

Reports outline speech study results from San Diego State University

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In this recently published article, scientists in the United States conducted a study "To compare multichannel amplification within a cellular phone system to a standard cellular phone response. Three cellular phone speech-encoding strategies were evaluated: a narrow-band (3.5 kHz upper cutoff) enhanced variable-rate coder (EVRC), a narrow-band selectable mode vocoder (SMV), and a wide-band SMV (7.5 kHz cutoff)."

"Because the SMV encoding strategies are not yet available on phones, the processing was simulated using a computer. Individualized-amplification settings were created using NAL-NL1 (National Acoustic Laboratories-Non-linear 1) targets. Overall gain was set at preferred listening levels for both the individualized-amplification setting and the standard cellular phone setting for each of the three encoders. Phoneme-recognition scores and subjective ratings (listening effort, overall quality) were obtained in quiet and in noise. Stimuli were played from loudspeakers in one room, picked up by a microphone connected to a (transmitting) computer, and sent over the Internet to a receiving computer in an adjacent room, where the signal was amplified and delivered monaurally. Sample: Fourteen participants with hearing loss. Phoneme scores and subjective ratings were significantly higher for the individualized-amplification setting than for the standard setting in both quiet and noise," wrote C.L. Mackersie and colleagues, [San Diego State University](#) (see also).

The researchers concluded: "There were no significant differences among the cellular phone encoding strategies for any measure.."

Mackersie and colleagues published their study in the Journal of the American Academy of Audiology (Evaluation of Cellular Phone Technology with Digital Hearing Aid Features: Effects of Encoding and Individualized Amplification. Journal of the American Academy of Audiology, 2009;20(2):109-118).

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