their counterculture instincts as adults and parents by asserting their right to make independent health care choices for themselves and their children. And they have been joined by segments of the "X, Y and echo" generations who grew up going to health food stores with their parents and now can pick up bottles of Echinacea, Goldenseal and soy vitamin drinks at the chain grocery and drug stores.

The pharmaceutical industry and organized medicine, which have had a stranglehold on the popular imagination when it comes to how we view health, may be gritting their collective teeth about the people's move toward herbal supplements and yoga and away from Ritalin and Prozac, but they are not about to tolerate independent thinking when it comes to vaccination. The public demand for the freedom to make vaccination choices puzzles and worries MDs, including some outspoken alternative health care advocates.

Andrew Weil, MD, a respected leader in the alternative health care movement, defends mass vaccination. Sparring with Richard Moscovitz, MD in *Natural Health* magazine in 1997, Weil asserted, "The debate about immunization could only be going on in a country where the people are mostly immunized. If people in this country lived with these diseases, you wouldn't hear them questioning immunization." Moscovitz, a clinician who specializes in homeopathy, countered, "For us to bombard a newborn baby with a whole battery of vaccines as, in effect, their first immunological experience I think is reckless beyond measure. I would say it borders on the criminal."

And as questioning parents are thrown out of pediatricians' offices if they do not submit their children to every state mandated vaccine and the American Medical Association (AMA) and American Academy of Pediatrics (AAP) adopt a "no exemption to vaccination" stance, parent vaccine safety and informed consent advocates are organizing in states and fighting for the right to freely make vaccine choices. In 2003, after seven years of work in Texas and two years of work in Arkansas, citizens of both those states won the legal right to exercise conscientious, philosophical or religious belief exemptions to vaccination. Outraged by the success of the effort in Texas led by Parents Requesting Open Vaccine Education (PROVE), physicians and public health officials mounted a public protest in an unsuccessful attempt to convince the legislature in special session to repeal the conscientious belief exemption just signed into law by the Governor.

Sensing a threat to their dominance that could become contagious, even the international public health community got into the act. An article on what the parents in Texas managed to do became hyperactively discussed in the pages of *The Lancet*. PROVE President Dawn Richardson commented "I didn't know we were creating an international incident by standing up for the right to exercise informed consent to vaccination. If vaccines are so safe and so effective, why are doctors so afraid of people having the freedom to follow their conscience and make informed vaccine choices?"

### **Vaccines: Man vs. Nature**

Vaccines are supposed to fool the body's immune system into producing antibodies to resist viral and bacterial infection in the same way that actually having the disease usually produces immunity to future infection. But vaccines atypically introduce into the human body lab altered live viruses and killed bacteria along with chemicals, metals, drugs and other additives such as formaldehyde, aluminum, mercury, monosodium glutamate, sodium phosphate, phenoxyethanol, gelatin, sulfites, yeast protein, antibiotics as well as unknown amounts of RNA and DNA from animal and human cell tissue cultures.

Whereas natural recovery from many infectious diseases stimulates lifetime immunity, vaccines only provide temporary protection and most vaccines require "booster" doses to extend vaccine-induced artificial immunity. The fact that manmade vaccines cannot replicate the body's natural experience with the disease is one of the key points of contention between those who insist that mankind cannot live without mass use of multiple vaccines and those who believe that mankind's biological integrity will be severely compromised by their continued use.

Philip Incao, M.D., a Colorado physician who utilizes a multidisciplinary approach in his alternative health care practice, maintains that health is about the individual successfully overcoming illness. He is part of a group of physicians in the U.S. and Europe who are taking a holistic approach to health and healing that marks the paradigm shift that is occurring in health care. According to Incao:

"Physically, health is about balancing acute inflammatory responses to infection, which stimulate one arm of the immune system, and chronic inflammatory responses to infection, which stimulate the other arm of the immune system. Just like a seesaw, the two arms of the immune system must remain in balance to maintain health. Vaccines tend to stimulate only one side of the immune system. Overuse of vaccines to suppress all acute, externalizing inflammations early in life can set up the immune system to respond to future stresses and infections by developing chronic internalizing disease later in life."

However, visitors to the US Centers for Disease Control and Prevention (CDC) website are told that "vaccines give your baby's immune system the chance to practice and make protective antibodies before real germs invade. If left totally to chance, your baby's first exposure to a disease may be from a germ too strong for your baby to fight. That's why before parents had vaccines for their children, many children died from whooping cough, measles, diphtheria and other diseases. Those same germs exist today but today's babies are protected by vaccines."

At the center of the vaccination debate, then, are two equally contentious questions. First, is it better to protect children against infectious disease early in life through temporary immunity from a vaccine or are they better off contracting certain contagious infections in childhood and attaining permanent immunity? Second, do vaccine complications ultimately cause more chronic illness and death than infectious diseases do? Both questions essentially pit trust in human intervention against trust in nature and the natural order, which existed long before vaccines were created by man.

### **More Vaccines and More Immune and Brain System Dysfunction**

Between 1964 and 2002, the US added eight new vaccines (a total of 23 doses) to the mandatory vaccination schedule, including five doses of live virus polio; two doses of live MMR (measles-mumps-rubella) vaccine; four doses of Hib (haemophilus influenzae type b, which is a type of meningitis); three doses of hepatitis B vaccine; one dose of live virus varicella zoster (chicken pox) vaccine; four doses of pneumococcal vaccine and more strictly enforced existing laws mandating five doses of DPT (diphtheria-pertussis-tetanus) vaccine.

In addition to more than doubling the number of doses of vaccine children have received during the past four decades, vaccination coverage rates rose in the US from between 60 and 80 percent in 1967 for MMR, polio and DPT vaccines to between 80 and 95 percent coverage in 1996 for MMR, polio, DPT, hepatitis B and Hib vaccines. Since 1996, vaccination coverage rates for American children entering kindergarten have continued to hover around 95 percent with the "core" vaccines. Reported coverage rates are lower in states that include the two newest mandated vaccines, hepatitis B and chicken pox, in their reports.

