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# Access to Care.
# MedTech as Equalizer.

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# Access to Care: MedTech as Equalizer

## How we make it possible at PeriVision

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peri vision

# Our vision at PeriVision

We make eye testing accessible to everyone — everywhere!

# Glaucoma – the silent thief of sight

⚡ Chronic eye disease damaging optic nerve

⚡ Caused by high intra-ocular pressure (not always!)

⚡ Irreversible vision loss

⚡ No symptoms, no pain!

⚡ Leading to total blindness if not treated timely

# Glaucoma – global healthcare burden

**0**     Cures – lifelong chronic disease
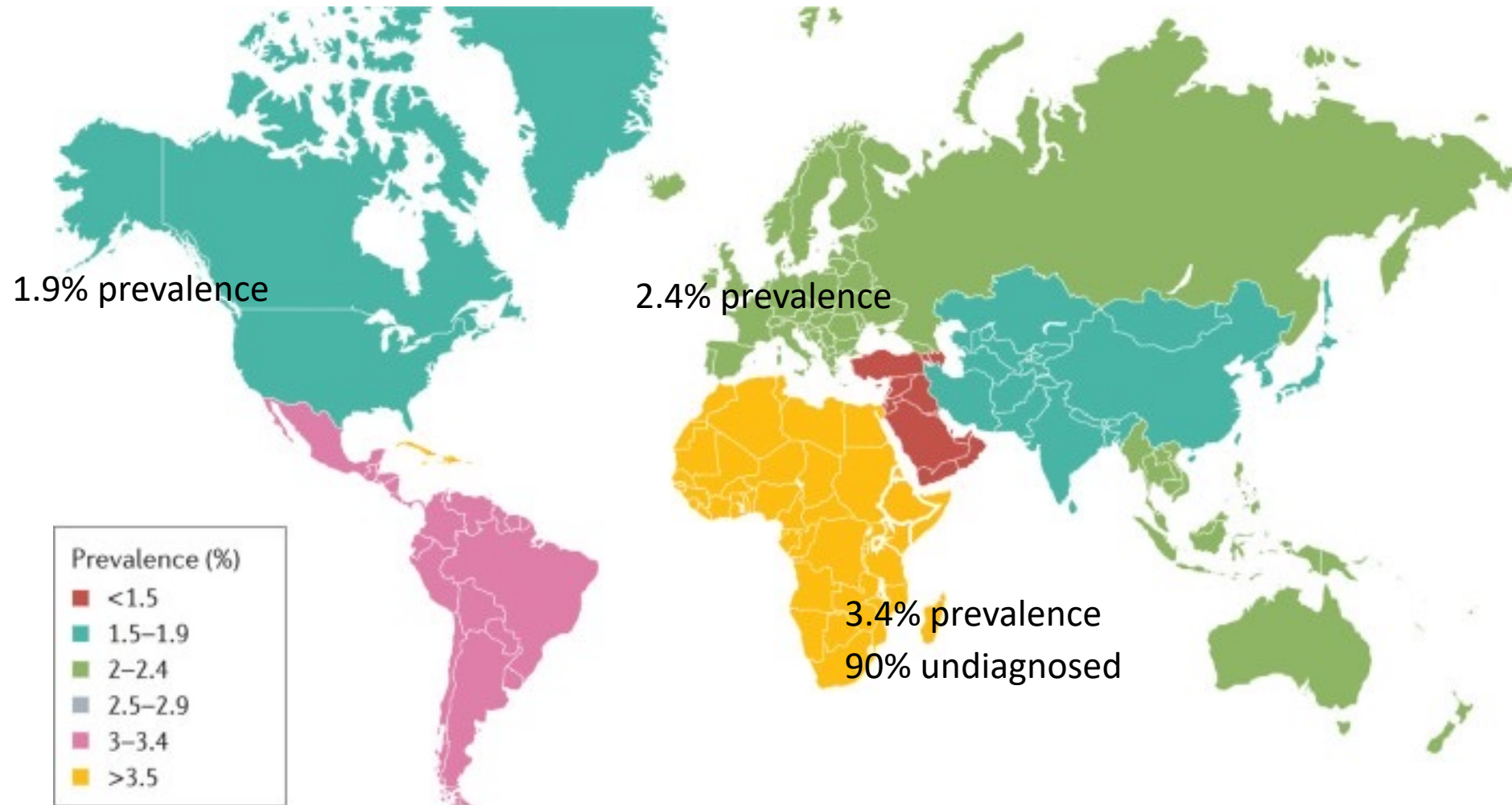
**#1**     Cause of irreversible blindness

