

Docket EPA-HQ-OAR-2018-0794

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To: Environmental Protection Agency

I'm testifying as a physician and as a grandmother concerned for the health and well-being of people in this country. I ask you to re-affirm and strengthen the scientific, economic and legal underpinnings of the 2012 Mercury and Air Toxics Standards for Power Plants.

As a psychiatrist, I will focus on risks of mercury to the human nervous system.

We have known for at least 200 years that mercury causes psychiatric illness. The old phrase "Mad as a hatter" became common when hat makers were exposed to mercury from the felting process. (1)

These days, mercury is emitted by coal-burning power plants. Dirty coal-burning plants are disproportionately found close to communities of color, Indigenous communities, and low-income and immigrant communities. Over a third of our country's Black citizens live within 3 miles of a coal-fired power plant. (2)

Children are particularly vulnerable to the toxic impact of mercury. In a 2022 article, Zhang et al report "Residential proximity to coal-fired power plants contributes to children's neurobehavioral disorders...Coal ash may contain several neurotoxins found to impact cognitive ability and behavior in children" including mercury. This study found increasing risk of attention, mood and anxiety disorders the closer the child lived to the source of coal ash. (3)

Before MATS, 50% of the mercury emitted in the US came from coal-fired plants--more mercury pollution than the next ten leading sources combined. (3) The number of children exposed to methylmercury levels that exceeded EPS recommendations was cut in half once MATS was in place. (4)

Even so, prenatal exposure results in approximately 60,000 children born in the US each year with irreversible neurologic damage to motor skills and the ability to learn. (5)

Heavy metals also increase the risk for dementia. I screen patients for mercury as part of a dementia/Alzheimer's work-up and test for mercury for cases of psychosis and mood disorders related to exposure. (6, 7)

Mercury bioaccumulates once it enters the food chain. Fish are particularly prone to bioaccumulation, which hits vulnerable populations the hardest as they follow cultural practices or fish for food to feed their families. (8)

It's time for the EPA to reaffirm 2012 Mercury and Air Toxics Standards (MATS) for power plants.

Citations:

- (1) Coal Blooded: Putting Profits Before People. NAACP. naacp.org/resources/coal-blooded-putting-profits-people.
- (2) CH Zhang et al Proximity to coal-fired power plants and neurobehavioral symptoms in children. Journal of Exposure Science & Environmental Epidemiology 32, 124-134 (2022). <https://doi.org/10.1038/s41370-021-00369-7>
- (3). U.S. Environmental Protection Agency. 2013. [EPA-823-R-13-002](https://www.epa.gov/epa-823-r-13-002) cited in <https://briwildlife.org/mercury-matters-2020-a-science-brief-for-journalists/> briwildlife.org/mercury
- (4) <https://www.nationalacademies.org/news/2000/07/epas-methylmercury-guideline-is-scientifically-justifiable-for-protecting-most-americans-but-some-may-be-at-risk>.
- (5) [A Hypothesis and Evidence That Mercury May be an Etiological Factor in Alzheimer's Disease](#)
Robert Siblingud, Joachim Mutter, Elaine Moore, Johannes Naumann, Harald Walach
Int J Environ Res Public Health. 2019 Dec; 16(24): 5152.
- (6) Huang X et al. Mercury poisoning: A case of a complex neuropsychiatric illness. American Journal of Psychiatry online Dec 2014 <https://doi.org/10.1176/appi.2013.12101288>.
- (7) [theguardian.com/us-news/2021/may-20/mercury-poison-vulnerable-communities-us-canada](https://www.theguardian.com/us-news/2021/may-20/mercury-poison-vulnerable-communities-us-canada).
- (8) e360.yale.edu/digest/trump-administration-to-weaken-limits-on-mercury-and-other-toxic-pollutants.