

US: Report shows additional millions affected by lead poisoning

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24 July 2003

A report in *The New England Journal of Medicine (NEJM)* of April 17, 2003, maintains that the current upper limit of 10 µg/dL blood lead burden currently accepted by the US Centers for Disease Control (CDC) is too high. The *NEJM* report confirms what other researchers have long suspected: no exposure to environmental lead is safe. The findings indicate that millions more children are adversely affected by environmental lead than previously estimated.

Dr. Richard L. Canfield of Cornell University led the analysis of data collected in a lead dust control research program. The conclusions published in April are significant because they are based on a study that looked, for the first time ever, at a population of children whose blood lead concentration never went above the government's current benchmark of 10 µg/dL.

Dr. Canfield and his co-investigators found that children with blood lead levels *below* 10 µg/dL had a decrease in IQ of 1.37 points for every increment of 1 µg/dL of blood lead burden. This is actually higher than the one-half-point decrease per 1 µg/dL that has been consistently found in populations with children above the official 10 µg/dL limit.

A separate *NEJM* review accompanying Canfield's research warned that the goal of eliminating elevated blood lead concentrations in the US by 2010 may not be accomplished by accepting the current CDC limit. The elimination of any lead above 10 µg/dL is one of the key goals for US health policy included in the US Department of Health and Human Services' "Healthy People 2010" report. The now-suspect upper limit of 10 µg/dL is also a benchmark for the World Health Organization (WHO).

The widespread use of lead in the United States in paint, gasoline, plumbing fixtures and other products until the latter part of the 20th century is an indictment of the profit system. The US government ignored for decades serious concerns raised by scientists and medical professionals about the dangers of lead, caving in to the pressure of the lead industry.

Evidence has been widely available for a century that lead is detrimental to the health of children and adults. European countries began to enact laws banning the substance in interior house paint in 1922 when the League of Nations recommended governmental action against the hazard. The US did not do so until the late 1970s, about the same time lead was taken out of gasoline.

The US government continued to accept high levels of lead in the general population, with an upper limit of 60 µg/dL considered

acceptable for children in the 1950s. The limit was lowered several times, finally being set at 10 µg/dL in the early 1990s, only because by that time that the figure represented the lowest concentration of blood lead burden the CDC considered adequately researched. But while finally recognizing the danger posed, Congress appropriated virtually no funds for cleanup.

Scientific studies have linked lead poisoning to adverse health and cognitive outcomes, including reduced IQ, learning disabilities and impaired hearing, as well as reduced attention span, hyperactivity and behavior problems in children. Very high blood lead levels were considered the cause of damaged kidneys and central nervous system problems and of anemia, coma, convulsions and even death.

The percentage of young US children with blood lead levels above 10 µg/dL dropped dramatically after 1978 when lead was taken out of US gasoline. While elevated blood lead levels were found in 78 percent of children in 1976, the fraction of children with blood lead levels above the official benchmark had dropped to only 4.3 percent by 1988-1991. Those children were concentrated in urban areas where a large proportion of homes were built before 1950.

In older homes, paint regularly contains large amounts of lead that can peel off the walls in flakes and chips or fall on floors and windowsills as a toxic dust, especially in poorly maintained housing stock. Of the byproducts of older paint, the effectively invisible lead dust is the greatest threat to the health of young children.

The concentration of lead poisoning among low-income children is the result of dramatic income inequality, poor housing, inadequate diet, poor education, and racial and income segregation. Lead poisoning is part of an interlocking and mutually reinforcing complex of causes leading to sharp differences in educational achievement in the US.

The disparities in academic outcome between populations of low-income children and their well-off counterparts in US primary and secondary schools is the subject of "A Strange Ignorance: The Role of Lead Poisoning in 'Failing Schools.'" Researcher Michael Martin presents a thorough report on lead poisoning and academic performance for the Arizona School Board Association. He criticizes current US education policy, which punishes teachers and students for poor academic results instead of addressing the underlying social problems.

Carol Ann Beaman, Ph.D. of Wayne State University in Detroit

presents important recent evidence from children in Detroit related to lead poisoning in her 1998 paper “The Effect of Current Whole Blood Lead Levels on the Early Learning Abilities of Six Year Old Urban Children.”

In a population as large as the school district in Detroit, even a 4-to-6-point decrease in mean IQ is significant. While it may not be critical for one child, Dr. Beaman says it results in more children who need special education classes and an absence of children with superior function.

