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**Cochlear nonlinearity in normal-hearing subjects as inferred
psychophysically and from distortion-product otoacoustic
emissions**

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The aim was to investigate the correlation between estimates of compression ratio, compression threshold, and cochlear gain for normal-hearing subjects inferred from temporal masking curves (TMC) and distortion-product otoacoustic emission (DPOAEs) input-output (I/O) curves. Special care was given to reduce the influence of DPOAE fine structure on the I/O curves. Data were collected for 10 subjects and for cochlear places with characteristic frequencies (CFs) of 0.5, 1, 2, and 4 kHz. Except at 4 kHz, little correlation was found between ratio estimates obtained with the two methods. One reason is that the DPOAE I/O curves show plateaus or dips which result in unexpectedly high compression estimates. Moderately high correlation was found between the compression-threshold estimates obtained with the two methods, although DPOAE-based values were systematically lower than those based on the TMCs. Both methods confirmed that compression ratio and threshold are approximately constant across the CF range considered. Cochlear gain could be estimated from TMCs only and it was found to increase slightly with increasing CF. It is discussed that DPOAE I/O curves may be inappropriate to infer precise individual nonlinear cochlear characteristics in normal-hearing listeners, particularly at low CFs [Work supported by IMSERSO 131/06, PROFIT CIT-390000-2005-4, MEC BFU-2006-07536, and The Oticon Foundation].