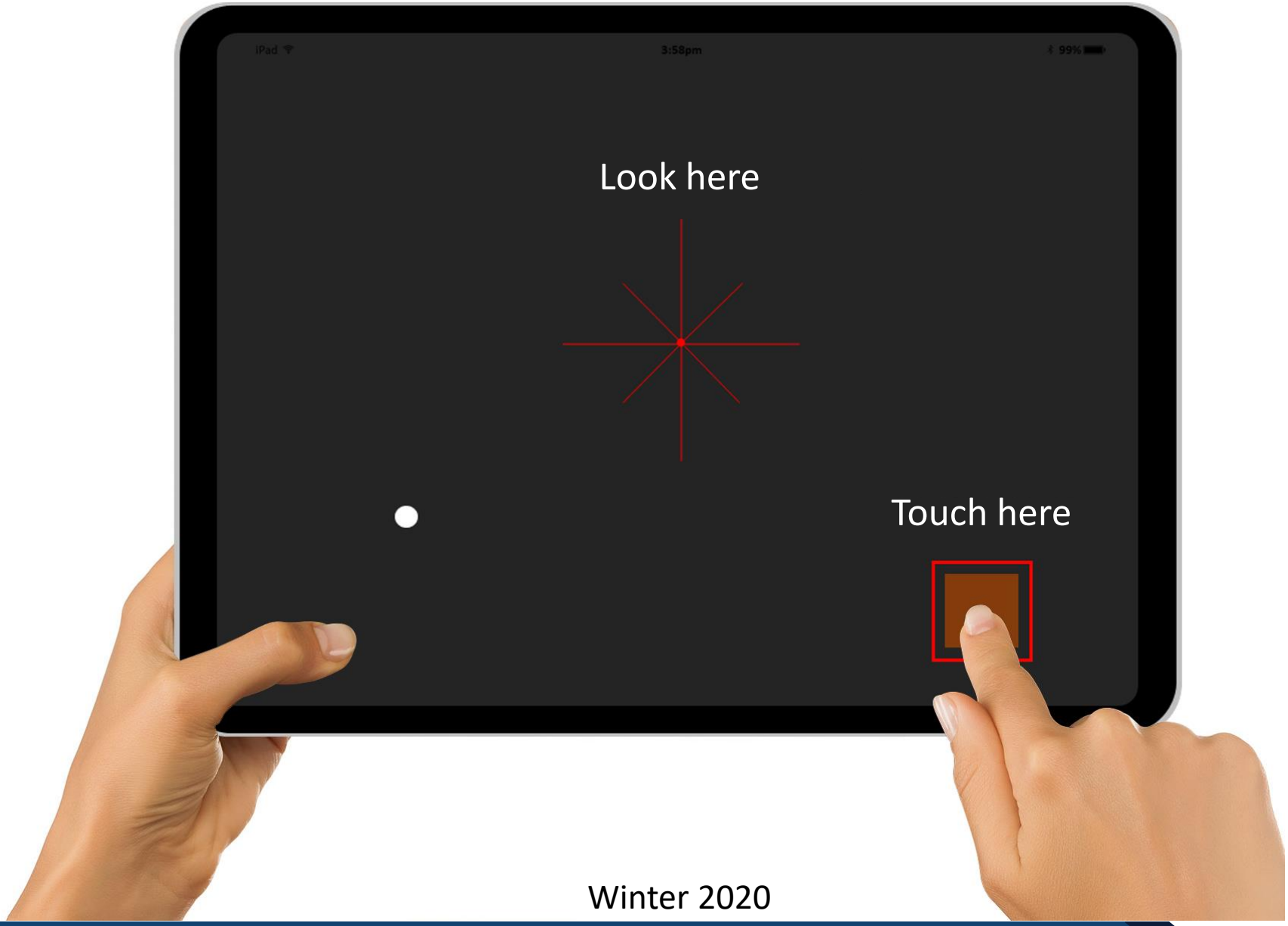
Changing the paradigm of vision testing

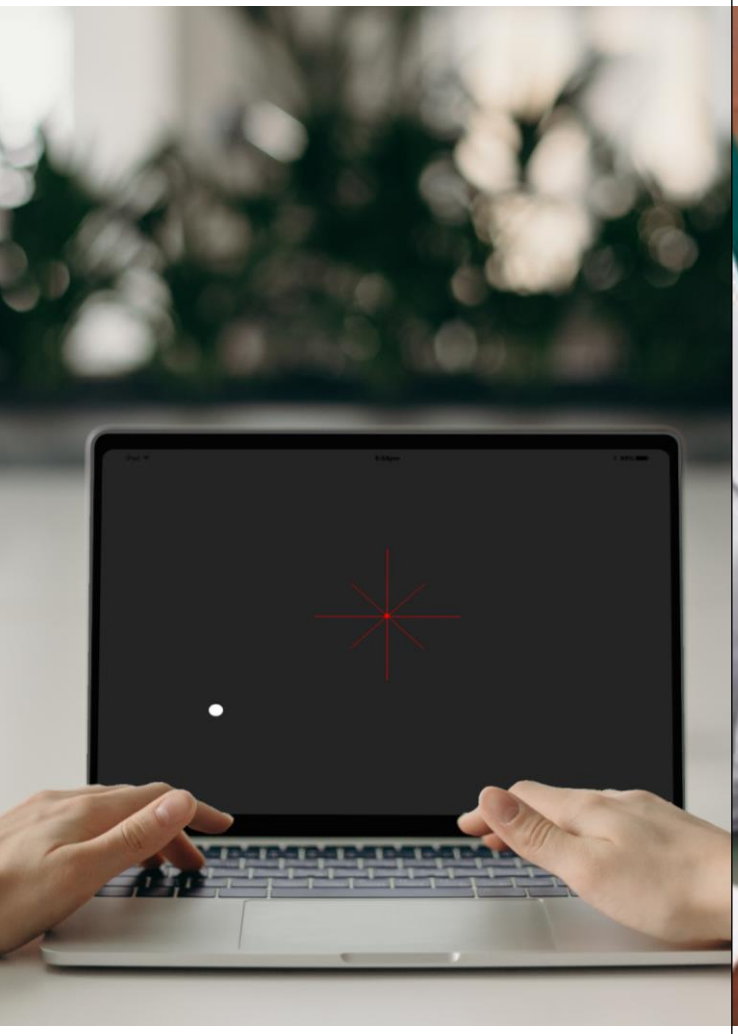


Winter 2020

Using modern technology

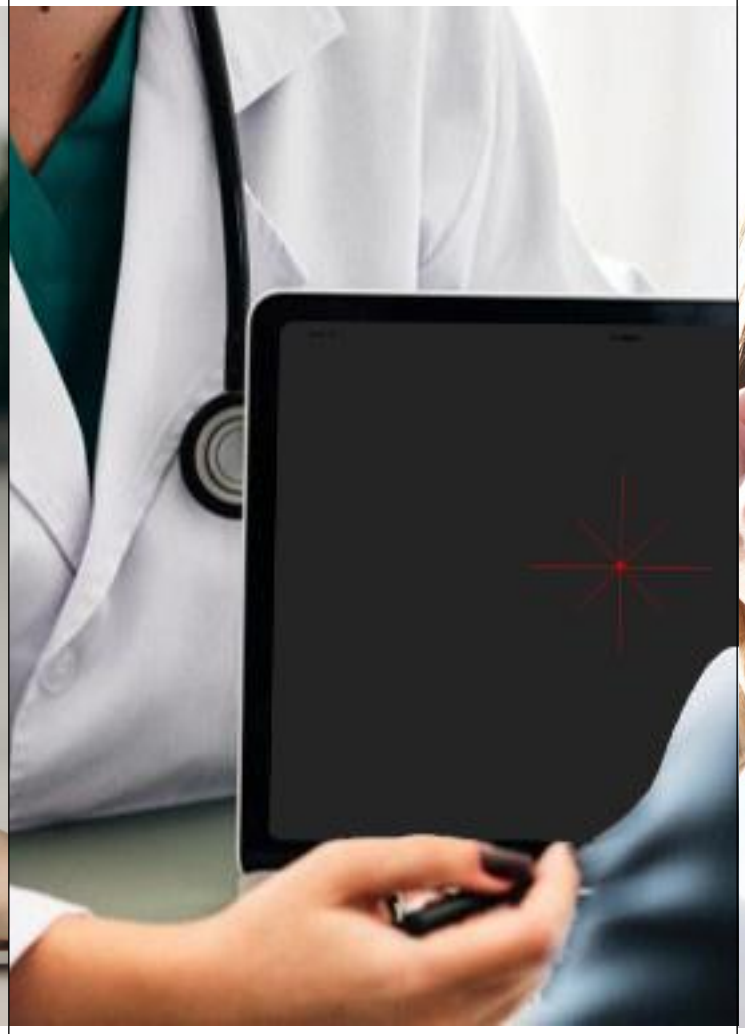
Melbourne Rapid Fields (MRF) is meticulously designed to perform vision and visual field testing on a tablet PC, Windows PC or Mac.

At-home



