

Introduction

Perimetry can be performed on any personal computer, via a web application.

Online perimetry offers advantages over standard perimetry

Can it be made more enjoyable?

How does it compare to standard automated perimetry (SAP)?



Methods

Cohort

98 glaucoma,
135 controls
One eye randomly included

Questionnaires

2x 10-item surveys:
user satisfaction of
SAP vs OCCP

Tests

Standard automated perimetry (SAP),
online circular contrast perimetry (OCCP),
OCT RNFL and GCC

Eyeonic Online Circular Contrast Perimetry (OCCP)

A

Fixation target

- Spinning gold star
- Progress bar underneath

B

Flickering test target

- appears for 360 msec
- Over 3 x pos/neg cycles

C

Blind spot localisation

- Optimise viewing distance
- Count fixation loss

D

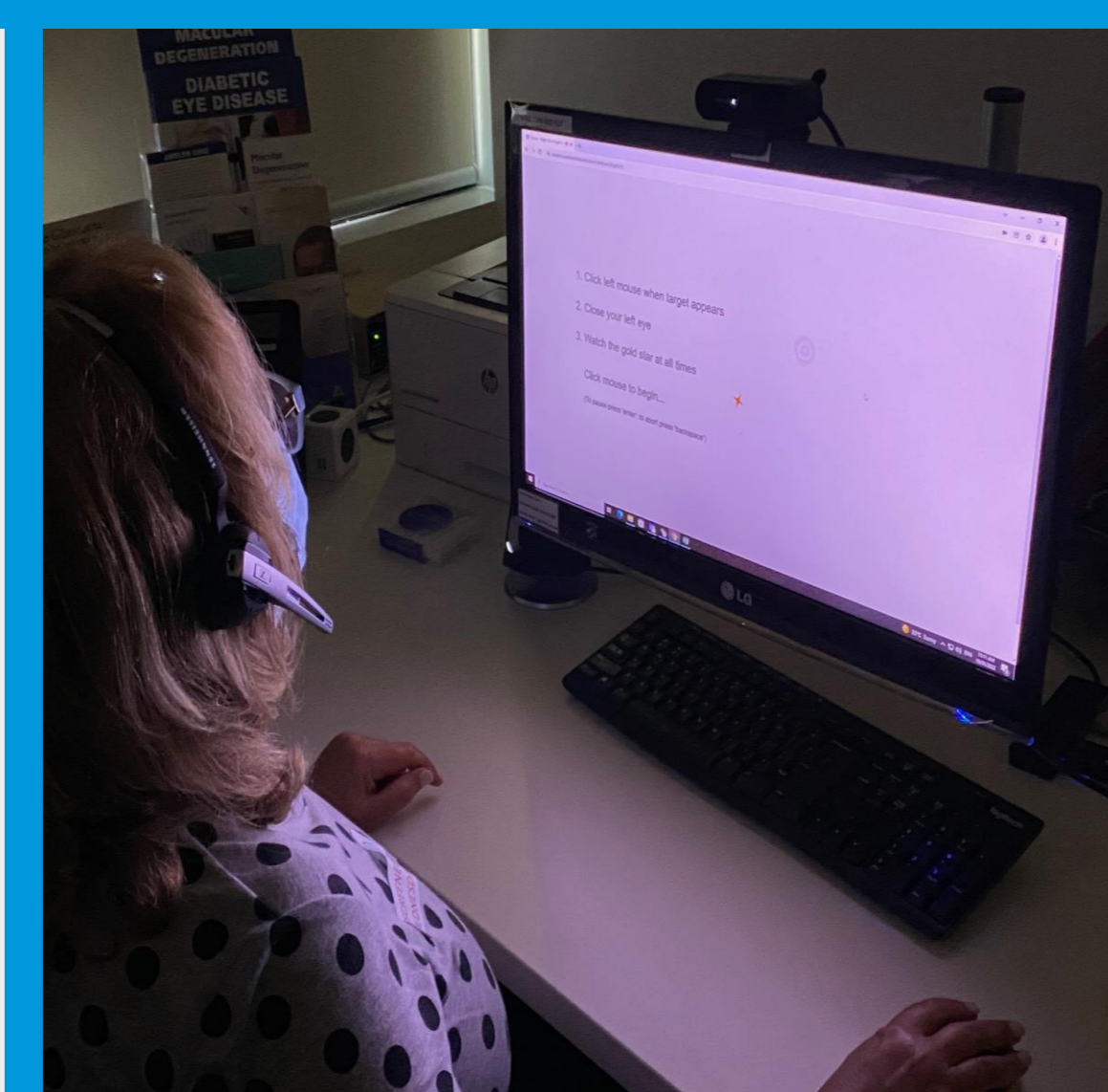
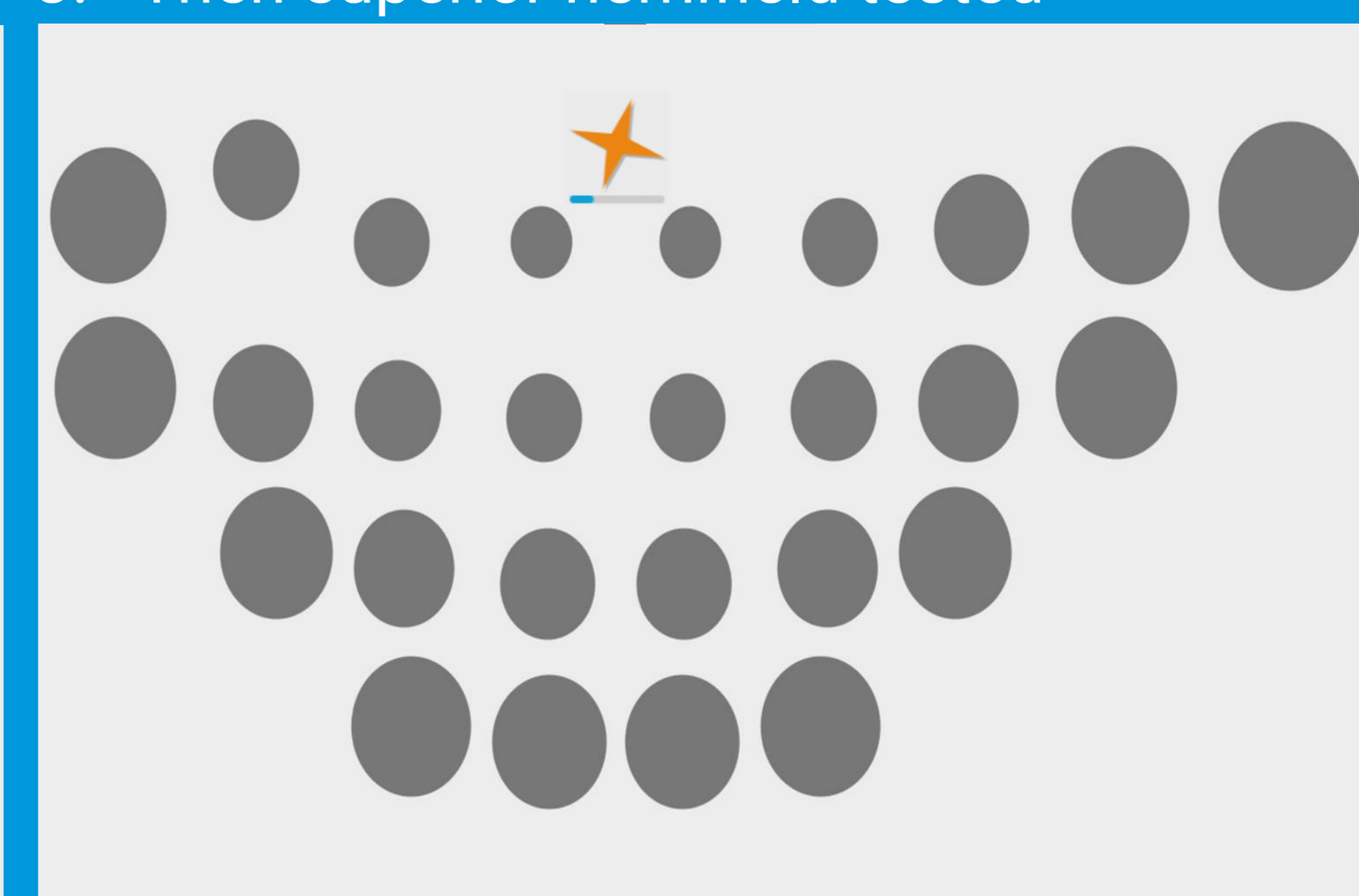
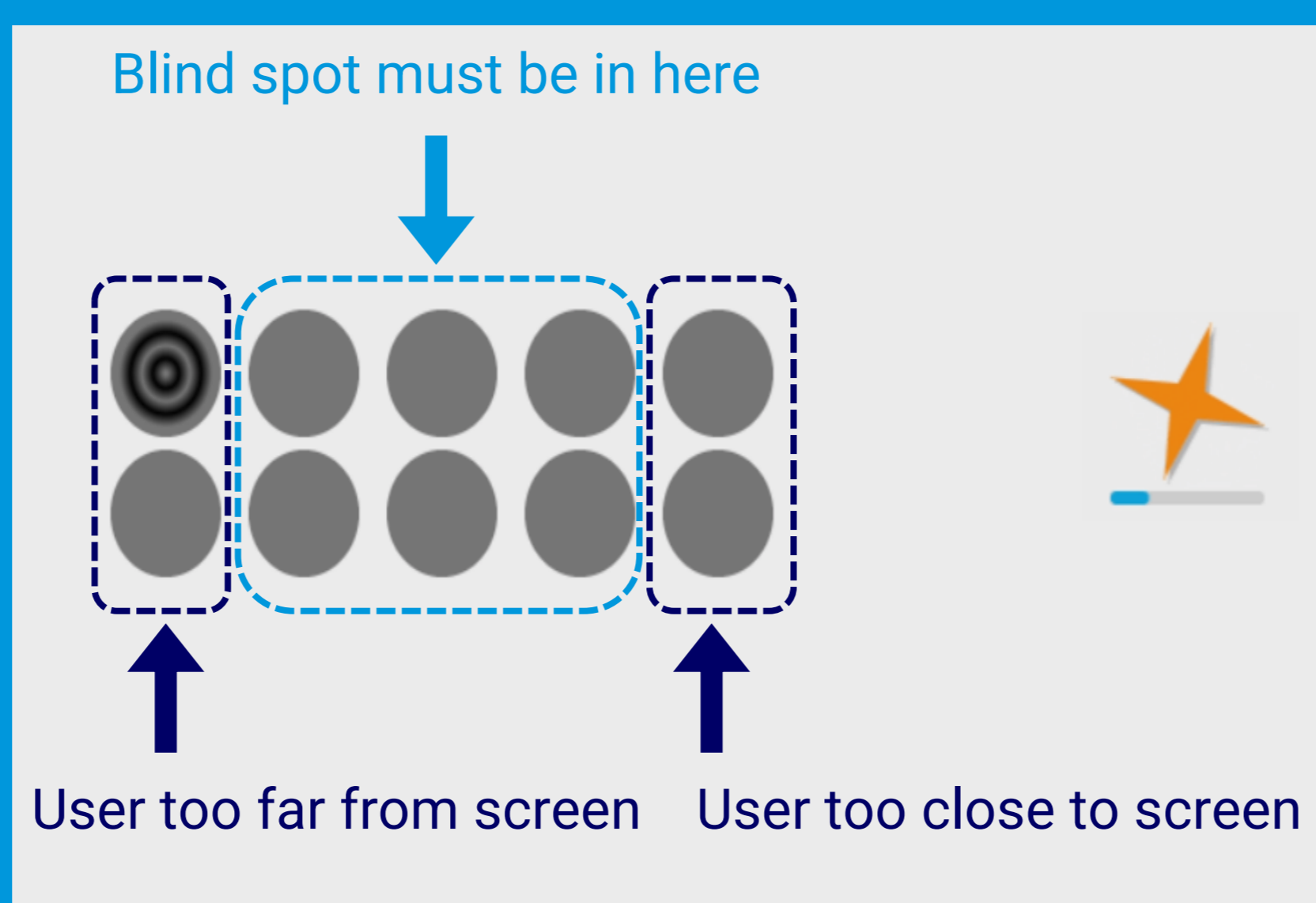
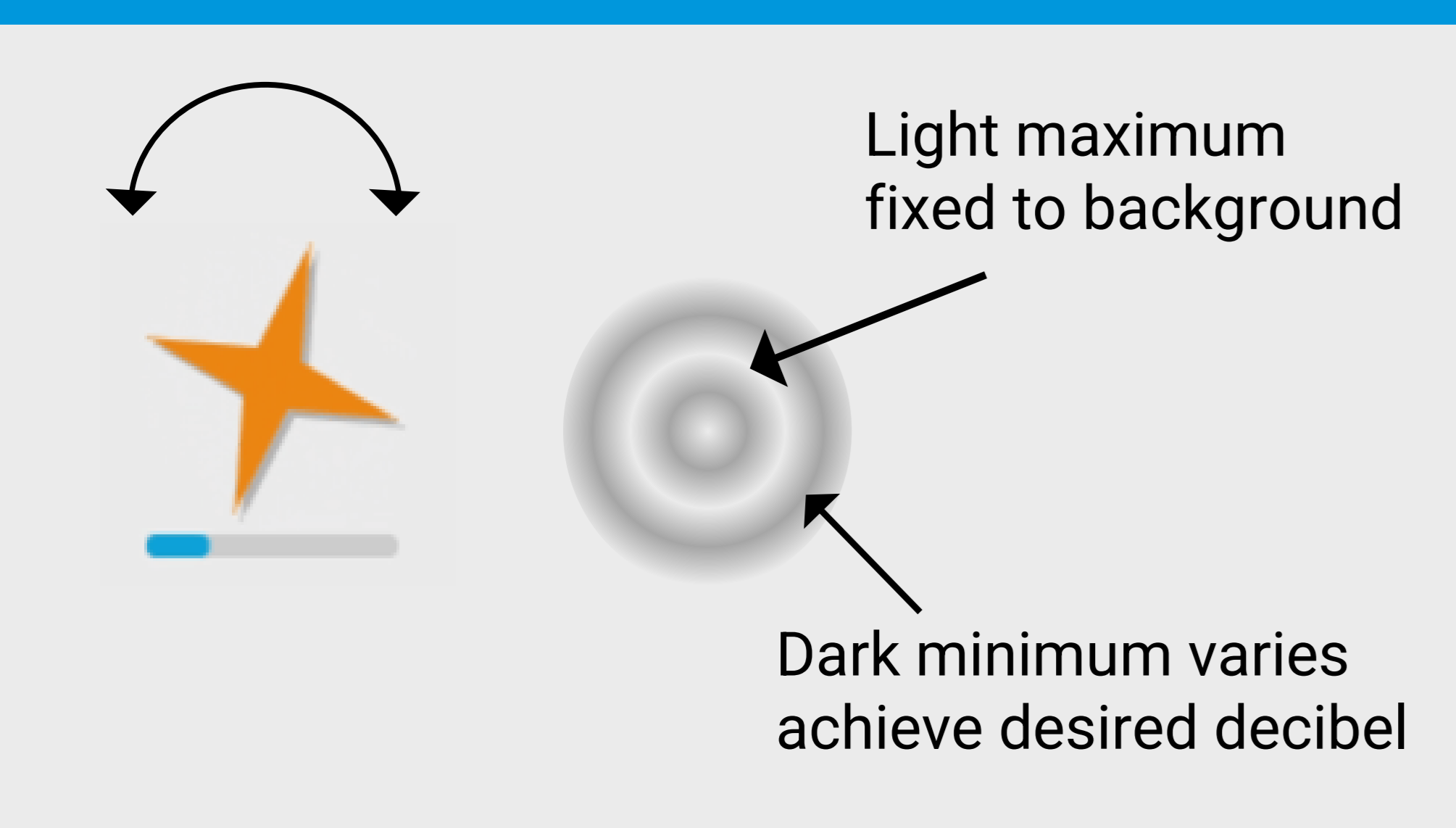
Moving fixation