During the same time period that the number of doses of childhood vaccines have more than doubled and vaccination coverage rates have neared 95 percent for five year olds, the number of American children suffering from immune and brain system dysfunction has risen dramatically. There has been a doubling of learning disabilities, attention deficit hyperactivity disorder (ADHD), and asthma, a tripling of diabetes and a 300 to 600 percent increase in autism in most states. These increasingly common brain and immune system disorders plaguing our children are forcing public school systems to build special education classrooms to accommodate the special needs of these children who are "stuck on sick."

After heart disease and cancer, autoimmune disease has become the third leading cause of illness in the United States and in many technologically advanced countries. According to the American Academy of Allergy, Asthma and Immunology (AAAAI), the autoimmune disease, asthma, is now "the most common disorder in children and adolescents, affecting nearly five million children under the age of 18, including an estimated 1.3 million children under the age of five. Fifty to 80 percent of children affected with asthma develop symptoms before they are five years old."

A 1997 study published in *Science* found that asthma has doubled in Western societies during the previous 20 years and in the United States causes one-third of pediatric emergency room visits. A 1995 report by the CDC stated that between 1982 and 1992, asthma increased 52 percent for persons between 5 and 34 years old and asthma deaths increased 42 percent.

Another autoimmune disorder, arthritis, is also "on a steady rise" according to the CDC in 1998, which estimated that arthritis now plagues more than 40 million Americans and projected that the number will grow to 60 million by 2020. Cases of diabetes, yet another chronic autoimmune disorder, have tripled in the US since 1958, now affecting nearly 16 million Americans and ranking fourth in the leading causes of death in America. The CDC concluded in 1997 that "the number of newly diagnosed cases of diabetes was almost 50 percent higher in 1994 than in 1980" and did not appear to be a result of the aging of the population.

In Europe, a 2000 report by the EURODIAB study group published in *The Lancet* evaluated the incidence rate of diabetes from 1989 to 1994 in Europe and Israel and found a 63 percent increase in children under 5 years old, a 31 percent increase in children five to nine years old; and a 24 percent increase in children 10 to 14 years old. They said "The rapid rate of increase in children under 5 years old is of particular concern." There is no explanation for why adult-onset diabetes, once extremely rare in children, has become more prevalent in American children in the past ten years.

In addition to an unexplained increase in autoimmune disorders during the past three decades, there also has been an unexplained increase in the numbers of minimally brain damaged children who are filling classrooms for the learning disabled in schools across America. A disability survey of US children under 17 years old published in the *Morbidity and Mortality Weekly Report* (August 25, 1995) stated that the "6 to 14 year old age group had the greatest number of disabled people." Learning disability led the way, occurring in nearly 30 percent of all disabled children. A total of 1,435,000 children were listed as learning disabled with another 1,446,000 children reported as suffering from speech disorders, mental retardation, mental or emotional disorders, epilepsy and autism.

The 1997 *Digest of Education Statistics* looked at children 0 to 21-years-old served in federally supported programs for the disabled between 1976 and 1996 and found that the numbers of children with specific learning disabilities more than tripled in those years; those with serious emotional disturbances nearly doubled; and the numbers of autistic children served rose from 5,000 in 1991-92 to 39,000 in 1995-1996 to produce a staggering 680 percent increase.

About five percent of US children (at least two million children) are estimated to have attention deficit disorder (ADD) or attention deficit hyperactivity disorder (ADHD). A 1990 survey of 2,400 practicing physicians showed there were about two million patient visits with the diagnoses of ADD. By 1994, ADD diagnoses had increased to 4.7 million, with 90 percent being prescribed drug therapy. By 1995, there were 1.5 million children taking Ritalin and a 2000 study reported that the number of two to four year olds taking prescription drugs like Ritalin and Prozac rose 50 percent between 1991 and 1995.

According to one NIH official, 40 percent of children diagnosed with ADHD have learning disabilities and "anywhere from 20 to 70 percent of children who have ADHD also have conduct disorder" often involving delinquent behavior. The growing numbers of children with an ADHD diagnosis is cause for concern because, as one researcher observed in an article in *JAMA* in 1998: "Adults with a history of attention deficit hyperactivity disorder appear to be over represented in the ranks of felons." This observation coincides with the evidence presented by medical historian Harris Coulter, Ph.D. in his 1990 book *Vaccination, Social Violence and Criminality*, where he draws parallels between the residual learning disabilities and hyperactive/abnormal behavior caused by complications of disease or vaccine-induced encephalitis and the hyperactive/abnormal behavior and learning disabilities being exhibited by more and more American children.

Many children with learning disabilities, ADHD and developmental delays exhibit signs of autoimmune dysfunction, with severe allergies to foods, drugs, and environmental toxins. This is particularly true for a brain disorder, autism, which is affecting more and more children in the US, Canada and Europe and has caused the most controversy in the vaccine safety debate.

### **Autism Numbers Soar**

The Autism Society of America (ASA) estimates that "more than one-half million people in the US today have autism or some form of pervasive developmental disorder," making autism one of the most common developmental disabilities. Autism is also the fastest growing developmental disability affecting children in the U.S.

A 1998 Maryland Special Education Census Data report revealed that the state experienced a 513 percent increase in autism between 1993 and 1998, while the general population in Maryland increased just seven percent from 1990 to 1998. Between 1992 and 1997, data from the 16<sup>th</sup> and 20<sup>th</sup> Annual Reports to Congress on the implementation of the Individuals with Disabilities Education Act (IDEA) showed a 300 percent increase in autistic children served under IDEA in 25 states.

In an April 1999 report, the state of California's Department of Developmental Services (DDS) found a 273 percent increase between 1987 and 1998 in the numbers of new children entering the DDS system with a professional diagnosis of autism. The report concluded that "the number of persons with autism grew markedly faster than the number of persons with other developmental disabilities (cerebral palsy, epilepsy and mental retardation) and "compared to characteristics of 11 years ago, the present population of persons with autism are younger (and) have a greater chance of exhibiting no or milder forms of mental retardation..."