Voice prompts enable your patients to test at-home. View their results online

In-clinic



Perform perimetry and neurological testing in your consulting room

On the go

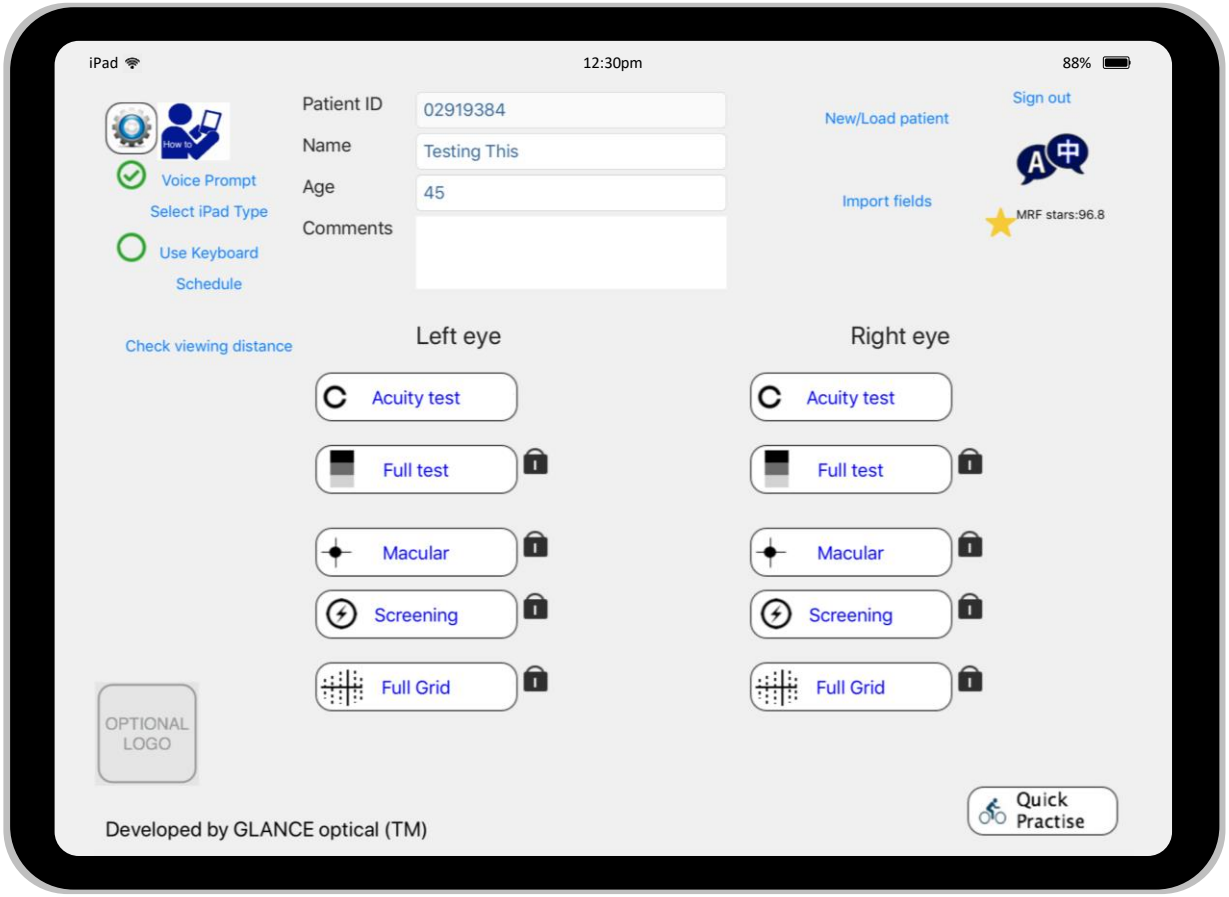
Take the world's first portable perimeter wherever you go

MRF for iOS

Vision testing in your palm

Conduct vision testing with our 4 easy-to-use apps:

