

Selective attention increases both gain and feature selectivity of the human auditory cortex

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On Sept. 19, a research report by Helsinki University of Technology, Laboratory of Computational Engineering scientists will appear in the online, open-access journal PLoS ONE, showing that selective attention increases both gain and feature selectivity of the human auditory cortex.

The ability to select task-relevant sounds for awareness, whilst ignoring irrelevant ones, constitutes one of the most fundamental of human faculties, but the underlying neural mechanisms have remained elusive.

While most of the literature explains the neural basis of selective attention by means of an increase in neural gain, a number of papers propose enhancement in neural selectivity as an alternative or a complementary mechanism.

The results of Kauramäki and colleagues suggest that auditory selective attention in humans cannot be explained by a gain model, where only the neural activity level is increased, but rather that selective attention additionally enhances auditory cortex frequency selectivity.

The results were obtained by measuring electroencephalographic event-related potentials during task performance in healthy volunteers.

Source: Public Library of Science

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