

The Benefit of Detecting and Treating Early Glaucoma Damage



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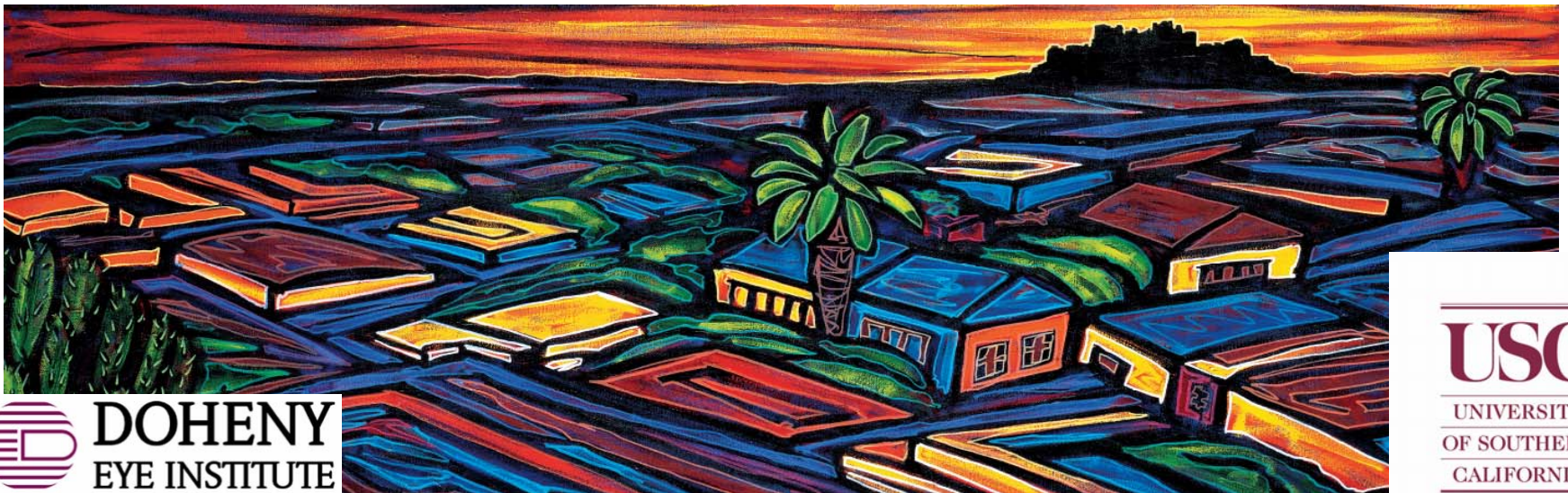
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Goal of Early Detection and Treatment



- To prevent glaucoma patients and glaucoma suspects from developing functional impairment or decrease in vision-related quality of life.

Why use PRO measures?



- Some treatment effects known only to the patient
- Formal assessment more reliable than informal interview
- Patient perspective augments other measures

Background



The 25-item National Eye Institute Visual Function Questionnaire (NEI-VFQ-25)

- Validity: Content, Construct, Predictive
- Reliability: Test-retest, Internal consistency, Inter-interviewer reliability
- Ability to detect change
- Interpretability – Minimum Important Difference (MID)

Question?



