

Mercury and Learning Disabilities



Stevens High School
Home of the Cardinals

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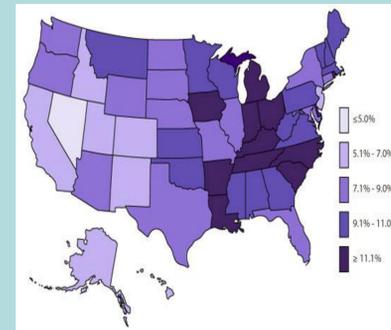
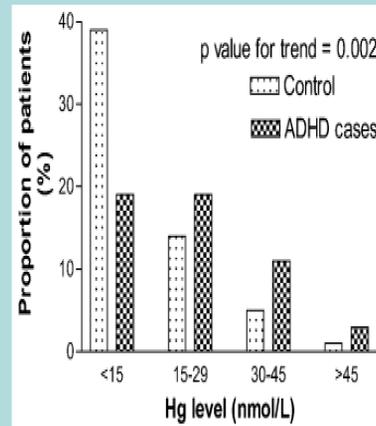
Introduction

We chose the question, "What learning disabilities can be linked with mercury?" because we have friends with learning disabilities and wanted to learn more about them. We wanted to find out what learning disabilities were caused or worsened by mercury exposure. We expected there to be at least one common disability to be a part of this. We also wondered if there were ways to lessen the severity of these disabilities. Our hypothesis was "At least one common learning disability can be linked with mercury exposure." In the article, "Mercury exposure, nutritional deficiencies and metabolic disruptions may affect learning in children," clearly stated that ADHD can be linked with mercury exposure.

Materials and methods

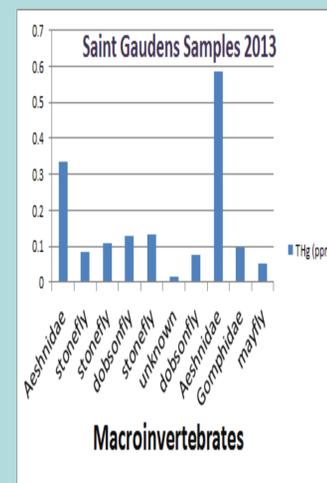
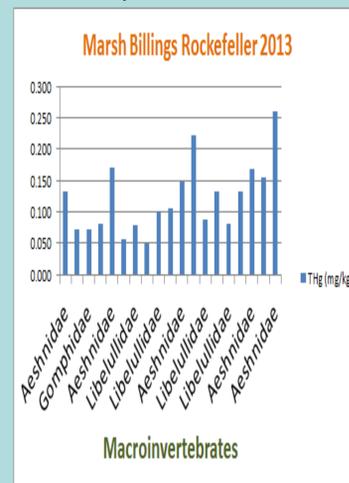
We collected our samples from a river that had dragonfly larvae. The river we went to is called Blow Me Down. We went to Saint Gaudens to go to a river and collect larvae data. We measured how long they are, we picked out the bigger ones out first and then picked out the small ones of dragonfly larvae. The dirty hands are not really dirty they had to touch the dragonfly larvae to put them on a tray and clean hands had to grab them with a spoon and put them in bags. The dirty hands grabbed the dragonfly larvae and the clean hands had to put them in bags with a spoon. Dirty hands could not touch the clean bag, clean hands can't touch anything.

Results



This graph shows that people with ADHD generally have a higher Mercury level than people without ADHD

The collection we did at Saint Gaudens was sent to Dartmouth for evaluation for mercury content. I think we could use that data about the water mercury, and the human population that interacts with the water, to find out what percentage of the people have ADHD. We should find out how many people in that population already have ADHD or other learning disabilities, then see if we can link that to the mercury in the Blow-me-down river.



State	2007	2011
New Hampshire	10.1%	7.2%
Vermont	9.4%	7.8%

Investigate Further

Do higher levels of mercury directly affect the levels of learning disabilities in a population?

What percentage of disabilities are actually linked with mercury?

Are certain people more susceptible to learning disabilities?

Conclusions and discussion

Our data did answer our question to a point. We did not learn about all the disabilities linked with mercury. But we learned about the major ones. Our hypothesis was "Some common learning disabilities are linked with mercury exposure." We thought we would find at least one or two learning disabilities, and we found two, so it was supported. We were set back because we didn't get to learn as much as we hoped about this subject.

The main source of human exposure to mercury is the consumption of fish contaminated with methylmercury, which may adversely affect early neurodevelopment. Although, it hasn't necessarily been proven for every type of learning disability. Sometimes, it can even affect the fetus through the mother. ADHD (Attention Deficiency Hyper-active Disorder) and ASD (Autism Spectrum Disorder) are sometimes caused by exposure to mercury.

This is talked about in the "Mercury exposure, nutritional deficiencies and metabolic disruptions may affect learning in children" document.

Our data could not pin-point every disability linked with mercury. With this data we have we hope to raise awareness about the effects of mercury exposure.

Literature cited

- Dufault, Renee, Roseanne Schnoll, Walter J. Lukiw, Blaise LeBlanc, Charles Cornett, Lyn Patrick, David Wallinga, Steven G. Gilbert, and Raquel Crider. "Mercury Exposure, Nutritional Deficiencies and Metabolic Disruptions May Affect Learning in Children." National Center for Biotechnology Information. U.S. National Library of Medicine, 27 Oct. 2009. Web. 10 Dec. 2013.
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Acknowledgments

We thank Schoodic Education and Research Center Institute, University of Maine Mitchell Center, The National Park Service, Saint Gaudens Historical Site, The Wellborn Ecology Fund, National Science Foundation, Dartmouth GK-12 Program, and The Chen Lab at Dartmouth.

