

Concerns Continue Over Mercury and Autism

To the Editors:

Stehr-Green et al.¹ have misrepresented my work and confused the debate over autism and mercury exposure with ecologic data from Sweden and Denmark. Their report has many flaws. Four stand out.

Their description of the California data promotes complacency regarding autism rates. For an Institute of Medicine (IOM) review,² I presented an ecologic analysis of autism rates and mercury exposure demonstrating an association between rising autism rates in California and mercury exposure in childhood vaccines. In their re-use of my charts, the authors claimed incorrectly that the California data represented the larger class of "autism-like disorders." California prevalence rates were reported based solely on autism cases.^{3,4} The authors' suggestion minimized the severity of the California situation. These high and rising autism rates point to a public health emergency, and require accurate measurement and precise classification.

Their autism cases account for a fraction of the autism population. The large majority of autism cases are found in outpatient populations. Yet, the analyses in Sweden (exclusively) and Denmark (for two thirds of the study period) rely on inpatient populations. One recent Danish study⁵ revealed that 93% of autistic records were for outpatients. Clearly, the small remaining group of inpatient registrations has little value in trend assessment.

Their rate and exposure assessments contain multiple errors. These flaws are too numerous to mention here. (For a more detailed criticism of the Danish and Swedish analyses and a longer version of this letter, go to www.safeminds.org/.) Despite these flaws, they claim, inappropriately, that the choice of Swedish and Danish sources was based on "high quality records."

Their interpretation of the autism-mercury hypothesis is incorrect. Based on these flawed trend assumptions, the authors use the shift in Sweden and Denmark to Thimerosal-free vaccines in an attempt to falsify the autism-mercury hypothesis. Absent a clear increase in autism rates in Denmark and Sweden, this attempt fails. The autism-mercury hypothesis I tested was that *increases* in mercury exposure are associated with *increases* in autism rates. Reductions in comparatively low Thimerosal® exposures need not produce decreasing autism rates in stable, low-prevalence populations for the autism-mercury hypothesis to hold.

Having performed the ecologic analysis with which the authors started, I fully recognize its failings. I do not wish to stand in defense of ecologic analysis. The

authors' attempts at trend analysis demonstrate the dangers of misusing ecologic analysis, especially when relying on shifting data sources and incomplete time series. Resources should flow instead to primary research.

Credible evidence points to rapidly rising U.S. autism rates.³ Mercury exposure is temporally,¹ epidemiologically,⁶ and clinically⁷ associable with U.S. autism cases and may help explain these increases. The IOM has called for an active research program² that did not include ecologic speculations. Independent scientists should heed their recommendations, remain concerned over the autism-mercury connection and investigate further using proper methods.

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Authors' Reply to Mr. Blaxill's "Concerns Continue Over Mercury and Autism"

In reply:

Our intent in undertaking the investigation to which Mr. Blaxill refers was to further examine the alleged

association between childhood exposure to Thimerosal®-containing vaccines and the risk of autism, using ecologic data from Scandinavia that are similar to those from California and the United States originally analyzed by Mr. Blaxill. Our paper,¹ published in this *Journal*, focused on an analysis of new data collected through a collaborative effort of colleagues in the United States, Denmark, and Sweden. Our results—which showed that the incidence and prevalence of autism apparently began to rise in the mid-/late-1980s and continued to climb throughout the 1990s in Denmark and Sweden, despite the fact that Thimerosal® exposures from vaccines disappeared in both countries in the early 1990s—stand in sharp contrast to the direct association alleged in California during the same time period, even though they are based on similar ecologic data that were apparently analyzed using similar methods.

In preparing our paper, we endeavored to provide a clear, complete description of the sources and contents of the data sets we used; the analytic methods we applied; and a discussion of the most important shortcomings in our data and results (most notably, those inherent in ecologic data²). In the course of presenting and discussing our findings, we commented on, and contrasted them with, those presented by Mr. Blaxill at a public meeting of the Institute of Medicine (IOM)'s Immunization Safety Review Committee in July 2001.³ In so doing, we attempted to summarize Mr. Blaxill's data collection and analytic methods; however, we could find only limited information describing his data and methods—viz., a single PowerPoint™ slide contained in the aforementioned presentation to the IOM Committee that also appeared on the SafeMinds website to which Mr. Blaxill refers. If Mr. Blaxill feels we

have “. . . misrepresented. . . [his]. . . work. . .”, perhaps the best way to clarify any inaccuracies would be for him to publish a full and complete description of his materials and methods (which, to our knowledge, has never been done), in the spirit of an ongoing, open scientific discussion of this important public health topic.

Finally, no single study—including ours—is likely to provide definitive, irrefutable evidence with regard to this issue. Rather, as we concluded in our original paper, we believe that our results are consistent with the overall body of evidence currently available in the extant literature (i.e., not merely a few selected studies) in arguing against the hypothesis that increased exposure to Thimerosal®-containing vaccines is responsible for the apparent increases in the rates of autism in young children worldwide. We join with Mr. Blaxill in calling for careful, unbiased research to resolve any outstanding questions.

Sincerely,

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(on behalf of all the authors of our original paper¹)

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