



AUTISM AND VACCINES: PAST LESSONS FOR THE CORONAVIRUS PANDEMIC

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Last month marked the one-year anniversary of the Coronavirus (COVID-19) shutdown in California. But now with the emergency approval of multiple vaccines, there is a renewed sense of hope and relief that life may soon return back to normal in 2021. Along with this hope, there is also hesitancy among some about vaccination. Will it protect us? Is it safe? Can we trust it? These are not new questions. The autism community has been through this journey of discovery before regarding whether or not to vaccinate. And so, as we now head into Autism Awareness Month, it may be helpful to reflect on insights gained from past research discussions about vaccination that can shed light on current conversations about the Coronavirus vaccines.

Let's start with a bit of history. Much of the controversy regarding autism and vaccines stems from a now-debunked 1998 study led by Andrew Wakefield.¹ In this study, 12 children were pre-selected in order to create an association between the Measles, Mumps, and Rubella (MMR) vaccine and the development of gastrointestinal symptoms and autism.^{1,2} After publication in *The Lancet* medical journal, Wakefield's data were reported and shared for more than a decade before his publication was completely retracted in 2010.¹ The medical field has conducted dozens of follow up studies on vaccines and autism, finding no truth to Wakefield's claims.^{3,4} Based on his false claims and unethical research practices, Wakefield lost his license to practice medicine.¹ Given



the wealth of research, the Centers for Disease Control (CDC) definitively states, "Vaccines do not cause autism."

So, what did we learn from the autism and vaccines controversy that might be applicable to the Coronavirus vaccine discussion? Perhaps one lesson is not all research is created equal. There were many flaws in Wakefield's research, including his small sample size and pre-selected participants. By contrast, research on the Coronavirus vaccines have included tens of thousands of participants who were randomly selected.^{5,6}

Another lesson is association does not mean causation. Many parents first notice autism behaviors in their young children around the same time that vaccines are typically administered. This coincidental association in time led Wakefield along with many parents to assume that vaccines caused autism. However, research on the genetics and neurology of autism point to prenatal abnormalities that occur long before vaccination.^{7,8,9} Unlike in Wakefield's study, the Coronavirus vaccines were tested through randomized

controlled trials that are specifically designed to evaluate cause and effect. Because of this rigorous research design, we can say with high confidence that the vaccines for COVID-19 actually prevent severe illness and death.

A third, critically important lesson learned from the controversy surrounding autism and vaccines is researchers must demonstrate their trustworthiness. Wakefield was exposed to have a very clear conflict of interest that biased him against acting in the best interest of the autism community.⁴ If researchers are to be trusted regarding their findings, then their work and their biases must hold up to both scientific and public scrutiny. The skepticism of some about Coronavirus vaccination is understandable based on personal experiences. Particularly for the African American community, there is a real history of injustice and exploitation that has contributed to distrust of the medical field. Because of this history, African Americans may question whether medical researchers have their best interests at heart. Past instances of exploitation have not been forgotten, including Henrietta



Lacks, the Tuskegee syphilis study, and Anarcha Westcott to name a few. More recent instances of police violence against African Americans as well as personal experiences of present day microaggressions and structural racism loom even larger in the memories of many. For African Americans, trusting the science may require gaining greater trust in the scientists. The fact that the Coronavirus vaccines have been researched globally among the world's top scientists, including one of African American descent, can hopefully provide some solace to skeptical community members; this is not another instance of exploitation, but rather an effort to right past wrongs in medical research with good science that is also ethically sound.

Furthermore, scientists are now doing the community relations work to demonstrate their trustworthiness to the public. For example, there have been multiple town halls and discussions about Coronavirus vaccination in the African American community led by Blackdoctor.org, Tyler Perry, BET, and others. One of the key scientists in developing the Moderna COVID-19 vaccine is immunologist Dr. Kizzmekia Corbett, an African American woman who is also leading the charge to build public trust. Dr. Corbett understands the hesitancy in the African American community and puts out a call to action for the medical field:¹⁰

“...we’re not going to be able to prove trustworthiness in this instance quickly, and that is OK. But what we do need to do is decide that we’re going to take steps and, even beyond this pandemic, move in a direction to be more trustworthy... to understand that the onus of this problem is not on them [African Americans] and their distrust; it is on us and our level of trustworthiness. And so, trust, especially when it has been stripped from people, has to be rebuilt in a brick-by-brick fashion. And so, what I say to people, firstly, is that I empathize and then, secondly, is that I’m going to do my part in laying those bricks. And I think that if everyone on our side, as physicians and scientists, went about it that way, then the trust would start to be rebuilt.”