**80M**     Patients globally

**50%**     Cases undetected (90% in LMICs)

# Glaucoma prevalence is higher in LMICs



1.9% prevalence

2.4% prevalence

3.4% prevalence
90% undiagnosed

Prevalence (%)
- <1.5
- 1.5–1.9
- 2–2.4
- 2.5–2.9
- 3–3.4
- >3.5

Nature Reviews | Disease Primers

LMICs: Low-middle income countries

# Glaucoma as a global healthcare burden
## Example of UK



**2M**     People at risk of blindness

**600K**     People waiting for eye appointments

**64%**     Delayed appointments

**44%**     Increase in demand by 2035

Source: https://innovator.scot/news/99
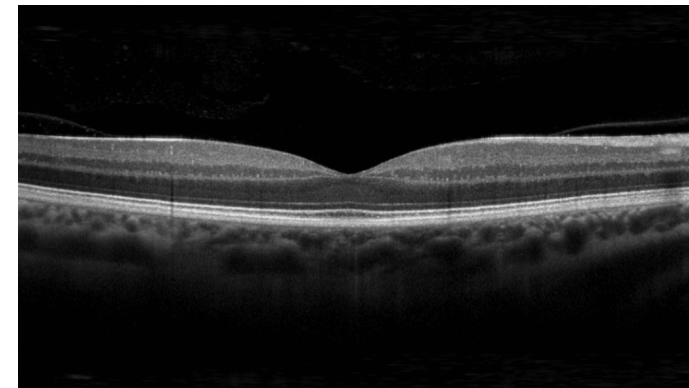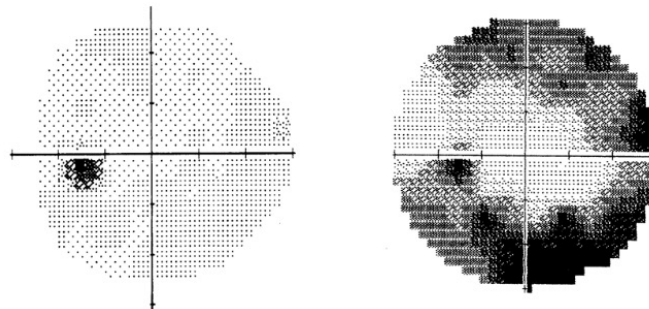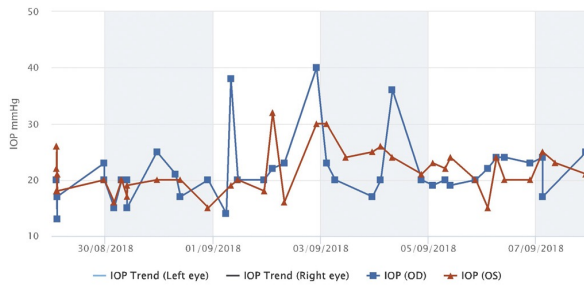
# Glaucoma diagnosis & prognosis



