

Vaccinations: how about some facts for a change?

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The greater the ignorance, the greater the dogmatism.
Sir William Osler, *Chauvinism in Medicine*, 1902

The discussion of vaccines is one that, more often than not, evokes some rather spirited disagreements within the chiropractic community. Nearly every issue of every chiropractic journal or newspaper, has something – a letter, an article, an advertisement – discussing vaccines, and almost never in a positive manner. Over the past several years we’ve heard allegations of the polio vaccine

leading to lymphoma and causing the AIDS epidemic, thimerosal preservatives leading to developmental disabilities, and the MMR vaccine leading to Crohn’s disease and autism. Some of these discussions have raised legitimate and thoughtful points; some have simply relied upon emotional rhetoric and haven’t troubled themselves with facts. Not troubling ourselves with facts may well have been acceptable in the time of chiropractic’s infancy – in fact, it would have been more the rule of that era than the exception – but now, I would submit, the time has come to cast off the cloak of dogma and enter the Twentieth Century so that we, as a profession, may then move on forward into the Twenty-First.

An examination of how chiropractic, as a profession, has come to be so strongly associated with the anti-vaccination movement has been well documented in previous papers, and in much more eloquent terms than I could possibly muster.^{1,2,3} From our humble beginnings as the illegitimate love-child of a magnetic healer, the chiropractic profession has had a tendency to be distrustful of all things medical. This distrust was fostered – some might say to the point of inflammation – by “The Developer,” BJ Palmer, who took the reigns of chiropractic while the profession was still a toddler, and BJ little more than an adolescent. At the wizened age of twenty, the man who nearly idolized PT Barnum was well on his way to emulating the ringmaster.^{4,5}

BJ Palmer outright and rather strenuously rejected the entire paradigm of the germ theory, which, in his defense, was little more than that – a theory – at the turn of the Twentieth Century. He had a much more colorful and, perhaps for the era, no less reasonable explanation for ill health:

“Chiropractors have found in every disease that is supposed to be contagious, *a cause in the spine*. In the spinal column we *will* find a subluxation that corresponds to every type of disease. If we had one hundred cases of small-pox, I can prove

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to you where, in one, you *will* find a subluxation and you will find the *same conditions* in the other ninety-nine. I adjust one and return his functions to normal. ... There is no contagious disease. ... There is no infection. ... There is a cause internal to man that makes of his body in a certain spot, more or less a breeding ground [for microbes]. It is a place where they can multiply, propagate, and then because they become so many they are classed as a cause.”⁶

Very early on, BJ and his followers grasped hold of the tenet that drugs were poisons, vile substances that interfered with the life force of natural healing that was innate to the body. Vaccines, then, were among the worst forms of poison, for their entire purpose calls for them to be given to otherwise healthy individuals with the intent of preventing, not treating, disease. All that was truly needed instead, BJ preached, was for a chiropractor of the right philosophy to adjust the spine, and disease would cease to exist.

In all fairness, the two other predominant paradigms of the time were allopathy and homeopathy, both based upon their own contemporary myths and wishful fancies, and both with their own well-documented spectrum of disappointing failures. The major difference between the two seemed to be that with homeopathy one died of the disease, whereas with allopathy, one died of the cure.

Given the naivete of the times, chiropractic had every bit as much right to make its extraordinary claims as did homeopathy, allopathy or osteopathy. The rigors of the scientific method were still rather sparse throughout all of medicine which, at the time, was struggling toward a scientific basis but still based mainly upon tradition. The tradition of spinal manipulation, or bonesetting, was closely on par with that of the use of *materia medica*. There are cave drawings in France, after all, of spinal manipulation that seem to date from the Seventeenth Century BC. There are pictographs of bonesetting found in the pyramids. Hippocrates, the Father of Medicine, is quoted as having said, “Get knowledge of the spine, for this is the requisite of many diseases.”⁷ He also authored the text, “Setting Joints by Leverage.” And no lesser a medical monolith than Sir James Paget had endorsed spinal manipulation.⁸

So I’m willing to stipulate that when chiropractic was finding its feet, it was not all that far behind the other health paradigms in its scientific basis (or lack thereof).

Opposing vaccination programs on that end of things – before there was the benefit of epidemiology to prove or disprove their efficacy and safety – can easily be rationalized. I will submit, however, that to hold to the tenet of opposition to vaccination on this end, now with the benefit of over a hundred years of data that clearly shows both benefit and safety, is anti-scientific quackery. Surely we as a profession have grown beyond that, haven’t we? Surely we now base our beliefs and our teachings and our education to the public upon facts that have withstood the test of scientific scrutiny. We stand on the threshold between complementary and alternative medicine and mainstream medicine, after all. Unfortunately, Grod and his colleagues recently found that while we might, in fact, be standing on that threshold, we are still far too mired in our anti-scientific past to yet pass through that door. Even our larger state and national associations are still putting their names to dogma dressed up to try and sound like science.⁹ Chiropractic as a profession is still far too willing to lend its name to pamphlets and flyers that smack far more of religion than they do of science.