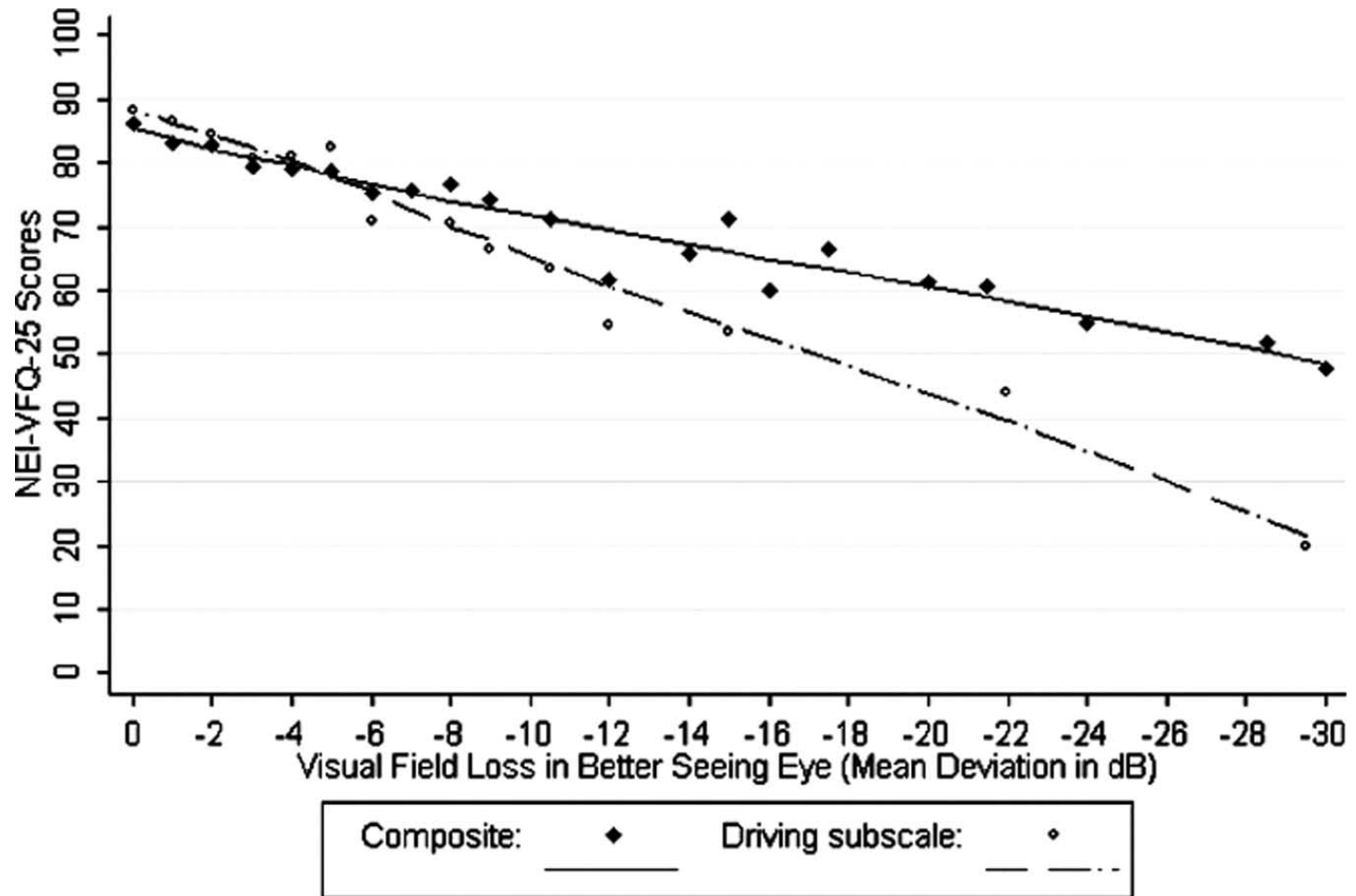
- **What degree of glaucomatous VFL is necessary to observe meaningful change in the ability of adults to function independently or complete vision-related tasks?**
- **What types of daily activities are most impacted by VFL?**

Los Angeles Latino Eye Study (LALES)

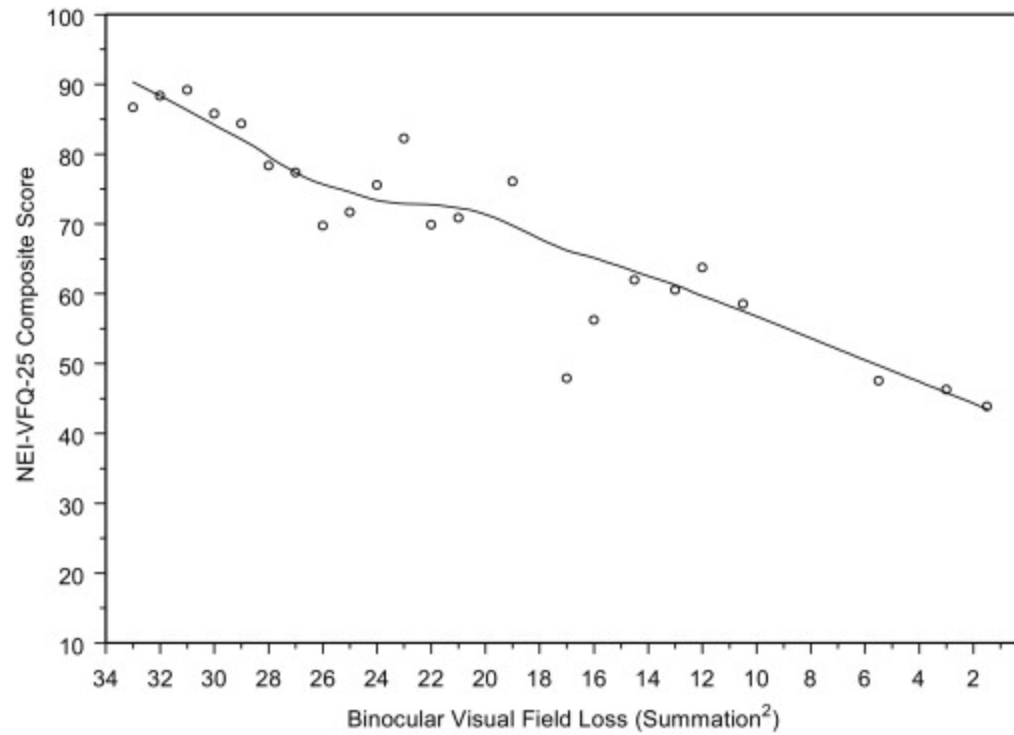


- A population-based prevalence study of eye disease
- 6357 Participants, Latino (self-described), 40 years and older
- NEI-VFQ-25, SF-12
- Adjusted for co-variates including central visual acuity loss
- No previous knowledge of disease or treatment