MRF Glaucoma MRF Macular MRF Diabetes MRF Neural

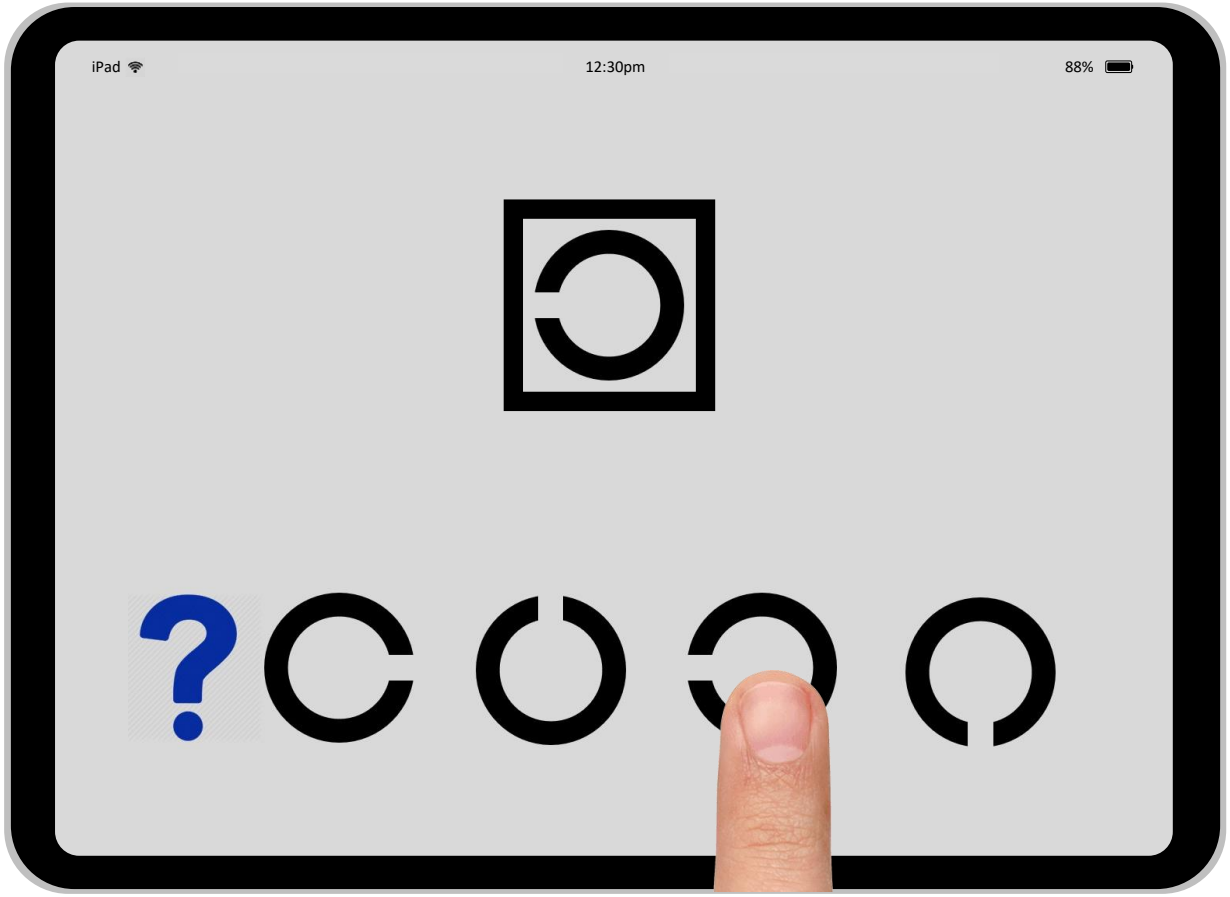


Benefits of MRF for iOS:

- Visual acuity testing
- Visual field testing
- Neurological testing
- Portability
- Telehealth
- Reduced cross-infection risk
- Easy to disinfect between patients
- Multi-lingual functions
- Progression analysis
- No on-going servicing fees
- No locked-in period

*Compatible with iPad 3 or newer. Apps can be downloaded from the Apple App Store. Each app includes 5 free tests.

Discover more with visual acuity



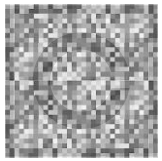
Procedure

1. Cover one eye
2. On the bottom row, tap on the orientation of the C in the box
3. If unsure, tap ?

Optotypes

High contrast acuity
(standard acuity test)

Low luminance, low contrast
(macular disease)



Acuity in noise
(amblyopia, stroke and other suspected brain anomalies)

Note

Low luminance, low contrast acuity and acuity in noise are available in MRF Diabetes, MRF Neural, and MRF Macular apps.

Probing attention or hemi-spatial neglect

Neglect test

Identifies a deficit in attention to one side of the visual field, following neurological insult such as stroke or brain injury.

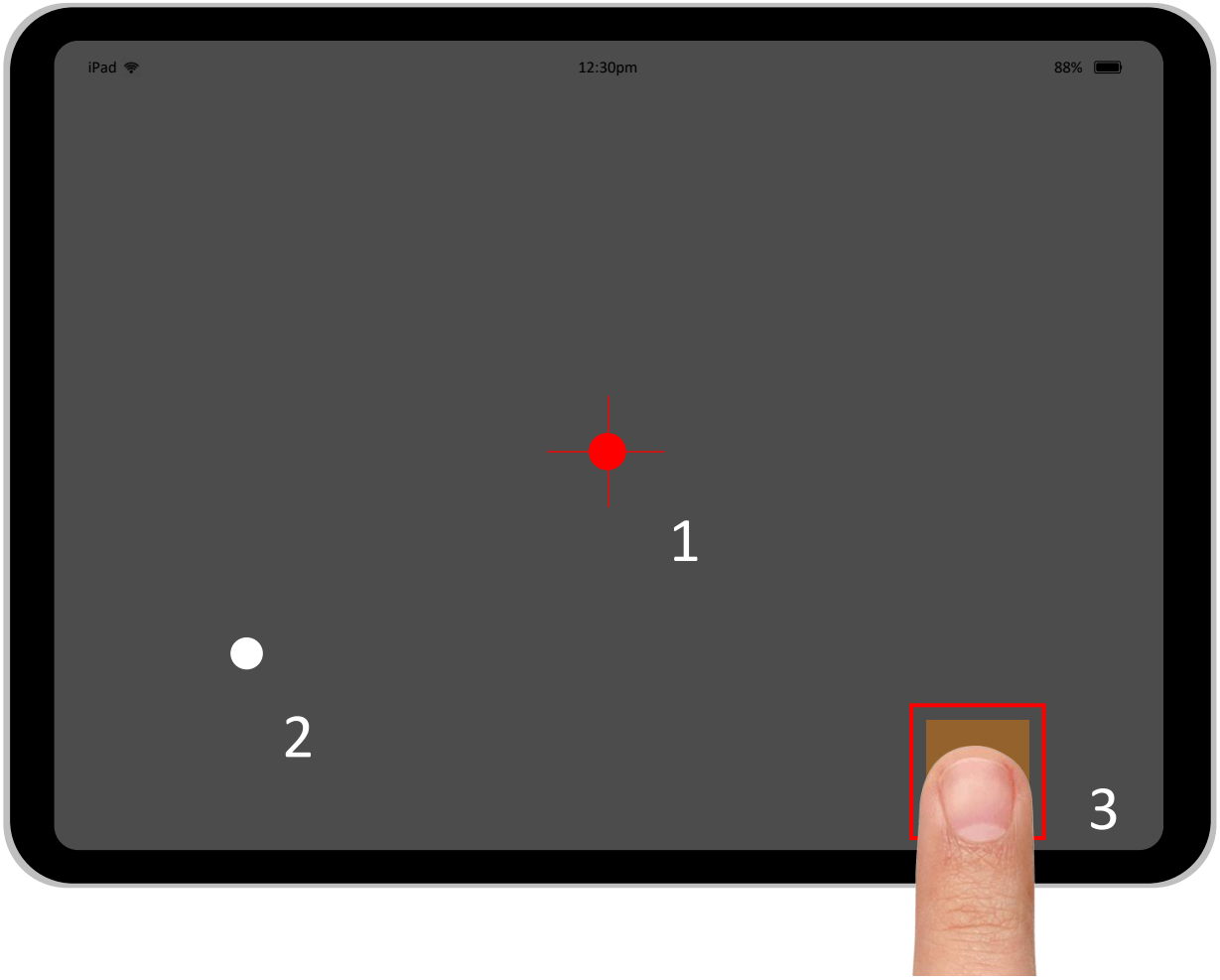
Procedure

1. Performed binocularly
2. Tap the 'frowning faces' to turn them into 'smiley faces'
3. Time taken for 17 correct responses is recorded for each eye
   Hemi-spatial neglect index (HSN) is R-L time normalised to the fastest eye

Note

The neglect test is a feature of the MRF Neural app.