In a report in April 2000, the CDC found the incidence of autism in Brick Township, New Jersey in 1998 was 1 in 150 children. In 2003, the state of California issued another report that revealed that during a 15 year period from 1987 to 2002, the number of new cases of autism increased by 634 percent while the number of other disabilities only increased between 57 and 79 percent. Between the years 1999 and 2002, the number of new autism cases entering the system nearly doubled. Autism, once rare (1 in 10, 000 births) is now the number one disability entering California's DDS system and is estimated to be occurring in 1 in 323 children. Because these latest figures only represent those cases which are professionally diagnosed as full spectrum autism and does not include milder forms of autism or those children born before 1997, the autism prevalence numbers for California may be closer to 1 in 150 children.

Although public health officials and doctors in the US, Canada and Europe are claiming that autism in children is not actually increasing but just appears to be increasing because of changes in diagnostic criteria, better diagnosis and better record keeping, parents of autistic children disagree. Rick Rollens, the father of an autistic son and co-founder of the M.I.N.D. Institute at the University of California-Davis, said "Anyone who knows anything about autism knows it can't be better diagnosis because you can't hide an autistic child. You can spot an autistic child from across an airport."

### **Conservative Institute of Medicine Weighs In**

Because the brain and immune systems develop at their most rapid rate in the first three years of life, it is a legitimate scientific question to ask whether artificial manipulation of the immature immune system with vaccines can cause permanent damage and death and could be contributing to an increase in immune mediated neurological and autoimmune dysfunction in children. Underlying the skepticism about the safety of national one-size-fits-all vaccine policies, which do not take into account biodiversity and genetic differences and justify vaccine casualties with the utilitarian "greater good" argument, is a basic challenge to the quality and quantity of the science which is used to under-pin mass vaccination policies.

When Congress passed the National Childhood Vaccine Injury Act of 1986, they included a mandate for the Institute of Medicine (IOM), National Academy of Sciences, to convene independent experts to examine the medical literature and gather other evidence to find out whether vaccines can or cannot cause permanent disability and death. Between 1991 and 2003, the IOM published reports which have been both praised and denounced by public health officials and parents alike.

But whatever the two sides have to say about the IOM reports, it is clear that one of the most conservative segments of the scientific community has looked at the evidence and concluded that, yes, vaccines can cause a range of autoimmune and brain dysfunction and there is a lot that is still unknown about vaccine side effects. And, like the National Childhood Vaccine Injury Act of 1986, this is the first "official" acknowledgement of that fact in the history of vaccination in the U.S.

In the 1991 and 1994 reports, IOM committees found a causal relationship between certain vaccines and autoimmune disorders such as acute and chronic arthritis, Guillain Barre syndrome (GBS), and thrombocytopenia (failure of blood to clot) as well as brain inflammation and encephalopathy (degenerative disease of the brain). Two live virus vaccines — oral polio (OPV) and measles — were found to cause vaccine strain viral infections that could end in death. Because either too few scientific studies had been conducted or the quality of the studies which were conducted were not good enough, the IOM could not conclude whether or not vaccines were involved in the development of many other brain and immune system disorders such as residual seizure disorders, aseptic meningitis, learning disabilities, attention deficit disorder, erythema multiforme (lesions of the skin or mucous membranes), or certain demyelinating diseases of the brain such as optic neuritis and transverse myelitis.

The 1991 IOM report concluded "In the course of its review, the committee found many gaps and limitations in knowledge bearing directly and indirectly on the safety of vaccines. Such shortcomings relate, for example, to pathologic mechanisms of specific infectious agents, the molecular basis of vaccine injury, and the natural history of conditions such as encephalopathy, mental retardation and chronic arthritis....many of the population based epidemiologic studies are too small or have inadequate lengths of follow-up to have a reasonable chance of detecting true adverse events, unless these effects are large or occur promptly and consistently after vaccination. If research capacity and accomplishment in this field are not improved, future reviews of vaccine safety will be similarly handicapped."

The 1994 IOM report again noted that "the lack of adequate data regarding many of the adverse events under study was of major concern to the committee. Presentations at public meetings indicated that many parents and physicians share this concern." The report added, "The committee was able to identify little information pertaining to why some individuals react adversely to vaccines when most do not. When it is clear that a vaccine can cause a specific adverse event, research should be encouraged to elucidate the factors that put certain people at risk for that adverse reaction."

In a report in 2002 issued by the IOM Immunization Safety Review Committee on vaccines and autoimmune dysfunction, the committee found that scientific evidence from epidemiological studies on whether allergy, including asthma, can be caused by multiple vaccination was conflicting and concluded the evidence "was inadequate to accept or reject a causal relationship." The committee found there was biological mechanism evidence that vaccines could increase the risk of immune dysfunction in some children that could lead to increased infections and allergy, including asthma. It stated that "the biological mechanism evidence regarding increased risk for infections is strong." The report added:

"The committee was unable to address the concern that repeated exposure of a susceptible child to multiple immunizations over the developmental period may also produce atypical or non-specific immune or nervous system injury that could lead to severe disability or death. There are no epidemiological studies that address this. Thus, the committee recognizes with some discomfort that

this report addresses only part of the overall set of concerns of some of those most wary about the safety of childhood immunizations."

### **Evidence that Diseases and Vaccines Adversely Affect Brain Function**

Inflammation of the brain (encephalitis, encephalomyelitis, encephalopathy) has been documented for more than 200 years in the medical literature to be caused by viral and bacterial infections as well as by vaccines containing altered viruses and bacteria. It is well known that smallpox infection and smallpox vaccine can both cause brain inflammation as can rabies and rabies vaccine.

It is widely accepted that pertussis or whooping cough can cause brain inflammation and permanent brain damage, with endotoxin and pertussis toxin in the *B. pertussis* bacteria responsible for most of it. In 1994, the IOM acknowledged that the whole cell pertussis vaccine in the DPT shot, which contains endotoxin and pertussis toxin, can cause both acute brain inflammation and chronic neurologic dysfunction in previously healthy children within seven days of receipt of DPT vaccine.

