



# Glaucoma - Visual field defects

## Perimetry

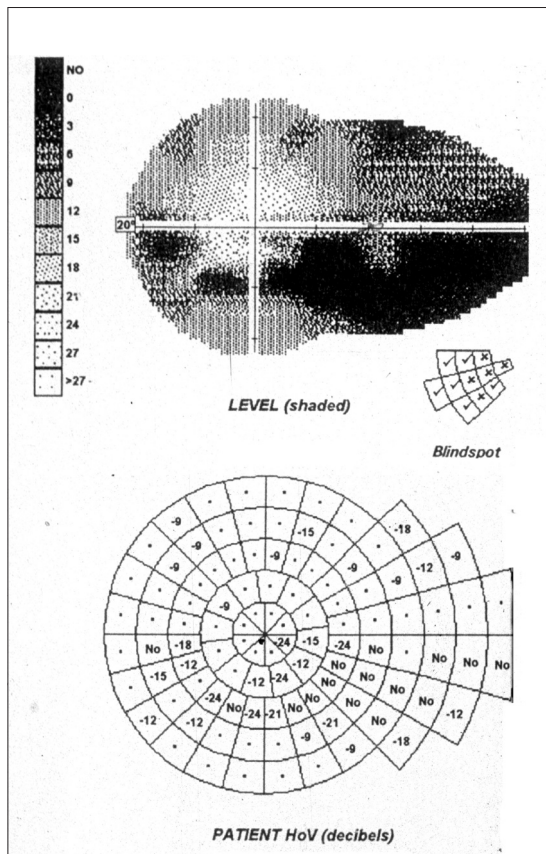
The optic neuropathy caused by glaucoma involves the loss of retinal nerve fibres and therefore the visual field defects correspond to their anatomical disposition in the fundus. Superior and inferior retinal nerve fibres terminate at and form the horizontal raphé, and therefore glaucomatous visual field loss typically respects the horizontal midline.

The earliest defects in glaucoma are probably small focal paracentral scotomas or depressions in sensitivity close to fixation. These are frequently seen initially in the superior nasal area and may mirror changes observed with the ophthalmoscope, such as erosion of the inferior temporal neuroretinal rim of the optic disc and retinal nerve fibre layer defects. Some authorities suggest that a generalised diffuse loss is also a potential early change. It has to be remembered, however, that these patients are often

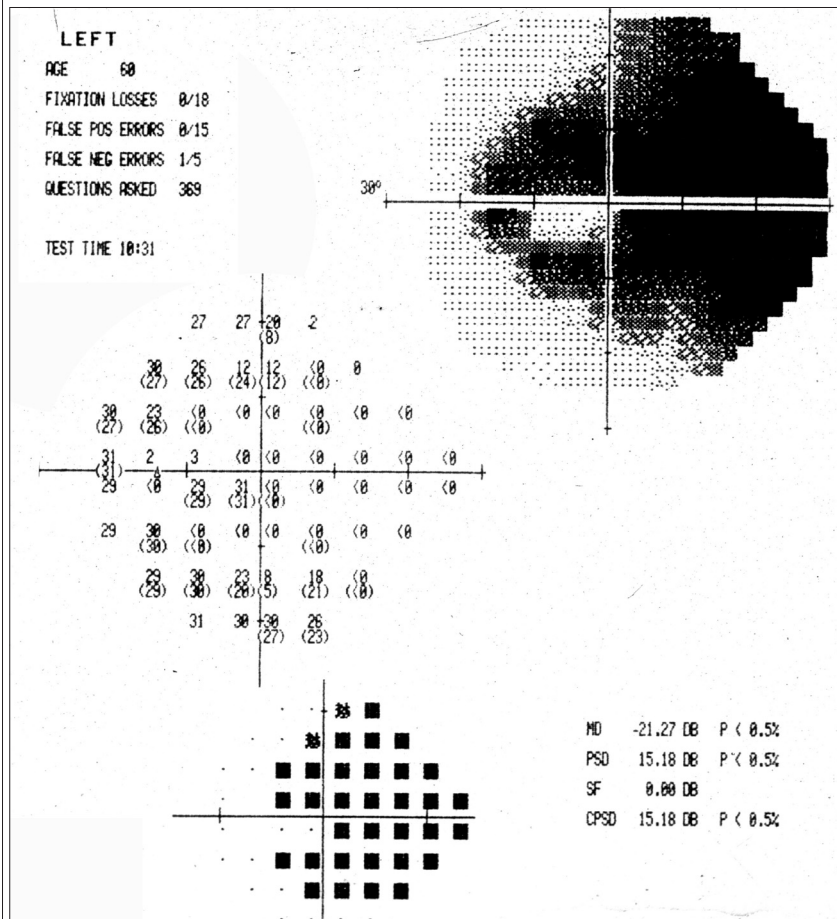
elderly with lenticular opacities and smaller pupils, changes that can lead to a similar loss of sensitivity. The least common defect is the so-called temporal wedge corresponding to damage at the nasal neuroretinal rim.

With the progression of glaucoma, the paracentral defects may coalesce to form arcuate defects that may become continuous with the blind spot. Typically, asymmetric levels of sensitivity across the horizontal midline produce the characteristic nasal step, the superior hemifield being more affected.

Late in the disease, superior and inferior arcuate defects may encircle and advance towards fixation. The tunnel vision thus created may present the patient with considerable difficulties even though visual acuity may still be normal. Eventually, the patient is usually left with a small temporal island in the visual field.



**Figure 1** Extensive visual field loss inferior to fixation with breakout into the peripheral visual field. Vision was 6/6. Courtesy of Phillip Kearney, optometrist, Bundaberg, Queensland



**Figure 2** Advanced POAG in a 60-year-old male. There are dense arcuate defects, a threat to fixation and respect of the horizontal midline. Vision was 6/5

The full series of these articles will be available in the book *Posterior Eye Disease and Glaucoma A-Z* by Bruce AS, O'Day J, McKay D and Swann P. £39.99. For further information click on the Bookstore at [opticianonline.net](http://opticianonline.net)

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