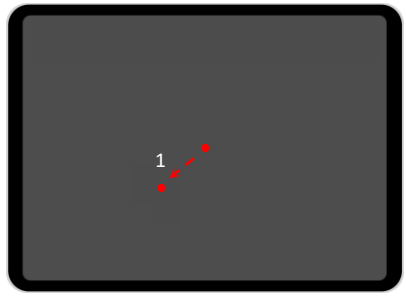
A fast, validated, visual field test



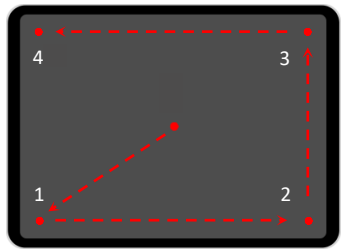
Test procedure

1. Patient looks at central fixation target
2. White/grey spots flash in the periphery
3. Patient taps on “touch zone” when a light is detected (can tap spacebar if optional Bluetooth keyboard is connected or left click if using Bluetooth mouse)

Fixation



iPad 12.9”
One fixation change
2.5 - 3 mins per eye (Full Test)

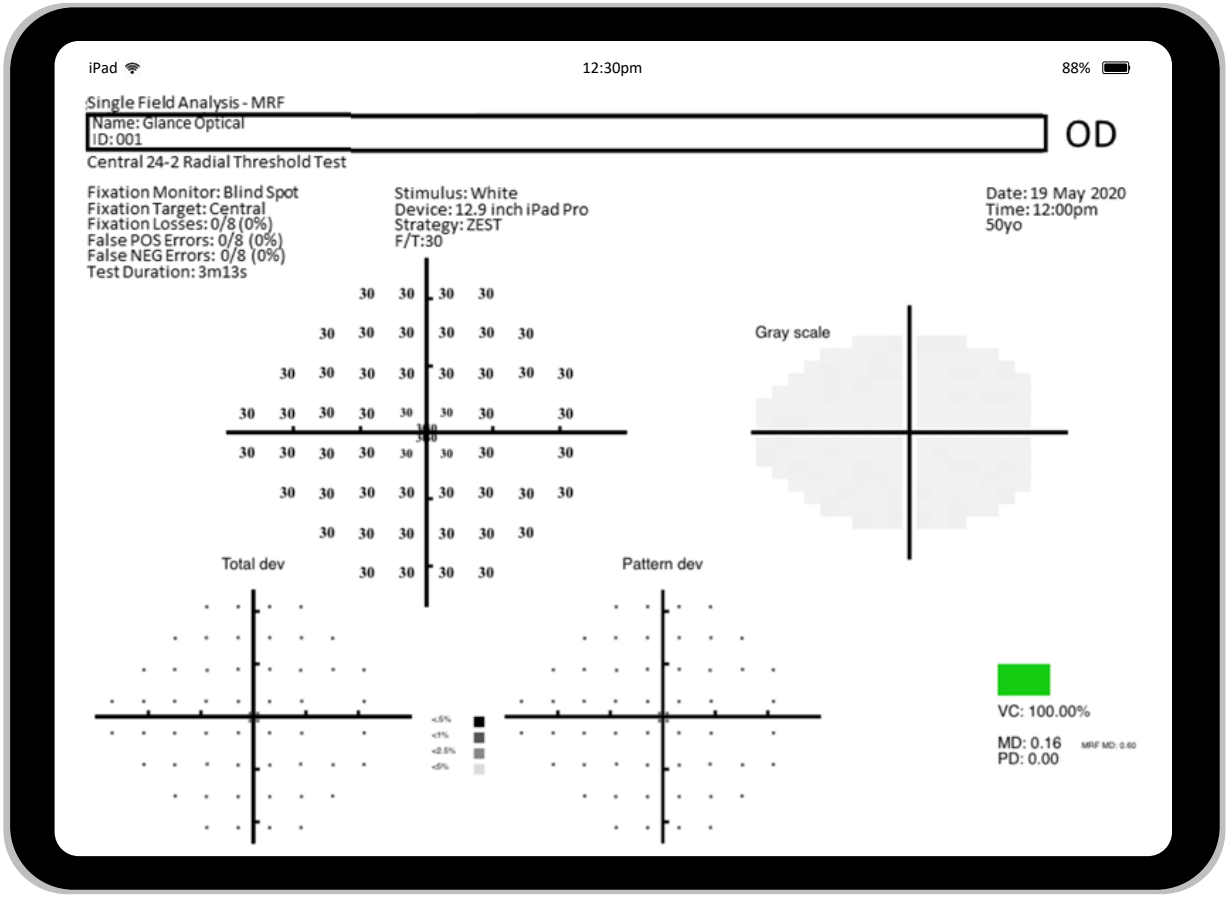


iPad 9.7”, 10.5”, 11”
Four fixation changes
4 - 5 mins per eye

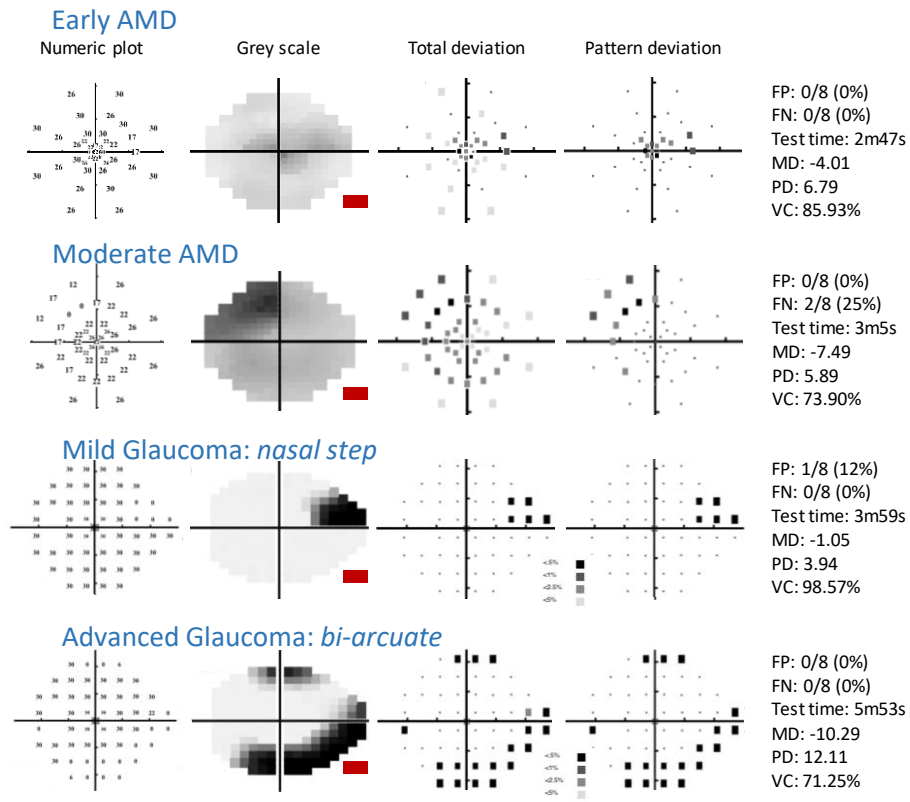
Note

Programmed voice prompts can be enabled to guide patient through exam. Available languages: English, Mandarin, Cantonese, Dutch, French, Italian, Greek, Spanish, Portuguese, Vietnamese and Hindi.