Measles virus infection has long been associated with demyelinating disorders and brain damage. In 1998, officials of the federal Vaccine Injury Compensation Program found that a causal relationship exists between live measles vaccine and encephalopathy after analyzing cases of children who received measles vaccine alone or in the combination MMR shot and, within 15 days of vaccination, suffered neurologic signs that progressed to death or mental regression, retardation, chronic seizures, motor and sensory deficits and movement disorders.

### **Evidence that Diseases and Vaccines Cause Immune Dysfunction**

In addition to brain inflammation, however, viral and bacterial diseases and viral and bacterial vaccines have been associated with the development of autoimmune dysfunction. In 1935, scientists investigating the neurological complications of rabies vaccine discovered they could deliberately induce brain inflammation in lab animals by injecting them with brain myelin, causing an autoimmune reaction whereby the animal develops antibodies to its own brain tissue, causing demyelination.

The autoimmune diseases, diabetes, multiple sclerosis and lupus, for example, involve chronic inflammation that causes tissue destruction including central nervous system damage. It is thought that these diseases may be triggered by an infection that activates autoreactive T-cells. And in individuals genetically susceptible to developing autoimmunity, chronic inflammation and/or autoantibodies may occur that selectively destroy organs in the body such as the brain.

The pertussis toxin has been shown in animal studies to provoke excess production of insulin by the pancreas and diabetes in mice. And from the earliest days of pertussis vaccine use, it has been associated with development of asthma in previously healthy children .

The primary complications for rubella disease and live rubella vaccine are autoimmune. There is evidence that persistent rubella viral infection in congenital rubella victims can cause diabetes. And chronic arthritis has been confirmed to be caused by both the disease and vaccine.

Since the late 1800's, the development of diabetes after mumps infection has been reported and there have been case reports of diabetes following mumps vaccination and after measles-mumps vaccination and MMR vaccination. In 2003, a study conducted by Barthelow Classen and David Carey Classen, published in the *Journal of Pediatric Endocrinology and Metabolism*, identified clusters of cases of type 1 diabetes mellitus, occurring in consistent temporal time periods after Hib vaccination, and it concluded that there are also clusters of cases of diabetes occurring 2-4 years after pertussis, MMR and BCG vaccination. The study data were also consistent with the occurrence of clusters following mumps infection.

A gastrointestinal disorder thought to be caused by infectious or immune mechanisms is Crohn's disease, which has been linked to measles infection and measles vaccine. Crohn's disease and ulcerative colitis, both thought to be autoimmune disorders, have also been reported to occur at a high rate in persons who had measles and mumps infections in the same year of life.

The virus that causes hepatitis B disease attacks the liver and can cause such severe joint pain, fatigue and weakness that the disease is sometimes mistaken for rheumatoid arthritis or lupus. Rare complications of hepatitis B disease include demyelinating disease, such as transverse myelitis and neuropathy.

Likewise, clinical symptoms that follow hepatitis B vaccine complications are similar to lupus or rheumatoid arthritis as well as optic neuritis and multiple sclerosis. GBS, chronic fatigue and vascular disorders have also been reported following hepatitis B vaccination. Researchers have also described CNS inflammation within 10 weeks of hepatitis B vaccination and concluded that, "The persistent inflammatory activity observed clinically and on MRI in these patients is comparable to that usually observed in multiple sclerosis," hypothesizing a triggering role of hepatitis B vaccination in CNS demyelination.

### **Asthma and Vaccines**

Asthma is an autoimmune disorder that tops the list of chronic respiratory diseases found in children. Although public health officials attribute the recorded increases in asthma to better case diagnosis, more air pollution both indoors and outdoors and smoking, some scientists find evidence that vaccination and lack of contagious infectious diseases in early childhood may later encourage the development of asthma and other allergic conditions.

In 1996, the British medical journal, *The Lancet*, published a study that noted that the incidence of early childhood diseases in Britain had fallen in the 20<sup>th</sup> century while those allergic diseases such as asthma, hay fever and eczema rose sharply. The researchers hypothesized that certain childhood infections, especially measles, may protect against allergy.

The authors of the 1997 *Science* article "Asthma: An Epidemic in the Absence of Infection?" concluded that "childhood infections may, therefore, paradoxically protect against asthma." And the authors of a study in a 1997 article in *Epidemiology* concluded that "it is theoretically possible that immunization may contribute to the development of allergic disease," including asthma.

In a 1997 issue of *Epidemiology*, New Zealand researchers reported that of 1,265 New Zealanders born in 1977, 23 received no childhood vaccinations and none suffered childhood asthma. Among the 1,242 who got DPT and polio shots, 23 percent later had episodes of asthma, 23 percent had asthma consultations and 30 percent had consultations for other allergic illness.

In a 2000 study, researchers, in reviewing data from the National Center for Health Statistics from 1988 to 1994 and comparing vaccinated to unvaccinated children, found that a child who received DPT or tetanus vaccination was 50 percent more likely to experience severe allergic reactions, more than 80 percent more likely to experience sinusitis and twice as likely to experience asthma as those children who were not vaccinated. The authors concluded that "asthma and other allergic hypersensitivity reactions and related symptoms may be caused, in part, by the delayed effects of DPT or tetanus vaccination."

### **Autism and Vaccines**

The dramatic rise in the numbers of cases of autism in the past few decades, particularly since the early 1980s, has been increasingly linked to vaccination in recent years, as it has become more evident that autism has a biological and not a psychological basis. The medical literature identified only a handful of autism cases in the 1940s. After the DPT vaccine became widely used in the 1950s

and the new live virus measles vaccine was in routine use after 1965, the numbers of autistic children began to grow.

By 1979, the combination live-virus MMR vaccine was added to the routine child vaccination schedule and given to children at 12 to 15 months of age while federal grants were given to states to provide free DPT, live oral polio and MMR vaccines to children in public health clinics. In California, where cases of autism have been monitored since 1970, there was a steep and steady rise in the numbers of autism cases beginning in the early 1980s.