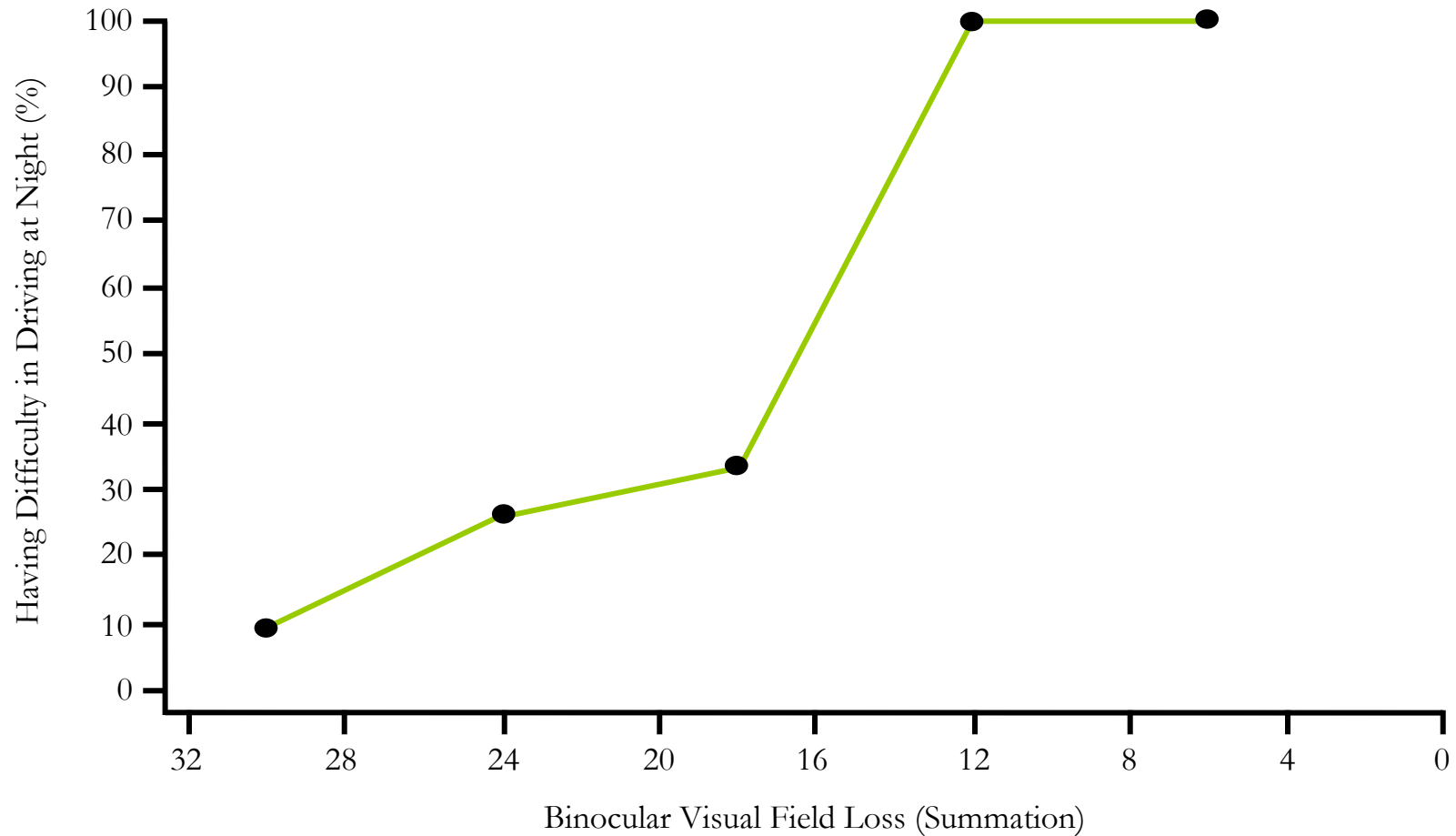
Los Angeles Latino Eye Study (LALES)