Results given in familiar formats



Exemplar results



Reliability indices
- False positive rate
- False negative rate
- Fixation loss

Global indices
- Mean deviation
- Pattern deviation
- Visual capacity

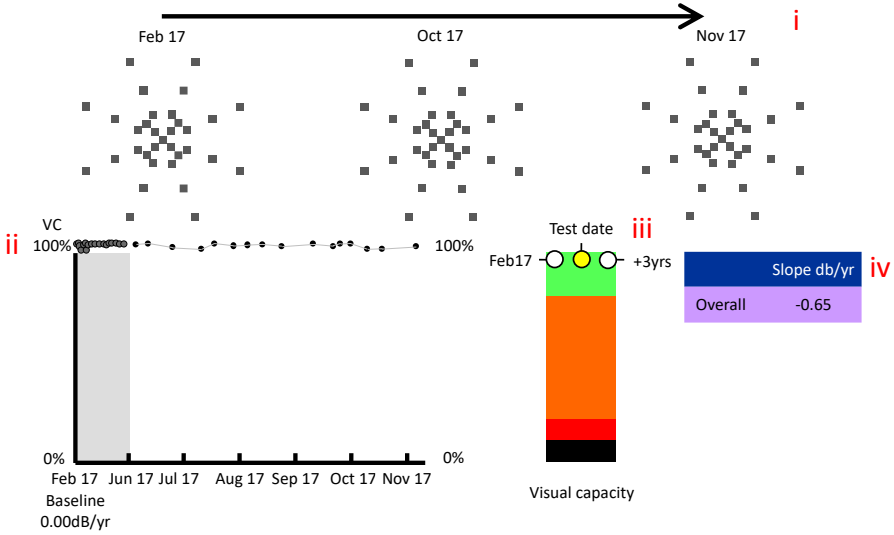
Pointwise
- Grey scale
- Total deviation
- Pattern deviation

Online portal
Access all results via your personalised online portal

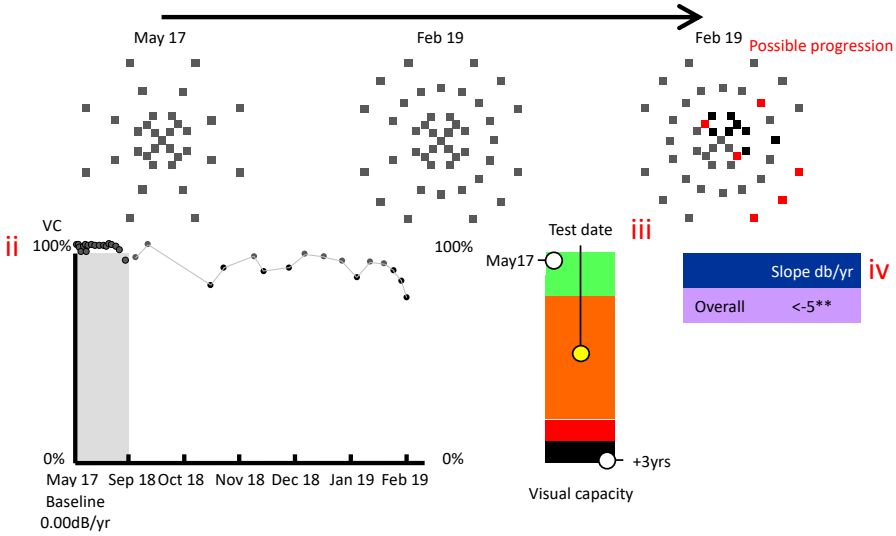
Normative indicator
- Normal
- Borderline
- Abnormal

Progression analysis

Patient 1: Stable over time and prediction for good outcome in 3 years



Patient 2: Variable over time with poor prognosis in 3 years



Event analysis (i)

Compares today's performance to baseline on a pointwise basis. Points are colour coded:

Grey:	No change
Black:	Change from baseline
Red:	Change confirmed at retest

Trend analysis (ii)

Visual capacity (MD normalised to age-expected value) plotted over time. Minimum 5 tests required.

Progression predictor (iii)

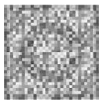
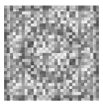
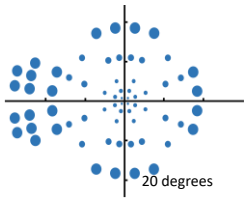
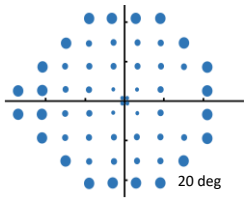
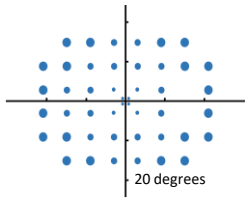
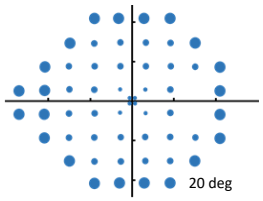
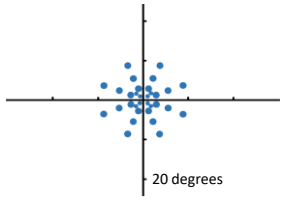
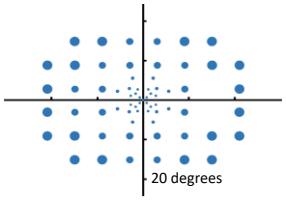
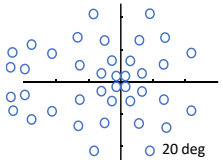
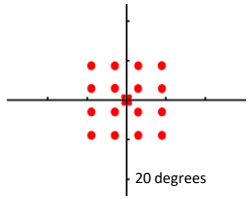
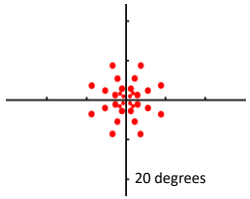
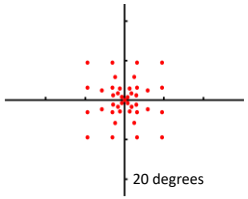
Coloured bars show visual capacity (VC) from 100% (green) to 0% (black).