That there remains a significant portion of the chiropractic profession opposed to vaccinations is not exactly a secret, nor should it be a surprise. The International Chiropractors Association (ICA) and the American Chiropractic Association (ACA) have, in recent years, both capitulated to the more dogmatic corner of the profession. The ACA in particular has watered down its official statement from something that was originally a lukewarm almost-endorsement, acknowledging that vaccines had been shown to be cost-effective and clinically practical from a public health standpoint, to their current officially published policy that speaks only of the adverse effects and risks of vaccines.¹⁰ The World Chiropractic Association (WCA), on its webpage openly endorses an “Exciting new book [that] takes on the vaccine industry.”¹¹ The book in question is a novel, by a former physician. WCA, it seems, has seen fit to elevate this work of fiction to the level of an expose. The book, according to the WCA website, is endorsed by the National Vaccine Information Center of Vienna, Virginia, an organization well-known for its unflinching anti-vaccine stance (as well as its ability to be less than scrupulous with scientific data that fail to fit that anti-vaccine agenda). The World Federation of Chiropractic (WFC) takes public health stances on fluorocarbons and vehicle restraints, but makes

no mention that I could find on vaccines. This, then, leaves the Canadian Chiropractic Association (CCA) to stand alone in North America as the only major chiropractic organization to say anything positive about immunizations.

“The CCA accepts vaccination as a cost-effective and clinically efficient public health preventive procedure for certain viral and microbial diseases, as demonstrated by the scientific community.”¹²

Cost-effective and clinically efficient. Let’s take a look at some of the clinical efficiency.

Between 1900 and 1904, just prior to the advent of a smallpox vaccination program in the United States, there were 48,164 cases of smallpox in the US alone. There have been no cases in the United States since 1950, and none in the world since 1977.

In the early 1920’s, just prior to the use of the diphtheria vaccine, the United States averaged 175,885 cases of diphtheria per year. Case mortality for diphtheria often approached ten percent. In 1998, there was only one documented case in the United States.

In the early 1950’s, the United States averaged 16,316 cases of paralytic polio per year. With the advent of first the Salk and then the Sabin vaccines, we have now been polio-free in North America for several years, and the end of polio on planet Earth is likely only a few more years away.¹³

Are there adverse reactions to vaccines? In some cases, unfortunately, yes. The whole cell pertussis vaccine proved to have significant neurotoxicity in a very small percentage of patients. For those patients, yes, the vaccine was nothing short of a tragedy. Encephalopathy occurred in approximately twenty-one cases out of every two million children vaccinated. A frightening statistic, and one quoted – or usually misquoted – quite often. The accompanying statistic that vaccination adversaries never seem to want to mention is that the incidence of encephalopathy with the whole cell pertussis vaccine was approximately one one-thousandth that of the incidence of death from the native disease itself. When the whole cell vaccine was all we had, public health officials still felt that, as a population, this risk was one worth taking. Now, however, the whole cell vaccine has been replaced by the acellular vaccine. To date, there have been no documented cases of

encephalopathy from the acellular pertussis vaccine. None. Many people like to rely upon Harris’ and Coulter’s *A Shot in the Dark* for their “data” on the DPT shot. The simple fact is, this book was out of date and its “findings” unfounded when the book was published. It is ever more so now that the vaccine has been changed.

Some of the most strenuous criticism of vaccines has been based upon temporality being assumed to equal causality. Let’s look for a moment at the “Diphtheria-Pertussis-Tetanus Toxoid vaccine (DPT) as a cause of Sudden Infant Death Syndrome (SIDS)” argument.

