New study of environmental contaminants in breast milk

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The levels of environmental contaminants in a mother's body decrease during breast-feeding. After a year of lactation, the levels of a number of environmental contaminants in breast milk drop by 15 – 94 per cent, according to a recent study from the Norwegian Institute of Public Health. There has been little study into this topic previously.

Breast milk is nutritionally the best food for infants and contains all the substances a child needs for optimal growth and development. However, breast milk contains low but measurable concentrations of environmental contaminants, health-harming chemicals from industry and manufacturing products that are widely spread in the environment.

Environmental contaminants enter the body through food and are partly excreted in breast milk. The contaminant levels in breast milk reflect those in the mother's body and are therefore ideal for monitoring exposure levels.

Norwegian women are among the mothers in the world who breast-feed their children longest; about 80 per cent of babies receive breast milk when they are six months old, and it is not unusual to breast-feed until the child is more than eighteen months old. This makes it especially important to study which contaminants infants are exposed to through breast milk in Norway.

The Department of Analytical Chemistry at the Norwegian Institute of Public Health has recently investigated how the content of environmental

contaminants in breast milk changes during the lactation period for each mother. Over 30 compounds of known contaminants such as brominated flame retardants, PCBs, and perfluorinated compounds were studied.

The study shows that the levels of almost all compounds in milk decrease with time, and are reduced by 15-94 per cent within a year of lactation. This must be considered when evaluating the benefits and possible risks of breast-feeding.

From previous studies we know that the levels of known environmental contaminants in breast milk and blood have fallen sharply in recent decades. The exceptions are brominated flame retardants and perfluorinated compounds, which first began to decline around the turn of the century.

The decline shows that measures taken by industry and by authorities to reduce the spread of these substances into the environment has meant that the population does not ingest as many environmental contaminants as before.

More information: C. Thomsen, LS Haug, H. Stigum, M. Frøshaug, SL Broadwell, G. Becher. "Changes in concentrations of perfluorinated compounds, polybrominated diphenyl ethers and polychlorinated biphenyls in breast milk during twelve months of lactation." *Environmental Science and Technology*, 44 (2010) 9550-9556

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