Left circle:	VC at baseline
Middle circle:	VC at current exam
Right circle:	3-year prediction for VC

Rate of progression (iv)

Average rate of progression is shown in dB per year in the purple box. Significance of deviation from normal indicated by the following:

*	<0.05
**	<0.01
***	<0.001

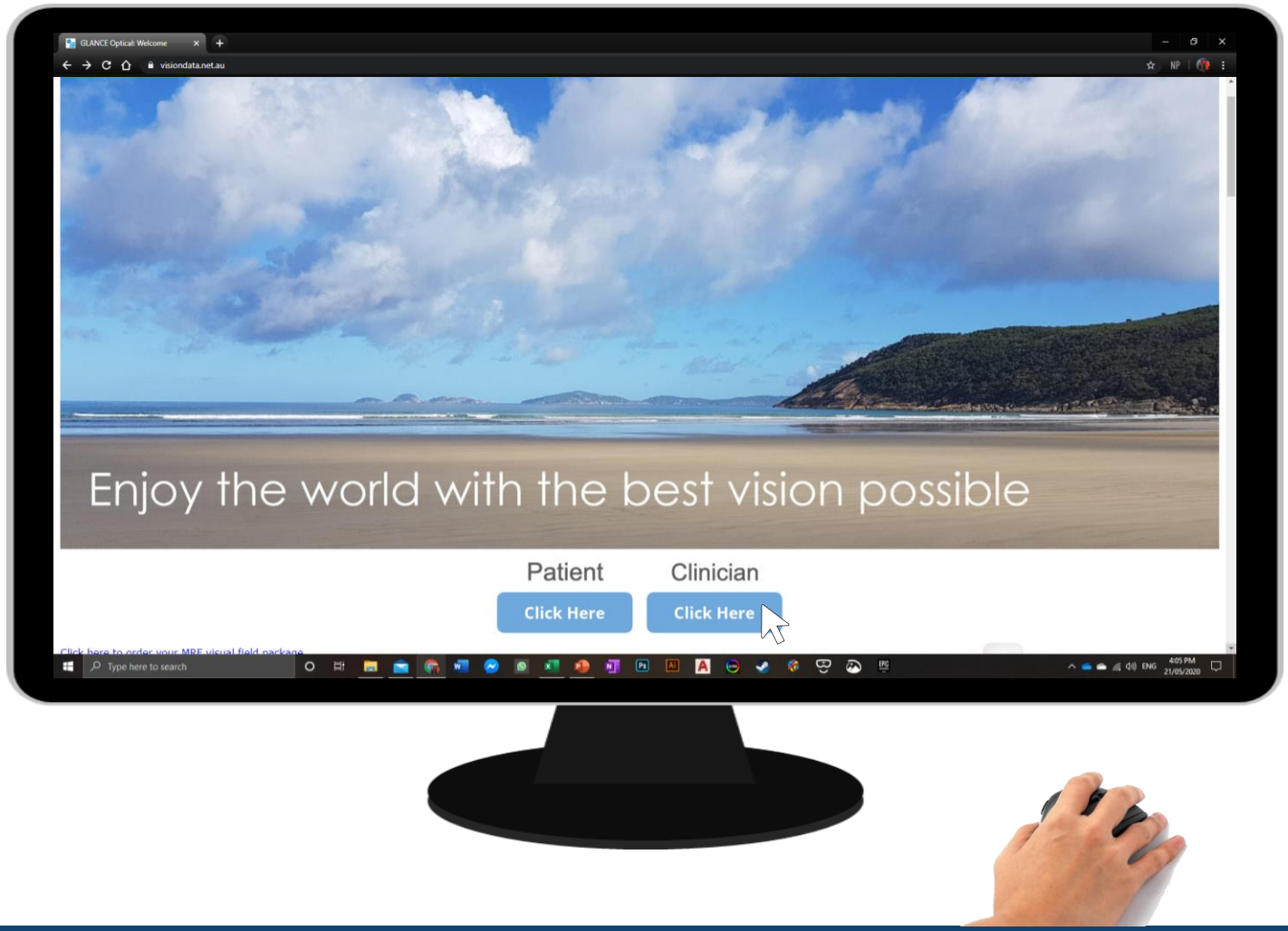
	MRF Glaucoma app	MRF Neural app	MRF Macular app	MRF Diabetes app
Acuity	High contrast	High contrast Low luminance, low contrast  Acuity in noise	High contrast Low luminance, low contrast	High contrast Low luminance, low contrast  Acuity in noise
Perimetry	 Full test • 66 points • Radial pattern • Expanding field • 30° x 20 ° • Approx. 5 min  Full grid • 56 points • Modified 24-2 • +4 foveal points • 27° x 21 ° • Approx. 4 min	 Full test • 46 points • Modified 24-2 • +4 foveal pts • -10 peripheral • 21° x 15 ° • Approx. 2.5 min  Full grid • 56 points • Modified 24-2 • +4 foveal points • 27° x 21 ° • Approx. 4 min	 Macular test • 33 points • Radial pattern • Expanding field • 9.5° x 9.5 ° • Approx. 1.5 min	 Full test • 66 points • Modified 24-2 • +20 macular pts, -10 peripheral pts (compared to Full Grid) • 21° x 15 ° • Approx. 3 min
Other	 Radial screen • 40 points • Radial pattern • Expanding field • 30° x 20 ° • Approx. 1.5 mins	 Central red • 20 points • Threshold • Grid pattern • 9.5° x 9.5 ° • Approx. 45 sec Hemispatial neglect	 Macular red test • 33 points • Threshold • Radial pattern • 9.5° x 9.5 ° • Approx. 1.5 mins Amsler grid	 Central red test • 41 points • Threshold • Radial pattern • 9.5° x 9.5 ° • Approx. 2min

Note: All spots size-scaled. RED spots G-V. Test distance: 33cm. Minimum device requirements: iPad 3 WiFi. Recommended: 12.9" iPad Pro WiFi/WiFi + Cellular. Test times estimated with iPad Pro 12.9"

MRF Online

Vision testing without bulky machines

Conduct vision testing by logging onto our website from a PC or Mac:
visiondata.net.au



Benefits of MRF online:

- Visual acuity testing
- Visual field testing
- Binocular driving test
- Use your existing hardware
- Telehealth
- Scalability to multiple sites
- Reduced cross-infection risk
- Easy to disinfect between patients
- Multi-lingual functions
- Progression analysis
- No on-going servicing fees
- No locked-in period

Vision testing tailored to your needs

MRF Online includes the following tests:

