

Required: A Vaccine for fear

I was thoroughly unprepared for the first seizure. Completely caught off guard by the second. Utterly destroyed by the third. Watching my baby suffer and writhe in the back-breaking-bend that only infants can do, was more than I could bear, more than most parents can bear. For my wife and I the repeated trial of emergency room visits and an intubated baby left us devastated, incapacitated, and incapable of making critical medical decisions in an appropriately timely manner. Luckily, for lack of a better phrase, our daughter was eventually admitted for pneumonia, a complication stemming from her previously undiagnosed chronic asthma. This would be the first of innumerable hospital visits over the first 4 years of her life yet, at least for us, the enemy was a known entity. For some, a situation such as this marks just the beginning of a tumultuous journey. A parent's role is to protect and nurture their children above all else. As human beings we are biologically programmed to keep our children from harm and we are fierce in maintaining that role. Imagine then, the heartache we experience when faced with an unknown and unseen threat, one which cannot be banished by brawn or guile. This feeling of powerlessness can overwhelm common sense and the consuming fear of the unknown drives hesitant parents to paralysis over the issue of whether vaccines cause autism.

In 2012, The Centers for Disease Control and Prevention [CDC] placed the prevalence of autism amongst 8 year-olds in the US at 1 in 68 children, a marked increase from the 2000 statistics of 1 in 150 children (Christensen). With these alarming rates one would think there would be clear information available to parents and research being done to provide answers to the looming questions such as "Why my child? What can be done? Is there a cure?" There is also a staggering financial cost associated with the spiraling autism rates in the US, with a 2014 study placing the burden at \$66 billion per year in the United States alone (Buescher), and yet despite

the humanitarian and economic impact, the underlying factors causing autism are still undefined. Succinctly stated by Cincinnati Children's Hospital Medical Center neurologist, Dr. Capal of Autism Speaks, "Currently, we can determine a specific cause of a child's autism only 10 to 15 percent of the time. Th[e] lack of a clear explanation for their child's autism can be frustrating and painful" (Capal).

There is anecdotal evidence of a correlation between febrile seizures and the onset of autism-like symptoms in young children. Some parents have reported an extreme fever spike in their children after receiving a scheduled vaccination injection, following which their child begins to regress. Febrile seizures are fever-induced seizures in babies commonly associated with a "fever above 100.4 degrees Fahrenheit" (Capal). These high fevers occur regularly in children from 6 to 60 months and hence about 5% of children within this age range will experience a febrile seizure (Duffy). Dr Capal, a trained medical professional with no personal stake involved, acknowledges these seizures are "scary to watch," for a parent to watch their child endure such a fever must be heart wrenching. Worse yet, is the fear that such an intense fever spike may leave lasting neurological damage. In a recent study published by the American Academy of Pediatrics, Dr Jonathan Duffy of the CDC and coauthors found "The risk of FS [febrile seizure] is also temporarily increased for several days after certain vaccines (diphtheria, tetanus toxoids, whole-cell pertussis vaccine, measles, mumps, rubella vaccine [MMR], and MMR, varicella combination vaccine [MMRV])" (Duffy). With even the most tenuous link between febrile seizures and the onset of autism, and the heightened risk window for febrile seizures after vaccination, it is understandable why many parents are choosing not to vaccinate.

Fueled by these correlations, there is a rapidly growing movement placing the blame for the current autism rates squarely on vaccines. Anecdotal evidence from concerned mothers and

fathers has connected the quick succession of high dose vaccines mandated by state governments to the rising rates of autism. Consider Mary*, a family friend who lives in my neighborhood. Recently over dinner my wife and I discussed with Mary her choice to homeschool her son. Her choice was primarily motivated by the recent passing of California Senate Bill 277; a California law which removes personal belief exemptions to vaccination requirements for entry to private or public elementary or secondary schools in California, as well as child day care centers (California Legislature). Mary's son is not vaccinated and as such cannot attend a California public school until his vaccinations are up to date. She would rather take on the added duties involved with homeschooling and the isolation her son experiences than face her fear of vaccines or risk placing her child in what she deems to be imminent danger. Mary's nephew reported an incredibly high fever shortly after a scheduled shot. Her nephew was bright and alert before and is now severely developmentally impaired, and for our friend the correlation is just too chilling to ignore. This scenario is all too familiar for many, an energetic, sparky young child forever changed by what is perceived as a compressed, high-dose schedule of vaccines pumped into an infant. Parents express "doubts about both short-term adverse reactions and the possibility of long-lasting negative effects. It is these concerns about safety that can cause parents to completely refuse vaccines" (McKee). In fact, 77% of parents polled in a recent study reported some concern with childhood vaccines (Kennedy).

