Sun 11/23/2025 7:38 PM

To whom it may concern,

My name is Dr. Erica Larson. I have a PhD in Pharmacology and Toxicology and I have over 13 years of research experience in the fields of immunology, infectious disease, and vaccines. I am writing this complaint in order to correct the information on the 'Vaccines and Autism' webpage (https://www.cdc.gov/vaccine-safety/about/autism.html) and demand its removal from the Center for Disease Control (CDC) website. There is an overwhelming number of erroneous statements that are false, misleading, and harmful. I have detailed them below:

Under "Key Points":

1. **Claim:** "The claim "vaccines do not cause autism" is not an evidence-based claim because studies have not ruled out the possibility that infant vaccines cause autism."

Response: This claim is false. There are numerous studies that have found no association (i.e. evidence) between vaccines and autism.

Madsen et al. 2002 – The authors concluded that MMR vaccination is not associated with an increased risk of autistic disorder or autistic spectrum disorders.

Smeeth et al. 2004 – The authors conclude that MMR vaccination is not associated with an increased risk of autism.

Mrozek-Budzyn et al. 2010 – The authors concluded that administration of MMR or single antigen measles vaccines is not associated with an increased risk of autism in children.

Andersson et al. 2025 – The authors did not find evidence to support an increased risk between vaccination and neurodevelopmental disorders.

This claim ignores studies that have studied these links and is a misleading statement. It should be removed.

2. **Claim:** "Studies supporting a link have been ignored by health authorities."

Response: This claim is false. Health authorities including the HHS constantly review the totality of evidence regarding the link between vaccines and autism

See 'Autism' under Measles, Mumps, and Rubella chapter: https://doi.org/10.17226/13164

https://archive.ahrq.gov/research/findings/evidence-based-reports/vaccinestp.html

During these reviews, the study methodologies and their weight are considered in decision-making as some studies may lack the power (i.e. small sample size) or design (i.e. lack of unvaccinated controls or vaccinated controls without autism) to apply observations to large populations.

Under "Vaccines do not cause Autism*":

3. Claim: "Pursuant to the Data Quality Act (DQA), which requires federal agencies to ensure the quality, objectivity, utility, and integrity of information they disseminate to the public, this webpage has been updated because the statement "Vaccines do not cause autism" is not an evidence-based claim.

Response: See response to point 1 above. Moreover, the objectivity of this entire webpage is called into question because it fails to provide the full context of studies selected to support claims that may inform and influence the perception of the reader.

E.g. "Approximately 1 in 2 surveyed parents of autistic children believe vaccines played a role in their child's autism."

The statement above is derived from Harrington et al. 2006 in which 77 parents responded (out of 150) and 54% of parents cited immunization as a cause for their child's autism. So the "1 in 2 surveyed parents" is based off of 42 parents. Furthermore, this study is based on the parent's impression of cause and is not a reliable metric since diagnosis of autism happens years after vaccination.

4. Claim: “Scientific studies have not ruled out the possibility that infant vaccines contribute to the development of autism.”

Response: Again, there have been numerous studies in large populations (i.e., half a million to over a million children) that have shown no association. This statement is misleading and should be removed.

5. Claim: “However, this statement has historically been disseminated by the CDC and other federal health agencies within HHS to prevent vaccine hesitancy.”

Response: The word usage of “prevent vaccine hesitancy” is manipulative. The statement of “Vaccines do not cause autism” is to emphasize the safety of vaccines and is backed by evidence-based studies. See response to point 1 for reference.

6. Claim: “This webpage will be updated with gold-standard science that results from the HHS comprehensive assessment of the causes of autism as required by the DQA.”

Response: The selective nature of the studies listed to support claims that vaccines cause autism, while ignoring the totality of evidence that has shown no association demonstrates that the HHS lacks an understanding of “gold-standard science”.

<u>Under “Background”</u>

7. Claim: “Approximately one in two surveyed parents of autistic children believe vaccines played a role in their child's autism…”

Response: Harrington et al. 2006 received responses from 77 (out of 150) parents with children with autism. Of that 77, 54% parents cited immunization as a cause for their child's autism (n = 42). This study is extremely underpowered and is inappropriate to apply to the total US population. This statement should be removed.

