

✉ **The measurement of retinal nerve fibre thickness is helpful in determining which patients with ocular hypertension will develop glaucoma**

The Science behind the Tip

In patients with ocular hypertension, moderate to severe retinal nerve fibre layer (RNFL) atrophy at baseline has been associated with a 7-8 times greater risk of subsequent visual field loss¹. RNFL damage can be found clinically in 60% of ocular hypertensive patients up to six years before changes are seen using perimetry.

In recent years, the RNFL has been evaluated using scanning laser polarimetry (GDx VCC) and optical coherence tomography. Both forms of technology are equally effective in detecting thinning of this layer². There is a good correlation between instruments, but thickness measurements taken with one instrument are not comparable with those taken with another³. The best method of monitoring is obtained with the same operator and device⁴.

References

1. Quigley HA, Enger C, Katz J et al. Risk factors for the development of glaucomatous visual field loss in ocular hypertension. *Arch Ophthalmol* 1994; 112: 644-649.
2. Pablo LE, Ferreras A, Schlottmann PG. Regional nerve fibre layer evaluation in ocular hypertensive eyes using optic coherence tomography and scanning laser polarimetry in the diagnosis of early glaucomatous defects. *Br J Ophthalmol* 2011; 95: 51-55.
3. Kim HG, Heo H, Park SW. Comparison of scanning laser polarimetry and ocular coherence tomography in preperimetric glaucoma. *Optom Vis Sci* 2011; 88: 124-29.
4. Pierro L, Gagliardi M, Inliano L et al. Retinal nerve fibre layer thickness reproducibility using seven different OCT instruments. *Invest Ophthalmol Vis Sci* 2012; 53: 5912-5920.