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### **Hearing impairment in children exposed to PCBs**

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Children residing in an area in Eastern Slovakia polluted by PCBs were examined audiotologically (otoscopy, tympanometry, otoacoustic emissions) at ages of  $8.6 \pm 0.7$  ( $n=433$ ) and  $12.5 \pm 0.7$  years ( $n=352$ ) (mean  $\pm$  SD). At the time of examinations, their PCBs concentrations in serum (mean  $\pm$  SD and limits of tertiles in ng/g serum lipids) were  $526 \pm 653$ , (219; 464), and  $353 \pm 552$ , (150; 348), respectively. In children participating in both examinations, PCBs decreased in 267 subjects; in 52 children PCBs serum levels increased in average by  $209 \pm 453$  ng/g serum lipids. Children with positive tympanometry were excluded. In the children with PCBs serum concentrations in the upper tertile, hearing thresholds at low frequencies were increased and the amplitudes of transient evoked otoacoustic emissions (TEOAE) were decreased for both ears at the first examination, while at the second for the left ear only. Spectrum analysis of TEOAE response for both ears showed SNR for frequencies 3.2 and 4.0 kHz decreased with increasing PCB concentrations at first examination, while at second examination amplitudes for 1 and 1.5 kHz were decreased for left ears only in children of upper PCB tertile. The amplitudes of the distortion product measured at second examination for  $f_2 \leq 2000$  kHz were smaller for children of the third tertile compared to the children of the 2 lower tertiles of PCB serum concentrations. Exposure of children to PCBs was associated with subclinical but diagnosable hearing impairment with unknown prognosis, especially in a combination with exposure to noise trauma and other ototoxic compounds.