

Lynn R. Goldman, MD, MPH

Professor, Johns Hopkins Bloomberg School of Public Health

Testimony on HR 2065

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Thank you for the opportunity to testify today in support of HR 2065, which would phase out emissions of mercury from US chlor-alkali production plants.

I am a pediatrician and formerly served as Assistant Administrator for Prevention, Pesticides and Toxic Substances at the EPA from 1993-98. I currently am a professor of environmental health sciences at the Johns Hopkins Bloomberg School of Public Health. I am a member of the Board for the Children's Environmental Health Network and I am a Trustee of Environmental Defense. I have done research on mercury exposures and toxicity. This testimony reflects my views as a pediatrician and a scientist, and not necessarily those of any of the above organizations.

Mercury is a toxic metal that is transformed to methylmercury in water. Methylmercury accumulates in the food supply, especially in fish. We have long known about the serious effects of mercury on children. Several longitudinal studies of mercury exposure to the fetus and cognitive functioning in childhood were the basis for a 2000 National Academy of Sciences (NAS) report "Toxicological Effects of Methylmercury". The NAS recommended a "safe" level of methylmercury for children that is only 0.1 micrograms per kilogram of body weight per day or one microgram per day for a 10kilo (22lb) child. To put this into perspective, this is only 0.000000035 (35 billionths) of

an ounce each day. The EPA has estimated that upward to some 630,000 children per year are born with mercury levels above this standard.

Evidence of toxic effects of methylmercury has continued to mount since 2000. At this point, *all* published studies of *in utero* mercury exposures have reported associated cognitive deficits as measured by decreased IQ, decreased attention and poorer motor skills. This includes not only earlier studies in the Faroe Islands and New Zealand but also an earlier study in the Seychelles that was once believed to be “negative”. Today the Seychelles researchers can identify adverse effects related to mercury exposures that previously were masked by beneficial effects of fish intake (and have been uncovered through painstaking scientific analysis). Additionally, in the US three newer studies from Oswego, New York, New York City, and Boston have all reported that methylmercury is toxic to developing brains at levels that occur in the general population. In 2000, the opinion of the National Academy of Sciences was that the weight of evidence substantiated the occurrence of adverse neurotoxic effects at lower levels of exposure. Today, this evidence is overwhelming.

Methylmercury also is hazardous for adults, causing an increased risk of cardiovascular disease and neurological toxicity. So here is what we know. One, consumption of species of fish with highest mercury levels is the predominant pathway of exposure to methylmercury. EPA and FDA

efforts to reduce mercury exposure have focused on educating the public about what kinds of fish to eat, and which to avoid. Two, fish consumption can provide many health benefits to both children and adults. So, to protect this valuable food source, we need to reduce mercury pollution.

*Mercury emissions from chlor-alkali production plants*

“Mercury cell” chlor-alkali manufacturing processes are among the least essential uses of mercury on the market today. Japan has banned them and the European Union is phasing them out of production by 2020. In the United States, most companies have already switched from mercury cells to cleaner membrane-based technologies in order to eliminate the use and emissions of mercury in chlor-alkali production. These newer technologies are not only feasible, they also are cost-effective. Only a handful of US companies continue to use the mercury cell process; their production comprises less than 5% of the total US chlorine and caustic soda production. Yet, large quantities of mercury are used in these processes. These facilities generate demand for mercury, leading to upstream releases of mercury from mining and other activities that are needed to supply them with mercury. These facilities generate releases of mercury, in the course of manufacturing, in waste, and via mercury contamination of products. They have caused mercury exposure in workers who maintain and operate these plants. Releases of mercury anywhere in the world contribute to the levels of mercury in the global environment, but there are also significant

amounts of local deposition. Studies have shown that mercury levels are generally higher in the proximity of mercury chlor-alkali plants.

We don't know the precise environmental fate of the mercury that is consumed in mercury cell chlor-alkali plants. What we do know is that elimination of mercury cell processes to manufacture chlorine and caustic soda will reduce US emissions of mercury, and will contribute to our efforts to reduce mercury emissions globally. For far too long we have heard both arguments to defer domestic action until global mercury releases are controlled, and to defer global action until we control US releases. It is time to step up to the plate on both fronts to protect not only the fish but also our children from harmful effects of mercury. Moreover the proposed legislation wisely provides for storage of mercury wastes in a manner in which the mercury will not be released to the environment. This is an important safeguard.

In closing, HR 2065 is both feasible *and* in the best interest of our nation's children. There is no need to expose a new generation of children to excessive levels of mercury pollution.