The old theory that children were made autistic because their mothers were "cold" and did not provide enough nurturing was discredited in 1964 by the pioneering autism researcher, Bernard Rimland, Ph.D. The fact that autism appears to be a biological disorder has only slowly gained acceptance with the recognition that autistic children are suffering a wide range of immune and brain system dysfunction. In addition to classic autistic behaviors such as spinning, rocking, flapping, lack of eye contact and speech, many autistic children today have gastrointestinal disorders, seizures, learning disabilities and severe allergies.

The connection between vaccination and autism was first reported 18 years ago in *DPT: A Shot in the Dark* (which I co-authored with Harris Coulter), but today the subject of autism and vaccines has become the most controversial vaccine safety topic debated in the pages of medical journals, on broadcasts and in print journalism reports, in congressional hearings and in homes of parents of autistic children. DPT vaccine-induced autism is thought to follow post-vaccine brain inflammation that one 1981 British study (the National Childhood Encephalopathy Study) estimated occurs after 1 in 110,000 DPT shots. In the U.S. several awards for DPT vaccine-induced autism have been made in the federal Vaccine Injury Compensation Program (VICP).

However, most of the arguments about the causal relationship between vaccines and autism have focused on the live MMR vaccine as well as on inactivated vaccines that have contained a mercury preservative, thimerosal.

In 1998, an unsuspecting young British gastroenterologist suddenly found himself in the midst of a hurricane for discovering a possible connection between the MMR vaccine and autism. Andrew Wakefield, M.D. and 13 colleagues published a report in the February 27, 1998 issue of *The Lancet* about a new syndrome involving inflammatory bowel disease and autism in children. Eight out of 12 normal children who developed severe intestinal disorders soon after an MMR vaccination also became autistic. Previously five of those eight children had reacted adversely to vaccinations.

The team of British scientists, who had inadvertently stumbled upon the connection while studying Crohn's disease and other inflammatory bowel dysfunction in children, emphasized that they had not proved a cause and effect relationship. They called for more studies to investigate whether persistent viral infection, either from natural disease or live virus vaccines, can lead to central nervous system damage in some children that takes the form of autism.

Nevertheless, in the same issue of *The Lancet*, CDC officials Robert Chen, MD and Frank DeStefano, MD charged in an editorial that, "vaccine safety concerns such as that reported by Wakefield and colleagues may snowball" when the public and the media "confuse association with causality and shun immunization." Other CDC officials discounted the study's importance, saying the children's health problems were "coincidental" and not caused by vaccination.

Soon after, a Reuter's newswire story quoted Johns Hopkins Neal Halsey saying it was "highly inappropriate" for Wakefield and his colleagues to discuss a possible connection between the children's health problems and measles or MMR vaccines. Wakefield was called before the Medical Research Council in the U.K. where British, US and WHO health officials criticized his report for unnecessarily frightening the public.

Undeterred, Wakefield subsequently published a study providing evidence for the presence of measles virus in the intestines of children suffering from autism and intestinal bowel disorders, while not finding evidence for measles virus in normal, healthy children. He continued to maintain that children with a pre-existing immune abnormality may be predisposed to sequestering the measles virus in the gut and that the MMR vaccine prompts them to develop autoimmunity leading to immune mediated CNS damage.

In 2001, the IOM Immunization Safety Review Committee examined the Wakefield hypothesis and concluded that "the evidence favors rejection of the causal relationship at the population level between MMR and vaccine and autistic spectrum disorders," but the committee also stated that "the proposed biological models linking MMR vaccination to autism spectrum disorders, although far from established, are nevertheless not disproved." The committee called for further scientific research into the occurrence of autism in children following MMR vaccination.

In 2003, Utah State University researcher Vijendra Singh published a serologic study in *Pediatric Neurology* reporting that measles antibody was significantly higher in autistic children compared with normal children and the antibody was directed against a protein. He hypothesized that autistic children have a hyperimmune response to measles virus which, in the absence of wild type measles infection, might be a sign of an abnormal immune reaction to measles vaccine strain virus or virus reactivation.

Shortly after Wakefield and his colleagues published initial evidence for an association between MMR vaccine and autism, in 1999 the U.S. Food and Drug Administration (FDA) and the Environmental Protection Agency (EPA) directed vaccine manufacturers to remove the mercury preservative, thimerosal, from childhood vaccines. EPA and FDA officials issued their directive in response to federal legislation requiring the evaluation of products containing toxins, such as mercury.

An analysis of mercury levels in childhood vaccines found that the total amount of mercury children were exposed to in routinely given vaccines (DPT, DTaP, Hib, hepatitis B) exceeded EPA toxic exposure guidelines. Mercury is a known neurotoxin which can cross the placenta and blood brain barrier and concentrate in the blood and brain but can also affect the immune system, kidneys and lungs. A pregnant woman's exposure to high levels of mercury has been shown to cause brain damage in the fetus.

There was special concern about mercury in childhood vaccines because, as of 1991, the CDC and American Academy of Pediatrics (AAP) had recommended that all newborn babies receive their first hepatitis B vaccine at 12 hours of age and again at one month of age. Hepatitis B vaccine, along with DPT, DTaP and Hib vaccines given at two months, four months and six months of age all contained mercury. By the end of 2001, all but trace amounts of thimerosal had been removed from DPT, DTaP, Hib and hepatitis B vaccines as manufacturers moved to package these vaccines in single dose vials that did not require a preservative (thimerosal is still present in DT and inactivated flu vaccine as well as certain combination DTaP-Hib and hepatitis B vaccines).

During the past four years, many parents with autistic children have become convinced that their children are mercury poisoned including those parents who founded SAFEMINDS. Scientists such as Boyd Haley, Chairman, Department of Chemistry, University of Kentucky, have given expert testimony in support of those concerns during investigative hearings held by Congressman Dan Burton (R-IN) in the U.S. House Government Reform Committee.