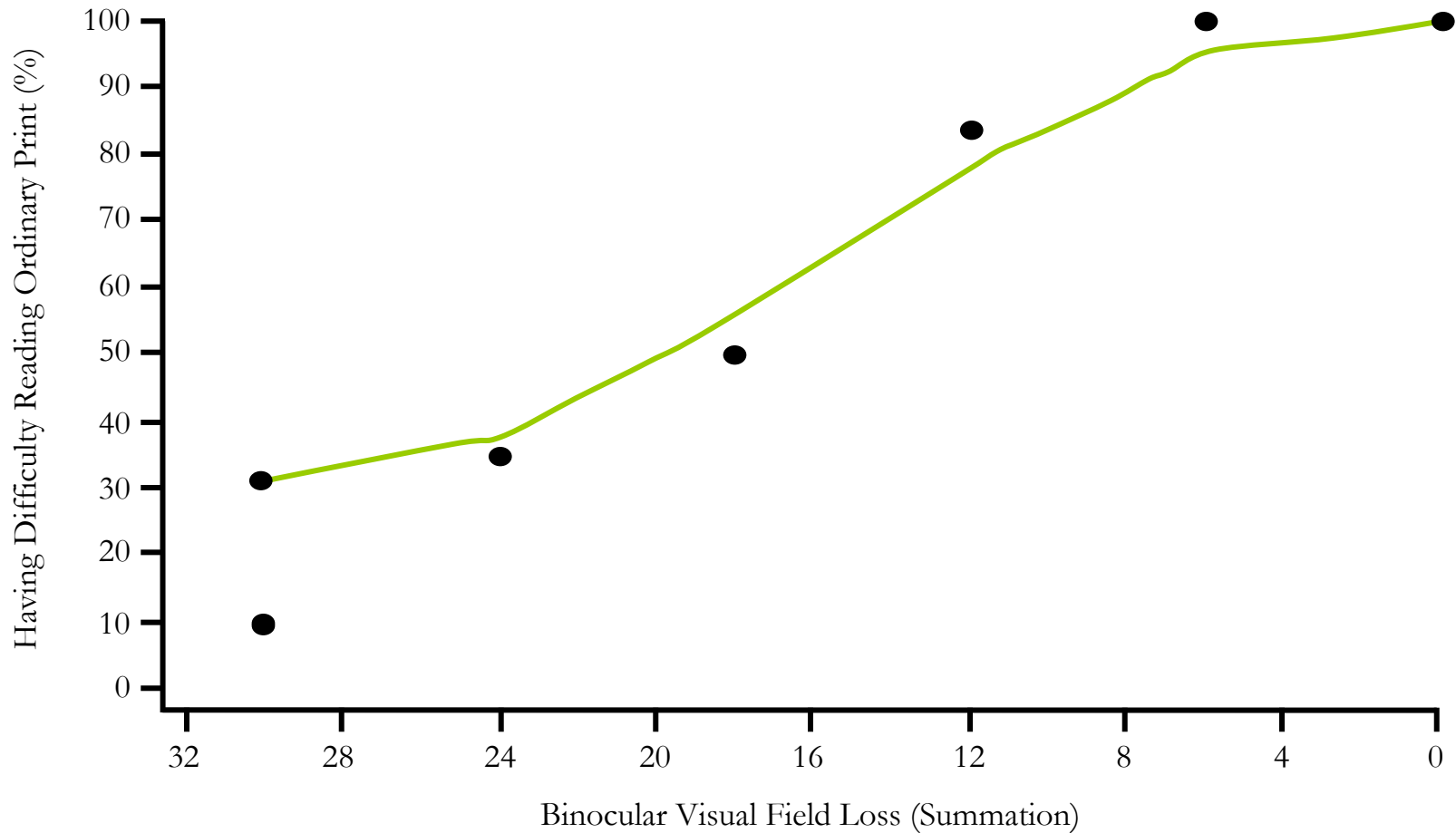
Los Angeles Latino Eye Study (LALES)



