A Comparison of Retinal Nerve Fiber Layer Thickness to Visual Field Sensitivity in Patients with Glaucoma

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Introduction
To explore the relationship between retinal nerve fiber layer thickness and visual field sensitivity in patients with primary open angle glaucoma.

Results
The average retinal nerve fiber layer thickness in the control eyes was 93.4 ± 8.0 μm, and 65.0 ± 11.0 μm in glaucomatous eyes. The average MD value in control eyes was -0.91 ± 1.26 dB, and -13.82 ± 8.11 dB in glaucomatous eyes. A significant correlation was found between the retinal nerve fiber layer thickness and visual field loss in patients with glaucoma (r=+0.64). Slightly less correlation was found in control eyes (r=0.04).

Methods
Automated static perimetry (Humphrey™ Field Analyzer; Carl Zeiss Meditec) and spectral domain optical coherence tomography scans (Cirrus™ HD-OCT; Carl Zeiss Meditec) of optic nerve head and retinal nerve fiber layer, were obtained from 54 age-matched normal control subjects and 26 patients with open angle glaucoma.

Results
A retinal nerve fiber layer thickness values less than 76 μm points on high probability for glaucoma. Values over 86 μm suggest absence of glaucoma.

References: