

Testimony of Dr. Walter Tsou for the EQB, PA Dept of Environmental Protection July 27, 2006.

My name is Dr. Walter Tsou, and I am speaking to you today on behalf of the Philadelphia chapter of Physicians for Social Responsibility. As a board member of PSR and the Former Health Commissioner of Philadelphia, I consider this issue of air quality and control critical to protecting the public's health.

We support the DEP proposal to cut mercury pollution from our state's coal fired power plants by 90% by 2015. The cornerstone of our nation's efforts to solve our air pollution problems is the setting of standards for the most serious air pollutants based on the current science and data. This role falls to the Environmental Protection Agency (EPA) and the DEP, which, inherent in your statutory mandate, is charged to protect vulnerable populations.

Mercury is such a pollutant and is a known neurotoxin. Its potentially harmful effects have been known since the 1800s when the term "mad as a hatter:" was coined because of the use of mercury by hat makers. Mercury can be absorbed through vapor inhalation, ingestion, injection or absorption through the skin. Because mercury toxicity can occur in so many ways, our only true protection from preventing mercury poisoning is to prevent it from entering the environment in the first place.

Mercury's most serious effect is on the developing fetus. For ethical reasons, we don't know the exact threshold for fetal neurotoxicity, but even small amounts are considered unacceptable. Elemental mercury is a liquid in room temperature and can readily vaporize and be inhaled. Most, but not all of this mercury will be eliminated in our feces, but small amounts can remain in a chronic state in our bodies causing central nervous system toxicity. These can be manifested in young children as delayed mental development or memory loss, behavior problems, depression, or even insomnia.

But its effects are usually much more subtle making it difficult to detect. It is likely that small amounts of mercury are already present in everyone in this room. In its ingested inorganic form, mercury can also effect the GI tract and cause kidney damage. Since the kidney cannot excrete heavy metals like mercury very well, accumulated amounts of mercury can cause chronic nephro and neurotoxicity.

The most common source of unregulated mercury in our environment is from coal fired power plants which release mercury in their exhausts. The mercury lies on the ground, in our lakes and in our rivers. Fish ingest this mercury and convert it to an organic form of mercury called methylmercury. Methylmercury can be ingested by pregnant mothers and cross the placenta risking fetal retardation. It can be absorbed by red blood cells causing anemia and also in our gums causing severe gingivitis, skin, and hair loss. It can inhibit the enzyme, choline acetyl transferase, which is necessary for proper muscle function and causes one of mercury toxicity's classic symptoms - tremors.

Today, it is difficult to recommend eating fish more often than once a week because of the potential toxins found in the fatty layer of their skin. Methylmercury is but one of these toxins.

In conclusion, we affirm the importance of health-based air quality standards to offer health protection to susceptible populations, especially children, from the harmful effects of air pollution, and urge you to base such standards on the latest science.

Nine years from now is enough time to do something constructive about this environmental toxin. We should do all we can to remove mercury from our environment. We owe that much to our children who inherit our planet. Thank you for the opportunity to address this important public health issue.