

## **Unborn babies exposed to hundreds of chemicals**

Babies in the womb are exposed to hundreds of dangerous chemicals, according to a new study commissioned by the Environmental Working Group (EWG).

Jane Houlihan and colleagues analysed laboratory tests of umbilical cord blood taken from 10 babies born in August and September of 2004 in U.S. hospitals. The researchers report, "Tests revealed a total of 287 chemicals in the group. The umbilical cord blood of these 10 children, collected by Red Cross after the cord was cut, harbored pesticides, consumer product ingredients, and wastes from burning coal, gasoline, and garbage." Of these chemicals, the researchers say, "we know that 180 cause cancer in humans or animals, 217 are toxic to the brain and nervous system, and 208 cause birth defects or abnormal development in animal tests." Among the chemicals found in cord blood were mercury, fire retardants, and the Teflon constituent PFOA.

Houlihan et al. note, "The dangers of preor post-natal exposure to this complex mixture of carcinogens, developmental toxins and neurotoxins have never been studied." Such chemicals are likely to be far more dangerous to a fetus or developing child than to an adult, they say, because children's exposures are far greater on a pound-for-pound basis; the immature blood-brain barrier of infants allows greater exposure; children have lower levels of proteins that can bind with toxins and remove them from the body; and babies' systems are rapidly developing, and thus more vulnerable to damage. "Not long ago scientists thought that the placenta shielded cord blood—and the developing baby—from most chemicals and pollutants in the environment," the researchers say.

"But now we know that at this critical time when organs, vessels, membranes and systems are knit together from single cells to finished form in a span of weeks, the umbilical cord carries not only the building blocks of life, but also a steady stream of industrial chemicals, pollutants and pesticides that cross the placenta as readily as residues from cigarettes and alcohol."

The researchers recommend that the government take stronger steps to protect unborn children and infants, including updating the Toxic Substances Control Act to require chemical manufacturers to "demonstrate affirmatively that the chemicals they sell are safe for the entire population exposed, including children in the womb."

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"Body burden—the pollution in newborns: A benchmark investigation of industrial chemicals, pollutants and pesticides in umbilical cord blood," Jane Houlihan, Timothy Kropp, Richard Wiles, Sean Gray, and Chris Campbell, report of the Environmental Working Group, July 14, 2005. Full report available at <http://www.ewg.org/reports/bodyburden2/newsrelease.php>.