Autism and vaccines: The history and politics of the Kennedy-Trump attack on public health

Part two

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The first part of this article can be read here.

The historical development of the autism diagnosis

Autism Spectrum Disorder (ASD), commonly known as autism, is a complex developmental disability. It is characterized by significant challenges in social interaction, verbal and non-verbal communication, and restricted or repetitive patterns of behaviors and interests.

Historically, autism—a term first coined in 1911 by Eugen Bleuler in his description of schizophrenia—has been classified under the umbrella term "pervasive developmental disorders" (PDDs), reflecting the variety of symptoms and clinical presentations. Diagnosis typically relies on clinical assessment using established criteria from diagnostic manuals such as the DSM-IV (Diagnostic and Statistical Manual of Mental Disorders). Over time, our understanding of autism has evolved, and research has identified subtle differences in the onset and progression of symptoms.

The field of child psychology and awareness of autism have grown significantly. The earliest research focused on children considered autistic was conducted by Grunya Sukhareva, a Soviet child psychiatrist in the 1920s. In the 1930s and 1940s, Hans Asperger and Leo Kanner described two related syndromes called infantile autism and Asperger Syndrome.

Although autistic children continued to be characterized using various terms related to schizophrenia, important advances were made in diagnosing and classifying autism. By the early 1970s, it was more widely recognized that autism and schizophrenia were in fact distinct mental disorders. In 1980, autism was formalized as a separate diagnostic category in the DSM-III. With improved screening tools and services, diagnosis is increasingly happening at younger ages. Screening and diagnostic methods have improved, contributing to better ascertainment of cases.

Vaccines and immunization—a milestone for public health

During the same decades of growing understanding and diagnosis of autism, major public health initiatives were expanding the use of vaccines, linking these events chronologically, but only coincidentally, not causally.

Immunization is considered one of the greatest achievements of public health. Programs like the Expanded Program on Immunization (now the Essential Program on Immunization) have achieved remarkable gains in controlling infectious diseases. The following timeline of vaccines demonstrates the tremendous success to the well-being of the global population:

When the World Health Organization (WHO) launched its global immunization program in 1974, few could have predicted its staggering economic legacy. Five decades later, vaccines have emerged as one of humanity's most powerful tools, not just for saving lives, but for fueling economies and slashing healthcare costs. A 2024 CDC report reveals that in the US alone, routine childhood vaccinations for children born between 1994 and 2023 prevented 1.1 million deaths, 32 million hospitalizations, and 508 million illnesses, saving $780 billion in direct medical costs and $2.9 trillion in overall societal costs. Globally, studies estimate vaccines have averted 154 million deaths since 1974, with every $1 spent on immunization returning up to $52 in low-income countries.

The 1994 launch of the Vaccines for Children (VFC) program marked a turning point. By covering immunization costs for low-income families, the US achieved near-universal vaccine coverage, preventing diseases like measles and whooping cough from draining resources. For example, Pneumococcal vaccines introduced in 2000 cut childhood pneumonia hospitalizations by 40 percent, saving $4.6 billion annually in treatment costs, according to the CDC in 2024. A 2005 JAMA Pediatrics study found routine childhood vaccines yielded a 16:1 societal return, saving $43.3 billion for the 2001 birth cohort alone.

Yet the benefits extend beyond healthcare.

Vaccinated children are more likely to attend school and enter the workforce, while parents miss fewer workdays. CDC estimates these productivity gains account for 70 percent of the $2.9 trillion societal savings just in the US. During the COVID-19 pandemic, vaccines prevented 20 million deaths globally in 2021 and averted $5.2 trillion in global GDP losses, equivalent to wiping out Japan's entire economy, according to *BMJ Global Health*, 2024. These are just the highlights in the broader public health benefits afforded through vaccines and a cogent public health infrastructure.

While vaccines were leading to historic declines in childhood mortality in the latter half of the 20th century, around the late 1980s and early 1990s, a notable increase was observed in the frequency or incidence of autism in several regions, including California, the United Kingdom, Denmark, and Japan.

For example, Denmark saw the prevalence increase from less than 2.0 cases per 10,000 in the 1980s to over 10.0 cases per 10,000 by 2000. The

incidence of newly diagnosed autism in the UK, as recorded by general practitioners, increased sevenfold from 1988 to 1999. This observed increase in autism frequency coincided with the widespread use of vaccines like the Measles, Mumps, and Rubella (MMR) vaccine. Although no actual links existed, the political climate of anti-communism and extreme individualism encouraged attacks on the public health gains made in the previous two to three decades.