Indeed, as more physicians and scientists reach out to our communities and address the concerns, trust is starting to build.

Kelsey: “The reason why I chose to get the COVID-19 vaccine despite my skepticism of it was because I knew I was in a high-risk work situation. As a Pharmacy Technician working at CVS, I knew my chances of greeting and helping potential COVID-19 patients were very high and the risk of taking the virus home with me was just as great. Every day I would come home with a sense of anxiety where I would always wonder to myself if I may have accidentally brought it home. To me, I knew that it was better to get the vaccine in order to protect my family members who are at high risk for COVID-19 themselves. Although I may be healthy and young enough to catch the virus and survive, I could not say the same for my family.”

Joyce: “I chose to get the COVID-19 vaccine because I trust the record-breaking amount of worldwide collaboration used to develop a viable vaccine. As an individual going into the healthcare field myself, I will be continuously vaccinated against different diseases to protect myself while treating patients. To me, getting the COVID-19 vaccine is no different than getting all the other vaccines I have gotten in the past. Furthermore, I believe the possible side effects of the vaccine are minimal compared to the permanent damage COVID-19 can cause.”

Selome: “I chose to get the vaccine because ending the pandemic will require everyone’s combined effort, whether that’s following social distancing guidelines, wearing masks, and getting the vaccine once you’re eligible. Before I decided to get the vaccine, I conducted my own research to determine how the vaccines work, how effective they are, and how the side effects might affect me. I chose to believe the scientific facts to come to my final decision about the vaccine. Ultimately, we are all looking forward to the day we get our lives back. For me, this vaccine gives me hope that we are closer to that day.”



Erin: “To be honest, I was one of the skeptics regarding the COVID vaccine. I wasn’t sure whether or not I’d take it, but I thought I had time to wait and see how it went for everyone else before I’d even be eligible. So when I was unexpectedly contacted to receive it in January, I suddenly had a quick decision to make. Given my previous skepticism, I was shocked at the sense of relief I felt after getting the vaccine.”

FAQs:

Why do we still need to wear masks and socially distance after getting the COVID vaccine? While the vaccine may prevent you from getting sick with Coronavirus or experiencing severe symptoms, that doesn’t mean you can’t still carry the disease or spread it to other people. Also, it will take some time for your body to develop COVID-19 antibodies and immunity to the virus even after getting vaccinated. Furthermore, we don’t know how long immunity lasts or how effective it will be in protecting us from mutated strands of Coronavirus. For all of these reasons, it is important that people continue to social distance and wear a mask even after they get their vaccination.

Where can I get the COVID 19 vaccine? The availability of the vaccine to you depends on your state's distribution plans and your demographic. Some states like California have launched a statewide enrollment and waitlist website: <https://myturn.ca.gov/>

Where can I learn more about the history of autism and vaccines? In a quick and easy read, the book *Autism's False Prophets: Bad Science, Risky Medicine, and the Search for a Cure* by Paul Offit chronicles the history of failed attempts to link autism to vaccines, including Wakefield and beyond.

A note from the authors:

The Autism Genetics and Human Diversity Project at UCLA is currently investigating genetic risk for autism in the African American community in order to increase participation of under-represented groups in autism research. By participating in this study, African American families who suspect their child has autism can receive a free assessment by trained autism specialists to determine if a diagnosis of Autism Spectrum Disorder (ASD) is appropriate. The study can also help families whose child has already been diagnosed with ASD by providing basic recommendations based on the autism specialist assessment. In addition, all participating families will gain access to educational resources and future research opportunities through the UCLA Center for Autism Research and Treatment (CART).

For more information about the Autism Genetics and Human Diversity Project, contact 310- 794-4090 or AutismGenetics@ucla.edu.

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