Lead toxicity in children demands DOs' attention

Silently robbing our children of their full intellectual potential, lead poisoning affects more than 2 million youngsters in the United States. In most instances, no signs or symptoms warn of its presence. Neither does social class provide an iron-clad indication that children have been exposed to lead poisoning. Studies in Australia and Boston have shown that children in middle- and upper-class communities have been exposed to high levels of lead.

Yet, the developmental deficits that accompany lead poisoning last throughout childhood and into adulthood. In the aforementioned Australian study, the average deficit in the overall intelligent quotient (IQ) of children there ranged from 4.4 points to 5.3 points when blood lead concentrations measured 10 μg/dL to 30 μg/dL. Such a deficit proves especially precarious for children who already have a low IQ. For these youngsters, a 5-point deficit could mean the difference between the need for remedial education or not.

By affecting children's intelligence and overall development and behavior, lead poisoning costs society its future productive citizens. In 1991, American health authorities estimated a $2000 savings for each microgram per deciliter that blood lead levels are lowered. This savings would be attributed to a reduced need for medical attention, remedial education, and an increase in productivity.

Because of these health—and social—ramifications, the Centers for Disease Control (CDC) recommends that all children aged 6 months to 6 years be screened for lead poisoning at least once, preferably on or before their first birthday. This recommendation applies to those youngsters who live in an area where lead poisoning poses a possible hazard.

The CDC Advisory Committee defines blood lead concentrations of 10 μg/dL as being dangerous; however, detrimental effects may occur at even lower levels, according to the CDC committee. Given this recently revised definition of lead toxicity, screening methods no longer rely on the erythrocyte protoporphyrin test, which is not sensitive to low lead levels. Direct measurement of lead levels via venipuncture or, under appropriate circumstances, fingerstick sampling, is the accepted screening method today. Chelation therapy is reserved for patients with blood lead concentrations of 45 μg/dL, a rare occurrence. Patients with high lead concentrations should be tested regularly until concentrations fall to 15 μg/dL.

Prevention, by far, is the best defense against lead poisoning. Although the US Consumer Product Safety Commission banned the residential use of lead-based paints in 1978, many older dwellings remain painted with just that. An estimated 12 million children younger than 7 years of age still live in homes with lead-based paint on the walls. Physicians need to warn parents concerning the dangers of paint chips, which can find their way into little hands—and mouths.

Walls are not the only source for paint chips. Old toys manufactured in the United States or imported toys may be painted with a lead-base paint. Children should keep toys out of their mouths. Other sources of potential lead poisoning that physicians should warn parents of are: old lead water pipes, food left in open cans, glazed ceramic containers or crystal glassware, and soil.

One of the national health goals of Healthy People 2000: National Health Promotion and Disease Prevention Objectives is to reduce the number of children aged 6 months to 5 years with blood lead levels of 15 μg/dL or less to 5000 and the number of children with blood lead level concentrations of 25 μg/dL or less to zero.

As we begin 1993, the year 2000 is just around the corner. Much work is to be done if we are to meet these objectives and give each child a chance for full intellectual and personal development.

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