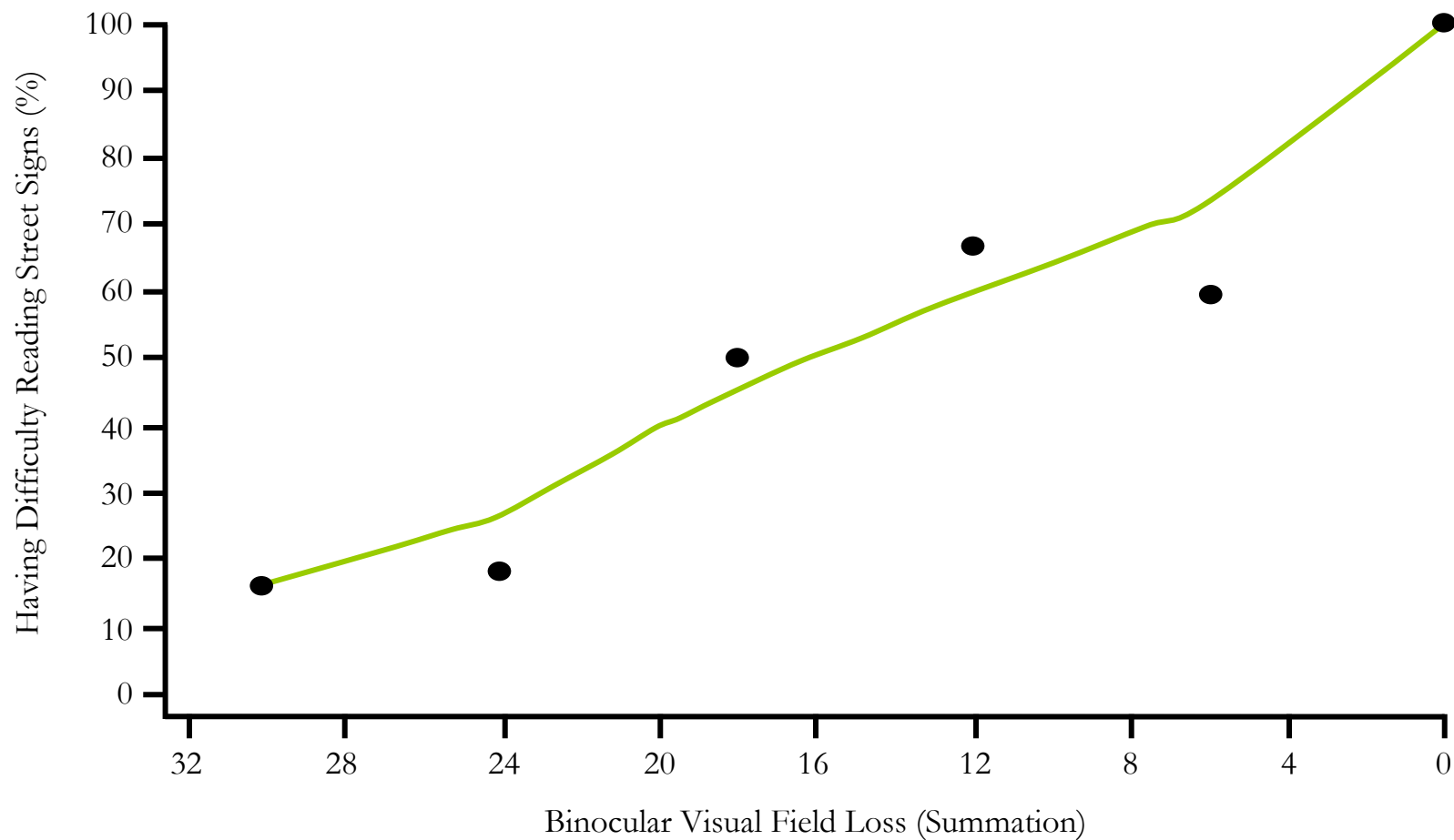
Same Pattern Persists for Driving at Night



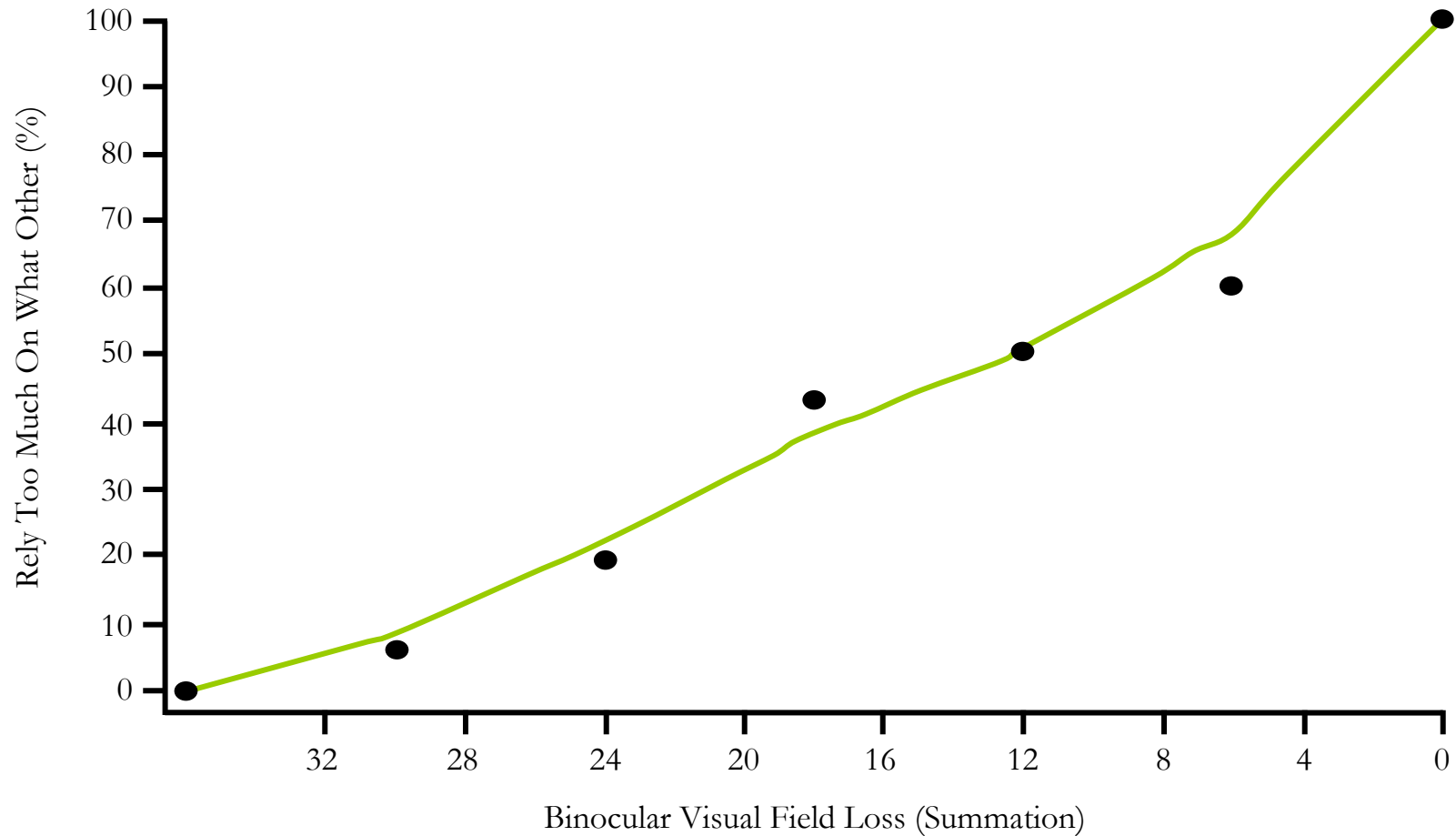
Difficulty Reading Ordinary Print and VF Loss



