



MORE EVIDENCE LINKS LEAD, MISBEHAVIOR

Earlier this year, Herbert Needleman reported a strong link between elevated lead levels and delinquency). A new study by Robert Tuthill links even slightly elevated lead levels to attention deficit disorder, itself a strong risk factor for criminal behavior.

Tuthill analyzed lead levels in the hair of 277 first-graders from eight Massachusetts schools, and found a striking dose-response relationship between hair lead levels and symptoms of attention deficit disorder as reported by teachers. This relationship remained strong, he says, even after age, ethnicity, gender, and socioeconomic status were taken into account. "An even stronger relationship existed between physician-diagnosed attention-deficit hyperactivity disorder and hair lead in the same children," he adds.

Tuthill also found that "there was no apparent 'safe' threshold for lead," with even low exposure increasing the likelihood of attention deficits—a disturbing finding, since approximately three million children in the United States are estimated to have at least mildly elevated lead levels.

Diet linked to lead levels?

A separate study, by Susan Lucas et al., suggests that a low-fat diet can help prevent lead poisoning in high-risk children. The researchers, studying inner-city preschool children, found "a significant association between blood lead levels and both dietary fat and total calories." No association was seen between lead levels and protein or carbohydrate intake.

Lucas et al. say the lead/fat connection may stem from the role of bile. The presence of bile, secreted when the body digests fats, leads to increased absorption of lead from the gastrointestinal tract.

Lucas et al. also found higher lead levels in children eating more calories. Because many foods are slightly contaminated with lead, they say, increased food intake may naturally result in increased lead intake.

"The significant associations of total calories and dietary fat with [blood lead levels], independent of other key nutrients, are important findings that, if replicated, would further strengthen the recommendation of a low-fat diet as a healthy one for children," the researchers say.

"Hair lead levels related to children's classroom attention-deficit behavior," Robert Tuthill, *Archives of Environmental Health*, Vol. 51, No. 3, May-June 1996, pp. 214-220. Address: Robert Tuthill, Box 30430, School of Public Health, Dept. of Biostatistics/Epidemiology, Univ. of Massachusetts, Amherst, MA 01003.

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"Relationship between blood lead and nutritional factors in preschool children: a crosscultural study," Susan R. Lucas, Mary Sexton, and Patricia Langenberg, *Pediatrics*, Vol. 97, No. 1, January 1996, pp. 74-79. Address: Susan Lucas, 13532 Huntley Place, Silverdale, WA 98383.