- Star at top; inferior hemifield tested
- Star moves to screen bottom
- Then superior hemifield tested

E

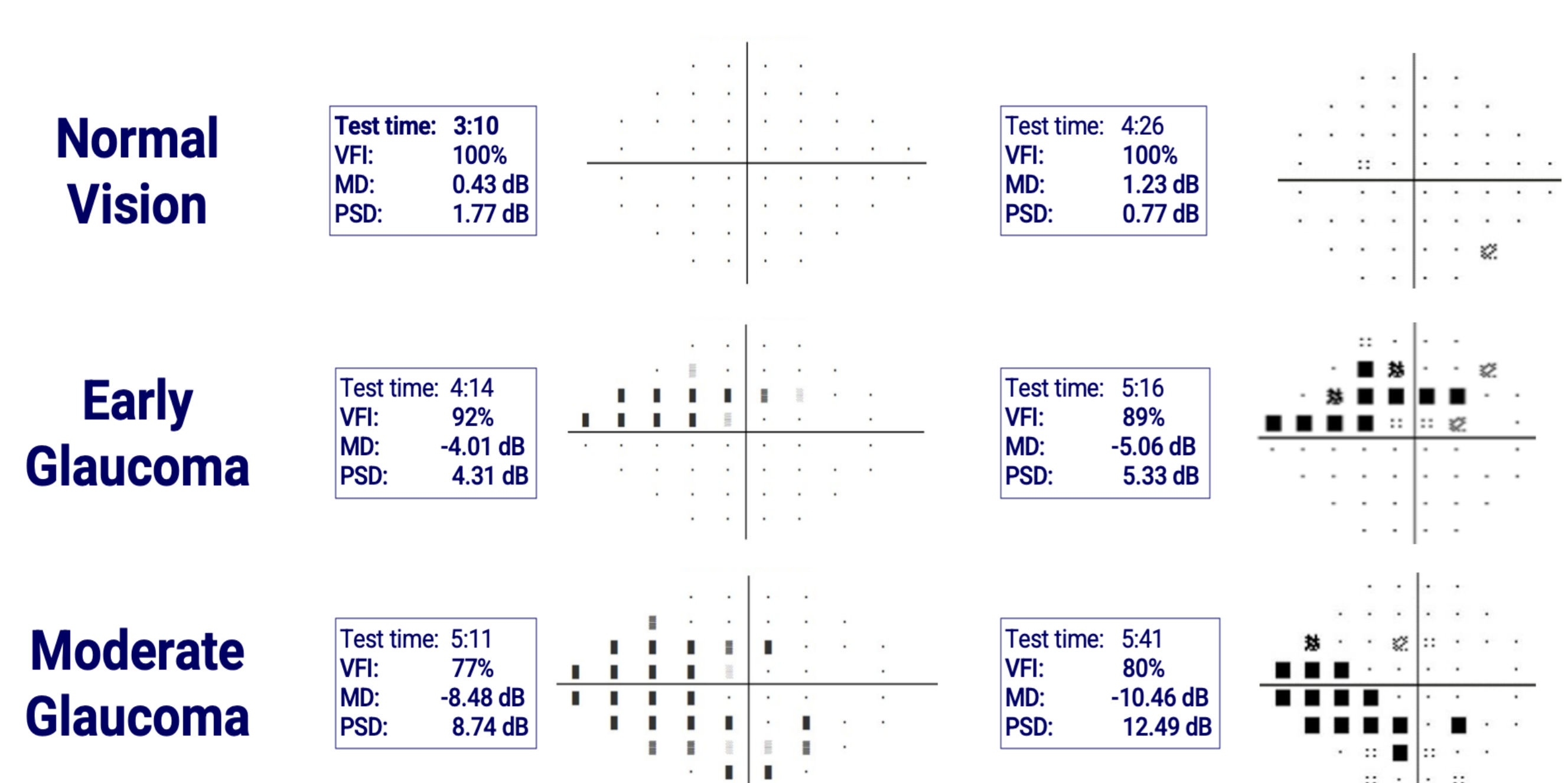
User monitoring

- Webcam monitors user
- AI face detection (not recognition)