Tonometry – Intraocular pressure



Perimetry – Visual function



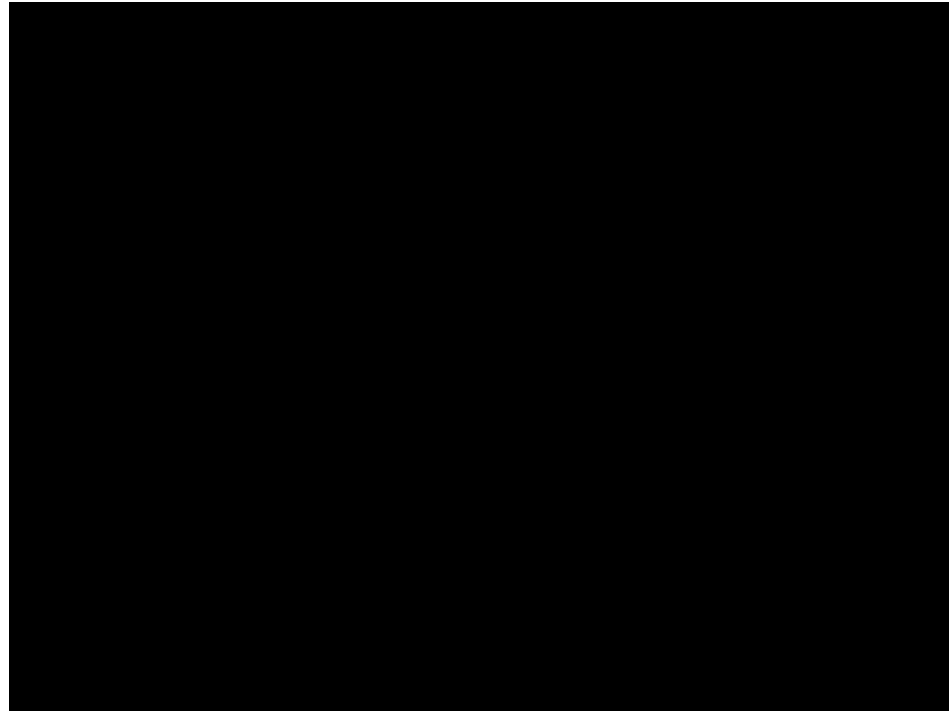Optical Coherence Tomography – Retinal thickness
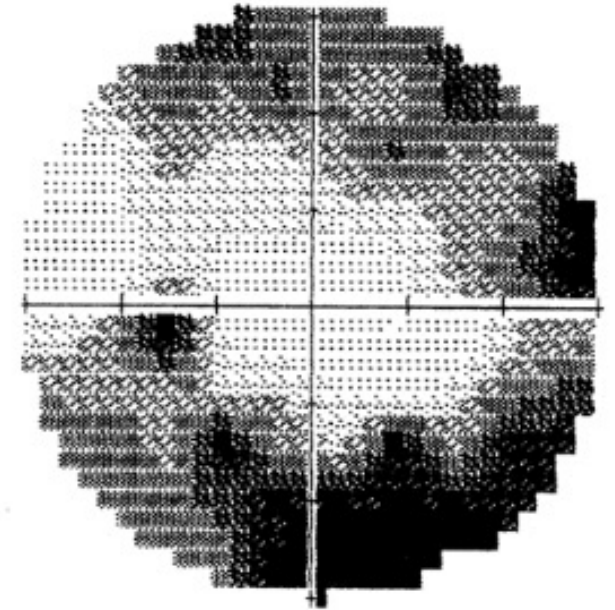
# Perimetry
## Integral part of glaucoma management



Perimetry setup



Perimetry test



Visual field

# Perimetry – costly and tedious
The most hated examination in ophthalmology

$ Stationary
Dedicated room & assistant

Long & tedious procedure
Uncomfortable

Unreliable/noisy data
Limited insight

**Resource-intensive procedure with low patient compliance leading to both limited capacity and low quality data.**

**Patients are not treated timely, adequately and fairly.**

# Inefficient workflow leads to inequality/bias in glaucoma management

Low quality data
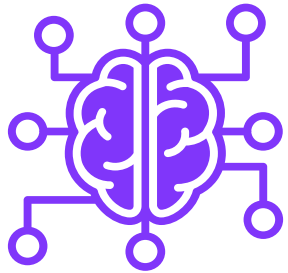
Limited accessibility to eye care

Misrepresentation of ethnic groups in normative databases

# PeriVision: introducing VR/AI-based perimetry

**VR eye test platform** *connected to the cloud for decentralized & efficient clinic workflows*

**AI co-pilot** *using holistic patient data for better diagnostics & prognostics*

**Cloud-based clinician app** *allowing clinicians to reach data from anywhere, anytime*

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# We optimize clinical workflow end-to-end using AI

