What do POPs require of Children and Environmental Health (CEH) strategy?

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Abstract

The European Ministers’ CEH declaration in Budapest 2004 recognised children as specially vulnerable and not ‘little adults’ [1]. It expressed concern over potential toxicity of many chemicals, including carcinogenic, neurotoxic, immunotoxic, genotoxic, endocrine-disrupting and allergenic effects, but particularly of POPs. The declaration and CEHAPE programme [1-2] were based on WHO studies showing that children are a vulnerable group with special susceptibilities and unique exposures to environmental factors. WHO stressed important implications for public health practices and risk assessment approaches and developed guidance on scientific principles and approaches to assessing risks to children [3-4]. The UK’s CEH Strategy [5] considers POPs only from breast milk ie. fat-soluble dioxins and PCBs; the TDI cannot be presumed to be protective as it does not include brominated dioxins, nor allow for dioxin-like chemicals other than PCBs. While the CEH Strategy refers to ‘strict controls’, general practice of controlling single chemicals [6] ignores additive and synergistic effects [7-9]. Fetal chord blood and the meconium are increasingly used outside the UK for sampling for POPs (necessary if non-fat soluble) and show that BDEs are increasing [10-11]. Perfluorinated POPs may also be increasing as huge quantities were disposed of in Buncefield fire foams prior to their phase-out.

Until the results of systematic studies are available, policy has to rely on small case studies, such as the WWF-UK 2004 monitoring of seven families (14 children) and the California study of a single family of four. The former found PBDEs, phthalates and PFOS/PFOA as well as Stockholm POPs, while the latter showed very different burdens of PBDEs, highest in the toddler, then a 5-yr old, then mother and last the father. Both show cause for concern sufficient to consider action as well as increased research. The toxicity of dioxin-unlike PCBs and PBDEs is largely unknown, but both affect similar enzymes to phenobarbital, whose long history for treating epilepsy and long-known harm to foetal and child development constitute strong grounds for concern, in advance as direct data.

A CEH strategy needs to include giving dietary advice to mothers that contains measures towards protecting the foetus pre-birth. In general, a CEH strategy needs stronger application of the precautionary principle. Most potential POPs have hardly been tested nor will be for years; moreover testing has limitations – no testing is possible on the human foetus and child. The precautionary principle becomes most important with the deficit of scientific information [14]. Protection of the child and its vulnerability require strong bias towards precaution.

Discussion

Points covered in attached slides
1. Euro-Policy driving for Children
2. UK’s CEH ‘Strategy’
3. Children’s Exposure to Polybrominated Diphenyl Ethers
4. Body Burden: The Pollution in Newborns
5. Exposure to multiple environmental agents
6. Children are not “little adults”
7. Children’s environmental health indicators
8. Con-Mals; need to apply Precautionary Principle

Reference(s)

2. CEHAPE Mid-term review meeting + linked 4th International Conference on Children’s Health and the Environment June 2007, http://inchesnetwork.net/activities.html
6. HPA/COT Variability and Uncertainty in Toxicology of Chemicals in Food, Consumer Products and the


12. WWF, Contamination. The Results of WWF’s biomonitoring survey, WWF-UK 2004 www.wwf.org.uk

13. Fischer D, Hooper K, Athanasiadou M, Athanassiadis I, Bergman Å. Children show highest levels of Polybrominated Diphenyl Ethers (PBDEs) in a California family of Four – A case study Environ. Health Perspect. 2006; 114,1581-1584. doi:10.1289/ehp.8554

Illustrations

Illustration 1

Euro-Policy driving for Children

Illustration 2

UK's CEH Strategy(1)
Illustration 3

Children's Exposure to Polybrominated Diphenyl Ethers

Illustration 4

- Exposure to multiple environmental agents
Illustration 5

Children are not "little adults"

Illustration 6

Contamination: the next Generation
Illustration 7

Con-Mals; need to apply Precautionary Principle
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