

# Incidence of glaucomatous visual field loss: a ten-year follow-up from the Rotterdam Study

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**PURPOSE:** To determine the 10-year incidence of glaucomatous visual field loss (GVFL) and to investigate the influence of risk factors for open-angle glaucoma on this incidence.

**DESIGN:** Population-based cohort study.

**PARTICIPANTS:** Participants aged > or =55 years from the Rotterdam Study.

**METHODS:** Of the 7983 participants in the Rotterdam Study, 6806 underwent ophthalmic examinations at baseline (1990-1993). In 6723 of these 6806 participants (99%), both visual field screening and an assessment of the optic disc were performed. After exclusion of 93 participants with GVFL at baseline, 6630 participants at risk of developing GVFL remained. These participants underwent similar ophthalmic examinations during 2 follow-up visits (1997-1999 and 2002-2006). The incidence of GVFL was determined as an incidence rate and recalculated to a 10-year risk. Risk factors for open-angle glaucoma (age, gender, positive family history of glaucoma, baseline intraocular pressure (IOP), myopia, and baseline vertical cup-to-disc ratio  $\text{http://VCDR}$ ) were assessed using Cox regression. The dependent variable was the development of GVFL.

**MAIN OUTCOME MEASURES:** Ten-year risk and incidence rates of GVFL. Hazard ratios of the above-mentioned risk factors.

**RESULTS:** Of 6630 participants, 3939 (59%) completed at least 1 follow-up examination and 2571 (39%) completed both; 108 participants developed GVFL. The overall incidence rate and 10-year risk of GVFL were 2.9 per 1000 person-years (95% confidence interval  $\text{http://CI}$ , 2.4-3.5) and 2.8% (2.3-3.4), respectively. The 10-year risk increased from 1.9% at age 55 to 59 years to 6.4% at age > or =80 years (**CONCLUSIONS:** These data provide an estimate of the incidence of GVFL in a white population. The development of GVFL was related to higher IOP, older age, high myopia, male gender, a positive family history of glaucoma, and a larger baseline VCDR.

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