8. Claim: "This connection has not been properly and thoroughly studied by the scientific community."

Response: This type of language is used throughout the webpage. It is factually false as stated in response to point one and should be removed.

9. Claim: In 1986, the CDC's childhood immunization schedule for infants (≤ 1 year of age) recommended five total doses of vaccines: two oral doses of oral polio vaccine (OPV) and three injected doses of Diphtheria and Tetanus Toxoids and Pertussis Vaccine (DTP). In 2025, the CDC schedule recommended three oral doses of Rotavirus (RV) and three injected doses each of HepB, DTaP, Hib, PCV, and IPV by six months of age, two injected doses of Influenza (IIV) by 7 months of age, and injected doses of Hib, PCV, MMR, Varicella (VAR), and Hepatitis A (HepA) at 12 months of age.

Response: The emphasis on 1986 immunization schedules is outdated since, as a scientific community, we have strengthened our understanding of the long-term health consequences from infectious diseases. The vaccination schedule has been updated to include vaccination against more pathogens in order to minimize hospitalizations, long-term health consequences, and death among children. This webpage fails to provide this context.

10. Claim: "The rise in autism prevalence since the 1980s correlates with the rise in the number of vaccines given to infants."

Response: This claim completely ignores the increase in awareness and screening as well as the broadening of diagnostic criteria for autistic spectrum disorder (Hirota and King 2023 JAMA). This "correlation is not only false, but it is misleading. It should be removed.

11. Claim: "One study found that aluminum adjuvants in vaccines had the highest statistical correlation with the rise in autism prevalence among numerous suspected environmental causes."

Response: Using one study to support the claim while ignoring other comprehensive studies is misleading and should be removed. Moreover, Nevison 2014 was a comparative study and did not measure aluminum levels in the specific population it had identified by IDEA. The shortcomings of this study were not discussed on the webpage.

12. Claim: "Correlation does not prove causation, but it does merit further study."

Response: This is an evasive statement to subvert the totality of data that shows no association between vaccines and autism. It should be removed.

<u>Under 'State of Evidence: Infant Vaccines – DTap, HepB, HiB, IPV, PCV</u>

13. Response: The entirety of this section is questionable as it aims to create doubt in other vaccines that are part of the vaccination schedule and have been deemed safe. There are several flaws with this section:

a. It frames the argument under an outdated directive (circa 1986)

b. It only focuses the summary of key findings on pertussis and does not acknowledge key findings from the other vaccines listed.

c. The methodology that it is setting up (studying single vaccines) is unethical and not feasible given the comprehensive nature of the vaccination schedule.

This section should be removed.

14. Response: The reference provided for the key finding reported in the table under the '1991 – Institute of Medicine' is not accessible. This is also an outdated reference.

15. Claim: "Note: The only study the IOM located regarding DTaP and autism found an association, but the IOM discounted it because it provided data from CDC's passive surveillance system (HHS VAERS) and lacked an unvaccinated comparison population."

Response: This statement is misleading as the IOM deemed this study insufficient. It, therefore, should not be stated that an association was found because there were major issues with methodology. The authors are inconsistent with providing this context. For example, in the MMR section, the authors attempt to sow doubt with studies related to MMR vaccination: "the IOM reviewed the published MMR-autism studies and found that all but four of them had "serious methodological limitations,""

Geier and Geier 2004, the study reported above, only looked at VAERS reporting, which reported claims can be unverified and, therefore, results from VAERS needs to be taken with some scrutiny. This context was not provided on the webpage. Furthermore, there are studies that have demonstrated safety of thimerosal-containing DTap vaccines (Price et al. 2010 Pediatrics; Tozzi et al. 2009 Pediatrics; Stehr-Gree et al. 2003 Am J Prev Med). Thimerosal has been taken out of childhood vaccines in the US in 2001 (https://www.cdc.gov/vaccine-safety/about/thimerosal.html). Making a statement about its links with autism is false. This note should be removed.

16. Claim: "Of note, the 2014 AHRQ review also addressed the HepB vaccine and autism. One cross-sectional study met criteria for reliability; it found a threefold risk of parental report of

autism among newborns receiving a HepB vaccine in the first month of life compared to those who did not receive this vaccine or did so after the first month. After reviewing the study, AHRQ determined that there was insufficient evidence of an association of the HepB vaccine and autism."

