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Mercury pollution can be stopped reasonably

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I am a retired Pennsylvania physician with boards in internal medicine, cardiology and geriatrics and additional studies in environmental and public health. I am on no one's payroll and represent no group, lobby or other entity.

Here are some facts about mercury pollution, which a July 17 op-ed by Gene Barr of the Pennsylvania Chamber of Business & Industry seemed to ignore:

- Mercury comes mainly from burning coal as a fuel for power plants here, but also from burning municipal waste and other sources.
- Medical waste releases have been reduced as the toxicity of mercury is better understood.
- A 94 percent reduction in medical waste mercury pollution has occurred in Pennsylvania over the last two decades.
- The most mercury-polluted county in the United States is Armstrong County.
- There is evidence of toxic levels of mercury in U.S. citizens, in particular women of childbearing age who may become pregnant and have children who have absorbed mercury and concentrated it in their brain in fetal development. The Centers for Disease Control document Mr. Barr referenced is the "Third National Report on Human Exposure to Environmental Chemicals."

It assessed a tiny fraction of the U.S. Here are two quotes: "mercury levels in these [U.S.] women continue to merit close monitoring because 5.7 percent of women of childbearing age had levels within a factor of 10 of those associated with neurodevelopmental defects" and "the current survey design does not permit CDC to estimate exposure on a state-by-state or city-by-city basis."

- The damage to children's brains is well known (Journal of Pediatrics, February 2004) and involves intellectual damage with behavioral and IQ problems as well as an unusual effect on the nerves that go to the heart. That nerve damage destroys the ability of the heart to change rate as needed in response to stimuli-like exercise. This makes the child's heart incapable of meeting the body's need for blood in exertion.
- Here is a quote from the renowned Dr. Philip Landrigan in the May 2005 Environmental Health Perspectives: "Using national blood mercury prevalence data from the Centers for Disease Control and Prevention, we found that between 316,588 and 637,233 children each year have cord blood mercury levels of 5.8 micrograms/liter, a level associated with loss of IQ. The resulting loss of intelligence causes diminished economic productivity that persists over the entire lifetime of these children. This lost productivity is the major cost of methylmercury toxicity, and it amounts to \$8.7 billion annually.
- Pennsylvania's mercury comes from not only our own state, but from other parts of the country and world as well. It pollutes here but also moves to other states and beyond.

Thus, we can make some progress in cleaning up the mess but an effective cooperative effort is needed. Pennsylvania should lead the nation in this effort.

- Other states like Oregon are forcing action to remove mercury from the environment more rapidly than the current national legislation.

We Pennsylvanians could be a beacon to other states. We can show that mercury pollution can be stopped at a reasonable cost and without the dire consequences that people being paid by power companies would like us to believe.

I am not an expert at calculating the costs of damaged health versus the costs of a cleanup. But an epidemic of brain-damaged children would be far more costly than preventing such a tragedy. Autism's current epidemic is most likely unrelated to mercury poisoning but its emotional and financial costs are cruel. Imagine the destruction an epidemic of mercury damage would cause. **PERHAPS SOME** lawyers or legislators think along the lines that damage must be shown before any action must be taken. I beg to differ. If brain damage from mercury is biologically plausible, that is likely to happen based on our current knowledge then strong action must be taken promptly. Prevention has always been the best and most cost effective medicine.

I do not have the space to list all the research both on humans and animals that shows what a potent toxin mercury is. "Mercury toxicity" gets 3,850,000 hits on Google!

We need a population that understands these facts and causes their legislators to act on mercury pollution effectively, both on a state and national level. Legislators that show influence by those who do not care for the safety of our people need to be corrected or replaced.

JACK LEBEAU, M.D., writes from Jenkintown.

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I am a retired PA physician with boards in internal medicine, cardiology and geriatrics and additional studies in environmental and public health. I am on no one's payroll and represent no group, lobby or other entity.

Here are some facts about mercury pollution with references. The op-ed by Mr. Gene Barr on July 17<sup>th</sup> seems to ignore them.

