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What is 'normal hearing' in paediatric audiometry?

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OBJECTIVE:

Reference data for paediatric audiometry urgently needs to be reviewed. International standards for air conduction (AC) audiometry in the conventional range of 0.25-8 kHz, for age groups below 18 years does not exist.

DESIGN:

We present pure-tone air-conduction audiometry results from 90 normal children aged 4 to 17 years. The complete frequency range of 0.25 to 20 kHz was measured, and a number of different questions were raised.

RESULTS:

Firstly, the hearing threshold in the conventional frequency range was compared to the international standard ISO 389. Significant differences from ISO zero were found for all groups at all frequencies between 0.25 to 8 kHz. Secondly, in the extra-high-frequency range, (9-20 kHz) sensitivity between groups was compared and a systematic decrease in sensitivity was found for the older group (11-17 years) compared to the younger group (5-10 years) children at frequencies higher than 14 kHz. Finally our data suggests that auditory thresholds should be analysed to account for potential ear and gender differences.

CONCLUSIONS:

We conclude that normative data for various age groups should be used as a reference level until a general standard can be adopted.