According to Dr. Beaman, the Michigan Department of Public Health reported 26,618 children who were screened and found positive for elevated blood lead levels in Detroit in 1999. Of the more than 14,000 showing levels elevated above 5 µg/dL, 5,000 were above the official limit, including 653 above 20 µg/dL.

In her 1998 paper, Beaman used a cutoff limit of 5 µg/dL—half the federal blood lead limit. She found significant effects in verbal, perceptual and attention skills that are critical to future reading success among her six-year-old subjects with blood lead at these lower levels. The acquisition of pre-reading skills intensifies between the ages of 13 to 30 months, the very months of the greatest measures of blood lead burden among populations of at-risk children.

Dr. Beaman postulates that mothers can themselves acquire lifetime cognitive and educational difficulties as a result of their own childhood lead poisoning. This makes it harder to manage the effects of lead poisoning on their children. A pregnant woman who is lead poisoned also leaches lead from her bones into her fetus.

Learning is linked to the number of books and toys in a child's home and to activities in which children participate outside the home. These factors are especially critical in reversing the effects of lead poisoning. But even a highly intelligent mother would find these things difficult to obtain if she lacks adequate income.

Furthermore, attempting to reverse some of the damage through home intervention only addresses a small part of the issue. Furthermore, chelation, a medical procedure that removes lead from the blood, is not effective for low-level lead burden cases.

A June 18 public meeting of the Lead-Based Paint Emergency Taskforce in Detroit highlighted the indifference of Democratic as well as Republican officials to the dangers posed by lead poisoning.

The task force was set up largely in response to an exposé published in the *Detroit Free Press* earlier this year on lead contamination in the city. Detroit ranks fifth among US cities in the number of children suffering from lead poisoning. Sixty percent of homes in Detroit were built before 1950 and are at high risk for lead poisoning, and 42 percent of Detroit's children live in poverty. In 2001, one in ten young children in Detroit had elevated lead levels.

In her remarks to the meeting, Detroit City Council president Maryann Mahaffey, a Democrat and a supporter of the Democratic Socialists of America (DSA), ignored the social crisis in Detroit, admonishing parents to take personal responsibility to dust and clean their homes thoroughly and not allow children to ingest paint chips. She went on to express concern that the recent publicity over lead poisoning in Detroit could discourage potential new residents, particularly those in higher-income brackets, from

moving into the city.

In the question period, an architect and builder from Detroit addressed the panel. He noted the contrast between the huge numbers of children affected by lead poisoning and the paltry abatement measures undertaken by the city. The main issue, safe affordable housing, was not even addressed.

“What are the programs at the city, state and federal level for lead abatement and what are the amounts of money being devoted to them? You mentioned two grants, one for the abatement of 250 homes and another to abate 138 homes. What is the size of each grant?”

In reply, one panelist commented that it cost \$25,000 for lead abatement in a single house. In other words, the total amount available for lead abatement was between \$9 million and \$10 million, or enough to cover only about 400 homes. At this point Mahaffey intervened in order to try to deflect criticism of the Democratic city administration to the Bush administration. “You raised an important issue. We are lobbying in Congress. With the tax cuts being made there are big cuts threatened in HUD [Department of Housing and Urban Development]. You have to be vigilant and let your congressmen and senators know they have to stop cutting these programs.”

“Then I want to ask,” continued the questioner, “What are the priorities of the city administration, which is spending \$180 million of city funds to provide parking and river front development for General Motors and has endorsed another \$90 million in tax-free bonds for the renovation of the Book-Cadillac Hotel into a luxury hotel?”

Mahaffey defended this looting of the city treasury. “We need the business,” she said. “If we don't do it they will go to Mississippi...or [with regard to] the Book-Cadillac renovation...they wouldn't do it at all.” Soon thereafter, she left the meeting.

The big business politicians are incapable of addressing serious social problems such as lead poisoning because they are beholden to the same corporate interests responsible for creating the disaster in the first place.

The record of the government and the corporations is one of contempt toward the working-class families who must raise their children in a toxic environment. Thousands more youth must be trained and hired to build new, safe and affordable housing and to properly clean up contaminated homes and neighborhoods. With additional proof that even lower levels of lead poisoning are having a profoundly detrimental effect on brain development in young children, anything less must be considered criminal neglect.

For further information on lead poisoning, teachers, parents of school-age children and others can access “Strange Ignorance: The Role of Lead Poisoning in ‘Failing Schools’” at <http://www.azsba.org/lead.htm>.



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