In 2001, the IOM Immunization Safety Review Committee issued a report that found the hypothesis that exposure to thimerosal-containing vaccines "is not established" but is "biologically plausible," and concluded that the evidence is inadequate to accept or reject a causal relationship between exposure to thimerosal from vaccines and the neurodevelopmental disorders of autism, ADHD and speech and language delay." The report called for removal of thimerosal from childhood vaccines and replacement of existing stocks of thimerosal containing vaccines with mercury-free vaccines.

An attempt by the vaccine industry to insert a rider in the Homeland Security Bill in late 2002, which would have protected vaccine manufacturers from lawsuits for harm caused by toxic additives and components of vaccines, such as thimerosal, further convinced parents that thimerosal is a cause of autism. The rider was eventually removed from the legislation, but parents of autistic children continue to be frustrated in their efforts to obtain recognition of thimerosal-induced autism as they seek compensation in the tort system and in the federal vaccine injury compensation program (VICP) for their children.

Evidence has been accumulating that suggests some children may not be able to excrete mercury from the body as efficiently as other children. In 2003, one study reported that urinary mercury concentrations were significantly higher in children with autistic spectrum disorders than in normal controls. The authors concluded that "data from this study, along with emerging epidemiologic data showing a link between increasing mercury doses from childhood vaccines and childhood neurodevelopment disorders, increases the likelihood that mercury is one of the main factors leading to the large increases in the rate of autism and other neurodevelopment disorders."

### **Autoimmunity Family History and Autism**

The significance of a family history of autoimmunity and autism was highlighted in a 1999 study published in the *Journal of Child Neurology* which found a statistically significant correlation between a family history of autoimmune disorders and autism. When comparing the medical histories of families of 61 autistic patients and 46 healthy controls, the authors discovered "that the subjects who reported two or more family members with autoimmune disorders were twice as likely to have autism, those with at least three family members with autoimmune disorders were 5.5 times more likely to have autism, and those whose mothers had autoimmune disorders were 8.8 times more likely to be affected."

The researchers added "the percentage of family members with adult rheumatoid arthritis, systemic lupus and the category of connective tissue autoimmune disorders were greater in the autism group than in controls and approached statistical significance in these cases." They suggested that perhaps "individuals with autism inherit a genetic predisposition for autoimmunity that, in conjunction with medical triggers or other environmental factors, results in developmental and neurologic pathology."

### **Vaccines and the Law**

If adverse responses to vaccination are under genetic control, then laws requiring vaccination are a de facto state-enforced selection and sacrifice of the genetically susceptible. Yet, refusal to vaccinate one's children with every mandated vaccine in the U.S. can result in denial of an education, including enrollment in day care, elementary school, high school, college, and graduate school; denial of health insurance; denial of employment; and threatened denial of government benefits for poor children, including food and medical care. In addition, parents who don't comply with vaccination laws have been charged with child medical neglect and threatened with having their children taken from them. Parents of children, even acutely ill children, are being thrown out of pediatrician's offices in Texas and other states if the parents attempt to make independent vaccine choices for their children.

All 50 states provide a medical exemption to vaccination laws that doctors licensed to prescribe drugs can write. All but two states (West Virginia and Mississippi) allow exemptions for religious beliefs, but some states require that parents belong to a religion that has a written tenet opposing vaccination, although several state Supreme Courts have found this requirement unconstitutional. Some 18 states provide for philosophical, personal belief or conscientious belief exemption, but less than 1 percent of all children in the US are exempted from vaccination for any reason.

Although American vaccine laws fall under state, rather than federal, jurisdiction, as soon as the CDC recommends a new vaccine for "universal use" in children, state health officials automatically make it mandatory. So, while state health officials only required children to show proof of one smallpox

vaccination to enter school in 1949, by 2003 most states required children to be injected with 34 doses of 10 vaccines.

### **Tracking Vaccines to enforce compliance**

To encourage high vaccination rates, federal health officials give grants and other financial incentives to state health and education agencies, or withhold them. In 1993, Congress authorized more than \$400 million for states that enforced mandatory vaccination by using social security numbers to track children from birth. Simultaneously, a grant program rewards state health departments with up to \$100 for each fully vaccinated child.

The government eventually plans to link state vaccine tracking systems together to create a government operated electronic database monitoring everyone's medical records, including vaccination status, from birth. (One federal proposal would link a national ID "smartcard" to a driver's license and health care or a job.) Individual legislators at both the state and federal levels, have already proposed tax penalties for citizens who don't fully vaccinate their children.

A number of private companies and organizations are already working with governments around the world to ensure "the integration and harmonization of immunization registries" through the promotion, standardization, and acceptance of computerized patient records systems that would monitor the health status of every child. The Children's Vaccine Initiative (CVI) launched in 1990 at the World Summit for Children in New York City, set a goal to develop global strategies for "the development and utilization" of vaccines by all the world's children. CVI received money from the United Nation's Children's Fund, the United Nations Development Program, the World Bank, WHO and the Rockefeller Foundation and major vaccine manufacturers. In 1994, CDC health officials developed the National Vaccine Plan for the U.S. which "provides a framework in which diverse domestic and international, public and private sector activities in immunization and vaccine development can be effectively coordinated."

### **HIV and Sexually Transmitted Disease Vaccines for Children**

In a February 12, 1997 meeting of the CDC's Advisory Committee on Immunization Practices, committee member Neal Halsey reminded HIV vaccine researchers that the government plans to target preteens for universal application of an HIV vaccine. Halsey told them "one of the things that's happened in the past with vaccines is that sometimes the manufacturers have developed them and tested them primarily in an age group or a population which may not be the final target population that this committee has considered....We really see age 11 to 12 as the target for introduction of vaccines for prevention of sexually transmitted diseases....It would be nice if there were studies that were planned in parallel when you move another step in the direction of actually having a candidate [HIV] vaccine, realizing where we think we would want to use universal application of such a [HIV] vaccine."

