



## Exposure to Lead & Prenatal Tobacco Linked to ADHD in Children

A new study<sup>1</sup> of 4,704 children between the ages of 4 and 15 years old found that both lead exposure and prenatal tobacco exposure are linked to Attention Deficit Hyperactivity Disorder (ADHD). The study reports that 4% of participants had ADHD,<sup>2</sup> which is equivalent to about 1.8 million children in the U.S. Researchers estimate that over 18% of the ADHD cases they studied were associated with prenatal tobacco exposure<sup>3</sup> (equivalent to about 270,000 U.S. cases), and that children with pre-natal tobacco exposure were 2.5 times more likely to have ADHD than those without prenatal tobacco exposure. Researchers estimate that over 21% of the ADHD cases they studied were associated with lead exposure<sup>4</sup> (equivalent to about 290,000 U.S. cases), and that children with the highest levels of lead exposure were at more than 4 times the risk for ADHD than those with the lowest levels.<sup>5</sup>

**Increased Risk, Percentage, and Number of U.S. ADHD Cases Associated With Lead Exposure and Prenatal Tobacco Exposure Among Children Age 5–14**

Characteristic	Increased Risk of ADHD Associated With Exposure	Percent of ADHD Cases Associated With Exposure	Estimated Number of ADHD Cases Associated With Exposure in U.S. Population
Prenatal Tobacco Exposure	2.5 times	18.4%	270,000
Blood Lead > 2.0 micrograms per deciliter	4.1 times	21.1%	290,000
Prenatal Tobacco Exposure or Blood Lead > 2.0 micrograms per deciliter	3.3 times	32.2%	480,000

Note: The risk factors are not mutually exclusive and the estimates of associated risk are not additive.

Source: Braun, et. el. (2006). Exposures to Environmental Toxicants and Attention Deficit Hyperactivity Disorder in U.S. Children. *Environmental Health Perspectives*. EHP Online, EHP In-Press, DOI: 10.128./ehp.9478. Retrieved September 20, 2006, from <http://www.ehponline.org/members/2006/9478/9478.pdf>.

<sup>1</sup> Data originate from the National Health and Nutrition Examination Survey (HNANES), a cross-sectional household survey of the non-institutionalized population, conducted between 1999 and 2002.

<sup>2</sup> Parents reported a medical diagnosis and use of stimulant medication.

<sup>3</sup> Mothers reported having smoked during pregnancy.

<sup>4</sup> Blood lead levels greater than 2 micrograms per deciliter.

<sup>5</sup> Children in the study were divided into 5 groups (i.e. quintiles) of increasing blood lead levels. Those in the highest quintile (with the highest blood lead levels, greater than 2 micrograms per deciliter) were compared to those in the lowest quintile (those with the lowest blood lead levels, including those with no discernable level, 0 to 0.7 micrograms per deciliter).

Prepared by TASC, Inc. TASC is an independent, not-for-profit agency that provides clinical case management and other services to men, women and adolescents with a variety of social and health-related needs. TASC serves approximately 30,000 clients in Illinois each year. For more information visit [www.tasc.org](http://www.tasc.org).

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