

Introducing  
vf progression expert



 **BioFormatix**

# vf progression expert

Michelangelo famously claimed that his purpose was to find and free the human form from the enormous slabs of marble he started with.

Ours is to find the true state of a patient's vision amid the considerable noise of visual field testing.

The detection of early glaucomatous damage and its probable progression are the most important challenges in the management of glaucoma today. Treatment efficacy depends on differentiating stable from progressive disease, particularly because progression is a strong indication for the intensification of treatment.

Current visual field analysis methods often use arbitrary criteria to establish progression, require a large number of visual field exams over a long period of time, and do not offer a reliable estimate of specificity.

Until now.



vf Progression Expert can uncover visual field changes with just two exams.

Our novel approach produces a quantitative estimate of visual field progression probability by cutting through the noise in visual field data.

The software is driven by our proprietary, population-based model of noise in the visual field test (patent pending). A large database of perimetry tests from the Advanced Imaging for Glaucoma (AIG) study was used to develop and validate the progression model.

vf Progression Expert is in a class of its own, featuring:

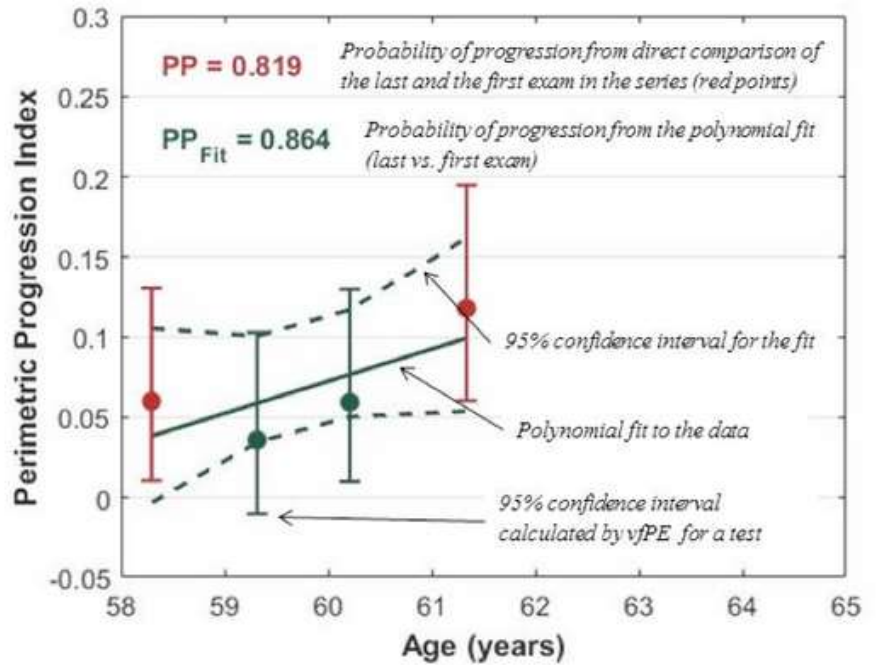
- A new global index: The Perimetric Progression Index
- Evaluation of the statistical significance of measured changes: The changes that can be attributed to measurement noise are estimated and disregarded
- Self-consistent progression model for which the False Alarm Rate  $\approx 1 - \text{Probability of Progression}$
- The progression probability can be evaluated using as few as two tests taken at any time interval: Polynomial fit to a series of tests improves sensitivity of progression detection.

# how it works

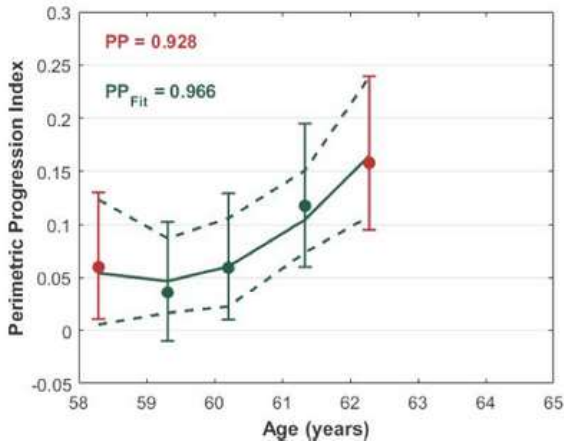
vf Progression Expert produces a Perimetric Progression Index (PPI) and a progression probability (PP) for a series of visual field tests.

The PPI nominal value is between 0 (normal field) and 1 (severe glaucoma)  
 PP or PPFit  $\geq 0.95$  indicates progression with the false alarm probability 0.05

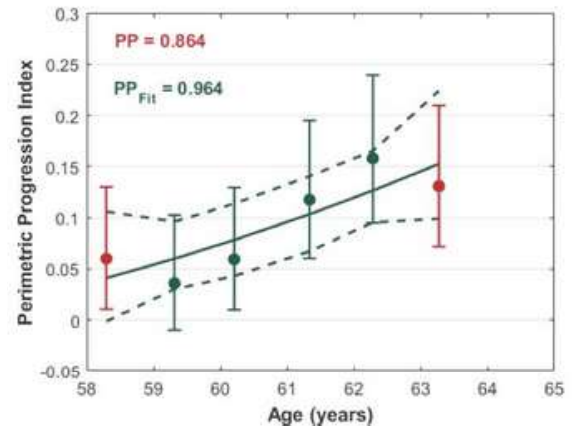
Low probability of progression for this series: Large overlap between the 95% confidence intervals for all exams.



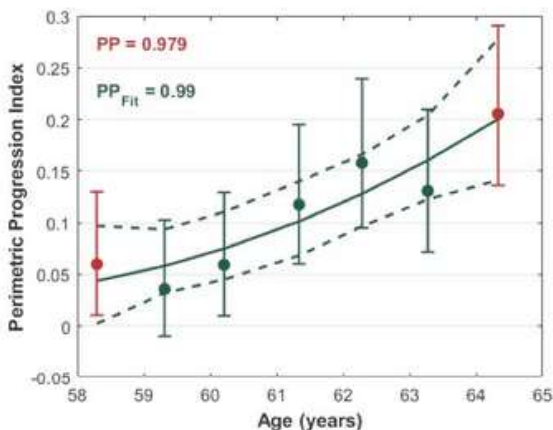
Fit analysis indicates progression (PPFit > 0.95). Direct comparison between the first and last exam in the series shows a lower probability of progression (0.928).



As above. Only the fit analysis indicates high probability of progression (>0.95).



Both direct comparison of exams and the fit analysis indicate progression. In this case, the direct comparison finds progression two years later than the fit analysis.







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