

A new desktop instrument for measuring macular pigment optical density based on a novel technique for setting flicker thresholds

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Abstract

A rapid portable technique for estimating macular pigment optical density (MPOD) in large populations is described. The new instrument utilises a novel method for setting flicker thresholds which is undemanding for naïve and elderly observers and easily operated by a non-technical person. The method has good repeatability ($r = 0.97$) and the data are comparable with an optical method based on retinal reflectometry ($r = 0.78$). MPOD spatial profiles are presented for seven normal observers and these are well described ($r = 0.99$) by a decaying exponential function consistent with previous reports. MPOD values are presented from 5581 (2435 females and 3146 males) individuals measured in 48 optometric practices. The mean MPOD of this population was 0.33 (S.D. ± 0.187) which is similar to previous large scale studies of MP.

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