Andrew Wakefield and the modern anti-vax movement

This apparent chronological overlap—the more frequent diagnosis of autism because of improved understanding and the widespread adoption of vaccines providing immunity to many common childhood illnesses—provided a plausible basis for speculation about a possible link between the life-saving treatments and the neurological disorder. This hypothesis gained significant traction following a 1998 paper published in *The Lancet* by Dr. Andrew Wakefield and colleagues.

The paper described a case series of 12 children with pervasive developmental disorders who also had gastrointestinal symptoms and developmental regression. For eight of these children, parents or physicians retrospectively linked the onset of behavioral problems to MMR vaccination. The study proposed a hypothesis that the MMR vaccine might be causally linked to a new syndrome involving specific gastrointestinal conditions and behavioral regression.

However, the Wakefield paper was later found to have serious flaws and willful scientific misconduct. British investigative journalist Brian Deer played a crucial role in exposing the truth behind the fraudulent study, later publishing a book in 2020 titled *The Doctor Who Fooled the World*. Deer's work revealed significant improprieties, including manipulative recruitment of subjects and undisclosed financial conflicts of interest. He uncovered a "secret scheme" linked to Wakefield's work, aimed at raising substantial funds. Deer demonstrated that the appearance of a link between MMR and autism was "manufactured." Data included in the study was shown to be deliberately falsified.

Following the initial revelations and a forensic investigation by the General Medical Council (GMC), *The Lancet* retracted Wakefield's paper in 2010. Ten of the original 13 authors had previously stated that the data were insufficient to establish a causal link. The editor of *the BMJ*, Fiona Godlee, in an editorial published in 2011, starkly stated, "Wakefield's article linking MMR vaccine and autism was fraudulent." The editorial concluded, "Clear evidence of falsification of data should now close the door on this damaging vaccine scare." Wakefield himself was struck off the medical register in the United Kingdom in 2010.

Despite the debunking of the Wakefield study and extensive scientific investigation, the vaccine-autism controversy persisted. When the MMR hypothesis was refuted, some proponents shifted their focus, hypothesizing that thimerosal (a mercury-containing preservative used in some vaccines, now largely removed from childhood vaccines in the US) or the sheer number of vaccines administered could cause autism. However, these hypotheses have also been consistently debunked by numerous studies.

Extensive epidemiological studies conducted across multiple countries have consistently found no association between MMR vaccination and autism. These studies, using various designs like cohort studies and case-control studies, have provided strong evidence against a causal link. For instance, a large study in Denmark found no association, and a study in Japan found that autism incidence continued to rise even after the withdrawal of the MMR vaccine from the population.

Studies specifically looking for the "new variant" of autism or developmental regression proposed by Wakefield also found no association with MMR. A 2014 meta-analysis of 10 observational studies, including 6 specifically on MMR and autism, reported no association. More recent studies have also found no link. The evidence has been extensively reviewed by committees of the National Academy of Medicine, all concluding that MMR vaccine does not cause autism.

Why have autism diagnoses increased?

The scientific community overwhelmingly attributes the observed increase in autism diagnoses over time to factors other than vaccines. These include:

- Broadened Diagnostic Criteria: The adoption of broader concepts and criteria allows more individuals to be included under the autism spectrum.
- Increased Awareness and Recognition: Greater awareness among parents, clinicians, and the public leads to more cases being identified and diagnosed.
- Improved Ascertainment and Screening: Better case-finding methods and improved screening tools contribute to identifying more cases, including those with milder symptoms.
- Changes in Reporting Practices: How autism is reported or categorized in databases can influence statistics.

While autism prevalence has risen over recent decades, the rates of intellectual disability and other developmental disabilities have generally declined. A comprehensive analysis of US special education records found that as autism diagnoses increased, there was a concurrent and significant decrease in the diagnosis of mental disorder and learning disabilities. This pattern was observed in most US states, with only a handful showing the opposite trend. The process, known as diagnostic substitution, occurs when individuals who might previously have been diagnosed with intellectual disability or another developmental disorder are now more likely to receive an autism diagnosis due to increased awareness, broader criteria, and the perceived benefits of the autism label in accessing support services.

