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## MONITORING OF ORGANOHALOGENS BODY BURDENS OF THE CZECH POPULATION

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**Objective:** Czech Republic belongs to the countries with a relative high body burden of PCBs due to their intensive industrial use in the past. A systematic program of sampling and analysis of human body fluids and tissues for selected persistent chlorinated organic compounds has been initiated in the Czech Republic in 1994 with the

aim to establish the current extent and long-term trends in the body burden of the Czech population. Breast milk has been the preferred matrix to evaluate human background exposure and body burden. Though the declining trend in the level of PCBs in the human milk has been observed, the body burden of the Czech population remains still higher in comparison with the most of other countries. The aim of this presentation is to summarize the existing data and to propose the further preventive measures in agreement with the Stockholm Convention.

**Material and methods:** Breast milk samples have been collected since 1994 according to WHO protocol in several locations of the Czech Republic. Altogether, about 4,000 samples of human milk were analysed. Human blood serum samples have been analysed since 2005 only. Informed consent and a questionnaire were completed by each participant. All analyses are performed by GC/MS/MS (Gas chromatograph with ion trap in MS/MS modus) in the National Reference Laboratory for POPs accredited at the Czech Accreditation Institute.

**Results:** A marked congener 153 was used as a representative indicator of body burden. Its level in human milk showed a significant time-trend decline from 352 ng/g fat (median) in 1994 to 174 ng/g fat in 2003. Age-dependent and regional-dependent differences in the levels of PCBs were observed. By contrast, an increasing trend has been observed after it with median value of 185 ng/g fat in 2005 and of 219 ng/g fat in 2006. On the other hand, the levels of HCB and DDT sum show continuous decreasing time-related trend from 427 and 1075 ng/g fat in 1994 to 52 and 321 ng/g fat in 2006, respectively.

The total PCB 153 values in the blood serum in 2006 ranged from 64 to 2,280 ng/g lipid with a median value of 438. Higher values were observed in men than in women. The values significantly correlated with age and BMI. Regional differences were also observed.

**Conclusion:** Czech population has been still at a higher exposure risk to PCBs. Our results confirmed the existence of hot-spot locations within the country and the necessity to identify and reduce sources of environmental contamination and to continue in monitoring persistent chlorinated organic compounds in human body.

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