

## **RNFL Defect Characteristics in Nonglaucomatous Eyes With Type II Diabetes**

Scientists assessed the characteristics of retinal nerve fiber layer defects associated with type II diabetes. They imaged 40 nonglaucomatous eyes with type II diabetes and 54 eyes with early open-angle glaucoma that exhibited a localized RNFL defect and 42 eyes from age- and sex-matched nondiabetic, nonglaucomatous controls with red-free fundus photography and optical coherence tomography (Cirrus HD-OCT, Carl Zeiss Meditec). They compared the area under the receiver operating characteristic curves of eyes with diabetes with that of eyes with glaucoma. When an RNFL defect on fundus photographs was identified in the quadrant, clock-hour, temporal-superior-nasal-inferior-temporal, deviation and thickness maps, it was considered a true detection. In diabetic eyes, RNFL defects were more frequently in the superior hemisphere than in those with glaucoma ( $p < 0.001$ ), and the angular locations of the defects in diabetic eyes ( $56.1 \pm 12.7$  degrees) were significantly farther from the fovea than those in glaucoma ( $44.3 \pm 17.3$  degrees;  $p < 0.001$ ). In addition, the width of the defects in diabetes ( $5.1 \pm 2.3$  degrees) was significantly narrower than those in glaucoma ( $20.8 \pm 12.3$  degrees;  $p < 0.001$ ). The best parameter discriminating RNFL defects in diabetes from those in glaucoma was width of defect (0.955), followed by rim area (0.844) and average RNFL (0.791). The thickness map showed a sensitivity (70 percent) and specificity (69.1 percent) superior to those of all other maps in diabetic eyes. Scientists suggested that identification of RNFL defects in thickness maps and assessing width via Cirrus HD-OCT seemed to be an effective tool for detecting RNFL defects in diabetes.

SOURCE: Jeon SJ, Kwon J-W, La TY, et al. Characteristics of retinal nerve fiber layer defect in nonglaucomatous eyes with type ii diabetes. *Investigative Ophthalmology & Visual Science* August 2016;57:4008-15.