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News

Release

PCBs and Lead Impact Onset of Puberty in Akwesasne Mohawk Girls

Study suggests toxicants may be affecting growth and development of children in the U.S.

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ALBANY, N.Y. (February 1, 2005) --Exposure to lead and PCBs among Akwesasne Mohawk Nation adolescent girls impacts the onset of menstruation, or menarche, according to a new study by researchers at the University at Albany. The study, "Relationship of Lead, Mercury, Mirex, Dichlorodiphenyldichloroethylene, Hexachlorobenzene, and Polychlorinated Biphenyls to Timing of Menarche Among Akwesasne Mohawk Girls," is featured in the February 2005 issue of *Pediatrics*, and is authored by Melinda Denham, Lawrence M. Schell, Glenn Deane, Mia V. Gallo, Julia Ravenscroft, Anthony P. DeCaprio, and the Akwesasne Task Force on the Environment.

The study indicates that lead acts to slow the natural process of sexual maturation. Girls of the same age with higher lead levels are less likely to have begun menstrual cycling. In other words, higher lead levels are associated with a later first menstrual period. The study shows that a group of four PCBs, believed to be estrogenic, have the opposite effect. Girls of the same age with higher levels of PCBs are more likely to have had a first menstrual period than girls with lower PCB levels. There was no relationship between, mercury, mirex, p,p'-DDE, HCB and the timing of menarche.

PCBs are a group of chemical compounds that are present throughout the environment and in all human populations. Different PCBs can have different biological effects, estrogenic, androgenic, anti-estrogenic. "By testing several PCB groupings, we were able to determine that potentially estrogenic PCBs affected the odds of reaching menarche," said Schell, the principal investigator of the study and professor of anthropology and epidemiology at UAlbany. "At the same time, lead was associated with a significantly lower probability of having reached menarche."

The study is unique in that it tests for effects of several toxicants in the body; most studies have tested for only one toxicant at a time. Furthermore, the levels are such that these results pertain to children throughout the United States. All children in the study had lead levels below the U.S. Centers for Disease Control and Prevention action level of 10µg/dL in the blood. This suggests that lead and PCBs may be affecting the growth and development of many children around the country. According to Schell, "these findings raise concern about the effects of some common pollutants and the maturation and health of children across the U.S."

The report concludes that additional investigations are needed to confirm this study, and additional research needs to determine whether such low toxicant levels may impact reproduction or disorders of the reproductive system

For a copy of the article,
visit: <http://pediatrics.aappublications.org/cgi/content/full/115/2/e127>.

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