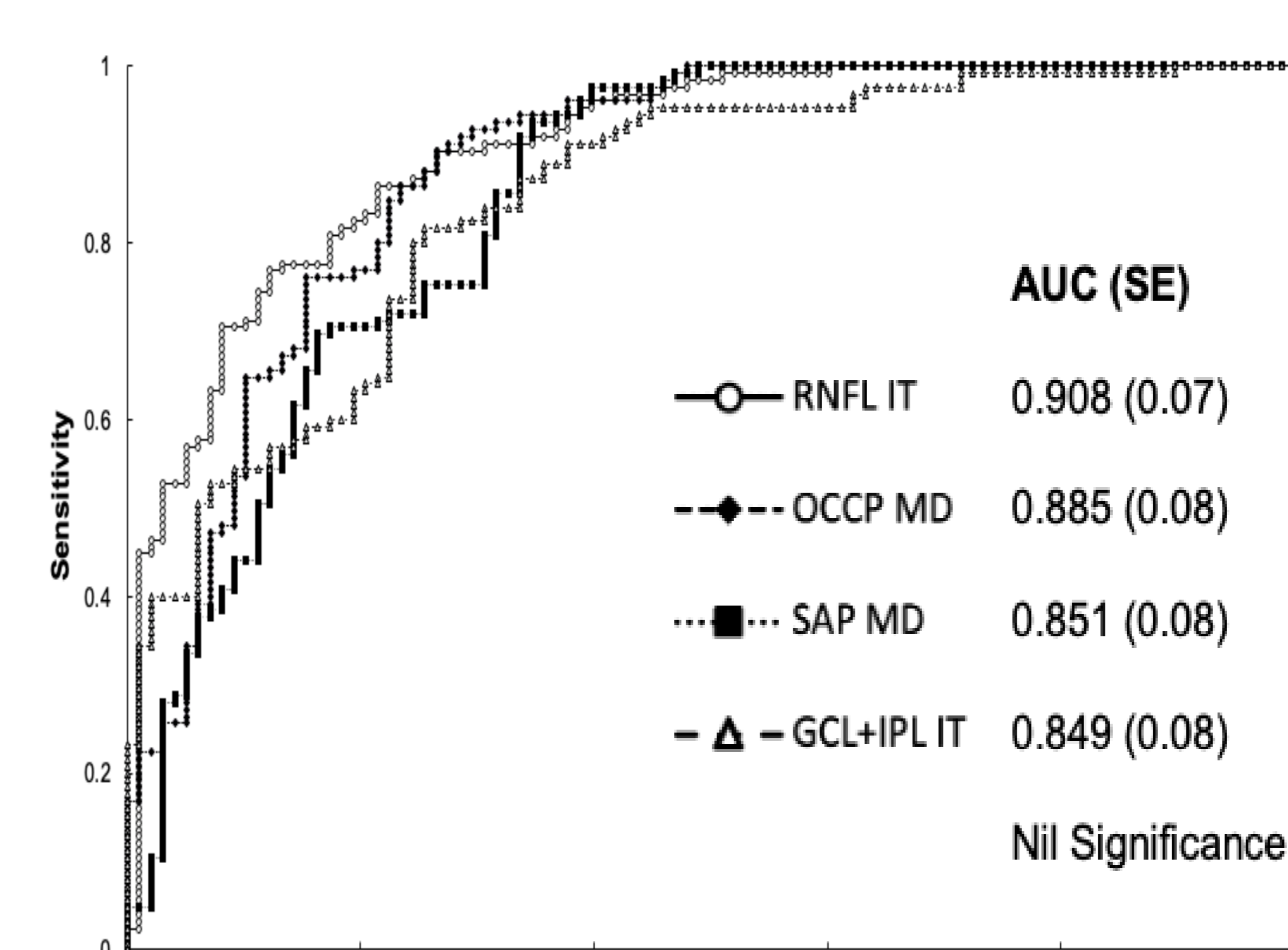


Results

1



2



1

Similar pattern: OCCP & SAP

- Similar VFI, MD, PSD, pattern plot
- OCCP: shorter test time than SAP

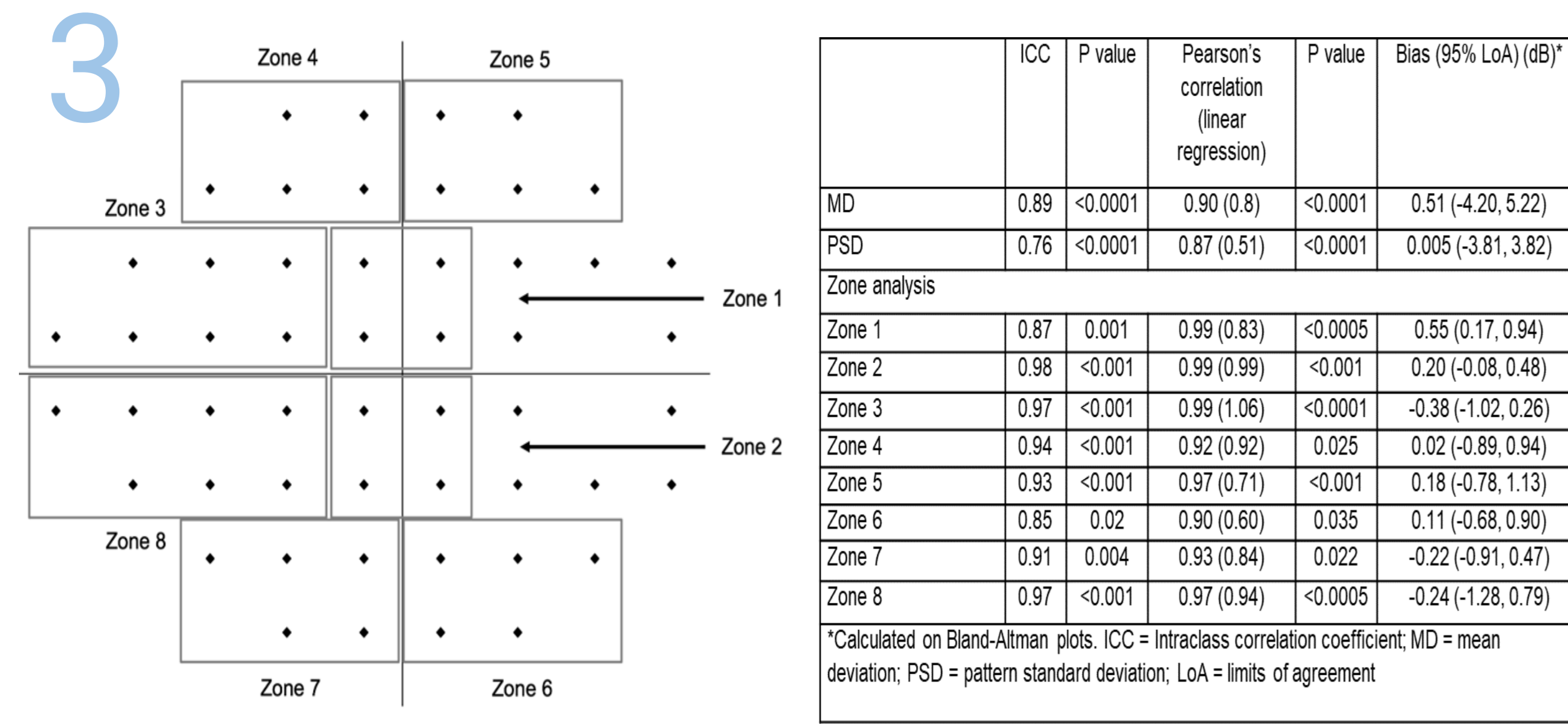
2

Glaucoma Diagnostic Accuracy

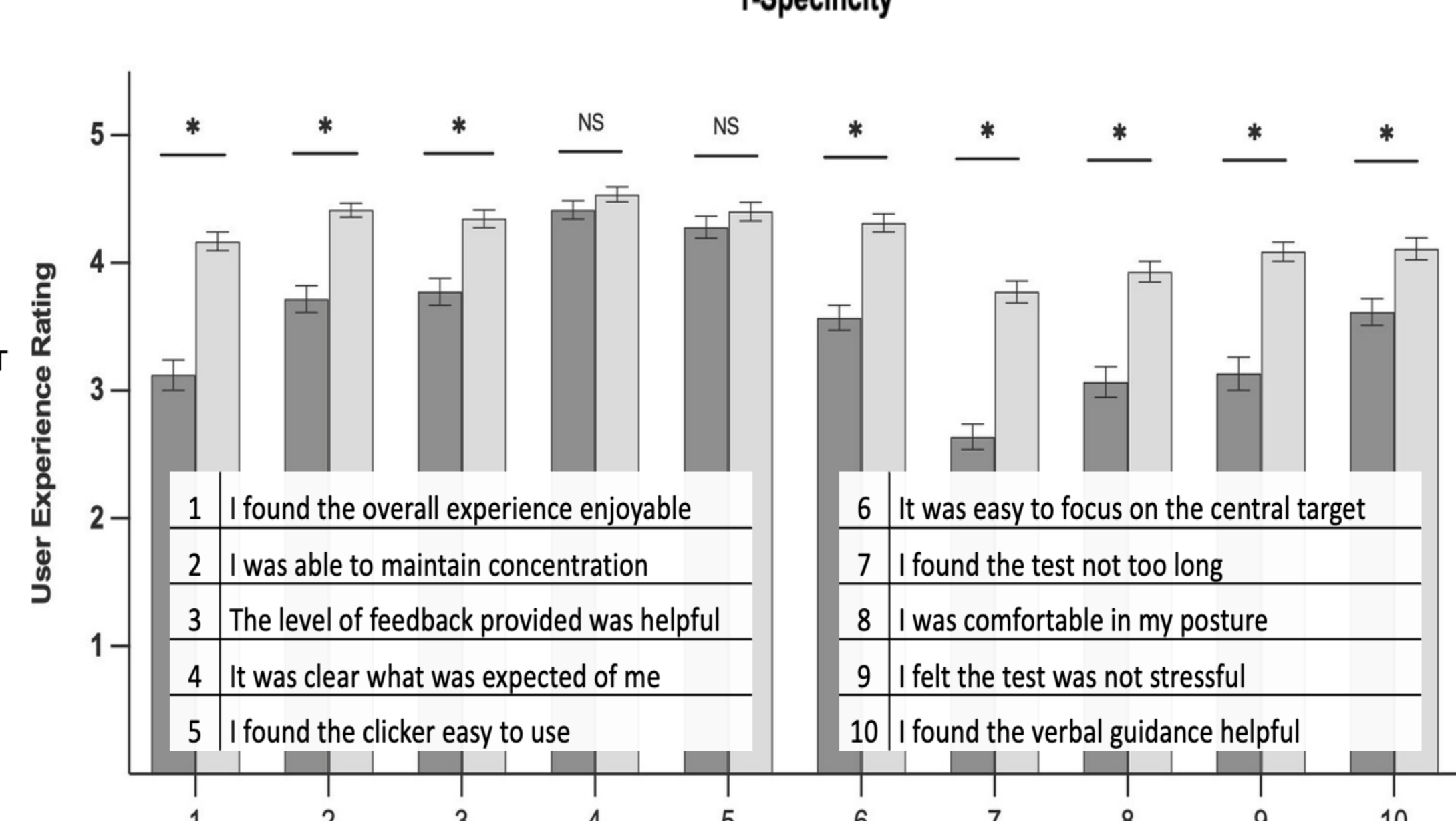
OCCP MD had similar AUC to:

- SAP: MD
- OCT: RNFL
- OCT: GCC+IPL Inferior thickness (IT)

3



4



3

MD, PSD, Zone-based agreement

Excellent agreement OCCP and SAP

- MD, PSD, zones 1-8

4

User Experience Rating

- 8/10 items: preference to OCCP
- 84% users preferred OCCP to SAP

Conclusions

Users prefer OCCP to SAP
OCCP has similar perimetric metrics to SAP
OCCP has similar diagnostic metrics to SAP, OCT GCC, OCT RNFL
Online perimetry on personal computers is possible, with many benefits

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