

# Oral chelation for environmental lead toxicity

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Treatment with dimercaptosuccinic acid (DMSA), an oral chelation agent, was linked to reductions in the amount of lead in blood in young children in Zamfara State, Nigeria following environmental lead contamination, according to a study by Jane Greig and colleagues from Médecins Sans Frontières (MSF) published in this week's *PLOS Medicine*.

The researchers report findings from an MSF program initiated in May 2010 to reduce [lead poisoning](#) in children following widespread environmental lead contamination due to [gold mining](#) in Zamfara State, Nigeria, leading to the death of an estimated 400 young children in the 3 months before chelation therapy was provided. The analysis included 3180 courses of DSMA [chelation therapy](#) administered between 1 June 2010 and 30 June 2011 to 1,156 children  $\leq 5$  y of age who had measurements of venous blood lead levels before and after each course of DMSA. The researchers found that, on average, treatment with DSMA was associated with a reduction in venous blood lead levels to 74.5% of the level at the start of the DMSA course. Nine of these 1,156 children died during the period studied, with lead poisoning likely involved in three of these deaths. The researchers report that no clinically severe adverse effects related to DMSA were seen during the study period, and no laboratory findings were recorded that required treatment discontinuation.

While the findings cannot be used to reach any definitive conclusions about the effectiveness or safety of oral DMSA as a treatment for lead

poisoning in [young children](#), blood lead levels decreased and the number of deaths was substantially reduced after the program was initiated.

The authors say: "This experience with basic supportive care and chelation in a large paediatric cohort adds significantly to the evidence base for clinical management of epidemic lead poisoning, particularly in resource-poor settings."

**More information:** Thurtle N, Greig J, Cooney L, Amitai Y, Ariti C, et al. (2014) Description of 3,180 Courses of Chelation with Dimercaptosuccinic Acid in Children #5 y with Severe Lead Poisoning in Zamfara, Northern Nigeria: A Retrospective Analysis of Programme Data. *PLoS Med* 11(10): pmed.1001739. [DOI: 10.1371/journal.pmed.1001739](#)

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