

☒ **In patients with progressive normal tension glaucoma, the use of topical brimonidine may help to preserve visual function**

### ***The Science behind the Tip***

A recent study has shown that visual function is more likely to be preserved with brimonidine 2% than with timolol 0.5% in patients with normal tension glaucoma despite similar intraocular pressure lowering effects<sup>1</sup>.

The problem with brimonidine is a significant incidence of ocular allergy, 20.2% at one year<sup>1</sup> increasing to 32.3% after several years<sup>2</sup>.

The beneficial effect of brimonidine is presumably the consequence of neuroprotection, mediated by an interaction with alpha<sub>2</sub>-adrenergic receptors in the retinal ganglion cells. Although the exact mechanism is not fully understood, there is experimental evidence in the rat model to support this hypothesis<sup>3</sup>. It is unlikely that a change in diastolic perfusion pressure is responsible for the difference between brimonidine and timolol<sup>4</sup>.

### ***References***

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2. Rahman MQ, Ramaesh K, Montgomery DM. Brimonidine for glaucoma. *Expert Opin Drug Saf.* 2010;9:483-91.
3. Wheeler L, WoldeMussie E, Lai R. Role of alpha-2 agonists in neuroprotection. *Surv Ophthalmol.* 2003;48:S47-51.
4. Quaranta L, Gandolfo F, Turano R, *et al.* Effects of topical hypotensive drugs on circadian IOP, blood pressure and calculated diastolic ocular perfusion pressure in patients with glaucoma. *Invest Ophthalmol Vis Sci.* 2006; 47:2917-23.