In the early 1970’s it was noticed that there was a temporal association between the DPT vaccinations and Sudden Infant Death Syndrome. In response to this possibility, before the data could be more thoroughly examined, three countries, Britain, Sweden and Japan, cut back the use of pertussis vaccine out of fear of the possible consequences. The effect was dramatic and immediate. In Great Britain, a drop in pertussis vaccination in 1974 was followed by an epidemic of more than 100,000 cases of pertussis and 36 deaths by 1978. In Japan, a drop in vaccination rates from 70% to 20%–40% led to a jump in pertussis from 393 cases and no deaths in 1974 to 13,000 cases and 41 deaths in 1979. In Sweden, the annual incidence rate of pertussis per 100,000 children 0–6 years of age increased from 700 cases in 1981 to 3,200 cases in 1985.¹⁴

Is there a temporal relationship? On the surface, one could say yes. But let’s be fair, something that many anti-vaccination activists choose not to be. The American Academy of Pediatrics (AAP) advises DTaP (formerly DPT) vaccines be given at two, four and six months of age.¹⁵ The definition of SIDS is “the sudden death of an infant under one year of age which remains unexplained after a thorough case investigation.¹⁶...” Though any infant death under the age of one year qualifies as SIDS, the most common age for SIDS to occur is between two and six months. Therefore, it would actually be unlikely for there *not* to be a temporal association between SIDS and the vaccine. Let’s skip over the temporal association alone, however, and look at data. Well-controlled studies conducted during the 1980’s showed rather conclusively that the number of SIDS deaths temporally associated with DPT vaccination was well within the range expected to occur by chance alone and, in fact, several of the studies showed that children who had recently received a DPT

shot were actually *less* likely to die from SIDS.^{17,18,19,20}

How about the Measles Mumps and Rubella vaccine (MMR) and autism? In 1998, Dr. Wakefield at the Royal Free College in London developed a hypothesis that he felt linked the MMR vaccine with the apparent increasing incidence of autism. The core of Dr Wakefield's case was that, in some children, the MMR vaccine provokes inflammation of the small and large bowel – enterocolitis – which then causes toxins to leak into the blood stream. These toxins then pass into the brain, producing damage that is manifested as the clinical picture of autism.²¹

Great theory, but no one could reproduce it. In fact, many researchers who subsequently studied Wakefield's original data (based upon the study of twelve children, it should be noted, one less than the number of researchers listed in the initial paper) couldn't reproduce the results. The mere possibility that we, as the intended guardians of the public health, might be responsible for these additional cases of autism again caused much concern within the medical community, and new studies were launched. Perhaps the most definitive and damning to Wakefield's theory was published in JAMA by Dales et al. in 2001. That study looked at the percentage of children born between 1980 and 1994, enrolled in California kindergartens, who received the MMR vaccine. The researchers looked at the age when the vaccine was given, and at the number of autism cases enrolled in the California Department of Developmental Services regional service center. The study found that the number of autism cases in California did, indeed, increase rather dramatically – over 370%, in fact – over those fifteen years. This needs to be contrasted, however, with only a 14% rise in the MMR vaccine coverage during those same years. Therefore, the increase in the prevalence of autism far outpaced the increase in the prevalence of MMR vaccination.²²

So why is the prevalence of autism increasing so rapidly? Or perhaps a better question would be, is it increasing? Autism used to be a very narrowly defined disorder, but with the DSM-IV (Diagnostic and Statistical Manual, Fourth Edition), the scope of the disorder suddenly grew much wider. So much wider, in fact, that the name was changed to "Autism Spectrum of Disorders." What is now autism ranges from some very mild communication and socialization deficits (such as is seen in Asperger's Syndrome) all the way through some profound pervasive developmental disorders (e.g. Rett Syndrome). Hence,

merely by virtue of the change in criteria, the number of autism cases would have been expected to increase dramatically once the DSM-IV was released in 1994. We can then add to this the fact that physicians are now better at diagnosing autism. This means that many children who were previously diagnosed as "mildly mentally retarded" or "slow" or "a little off" were very likely, in fact, falling within what is now the autistic spectrum. They were simply misdiagnosed, or underdiagnosed. Twenty percent or so of people with autism are actually very functional, and in the past would not have gained a diagnosis at all. Many of these people we knew growing up. Think back to the elementary school classmate who liked to rock in his chair when things were quiet, kept to himself, couldn't get along well with others, yet could draw intricate doodles with incredible precision. These were the kids who, instead of playing kickball with the rest of the class, would instead play with a Matchbox car. They wouldn't play with the car the way most children did, however. Instead, they would spin the wheels incessantly, staring at the motion of the rotating wheel for hours if uninterrupted.

So how do we explain the observation that many of these children were "normal" until just after their MMR vaccination? I present here a description of Rett's Syndrome, for those who might be unfamiliar with the disorder.

