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CDC Releases Extensive Survey of Americans' Exposure to Environmental Chemicals

The *Third National Report on Human Exposure to Environmental Chemicals*, released today by The Centers for Disease Control and Prevention (CDC), shows a significant decline in exposure to secondhand smoke and continued decreases in children's blood lead levels. The report also suggests the need for more research into health effects of exposure to low levels of cadmium.

"This is the most extensive assessment ever of Americans' exposure to environmental chemicals; it shows we're making tremendous progress, and that's good news," said CDC Director Dr. Julie Gerberding. "Exposure to secondhand smoke continues to plummet and blood lead levels in children are way down. However, many challenges remain. CDC is steadfast in its commitment to health protection, including protection from environmental threats."

Exposure to Environmental Tobacco Smoke Decreases

Levels of a chemical called cotinine, which is a marker of exposure to secondhand smoke in nonsmokers, have dropped significantly since levels were first measured from 1988 to 1991. Compared with median levels for 1988-1991, median cotinine levels measured from 1999-2002 have decreased 68 percent in children, 69 percent in adolescents, and about 75 percent in adults. Still, some populations remain at greater risk; the third report shows that non-Hispanic blacks have levels twice as high as those of non-Hispanic whites or Mexican Americans, and children's levels are twice as high as adults' levels.

Children's Blood Lead Levels Continue to Decline

New data on blood lead levels in children aged 1—5 years show that for 1999—2002, 1.6 percent of children aged 1—5 years had elevated blood lead levels (levels of 10 micrograms per deciliter or greater – the CDC blood lead level of concern). This percentage has decreased from 4.4 percent in the early 1990s.

“Lowering blood lead levels in children is one of the major environmental health accomplishments of the past 30 years; however, CDC is still concerned about exposure to lead from lead-based paint and lead-contaminated house dust, soil and consumer products,” said Dr. Jim Pirkle, Deputy Director for Science at CDC’s Environmental Health Laboratory. “There is no safe blood lead level in children. Children are best protected by controlling or eliminating lead sources before they are exposed.”

Exposure to Cadmium Merits Monitoring

Recent studies have shown that urine levels of the metal cadmium as low as 1 microgram per gram of creatinine may be associated with subtle kidney injury and an increased risk for low bone mineral density. The report shows that about 5 percent of the U.S. population aged 20 years and older had urinary cadmium at or near these levels. Cigarette smoking is the likely source for these higher cadmium levels. More research is needed on the public health consequences of these levels in people in this age group.

For this year’s report, CDC’s Environmental Health Laboratory measured 148 chemicals – 38 of which have never been measured in the U.S. population – or their breakdown products (metabolites) in blood or urine. The samples were collected from approximately 2400 people who participated in CDC’s National Health and Nutrition Examination Survey (NHANES) from 1999 -2002. NHANES is an ongoing national health survey of the general U.S. population. The report provides exposure data on the U.S. population by age, sex, and race or ethnicity.

In addition to lead and cadmium, the report includes extensive data for such chemicals as mercury, lead, cadmium, and other metals; phthalates; organochlorine pesticides; organophosphate pesticides; pyrethroid insecticides; herbicides; polycyclic aromatic hydrocarbons; dioxins and furans; polychlorinated biphenyls; and phytoestrogens.

CDC conducts this research to learn more about the effectiveness of public health interventions and better understand the health risks of exposure to chemicals in the environment. Research separate from the report's findings is needed to determine the relationship between levels of chemicals in the blood or urine and health effects. The results presented in this and future reports will help set priorities for research on human health risks resulting from exposure to environmental chemicals.

The *Third National Report on Human Exposure to Environmental Chemicals* and an executive summary are available online at the following Web site: <http://www.cdc.gov/exposurereport>.

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