But there are other plans to target adolescents for vaccines being developed for genital herpes, papillomaviruses that cause genital warts, and cytomegalovirus, all which are sexually transmitted. A spokesperson for the National Institute of Allergy and Infectious Diseases, which is sponsoring clinical trials of a herpes vaccine, was quoted as saying "Parents will have to take their daughters in to the pediatricians when they're little girls to get them protected against sexually transmitted disease."

Vaccines for sexually transmitted diseases are not the only vaccines that will target adolescents. In 2003, researchers announced development of anti-smoking and anti-cocaine use vaccines but admitted there might be some resistance by parents to accepting these lifestyle vaccines for their children.

### **Getting Vaccinated in America to Vaccinate the World**

As public health officials increasingly define disease control in global, rather than national, terms, mass vaccination proponents and vaccine makers must find ways to finance delivery of newer and more expensive vaccines to poor countries. They accomplish this by first making the vaccinations mandatory in rich countries, as HIV vaccine developer Stanley Plotkin, M.D., of Pasteur Merieux Connaught, explained in 1996: "The keystone of the [global mass vaccination] system is that the research costs [of drug companies] are recouped in North America and Europe, and the vaccines are sold in the developing world at much, much lower margins...The relatively high rate of childhood vaccination seen lately in most parts of the world is the result of that system."

In 1998, the CDC illustrated how this funding formula works by recommending that all American babies under six months receive three doses of rotavirus vaccine for diarrhea. Although a serious health problem in the Third World, where more than 800,000 babies lacking adequate nutrition or health care die from dehydration caused by severe diarrhea every year, most American babies recover from bouts with rotavirus and are left with permanent immunity. About 20 to 40 babies die of rotavirus infection in the US every year. By the summer of 1999, the rotavirus vaccine was pulled off the US market after it was discovered that babies were being injured and dying from bowel blockages following rotavirus vaccination.

### **Vaccine production problems and new epidemics**

The rotavirus vaccine, which cost \$40 a shot, was the first rhesus-human reassortment vaccine, created by co-cultivating rhesus monkey rotavirus strains with human rotavirus strains to create a genetic human-monkey hybrid strain of rotavirus. This production process, while more sophisticated, recalls the use of rhesus monkeys to produce the original Salk polio vaccine.

In the rush to put a polio vaccine on the market in 1955, polio vaccine pioneer Jonas Salk unknowingly used rhesus monkey kidney tissues contaminated with monkey viruses. By 1960, an NIH scientist, Bernice Eddy, discovered that rhesus monkey kidney cells used to make the Salk polio vaccine and experimental oral polio vaccines could cause cancer when injected into lab animals. Later that year the cancer causing virus in the rhesus monkey kidney cells was identified as SV40 or simian virus 40, the 40<sup>th</sup> monkey virus to be discovered.

Unfortunately, the American people were not told the truth about this in 1960. The SV40 contaminated stocks of Salk polio vaccine were never withdrawn from the market but continued to be given to American children until early 1963 with full knowledge of federal health agencies.

Between 1955 and early 1963, nearly 100 million American children had been given polio vaccines contaminated with the monkey virus, SV40.. Today, US health officials admit that the Salk polio vaccine was contaminated with SV40 and that SV40 has been proven to cause cancer in animals. At a conference on SV40 and human cancers held by the National Institutes of Health in 1997, there was no disagreement among both government and non-government scientists about these two facts. The only disagreement was whether SV40 was actually being identified in the cancerous tumors of children and adults alive today and, if it was, whether the monkey virus was in fact responsible for their cancer. Non-government scientists working in independent labs around the world said, yes." But the scientists connected with the US government said "no."

Highly credentialed non-government scientists continue to identify SV40 in human brain and lung cancers and are finding that SV40 is also associated with bone cancers and Non-Hodgkins Lymphomas. And in a report published in 2001 on SV40 and cancer, the Institute of Medicine stated that "in light of the biological evidence supporting the theory that SV40 contamination of polio vaccines could contribute to human cancers, the committee recommends continued health attention in the form of policy analysis, communication and targeted biological research."

At a September 10, 2003 investigative hearing of the U.S. House Subcommittee on Human Rights and Wellness chaired by Congressman Dan Burton, testimony was provided by attorney Stanley Kops

that the Salk vaccine was not likely the only vaccine contaminated with SV40 and used by millions of American children. Since 1963, the vaccine manufacturer and federal health agencies have assured the world that, while the Salk vaccine was made using the SV40 infected rhesus monkey kidney tissues, the oral polio vaccine used after 1963 was made using African Green monkeys, which are rarely infected with SV40. The vaccine manufacturer and government health officials have insisted that the switch from rhesus monkey to African Green, as well as testing protocols to detect SV40, prevented SV40 from contaminating oral polio vaccine after 1963.

At the hearing, Kops presented internal vaccine company memos and federal agency documents suggesting that (1) the original seed stocks of oral polio vaccine were made using the rhesus monkey and were contaminated with SV40; (2) the major oral polio vaccine manufacturer did not adequately test their master seed stocks which reportedly contained SV40 but used them to produce vaccine released for use by American children from the 1960's through the 1990's; and (3) federal regulatory agencies either did not know or knew and did not do anything about evidence that SV40 contaminated oral polio vaccine was released for use by the public from the 1960's through the 1990's.

If SV40-contaminated rhesus monkeys were used to produce original OPV seed stocks, and if these seed stocks were used to produce oral polio vaccine that was swallowed by American children through the 1990's, and if SV40 does cause human brain, lung and bone cancers, then this could explain why children today, who were not born before 1963 and never got the SV40 contaminated Salk vaccines, are now sick and dying from cancerous tumors containing DNA from a monkey virus that was in those vaccines. Pediatric brain cancer, once rare, rose during the past few decades according to the National Cancer Institute. But it is unknown how many of these children had or have SV40 in their brain tumors because nobody checks.