Reading Street Signs and Visual Field Loss



Dependence on Others and VF Loss

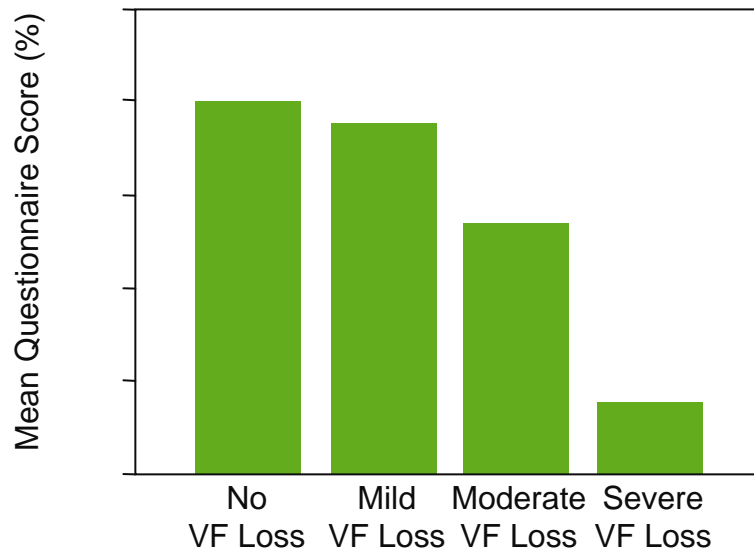


Daily Challenges Are Seen Across All Stages of Glaucoma, Compared with Normal Subjects

