

## Mercury FAQs...

### WHAT IS MERCURY?

Mercury is a developmental toxin that occurs naturally in the environment, as well as produced by human activities that increase occurrence in the environment. It exists in several forms: elemental or metallic mercury, inorganic mercury compounds, and organic mercury compounds.

### WHAT ARE THE EFFECTS OF MERCURY EXPOSURE?

Mercury in all forms is an acknowledged neurotoxin. High levels of mercury in the bloodstream of unborn babies and young children impairs brain development. Mercury has been linked to NDDs, such as mental retardation, Attention Deficit Disorder, autism and other impairments affecting behavior, mental and emotional health. According to the EPA, 1 in 6 women of child-bearing age already have levels of mercury in their bodies considered harmful to unborn children.

### HOW DOES MERCURY OCCUR IN THE ENVIRONMENT?

Human activities account for two-thirds of environmental mercury exposure. According to EPA, coal-fired electric power plants account for about 40% of total U.S. manmade mercury emissions. Other large sources are industrial boilers, burning hazardous waste, and the production of chlorine, cement and pulp/paper.

## WHAT YOU SHOULD KNOW

1. **Technology exists to greatly reduce or eliminate mercury emissions from power plants, the largest offender of mercury emissions.** Activated carbon injection (ACI), an existing technology already used for medical and municipal waste incinerators, reduces mercury emissions by 90%. This technology has been successfully used in the reduction of mercury emissions for power plants in Alabama, Kansas and North Dakota with similar results. Plants already using fabric filters could also increase mercury reductions similarly by adding scrubbers.
2. **Existing Mercury Control Technology Is Affordable and Impacts Cognition.** Using EPA data, the National Wildlife Federation (NWF) estimated that installing mercury control technology to achieve 90% mercury reduction at power plants would cost the average household about 69 cents to \$2.14 per month. Studies from Mt. Sinai and Harvard also suggest substantial benefits are realized in the reduction of mercury emissions in increased IQs and a decrease in premature mortality with monetary savings ranging from \$3.5 to \$5.2 billion annually.
3. **Shifting to Clean Sustainable Technology Portfolio:** Existing technologies can minimize but not eliminate mercury emissions from coal-fired power plants. Long-term energy solutions are needed to shift energy production from coal-fired power plants to cleaner non-mercury-polluting technologies.
4. **Research Specific to Environmental Mercury, Autism and Neurological Disorders:** Autism is reported as affecting approximately one in 150 children born in 1994 in the United States. A recent report by the Interagency Autism Coordinating Committee (IACC) of the National Institutes of Health (NIH), noted that the role of the environment in autism research had received insufficient attention to date and remains an understudied area of investigation.
  - University of Texas Health Science Center - [Proximity to Point Sources of Environmental Mercury Release as a Predictor of Autism Prevalence](#) - Raymond F. Palmer et al; A significant increase in risk of autism diagnosis was identified in relation to proximity to coal plants and industrial mercury emitters. March 2008
  - University of Northern Iowa - [Blood Levels of Mercury Are Related to Diagnosis of Autism: A Reanalysis of an Important Data Set](#) - DeSoto & Hitlan; A significant relationship does exist between the blood levels of mercury and diagnosis of an autism spectrum disorder. November 2007
  - Division of Environmental and Occupational Disease Control, California Department of Health Services - [Autism Spectrum Disorders in Relation to Distribution of Hazardous Air Pollutants in the San Francisco](#) - Gayle Windham et al; Found an association between autism and mercury in ambient air at birth residence. September 2006
  - Department of Physiology, University of Lausanne, Switzerland - [Involvement of Environmental Mercury and Lead in the Etiology of Neurodegenerative Diseases](#) - Tschudi-Monnet, et al; Environmental mercury was found to contribute to mitochondrial dysfunction, oxidative stress and brain inflammation, preconditioning the brain for the development of neurodegenerative disease such as Alzheimer's. April 2006
  - University of Texas Health Science Center - [Environmental mercury release, special education rates, and autism disorder: an ecological study of Texas](#) - Raymond F. Palmer et al; Environmentally released mercury increased autism rates. February 2005
5. **What You Can Do:** Many states are taking steps to reduce mercury and enacted tough standards and require as much as a 90% reduction of mercury emissions from coal-fired power plants. To learn more about what states are pursuing reductions in mercury emissions, visit <http://www.4cleanair.org/Documents/StateTable.pdf>

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