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Performance of the 10-2 and 24-2 Visual Field Tests for Detecting Central Visual Field Abnormalities in Glaucoma

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## ABSTRACT

**Purpose:** To compare the performance of the pattern standard deviation (PSD) values derived from the central 12 locations of the 24-2 visual field test (C24-2) to the entire 10-2 test for detecting central visual field abnormalities in eyes with, suspected or at risk of having glaucoma.

**Design:** Cross-sectional, case-control study

**Methods:** Eyes with, suspected or at risk of having glaucoma, based on masked grading of optic disc stereophotographs and/or ocular hypertension (intraocular pressure  $\geq 22$  mm Hg) were included as cases ( $n=523$ ). Eyes from healthy participants were included as controls ( $n=107$ ) to allow the two tests to be compared at matched specificities. The sensitivity to detect cases at 95% specificity using PSD values derived from the entire 10-2 test and C24-2 were compared.

**Results:** The sensitivity of the 10-2 and C24-2 PSD values was not significantly different between the 10-2 and C24-2 at matched specificities (35.9% and 35.4% respectively;  $P=0.900$ ). There was also a substantial agreement between the cases detected by both methods ( $\kappa=0.80\pm 0.04$ ), and a very strong association between the PSD values from the two methods ( $R^2=0.91$ ).

**Conclusions:** 10-2 and 24-2 tests identified a similar number of eyes with, suspected or at risk of having glaucoma as having central visual field abnormalities using PSD values. These findings do not mean that 10-2 tests are not useful, but highlight the need for further studies to determine the potential advantages of 10-2 tests through equivalent comparisons against 24-2 tests to ensure appropriate recommendations are made about its incorporation into the glaucoma standard-of-care.

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