This sentiment is prevalent in many circles. Increasingly parents are unwilling to place their children's safety at risk without conclusive evidence that vaccines, either directly or indirectly, do not cause autism. Pauline* is a young mother of two, who lives just a block away from Mary. She acknowledges there are flaws to the anti-vaccination argument, and that Andrew Wakefield's discredited study, which initiated the widespread vaccine hesitancy we now

experience, cannot be taken as proof of a causal link between vaccines and autism in young children. Yet, when it comes to the vaccination of her own young girls, Pauline hesitates and is paralyzed by fear and indecision. Her motivation is tough to deny because at the heart of the issue for Pauline is the safety and health of her daughters. In the absence of clarity on the issue of vaccine safety, she chooses to take the seemingly low risk of contracting a vaccine-preventable illness over the perceived imminent threat to their child's development and vitality.

Despite the growing unease felt by many parents, the number of prescribed vaccines in the United States more than tripled between 1990 and 2012 which has greatly contributed to the negative public perception of these mandated public health safeguards (Dubé). Corroborated by a further national study conducted by Charitha Gowda of the Division of Infectious Diseases at the University of Pennsylvania, and Amanda Dempsey of Children's Hospital Colorado focusing on parents' levels of confidence in the safety of vaccines, "In 2000, 19% indicated they had 'concerns about vaccines' whereas in a subsequent survey performed in 2009 this number had risen to 50%. Concurrent with the rise in parental vaccine hesitancy is the steady increase in non-medical vaccine exemptions that has occurred over the last several years" (Gowda). The increase in vaccine hesitancy correlates with the increase in the number of scheduled vaccines a young child is now required by law to receive. The more federal and state government mandate a stricter vaccine schedule, the more the public push against the idea of more shots for their children.

For Mary and Pauline the campaign against vaccine-preventable communicable diseases has almost been too successful. For instance, the last case of debilitating, potentially fatal Polio to originate in the United States was in 1979 (Centers for Disease Control and Prevention).

Largely eradicated from the US, these illnesses are now so far out of the collective public conscious that the seed of doubt and fear surrounding the link between autism and vaccines is allowed to grow. Due to this, the distant threat of deadly Measles, Mumps, or Rubella cannot overcome the looming fear that vaccines may have a casual link to the onset of autism. As with any parent, the safety of their children is of utmost importance for both mothers and when faced with the uncertainty over whether to vaccinate or not, the easiest course of action is simply to do nothing.

* names changed to protect privacy

Work Cited

- Buescher AVS, Cidav Z, Knapp M, Mandell DS. Costs of Autism Spectrum Disorders in the United Kingdom and the United States . *JAMA Pediatr.* 2014;168(8):721–728. doi:10.1001/jamapediatrics.2014.210. 25 Oct. 2017.
- California Legislature. “Senate Bill No. 277.” *Bill Text - SB-277 Public Health: Vaccinations*, California Legislative Information, leginfo.ca.gov/faces/billNavClient.xhtml?bill_id=201520160SB277. 25 Oct. 2017.
- Capal, Jamie. “Febrile Seizures, Epilepsy and Autism: Your Questions Answered.” *Autism Speaks*, 4 July 2016, www.autismspeaks.org/blog/2016/07/01/febrile-seizures-epilepsy-and-autism-your-questions-answered. 25 Oct. 2017.
- Centers for Disease Control and Prevention. “Global Health.” *Centers for Disease Control and Prevention*, Centers for Disease Control and Prevention, 21 June 2016, www.cdc.gov/polio/us/. 25 Oct. 2017.
- Christensen DL, Baio J, Braun KV, et al. Prevalence and Characteristics of Autism Spectrum Disorder Among Children Aged 8 Years — Autism and Developmental Disabilities Monitoring Network, 11 Sites, United States, 2012. *MMWR Surveill Summ* 2016;65(No. SS-3)(No. SS-3):1–23. DOI: <http://dx.doi.org/10.15585/mmwr.ss6503a1>. 25 Oct. 2017.
- Dubé, Eve et al. “Vaccine Hesitancy: An Overview.” *Human Vaccines & Immunotherapeutics* 9.8 (2013): 1763–1773. *PMC*. Web. 16 Oct. 2017.
- Duffy, Jonathan, et al. “Febrile Seizure Risk After Vaccination in Children 6 to 23 Months.” *Pediatrics*, American Academy of Pediatrics, 6 June 2016, pediatrics.aappublications.org/content/early/2016/06/02/peds.2016-0320. 25 Oct. 2017.

Gowda, Charitha, and Amanda F Dempsey. “The Rise (and Fall?) of Parental Vaccine Hesitancy.” *Human Vaccines & Immunotherapeutics* 9.8 (2013): 1755–1762. *PMC*. Web. 16 Oct. 2017.

Kennedy A, Lavail K, Nowak G et al. Confidence about vaccines in the United States: understanding parents' perceptions. *Health Aff (Millwood)* 2011;30(6):1151–1159. [PubMed]. 25 Oct. 2017.

McKee, Chephra, and Kristin Bohannon. “Exploring the Reasons Behind Parental Refusal of Vaccines.” *The Journal of Pediatric Pharmacology and Therapeutics : JPPT* 21.2 (2016): 104–109. *PMC*. Web. 16 Oct. 2017