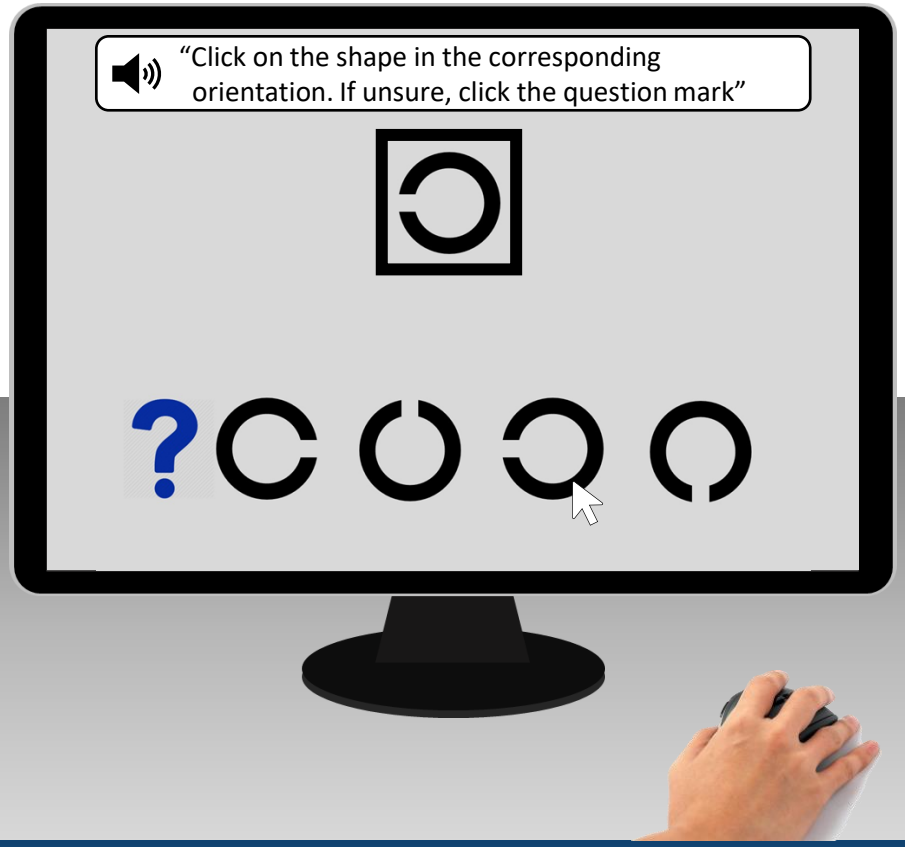
Visual acuity

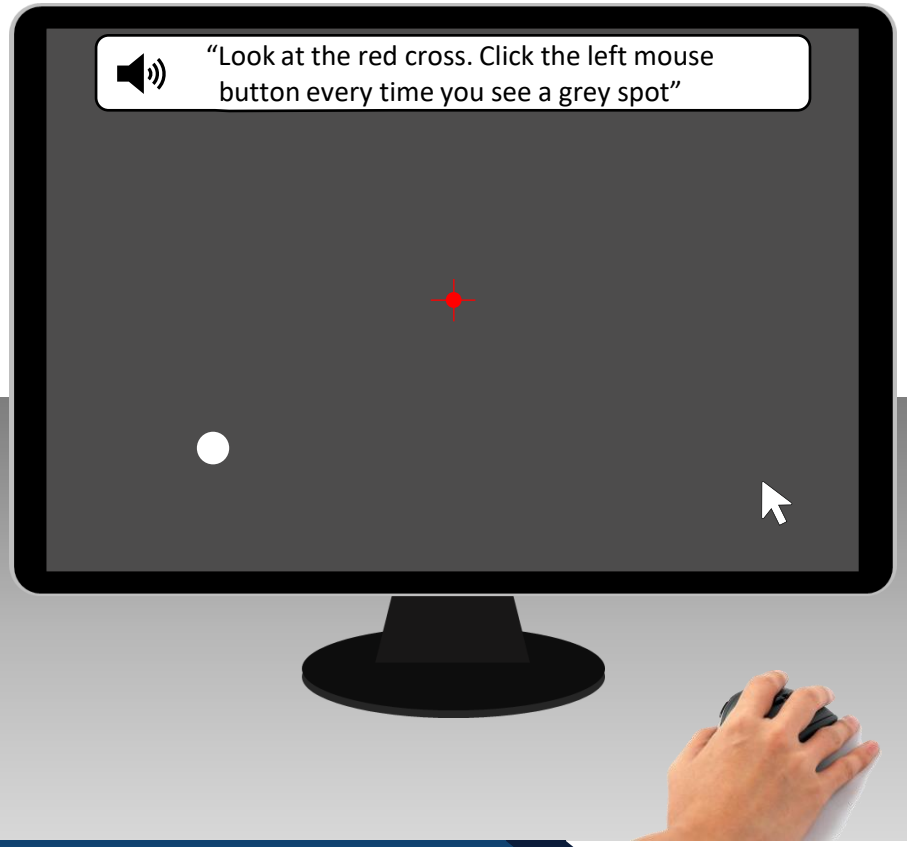
- High contrast
- Low luminance

Visual field

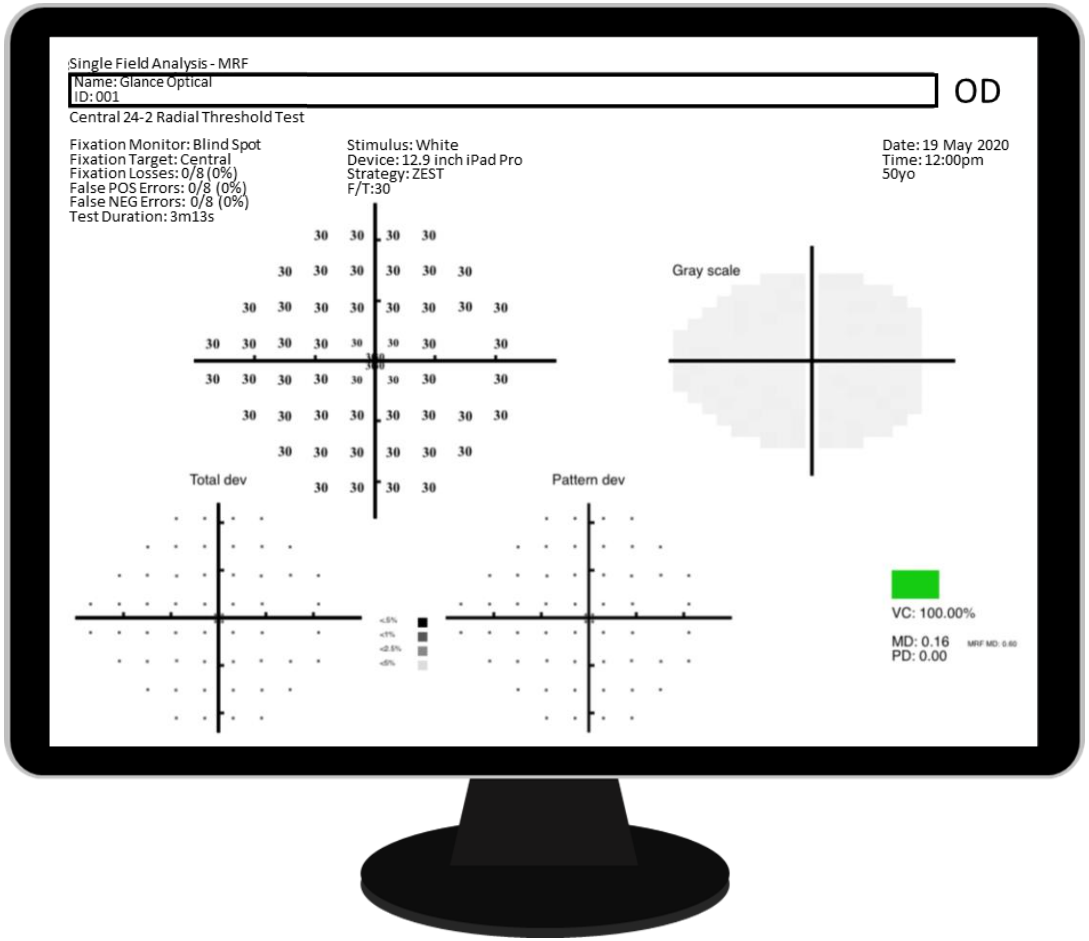
- 10-2, 24-2 and binocular driving test*
- Progression analysis built-in