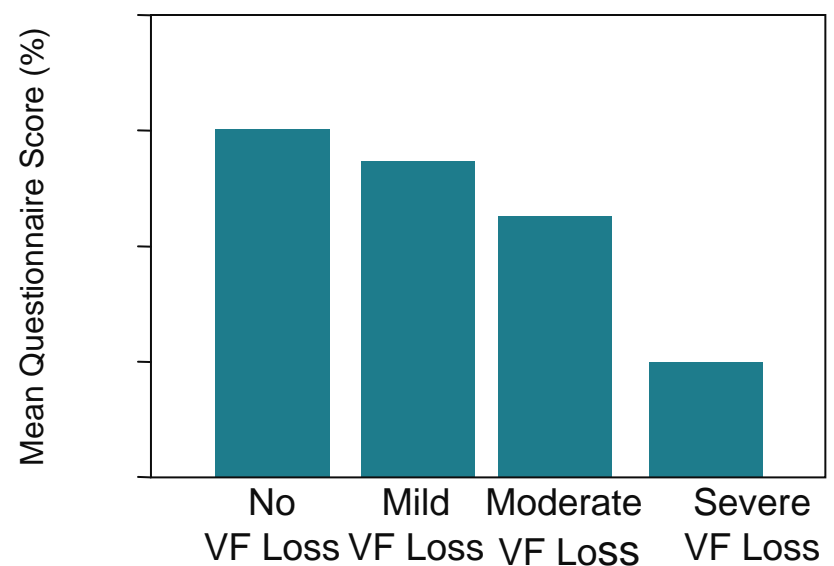


- Factors most affected included personal care/ household tasks and mobility

Personal Care and Household Tasks



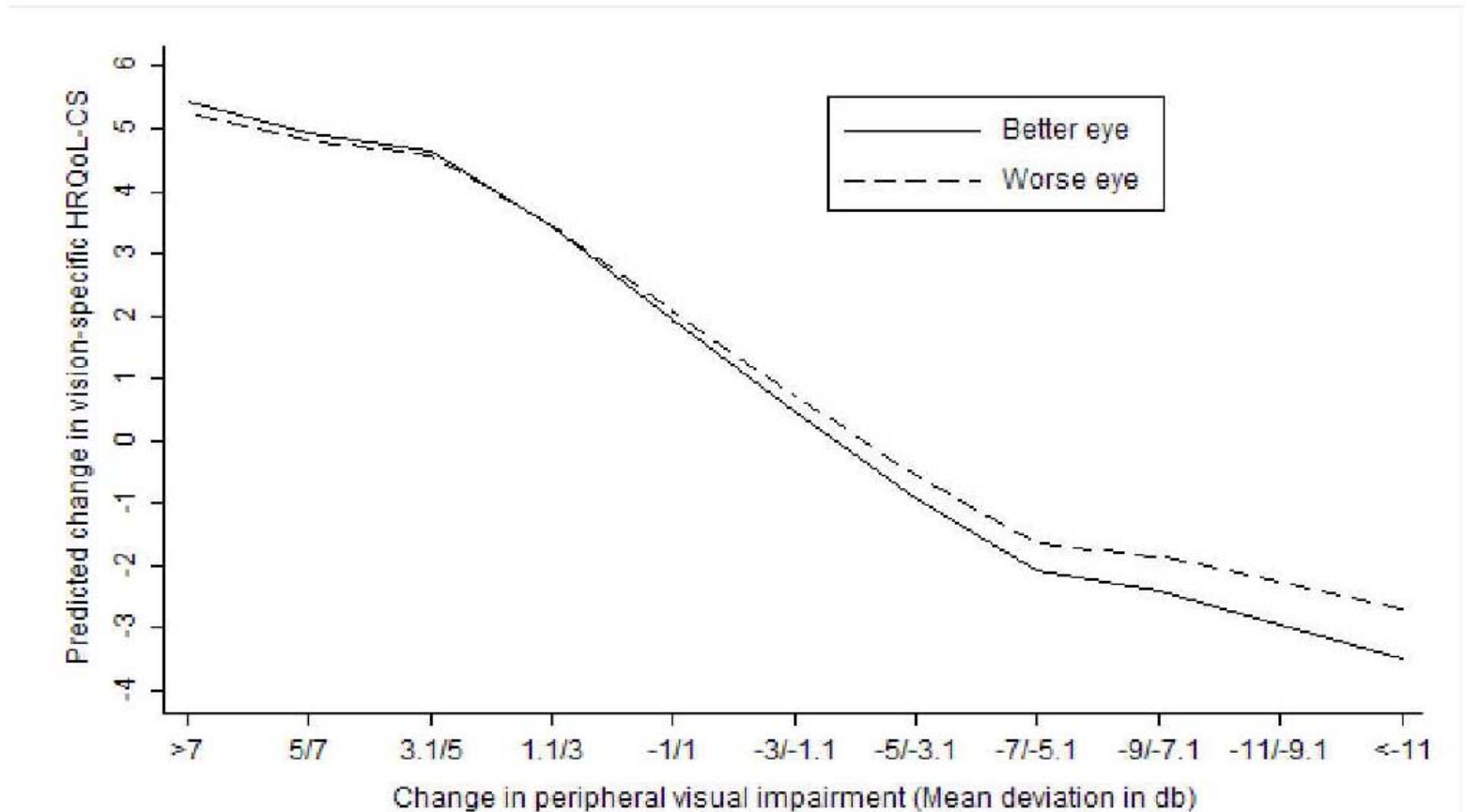
Outdoor Mobility



Change in Visual Field Loss and Patient reported Outcomes



Figure 1.



Conclusion



- **Loss in HRQOL scores for glaucoma participants was present in people with mild VFL and continuing through moderate/severe VFL.**

Conclusion



- A 3-4 dB difference or change in VF Loss was associated with a clinically meaningful 5 point difference in the NEI-VFQ driving subscale.
- Greater visual field loss is associated with a higher prevalence of falls - present in persons with mild visual field loss and continuing through moderate/severe visual field loss.

