

Are glaucoma eye tests worth getting out of bed for? Piloting new technologies to reduce unnecessary hospital appointments

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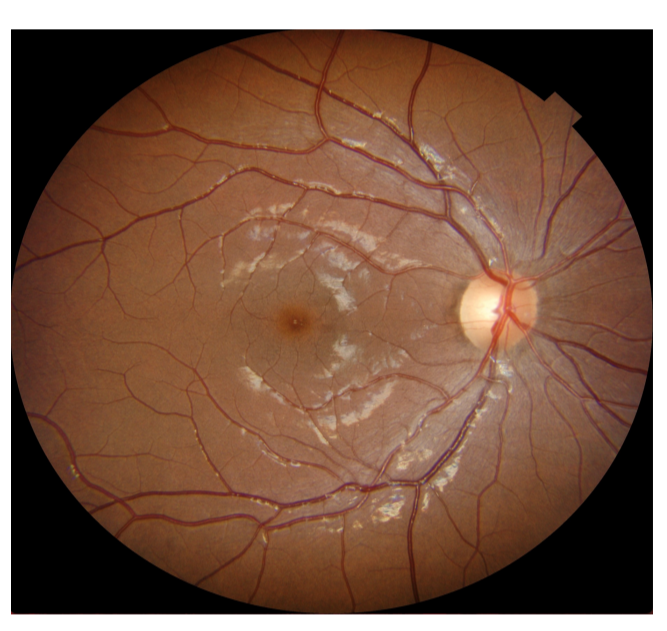



