

Study of distortion product otoacoustic emissions amplitude shifts following exposure to noise

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Abstract

The aim of this study was assessment of Distortion Product Otoacoustic Emissions (DPOAE), in noise exposed guinea pigs. Ten guinea pigs in two control groups (without noise exposure) and a case group (that was exposed to a white noise with 95 dB SPL, 6h/d, 5d/wk for 2 consecutive weeks) were assessed in a Plexiglas cage. In order to stabilize permanent thresholds, DPOAEs before and two weeks after the last exposure were recorded by a DPOAEs analyzer. There is no significant difference in the control groups DPOAEs amplitude in the assessment frequencies, while in the noise exposed group a significant difference (with range 1.12- 6.24) was found between all the assessment frequencies, as the greatest and lowest decline was seen at 3937 and 562 frequencies (with 6.24 and 1.12 dB respectively). DPOAEs amplitude decline following noise exposure can indicate the noise adverse effects on outer hair cells function. Therefore hearing protection in noisy environments is necessary.

Keywords: DPOAE, Noise, Guinea Pig.

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