

NIH Annual Intramural Research Report**ZIA ES043011-15****Report Title**

Toxicity Of Lead In Children--Clinical Trial

2009 Fiscal Year

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Principal Investigator

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There were 4 External Collaborators

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Keywords**Goals and Objectives**

This study was originally designed to test whether succimer, an oral chelating agent, could prevent lead-associated cognitive defects in toddlers. It does not. Using these data, we have explored other aspects of lead poisoning. We have analyzed blood samples from the trial for mercury and cadmium. We have found that that succimer is not a good chelator of mercury and does not chelate cadmium at all. We also found that mercury or cadmium at the low levels seen in these children is not associated with any of the cognitive or behavioral test scores, or, in the case of cadmium, with blood pressure.

Summary

In a randomized clinical trial of succimer, an oral chelating agent that lowers blood lead concentration, children with blood leads of 20 to 44 micrograms per deciliter were given succimer or placebo when they were about 2 years old and followed with cognitive and behavioral testing. We reported previously that, despite lower blood lead levels during treatment, children given succimer had test scores that were no different from those of children given placebo at ages five or seven years. We have arranged with CDC to analyze blood samples collected in this project for methyl mercury, inorganic mercury, and cadmium, which will allow a randomized trial of succimer for chelation of these compounds without enrolling any new subjects or collecting any specimens. Succimer does not appear to be an efficacious chelating agent for mercury or cadmium. Neither mercury nor cadmium is associated with cognitive or behavioral test scores, and cadmium is not associated with blood pressure.

Publications Generated during the 2009 Reporting Period

Ordered by publication type and then author name.

1. Committee on Environmental Health, Committee on Infectious Diseases, Rogan WJ, Brady MT (2009). Drinking water from private wells and risks to children. *Pediatrics* 123, 1599-605. <https://doi.org/10.1542/peds.2009-0751>

PubMed ID 19482772

2. Rogan WJ, Brady MT, Committee on Environmental Health, Committee on Infectious Diseases (2009). Drinking water from private wells and risks to children. *Pediatrics* 123, e1123-37.
<https://doi.org/10.1542/peds.2009-0752>

PubMed ID 19482745