Factors for Glaucoma Progression and the Effect of Treatment: The Early Manifest Glaucoma Trial



Table 2. Baseline Factors Associated With Progression in the Early Manifest Glaucoma Trial*

Variables	Reference	Hazard Ratio (95% CI)	<i>P</i> Value
Study group	Control	0.50 (0.35-0.71)	<.001
Intraocular pressure, mm Hg	<21	1.70 (1.18-2.43)	.004
Exfoliation	None	2.22 (1.31-3.74)	.003
No. of eligible eyes	1	1.96 (1.36-2.82)	<.001
Mean deviation, dB	>-4	1.58 (1.10-2.28)	.01
Age, y	<68	1.47 (1.04-2.09)	.03

Abbreviations: CI, confidence interval; dB, decibels.

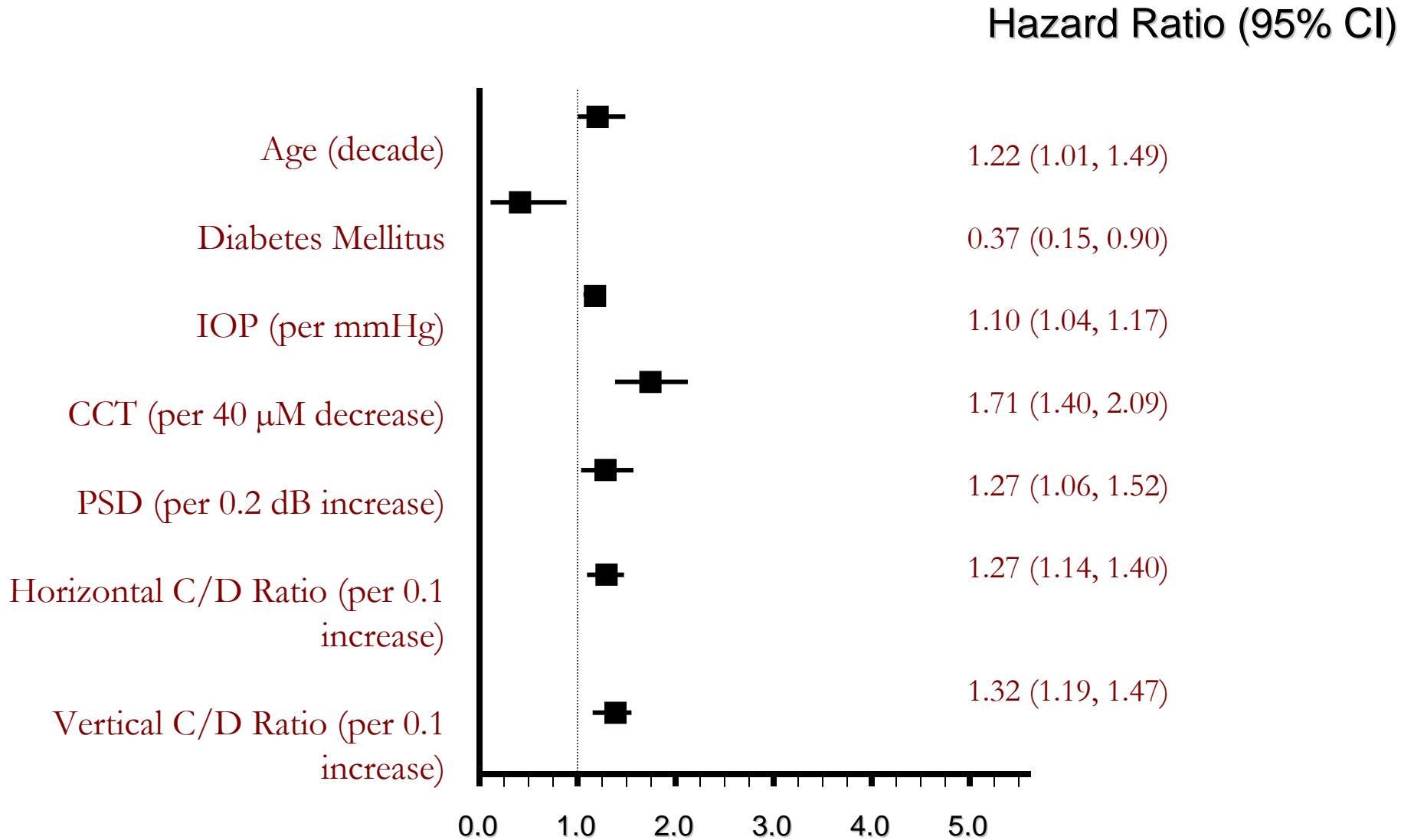
*Progression analysis used Cox proportional hazard model. *P* values based on Wald χ^2 statistic.

Conclusion



Early Visual field loss is a risk factor for the development of progressive visual field loss

OHTS Significant Baseline Predictive Factors from Multivariate Proportional Hazard Models



Conclusion



- Structural measures of the optic nerve are predictive of the development of future optic nerve damage



**Important to prevent
the development of
early glaucomatous
damage**