

No "safe" lead level seen for fetal brain

Amy Norton, Jan 19, 2006, REUTERS

NEW YORK (Reuters Health) - Exposure to even small amounts of lead through a mother's blood may harm the brain development of unborn babies, a new study suggests.

The Centers for Disease Control and Prevention (CDC) currently considers 10 micrograms per deciliter (mcg/dL) the "level of concern" for lead in the bloodstream, but researchers in Mexico found that maternal blood lead levels well below 10 mcg/dL appeared to have a lasting impact on their children's IQ, at least up to the age of 10.

Lead is a toxic metal that is present in the air, soil and water, though public health efforts in recent decades to reduce environmental levels -- by taking lead out of gasoline and paints, for example -- have cut Americans' lead exposure.

Young children and unborn babies are especially vulnerable to the toxicity of lead, as even low-level exposure can damage the developing brain and cause learning and behavioral problems.

The new study, along with past research, indicates there is no level of exposure that's "safe" for the fetal brain.

In particular, lead exposure during the early third trimester appeared critical, and much of the effects on children's later intellectual development seemed to occur at levels well below the U.S. federal standard - within the first 6 mcg/dL of exposure.

"The weight of evidence from a number of studies, including this one, argues convincingly that the outdated current CDC recommendations do not adequately protect either children or fetuses from developmental damage related to lead," study co-author Dr. Stephen J. Rothenberg told Reuters Health.

Rothenberg, who is with the National Institute of Public Health in Cuernavaca, Mexico, said he and his colleagues believe the only "safe" level of lead exposure for children and pregnant women is no exposure.

Their study, published in the journal *Environmental Health Perspectives*, followed 175 children whose mothers' blood lead levels were measured repeatedly throughout pregnancy. The children took IQ tests at the ages of 6 and 10.

The researchers found that maternal lead levels during pregnancy, particularly around the 28th week, were associated with poorer IQ test performance -- even with other factors, such as lead exposure after birth, considered. And the effects appeared to occur largely within the "first few" micrograms per deciliter of exposure, the researchers report.

Pregnant women who are found to have more than a few micrograms per deciliter of lead in their blood can, with their doctor's help, identify and avoid any ongoing sources of lead exposure, Rothenberg said.

But he stressed the importance of limiting low-level exposure long before pregnancy. Over time, lead is laid down in the bone, some of which will be released into the bloodstream during pregnancy.

"Lifetime exposure avoidance is the only way to avoid any fetal exposure to lead," Rothenberg explained.

Some measures for lowering lead exposure include using bottled or filtered water, since tap water can be a source of lead, particularly in older home with lead-based pipes. Older homes may still contain lead-based paint, and if the paint is peeling, lead dust can be inhaled. To remove this hazard, homeowners should hire a certified lead abatement contractor.

SOURCE: Environmental Health Perspectives, online December 29, 2005. See article at <http://ehp.niehs.nih.gov/members/2005/8552/8552.pdf>