"Rett syndrome thus far manifests only in girls. ... Patients exhibit normal growth and development in early infancy. Symptoms gradually appear between six and eighteen months and eventually include autistic behavior, dementia, ataxia, and loss of purposeful use of the hands. Hand-wringing movements as well as intermittent hyperventilation are characteristic. ... Almost all instances have been sporadic [i.e. not genetically linked within families]. This disorder is not uncommon. Haberg has estimated its incidence in Swedish girls to be one in fifteen thousand live births."²³

The MMR vaccination is recommended by the AAP at fifteen months of age. It is immensely difficult, if not impossible, to diagnose an autism spectrum disorder before language begins to develop. And, in children who initially do well developmentally and then regress into autism, this regression is often seen between twelve and eighteen months. Yes, there is a temporal association. But the timing of the regression was noted long before MMR

was available. Autistic disorders were described by Kanners in 1943 and by Asperger in 1944.

Both SIDS and autism are tragic, and any potential cause needs to be investigated fully. That has been done in the case of vaccines, and quite simply, the data is not there to support a causal link, no matter how strenuously the National Vaccine Information Center might argue in their literature and on their webpage.²⁴ This question has been asked and answered, and to continue the inflammatory rhetoric any further is simply irresponsible. The medical community does not simply sit back and let the vaccines roll on, however. The safety of all medications, but especially of vaccines, has been in the forefront of medical inquiry ever since their development, but most especially the past several years. A Medline search for articles on the topic of "Vaccine Safety" revealed just twenty-eight articles in 1980, with a linear progression upwards to a high of 368 in 2001.

While adverse reactions to vaccines are tragic, it would be even more tragic to allow vaccine preventable diseases like diphtheria, polio, measles, rubella, tetanus, et al. to regain a foothold in our society. There are legitimate contraindications to some vaccines for some children. The Centers for Disease control and the Advisory Committee on Immunization Practices (ACIP) took great pains to spell these out, as well as offer an objective look at the risk/benefit ratio of recommended vaccines.²⁵

There are forces out there working to undermine the public's confidence in vaccines. Some of them have interpreted the data differently, or perhaps simply aren't interpreting data, but are truly acting out of their own genuine desire to do what they feel is in the public's best interest. Some are simply working from a desire for a personal soapbox or for personal gain. Some, like many chiropractors, are merely promoting an historical dogma. Perhaps most tragic, though, are those who rail against vaccines because their child suffered a tragedy – some of them truly related to the vaccines, some of them not. Adverse events do, in fact, occur and I in no way want to seem as if I'm trying to diminish that fact. All I'm saying is that there are larger things at stake here. Nothing can make up for the tragedy of life or health stolen from a child by an adverse reaction to a vaccine. But even more so, nothing can make up for the tragedy of life or health stolen from a large number of children stricken by plagues. It is quite easy for someone to be cavalier about

recommending against the polio vaccine when they have never witnessed a room filled with hissing and thumping iron lungs. The fact that those individuals have not had to witness that horror is due directly to the success of the polio vaccines. The not-always-friendly rivalry between Drs. Salk and Sabin to be the first to develop the polio vaccine is the stuff of medical legend, but what they did is nothing short of miraculous. The Salk vaccine was released first, but was quickly replaced by the Sabin Vaccine (the oral attenuated polio vaccine) because of its ease of administration (no needle – the vaccine could be ingested with a sugar cube) its low cost, the fact that it tended to elicit IgA antibodies directly in the mucosa of the GI system, which is the point of origin for the wild polio virus better than did the injectable vaccine, and its relative lack of resistance from the children receiving it. Once wild polio was mostly eradicated, however, we found that the vaccine was now the cause of the few cases of paralytic polio occurring each year (approximately six cases in the United States each year since 1980). After some study of the data, the recommendation shifted back to receiving two doses of the injected vaccine first, which was killed virus and did not carry with it a risk of contracting the disease. As the killed vaccine again proved its efficacy, the oral polio vaccine was withdrawn from recommendation. Soon, very soon, the need for the polio vaccine is expected to be gone altogether, at which time it will go the way of the smallpox vaccine – off into history.

Public health matters need to be exactly that: matters which are in the best interest of the health of the public as a whole. No medicine, no procedure, no vaccination, no manipulation, no intervention of any kind is completely without risks. Those risks must always be weighed against the potential benefits and then decisions about policy and recommendations made based upon what is best for the public that we serve. It is nothing less than irresponsible for chiropractors, as doctors, to irrationally hold to beliefs that are solidly refuted by facts. If we are ever to move ahead as a profession, if we are ever to be accepted by those who use science and rational thought as their guide, then we, too, must be willing to use those same stars to pilot our course. We *must* be willing to leave dogma and our jaded history behind and become *doctors* in the true sense of the word. We must become teachers, and what we teach must be the truth, based upon facts and observations, not upon dogma and belief.

It's time to leave BJ's showmanship behind. It's time for us to do what is right and let the facts, not our historical chiropractic theology, guide our advice to our patients and to the public as a whole.

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