The precedent that has been set by federal health agencies allowing SV40 to contaminate polio vaccine given to millions of children may be influencing how new vaccines are being created. Transcripts of meetings in 1998, 2000 and 2001 of the FDA Vaccines and Related Biological Products Advisory Committee which dealt with adventitious agent contamination of vaccines, reveals that vaccine manufacturers are asking the FDA for permission to use cells from human and animal cancer tumors — cancer cells — to make HIV and other viral vaccines in the future that would be used on a mass basis. There has been a federal ban on the use of cancer cells to produce vaccines since 1954 but active consideration is being given to lifting that ban despite the acknowledged risks of contamination with adventitious agents, including residual DNA and RNA.

There is frank admission that the limitations of technology and lack of scientific knowledge means there can be no guarantee that vaccine will not be contaminated with substances that could prove harmful to humans one day. Nevertheless, there are plans to set allowable thresholds for adventitious agent contamination of vaccines.

## **A Brave New World**

In 1997, CDC official Walter Orenstein, M.D., testifying before the US Congress, painted a picture of the future in his annual appeal for more vaccine funding. "On the horizon are vaccine technologies that would have been considered science fiction just a decade ago but are now reported at scientific meetings," he said. "Snippets of synthetic DNA have worked as experimental vaccines in animals. Edible plants have been bioengineered to become vaccine factories...Vaccines have been enclosed in microscopic capsules, permitting them to be released slowly over time."

Several years ago, vaccine researchers held a press conference in Washington, D.C. to announce research to create a genetically engineered "supervaccine" that will be given orally at birth. This supervaccine — dubbed by one researcher as the "Holy Grail" — will contain raw DNA from 20 to 30 viruses, parasites, and bacteria that will be inserted directly into the cells of babies. The vaccine will be time-released over several months. Disease organisms scheduled to be included in the

supervaccine are pneumonia (three viruses), AIDS (two viruses); dengue hemorrhagic fever (four viruses), diarrheal disease (several viruses and bacteria), measles, meningitis (six viruses and bacteria), polio (three viruses), schistosomiasis (one parasite), tuberculosis, typhoid fever and pertussis.

In all, vaccine manufacturers and US government researchers are developing more than 150 different viral and bacterial vaccines. A live virus flu vaccine that will be squirted up the nose has been licensed and will target all healthy children and adults between the ages of 5 and 49 in the coming flu season. Adhesive skin patch vaccines and high technology jet guns will someday deliver vaccines designed to prevent strep throat, asthma, stomach ulcers, tooth decay, cancer and the common cold. If the microbe fighters have their way, the "Brave New World" of the future will truly be infection free.

Or will it? In 1993, scientists at the American Society of Microbiology annual meeting reported that diseases such as tuberculosis and meningitis have become resistant to antibiotics because of their overuse in the past decades. One study shows that pediatricians are prescribing antibiotics for 44 percent of children with common colds. In 1998, evidence of penicillin-resistant strep bacteria caused worry that more people will die from severe pneumonia, bacteremia and meningitis. That same year a government report warned that the overuse of antibiotics in animals, which transfer microbes from livestock to humans through the food chain, is producing resistant bacteria, including antibiotic resistant salmonella, enterococci and *E. coli*. Health officials warn food producers that antibiotics should never substitute for "inadequate hygiene."

Now there are signs that viruses and bacteria, eager to survive, may be outsmarting vaccines. A 1998 study published in the *British Medical Journal* found that *B. pertussis* infection is occurring in vaccinated populations in the Netherlands, Norway and Denmark despite vaccination rates as high as 96 percent. Among other causes of the whooping cough outbreaks, scientists have found an increasing incidence of *B. pertussis* with a mutated surface protein.

In 1998, a CDC study identified eight distinct genotypes of a wild-type measles virus in populations around the world. In January of 1999, the CDC reported a 1998 measles outbreak in Alaska in which 51 percent of the children had received one or more doses of measles vaccine. Will health officials add yet another dose of measles vaccine, as they did during measles outbreaks in the late 1980's when they realized that one dose failed to do the job?

While the global village gets smaller and smaller, US health officials warn parents and the media that terrible diseases killing children in the Third World are "just a plane ride away." The climate of fear that has been created post September 11, 2001, saw government health officials attempt to convince the American public that the most reactive vaccine ever used by humans — the live virus smallpox vaccine — should again be used by everyone to prepare for the possibility of a smallpox bioterrorist attack. Ironically, it was the American health care workers, who give vaccines, who took a look at smallpox vaccine risks and said "No thanks" to that plan.

The microbe hunters, who want us all to believe as they do that vaccines are the weapons we must all use to insure the health and well being of mankind, are so far winning the political battle for the hearts and minds of the most influential segments of our society. And yet, the parents and doctors questioning their wisdom and their authority are making their pleas for thoughtful reconsideration of the global mass vaccination plan heard in many forums.

"What we forget is that millions of years of evolution have taken place on this planet, and up until the last 100 years, humans have lived in relative harmony with microbes. Yes, there have been epidemic infectious diseases in history, but they have always resolved themselves," said Richard Moscovitz, M.D. "I don't think there is any real appreciation for what we may be doing by using so many vaccines to try to eradicate so many organisms."

If we stay the present course, will mankind be free from infectious disease but crippled by chronic disease? Will eradication of feared diseases, such as AIDS, through mass vaccination be one of man's greatest triumphs or will we live in fear of deadly mutations of microbes that have outsmarted man's attempt to eradicate them? We may look back at the crossroads we are at today and wish we had decided to make peace with nature instead of trying to dominate it.

Whatever government and industry decide to do, public support for mass vaccination programs will continue to erode if public policy continues to precede science and individual health is dismissed as less important than public health. Doctors, who enforce vaccination without allowing informed consent and insist that some may be sacrificed for the greater good, will continue to lose the faith and trust of the people. Vaccines will come to be associated with feelings of fear and harm instead of feelings of safety and protection as the vaccine safety debate becomes more polarized and citizens calling for forced vaccination are pitted against those calling for freedom of choice.

Perhaps the peace we need to make is not as much with nature, as with ourselves.