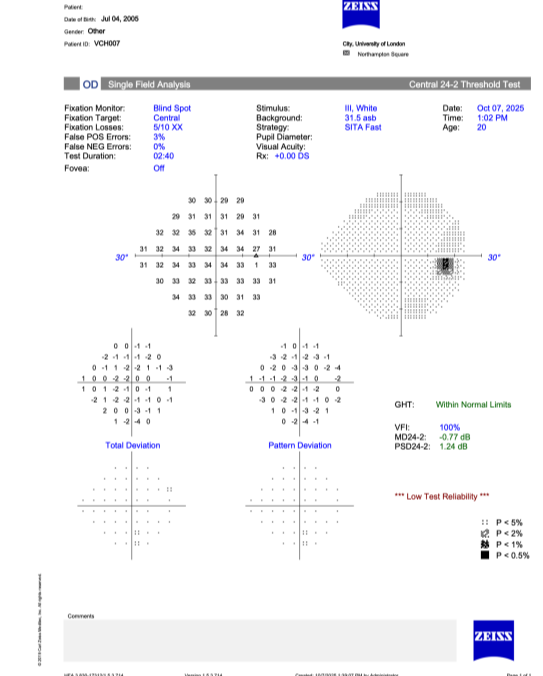

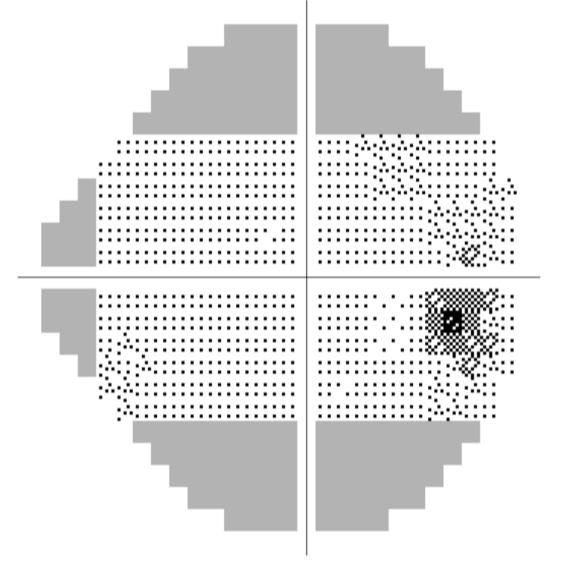

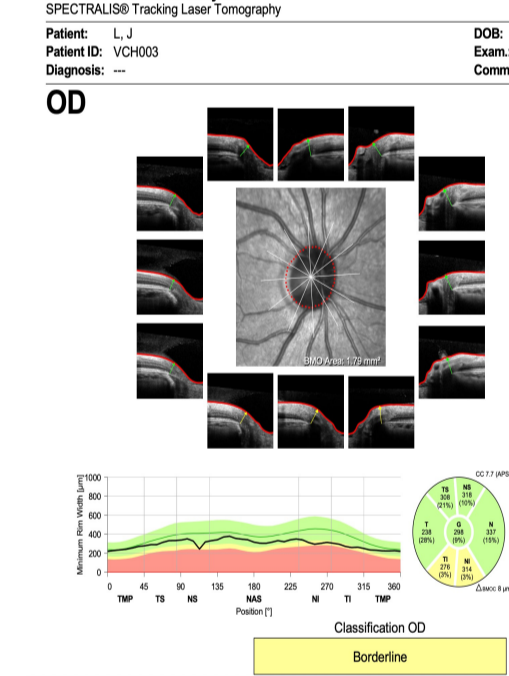

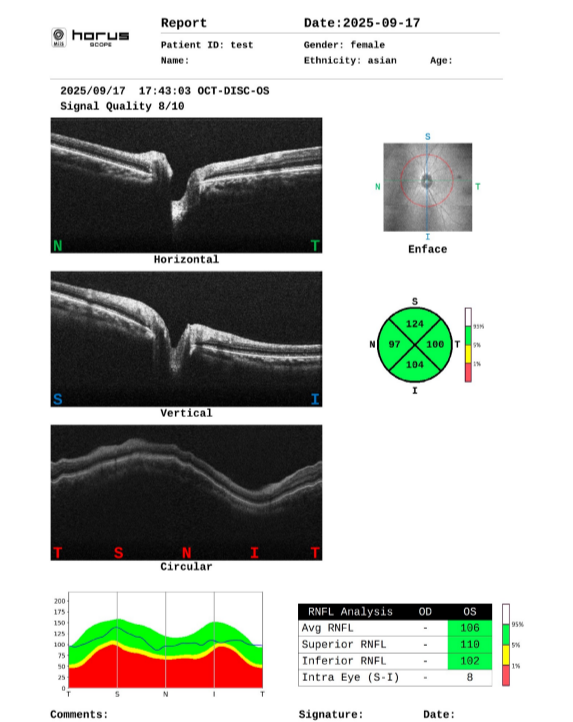

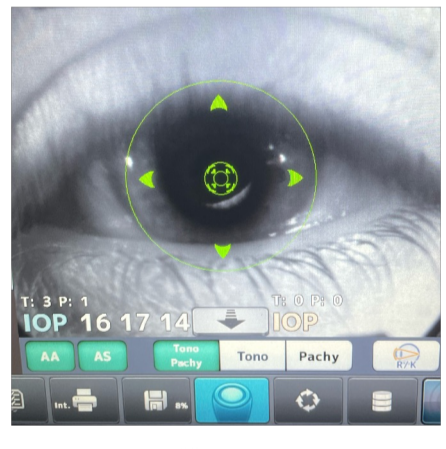


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Background and Purpose

- By 2050, one million people will reside in UK care homes, and many will struggle to attend hospital clinics due to complex care needs.
- Glaucoma is one of the leading causes of irreversible blindness. It can be managed but not cured. Around 1 in 10 care home residents will have glaucoma, and all will require yearly monitoring. Currently this monitoring occurs solely via hospital outpatient appointments.
- We are launching a 3-year project to explore the feasibility of monitoring glaucoma patients in the community using portable technologies. This aligns with the UK Government's ambition for the majority of outpatient appointments to be delivered outside hospitals by 2035.

Standard vs Portable Equipment

Four primary methods are employed clinically to monitor glaucoma. In each case, we are investigating portable alternatives:

	Standard	Example Output	Portable	Example Output
Fundus Camera	 <p>TopCon fundus camera – easy to use, table-top camera</p>		 <p>Optomed Aurora IQ - 50° field of view with non-mydratric operation providing high quality retinal and anterior imaging</p>	
Visual Field	 <p>Humphreys visual field analyzer – the gold standard visual field for detection and management of glaucoma</p>		 <p>Eyecatcher – portable, easy to use device with strong correlation to standard visual field tests</p>	
OCT	 <p>Heidelberg Spectralis – High resolution OCT images. The high quality images help diagnostic confidence and monitor progression</p>		 <p>ACT 100 – compact and lightweight OCT machine</p>	
Intraocular Pressure	 <p>MR 6000 TOMEY NCT – Auto alignment and auto measurement non-contact tonometer using a puff of air.</p>		 <p>iCare 200 tonometer - measures IOPs in almost any position - standing, sitting, supine, upright, or lateral recumbent.</p>	

Preliminary Findings

Images from the current testing phase are shown below. Each test is performed in a random order, and each participant is also asked for their ease-of-use impressions



Visual Fields
'I prefer the Eyecatcher. It is more comfortable with the glasses and prefer the larger fixation target'



Fundus Camera
'I prefer the portable camera - the flash is less intense, and the positioning is more natural compared to using the chin rest and forehead bar'



Eye Pressure
'I prefer the iCare as its quicker and I dislike the puff of air'

Conclusions

Initial testing is ongoing (no adverse events so far encountered). Anecdotal impressions are overwhelmingly positive. We aim to have preliminary results by the end of the 2025.

Future Work

- Next (Phase 2) we shall pilot the equipment in older patients within Guys and St Thomas' geriatric clinics
- Finally (Phase 3) we shall roll out the equipment to care homes (and other community centers), and shall assess their utility and feasibility in practice