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Lateralization asymmetry in right/left ears of elderly individuals with respect to various sound pressure levels

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Abstract

The authors have previously reported that elderly individuals have asymmetrical right and left ear performance when they horizontally lateralize a 1 kHz pure tone with Interaural Time Differences (ITDs). In the previous experiment, the Sound Pressure Level (SPL) was set to 60.0 dB(A), but in the present experiment, conditions were set every 1.5 dB(A) from 54.0 dB(A) to 66.0 dB(A) in order to investigate the effect of SPLs. Participants were 18 elderly and 16 young adults. For ITDs, 8 conditions were set to lead the right or left ear and those were 0.2, 0.4, 0.6, and 0.8 ms, respectively. The frequencies of the sounds were 2 types: 1 kHz and 0.5 + 2 kHz. As a result, for a 1 kHz pure tone, the elderly individuals had asymmetry in right and left ear performance. It was more likely that the sound leading in the right ear was referred to as left. The lower the SPL, the more confusion existed between the right and left. Even in the elderly, confusion was rare for a sound of 0.5 + 2 kHz. Younger individuals rarely had confusion between the right and left ears for all conditions.

■理工学研究所との関連

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