Recent CDC and academic studies reinforce this trend. For example, a 2024 study led by Santhosh Girirajan found that the apparent rise in autism coincides with a decline in other childhood disorders, highlighting the complexity of prevalence statistics and the importance of diagnostic practices.

Despite the strong scientific evidence disproving any link between autism and vaccines, the controversy has persisted. Indeed, completely unfazed by the scientific communities' responses to these allegations and investigations proving the safety of vaccines, Wakefield partnered with activists like Kennedy and Del Bigtree, CEO of the Informed Consent Action Network (ICAN), to amplify the misinformation. The framing of vaccine mandates as "government overreach" became a lightning rod for right-wing and conspiracy minded reactionary groups.

This has led to decreased MMR vaccination coverage in some areas, contributing to the re-emergence of preventable diseases like measles as recently evidenced in Texas where two children have died from a preventable disease. Experts have repeatedly emphasized that research funding and efforts should focus on the true causes and potential treatments for autism, as the hypothesis linking it to vaccines has been thoroughly investigated and rejected. The proven benefits of widespread vaccination in preventing serious infectious diseases remain essential for public health.

The science of Autism Spectrum Disorder

Autism spectrum disorder (ASD) emerges from a complex interplay of genetic vulnerabilities and environmental influences, with socioeconomic inequities amplifying risks and compounding challenges for affected families. This intricate web begins in the earliest stages of brain development, where genetic blueprints guide—and sometimes disrupt—the formation of neural circuits critical to social interaction, communication, and sensory processing.

At the heart of ASD lies a strong genetic component, with over 250 genes implicated in shaping prenatal brain development. Among these, CHD8 stands out as a master regulator. This gene orchestrates chromatin remodeling, a process that determines which genes are activated during critical periods of fetal brain growth. Mutations in CHD8 disrupt the delicate balance of neural progenitor cells, leading to abnormal cortical layering and synaptic pruning—a hallmark of ASD often observed in brain imaging studies. Similarly, SHANK3, a gene vital for maintaining synaptic structure, is frequently altered in autism. When dysfunctional, it destabilizes connections between neurons, contributing to the social and communication difficulties that define the condition.

A groundbreaking 2024 study published in *Science* by Wamsley et al. from UCLA provides the most detailed view yet of autism spectrum disorder (ASD) biology. Using advanced single-cell genomic techniques, researchers analyzed over 591,000 brain cells from postmortem samples, identifying disruptions in specific neurons and glial cells tied to ASD. They found that genetic risk factors affect molecular pathways critical for synaptic communication and neurodevelopment. These findings underscore ASD's roots in genetic and developmental processes, not external factors like vaccines.

The study's emphasis on genetic and neurodevelopmental mechanisms directly contradicts long-debunked claims linking vaccines to autism. This aligns with decades of research, including a 2019 Annals of Internal Medicine study of 657,461 Danish children, which found no association between the measles-mumps-rubella (MMR) vaccine and ASD. The UCLA team noted that rising ASD diagnoses reflect improved awareness and diagnostic criteria, not an "epidemic" caused by environmental toxins.

Despite robust evidence, recent political efforts—such as US Health Secretary Robert F. Kennedy Jr.'s call to investigate vaccines as an ASD cause—risk diverting resources from meaningful research.

The *Science* study highlights the urgency of focusing on genetic and molecular pathways to develop targeted therapies. Promoting vaccine myths not only undermines public health but also stigmatizes autistic individuals by framing their neurotype as a preventable tragedy. As Dr. Peter Hotez emphasized, such rhetoric ignores the lived experiences of autistic people and distracts from efforts to address systemic inequities in care.

While genetics load the gun, environmental factors often pull the trigger. The fetal brain is exquisitely sensitive to external influences, particularly during the first two trimesters. Maternal immune activation—triggered by infections like influenza or autoimmune conditions—can flood the developing brain with pro-inflammatory cytokines, such as IL-6, that affect language development. Animal studies show that prenatal exposure to IL-6 produces offspring with social deficits and repetitive behaviors, mirroring core ASD traits.

Endocrine-disrupting chemicals add another layer of risk. Phthalates, found in plastics and personal care products, interfere with thyroid hormone signaling—a system that guides neuronal migration. In genetically susceptible fetuses, this disruption can derail the formation of cortical layers, as seen in mutated mice. Such findings underscore the vulnerability of specific genetic profiles to environmental effects.