Response: Again, the authors fail to provide context prior to stating findings. This is misleading and should be removed. The study that is mentioned, Gallagher and Goodman 2010, reported a 2.82-fold higher incidence (not 3-fold higher) and it was based on parental reporting. It also was determined to provide insufficient evidence because it sampled 33 children with autism and only 9 of them were vaccinated. The statement above is unsupported.

17. Claim: In fact, there are still no studies that support the claim that any of the 20 doses of the seven infant vaccines recommended for American children before the first year of life do not cause autism. These vaccines include DTaP, HepB, Hib, IPV, PCV, rotavirus, and influenza.

Response: This statement is problematic and should be removed because what is suggested (i.e., selectively vaccinating children) is unethical. This statement fails to acknowledge the totality of epidemiological evidence (including studies that have studied millions of children) to support that vaccines do not cause autism. In fact, in the 2012 IOM, it states "[t]he committee has a high degree of confidence in the epidemiological evidence based on four studies with validity and precision to assess an association between MMR vaccine and autism; these studies consistently report a null association…" and "[t]he evidence favors rejection of a causal relationship between MMR vaccine and autism."

<u>Under 'State of Evidence: MMR Vaccines</u>

18. Claim: "However, in 2012, the IOM reviewed the published MMR-autism studies and found that all but four of them had "serious methodological limitations," and the IOM gave them no weight. The remaining four studies and a few similar studies published since also have all been criticized for serious methodological flaws. Furthermore, they are all retrospective epidemiological studies which cannot prove causation, fail to account for potential vulnerable subgroups, and fail to account for mechanistic and other evidence linking vaccines with autism."

Response: This paragraph ignores the totality of evidence and generates unsubstantiated doubt. It should be removed.

19. Claim: Many of the retrospective studies utilized, such as the 2002 New England Journal of Medicine study on the Denmark population, may be unreliable for the U.S. population. Children in these studies receive vaccines based on foreign vaccination schedules that differ from the schedule in the U.S.

Response: The current MMR schedule in the US is first dose at 12-15 months and 4-6 years old. The Danish schedule is 15 months and 4 years old. These are not drastic differences in vaccine schedules. This context is not provided and, therefore, is misleading. It should be removed.

20. Claim: One analysis found that the 2019 CDC vaccine schedule resulted in 4.925 mg of total vaccine-related aluminum exposure by age 18 months.

Response: The study cited (MacFarland et al. 2020) was not a clinical study (i.e., it was not tested in humans). This statement should be removed.

21. Claim: There is evidence in the U.S. of a positive association between vaccine-related aluminum exposure and persistent asthma.

Response: This statement has nothing to do with autism and should be removed.

22. Claim: "…shows some higher event rates of neurodevelopmental conditions with moderate aluminum exposure (Supplement Figure 11 — though a dose response was not evident) and a statistically significant 67% increased risk of Asperger's syndrome per 1 mg increase in aluminum exposure among children born between 2007 and 2018 (Supplement Figure 4)."

Response: This statement is cherry-picking data. Moreover, the 67% increased risk of Asperger's syndrome is not reported in Supplemental Figure 11. This is statement is a clear example of false reporting of data.

23. Claim: "Mechanisms for further investigation include the impacts of aluminum adjuvants, risks for certain children with mitochondrial disorders, harms of neuroinflammation, and more."

Response: Mitochondrial disorders is not a medical term. It should be removed.

24. No reference list to all the studies mentioned is not provided. It should be provided.

I expect a point-by-point rebuttal and a comprehensive list of references that substantiate the claims made by this webpage.

In conclusion, it is infuriating that the 'burden of proof', in this case, is placed on the commentator, myself, when it is clear that the authors of this webpage have not met the 'burden or proof' nor the scientific rigor required to substantiate their claims. Furthermore, it is apparent that the authors actively ignore the totality of evidence that show no association between vaccines and autism in order to legitimize a scientifically refuted opinion. This webpage is an embarrassment to the CDC, the United States government, and the American people. It is harmful and it should be removed in its entirety.

Should you need to contact me regarding my responses, I can be reached at the following contact information:

Erica Larson

110 W Littlewood St

Pittsburgh, PA 15223

(916)221-0900

Erica.c.larson94@gmail.com