Junk study by Harvard School of Public Health tries to link pollution and autism: fails miserably

By ACSH Staff — December 19, 2014

Regular readers of our Dispatch know that our scientists have little respect for the typically-junk reports published in *Environmental Health Perspective*, and the same goes for authors based at the Harvard School of Public Health. The journal and the academic center often seem to have the same goal: ignore or flout or distort the rules of science and sound statistics whenever needed to promote their anti-chemical, anti-technology agendas. They have struck again with a remarkable pseudo-analysis of air pollution s alleged link to autism.

The study [1], somewhat lengthily entitled *Autism Spectrum Disorder and Particulate Matter Air Pollution before, during and after Pregnancy,* ostensibly seeks to assess and explore the association between maternal exposure to particulate matter (PM) air pollution and odds [ie, risk] of ASD in her child. From the outset, this seems like a formidable task, given the extraordinary difficulty of obtaining reliable measurements of PMs of various sizes, and the near-impossibility of measuring individual exposures to PM among free-living humans. (The controversial diagnosis of ASD, while fraught in many cases, is the parameter least susceptible to confounding and/or manipulation, but it does add to the study s ¦.complexity).

So, how did the authors (Dr. Ranaan Raz of the HSPH is the lead author, but others contributed, including Dr. Kristen Lyall of UC-Davis pesticides and endocrine-disrupters and autism group) get around those major obstacles? Easy! They simply got all the moms-to-be s addresses and figured out some method for assigning an air pollution exposure surrogate to the location given as their home addresses during pregnancy. More specifically:

Monthly averages of PM with diameters ¤2.5 Âµm (PM2.5) and 2.5-10 Âµm (PM10-2.5
) were predicted from a spatiotemporal model for the continental US and linked to residential addresses.

See? How easy was that: they just used pollution models for the continental US [!] and somehow correlated those with the pregnant subjects home addresses, to get their PM exposure!

But there s more (or less): the authors also attempted to control for several confounders as senior author Mark Weisskopf told Bloomberg News [2]: *The design of the study and the results rule out many confounding measures that can create a bias ¦ The researchers took into account socioeconomic factors that can influence exposure to pollution or play a role in whether a child is*

diagnosed with autism.

So not only did the researchers make a sort-of educated guess as to the mothers exposure to pollution, they also allegedly controlled for a host of home-related and parental-related factors that are known or thought to contribute to either or both of PM exposure or to ASD risk. Then they put all of those data into their special computer model, and fiddled with the dials until they got the "statistically significant" results they sought!

ACSH s Dr. Gil Ross had this comment: Over and over again, we see this type of phony, pseudo-quantitative junk being passed off as a putative link or association between factors that is simply not grounded in science, the study s own data, or even common sense. But this author, Weisskopf, went beyond the fringe when he said this: One of the unique aspects of the study we did is that it provides an even stronger piece of evidence for there being a causal effect...It s really the pollution doing it. He gives away his clear bias and abandonment of any semblance of science: no observational/retrospective study can allow a cause-and-effect inference, even a strong, solid study. And this is the antithesis of a strong study: it s based on sand and smoke and mirrors, fully committed to its agenda.

Source URL: https://www.acsh.org/news/2014/12/19/junk-study-harvard-school-public-health-tries-link-pollution-autism-fails-miserably
Links
[1] http://ehp.niehs.nih.gov/1408133/
[2] http://www.bloomberg.com/news/2014-12-18/air-pollution-exposure-in-pregnancy-linked-to-autism-in-study.html