*Binocular Esterman equivalent. Requires 27” display or dual monitor setup



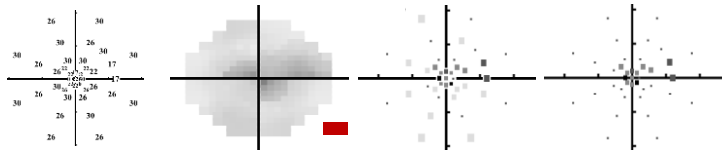


Results given in familiar formats



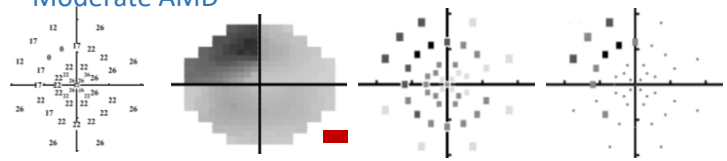
Exemplar results

Early AMD



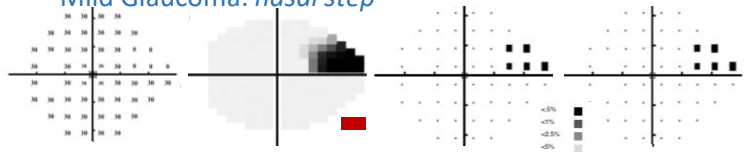
FP: 0/8 (0%)
FN: 0/8 (0%)
Test time: 2m47s
MD: -4.01
PD: 6.79
VC: 85.93%

Moderate AMD



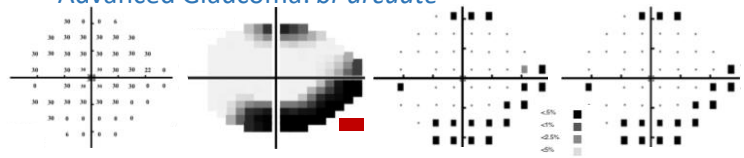
FP: 0/8 (0%)
FN: 2/8 (25%)
Test time: 3m5s
MD: -7.49
PD: 5.89
VC: 73.90%

Mild Glaucoma: *nasal step*



FP: 1/8 (12%)
FN: 0/8 (0%)
Test time: 3m59s
MD: -1.05
PD: 3.94
VC: 98.57%

Advanced Glaucoma: *bi-arcuate*



FP: 0/8 (0%)
FN: 0/8 (0%)
Test time: 5m53s
MD: -10.29
PD: 12.11
VC: 71.25%

Reliability indices

- False positive rate
- False negative rate
- Fixation loss

Global indices

- Mean deviation
- Pattern deviation
- Visual capacity

Pointwise

- Grey scale
- Total deviation
- Pattern deviation

Online portal

Access all results via your personalised online portal

Normative indicator

- Normal
- Borderline
- Abnormal

Telehealth: the way forward

Doctor prescribes test

Specify the tests to be conducted by your patient. Email them a link with test instructions.

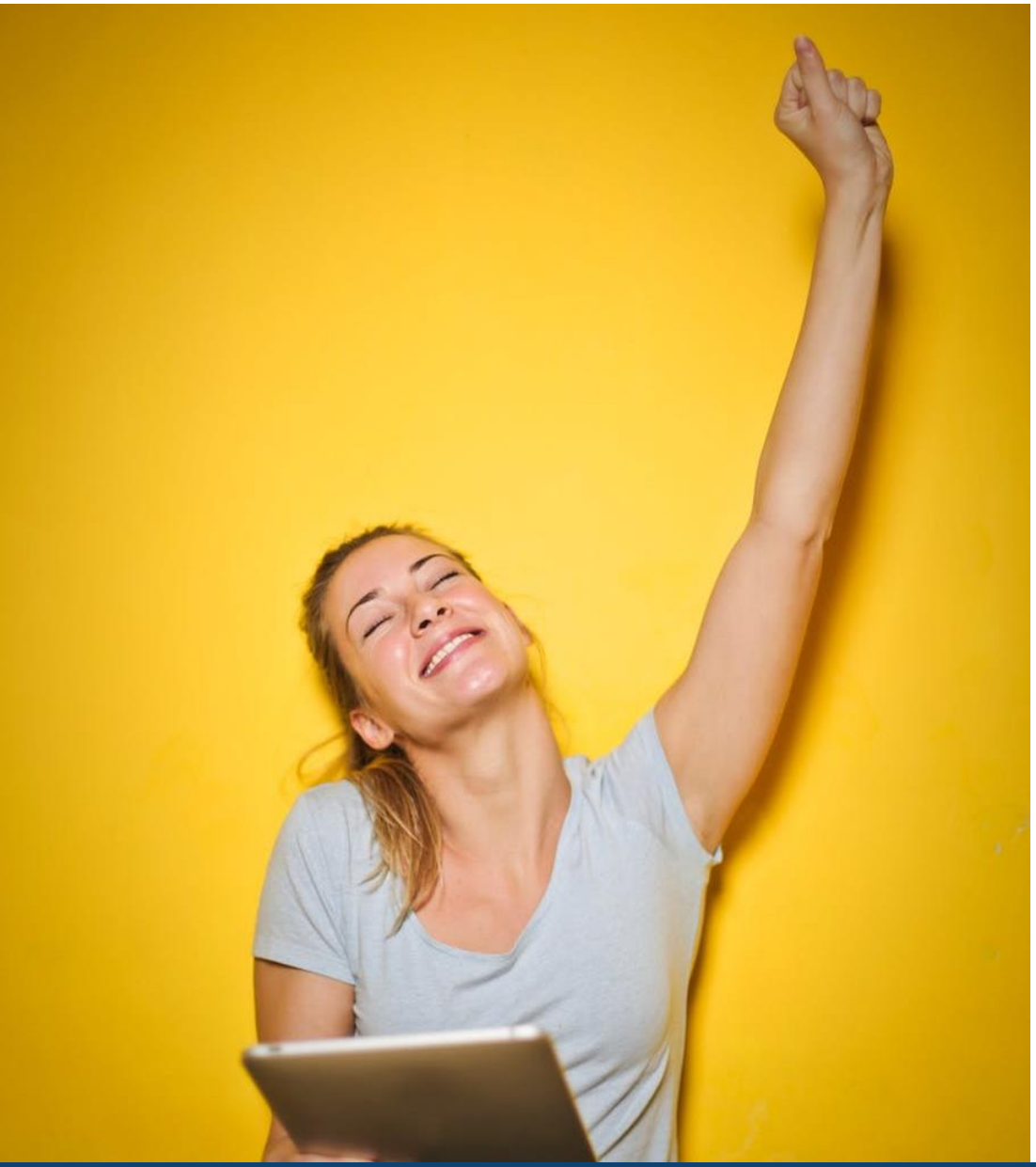
Patient tests from home

Patient conducts test under the guidance of voice prompts and submits results to secure online server.

Results available online

Access their results anywhere via your personalised cloud account. Artificial intelligence can notify you of change.

Complement your practice with MRF



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Web: www.visioninhome.com

Sales enquiries:

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Australia
Ph: 1800 225 307
Email: malcolm.sketcher@paragoncare.com.au

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