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Child health and environmental pollution in the Aral Sea region in Kazakhstan.

[Zetterström R.](#)

Source

Department of Paediatrics, Karolinska Hospital Stockholm, Sweden.

Abstract

Environmental pollutants, which may occur in breast milk and in various food products and drinking water, and which are also transferred to the foetus, constitute a severe threat to the health of infants and children. Among such compounds, various organochlorines, such as pesticides for the control of parasites (DDTs, HCHs), and products of industry and agriculture, such as dioxins and dioxin-like compounds (PCBs), are much discussed, in addition to organic mercury and heavy metals, such as lead and cadmium. The consequences of acute exposure to PCB have been documented in Japan following the ingestion of rice oil contaminated by PCBs. In Sweden birthweight has been found to be reduced and the perinatal mortality rate higher than expected in regions with high consumption of fatty fish from the Baltic Sea. In addition, from studies around Lake Michigan, it has been shown that children who have been exposed to PCBs in utero have retarded cognitive development. In the Aral Sea basin in Central Asia people have been subjected to long-term exposure to various pesticides, which have been distributed over the cotton fields in huge quantities. Organochlorines are resistant to breakdown in nature, thus they enter the food chain, eventually entering the human diet, and they may also be inhaled from dust. Such compounds accumulate in the foetus by placental transport and continue to do so postnatally if the infants are breastfed, as they may be present in high concentrations in human milk. The health of children living in the Aral Sea region is reported to be poor, with high morbidity and mortality and a high rate of chronic diseases and retarded mental and physical development. However, in addition to being subjected to environmental pollution, these children also suffer from health hazards related to poverty. Through epidemiological studies it may be possible to obtain information about to what extent exposure to environmental pollution from organochlorines contributes to the poor health of people living in the Aral Sea region.

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