1. Mercury comes mainly from burning coal as a fuel for power plants here but also from burning municipal waste and other sources. Medical waste releases have been reduced as the toxicity of mercury is better understood. A 94% reduction in medical waste mercury pollution has occurred in Pennsylvania over the last two decades. **PA Secretary of the Environment Kathleen McGinty.**
2. The most mercury-polluted county in the United States is Armstrong County, PA (**US-PIRG, 2003**)
3. There is evidence of toxic levels of mercury in US citizens, in particular women of childbearing age who may become pregnant and have children who have absorbed mercury and concentrated it in their brain in fetal development. The Centers for Disease Control (CDC) document Mr. Barr referenced is the "**Third National Report on Human Exposure to Environmental Chemicals**" It assessed a tiny fraction of the US population. Here are two quotes: "mercury levels in these (US) women continue to merit close monitoring because 5.7% of women of childbearing age had levels within a factor of 10 of those associated with neurodevelopmental defects" and "The current survey design does not permit CDC to estimate exposure on a state-by-state or city-by-city basis". And we have a county with the worst concentrations of mercury in our nation. Hmm.
4. The damage to children's brains is well known (**Journal of Pediatrics, February 2004**) and involves intellectual damage with behavioral and IQ problems as well as an unusual effect on the nerves that go to the heart. That nerve damage destroys the ability of the heart to change rate as needed in response to stimuli like exercise. This makes the child's heart incapable of meeting the body's need for blood in exertion.
5. Here is a quote from the renowned Dr. Philip Landrigan et al. in **Environmental Health Perspectives May, 2005 Vol.113 (6)**. "Using national blood mercury prevalence data from the Centers for Disease Control and Prevention, we found that between 316,588 and 637,233 children each year have cord blood mercury levels > 5.8 micrograms/liter, a level associated with loss of IQ. The resulting loss of intelligence causes diminished economic productivity that persists over the entire lifetime of these children. This lost productivity is the major cost of methyl mercury toxicity, and it amounts to \$8.7 billion annually (range, \$2.2–43.8 billion; all costs are in 2000 US\$)."
6. Pennsylvania's mercury comes from not only our own state, but from other parts of the country and world as well. (**US EPA, other sources**) It also pollutes here but also moves to other states and beyond. Thus we can make some progress in cleaning up the mess but an effective cooperative effort is needed. Pennsylvania should lead the nation in this effort.

7. Other states like Oregon are forcing action to remove mercury from the environment more rapidly than the current national legislation demands. **"The Oregonian" 7/17/06**
8. We must not allow an emissions trading system in which a company here can send a check to another company in another state to buy an emissions credit that gets the PA company off the hook and pays to clean up another state. Let's work together and get the cleanup done! **Testimony of Secretary McGinty April 25, 2006.**

We Pennsylvanians could be a beacon to other states. We can show that mercury pollution can be stopped at a reasonable cost and without the dire consequences that people being paid by power companies would like us to believe.

I am not an expert at calculating the costs of damaged health versus the costs of a cleanup. But an epidemic of brain damaged children would be far more costly than preventing such a tragedy. Autism's current epidemic is most likely unrelated to mercury poisoning but its emotional and financial costs are cruel. Imagine the destruction an epidemic of mercury damage would cause.

I need to make a final point. Perhaps some lawyers or legislators think along the lines that damage must be shown before any action must be taken. I beg to differ. If brain damage from mercury is biologically plausible, that is likely to happen based on our current knowledge then strong action must be taken promptly. Prevention has always been the best and most cost effective medicine. I do not have the space to list all the research both on humans and animals that shows what a potent toxin mercury is. "Mercury toxicity" gets **3,850,000** hits on Google! Facts are there and in Medline and other readily available sources.

We need a population that understands these facts and causes their legislators to act on mercury pollution effectively, both on a state and national level. Legislators that show influence by those who do not care for the safety of our people need to be corrected or replaced.

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