The burden of these environmental risks falls disproportionately on marginalized communities. In low-income urban neighborhoods, particulate matter (PM2.5) levels often exceed EPA limits, exacerbating genetic susceptibilities. A 2024 Harvard study linked PM2.5 exposure to upregulated MET gene expression in the fetal brain, impairing synaptic pruning in regions like the prefrontal cortex.

Meanwhile, agricultural communities—disproportionately Latino and immigrant—face heightened exposure to chlorpyrifos, a pesticide banned in residential settings but still used on crops. Chlorpyrifos inhibits acetylcholinesterase, an enzyme critical for neurotransmission, and synergizes with ASD-linked genes like CHD8 to amplify risk.

Financial strain and poor access to healthcare compound these barriers. Families of autistic children spend 3–5 times more on healthcare annually than neurotypical households, with 40 percent reporting catastrophic out-of-pocket costs. Low-income mothers, already grappling with food insecurity, are 40 percent less likely to meet folic acid recommendations—a critical nutrient that mitigates ASD risk in those with MTHFR gene variants. Chronic stress from poverty elevates maternal cortisol, which crosses the placenta and suppresses BDNF, a growth factor vital for amygdala development. The result is a vicious cycle where socioeconomic disadvantage amplifies biological risk.

Scientifically, the evidence strongly suggests that autism's biological origins are prenatal. This means the foundational biological processes that contribute to autism begin before birth. The developing nervous system is particularly vulnerable to environmental toxins during these critical prenatal and early postnatal periods. Therefore, according to the scientific understanding presented in these sources, the question of "when" autism occurs points overwhelmingly to development in the womb.

Conclusion

The ongoing deliberate deceit being perpetrated by HHS and NIH to link vaccines to autism, while at the same time effectively creating a new category of "life unworthy of life," also means that many of the diseases that had been in check will resurface as vaccines are maligned and public health infrastructure decimated.

In a study published in the *Journal of the American Medical Association* last week titled, "Modeling Reemergence of Vaccine-Eliminated Infectious Diseases Under Declining Vaccination in the US," the authors warned that at the current pace, measles could become endemic within 20 years after having been eliminated a quarter century ago. Under a scenario with only a 10 percent decline in MMR vaccination, the authors estimate 11.1 million measles cases in the next 25 years. A 50 percent decline in routine childhood vaccinations could lead to 51.2 million cases of measles, 9.9 million cases of Rubella, and 4.3 million cases of polio. This would also lead to an additional 10.3 million hospitalizations and nearly 160,000 deaths.

With Robert F. Kennedy Jr. and his team of anti-science quacks now installed by Trump at HHS, with the entire public health apparatus at their fingertips, the bank robbers are truly in control of Fort Knox. While studies are prioritized into the fake vaccine-autism connection, the NIH has cut funding for grants by $5.5 billion and canceled more than 300 grants announced, including studies on Alzheimer's and autism. The Department of Education's Institute of Education Sciences, a major supporter of school-based autism interventions, has been gutted, and programs like Charting My Path for Future Success, which helped students with disabilities transition from high school to college or work, have been eliminated.

The situation is further exacerbated by proposed or enacted Medicaid

reductions, which jeopardize access to therapies such as Applied Behavior Analysis (ABA), speech, and occupational therapy, services that are often lifelines for families of children with autism. Medicaid is the primary payer for many disability services, and cuts could result in reduced therapy hours, longer waiting times, and increased financial burdens for families, particularly those in low-income and rural areas. Disability advocates warn that these funding cuts threaten to reverse decades of progress in community-based care, increase institutionalization, and deepen inequities for some of the nation's most vulnerable children and adults.

These issues assume social dimensions in the context of the broad-based attack on the most vulnerable in the population. The defense of science-based public health requires a political perspective that not only offers a correct critique of right-wing conspiracy theories and religion-based distrust of reason and scientific method, but puts forward a solution that places social equality and democratic rights at the center of the fight against the turn to fascistic forms of rule.

While the scientific study of autism unearths many of the biological intricacies of life and how it interacts with the material world, only the remaking of society—politics, financial institutions, educational and health infrastructure—along anti-capitalist lines can address the needs and well-being of the population. After all, the fundamental collective goal of a humane social order is to produce the best living conditions for all, in particular the most vulnerable, on the basis of democracy and equality.

Concluded

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