| DATA ACQUISITION | SCREENING/DIAGNOSIS | PROGNOSIS |
|---|---|---|

Reducing examination time

Detecting early glaucoma cases
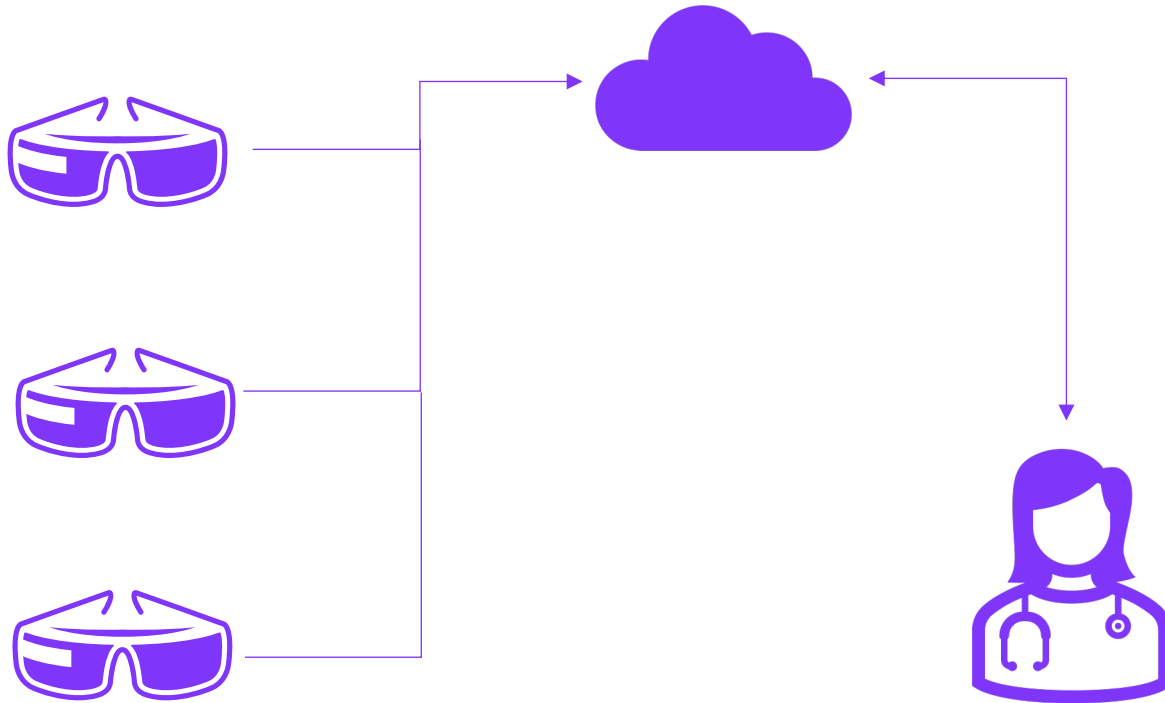
Predicting disease progression

Less fatigue & higher quality data

Increased detected cases

Timely treatment

# We aim for higher efficiency & access with cloud-based portable solution

Portable → No dedicated room

Eye tracking
& virtual assistant → No assistant

Less cost
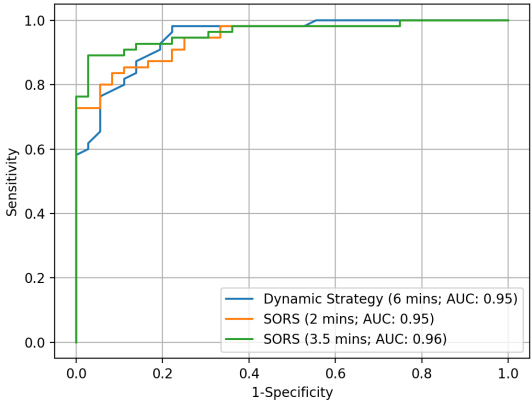& small footprint → More test availability

# Clinical research showed improved data quality & workflow

**Same diagnostic accuracy**
**Lower test-retest variability**
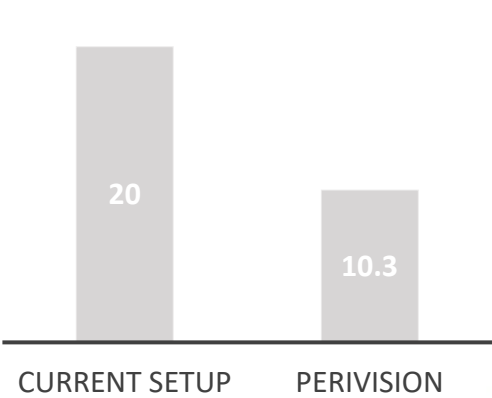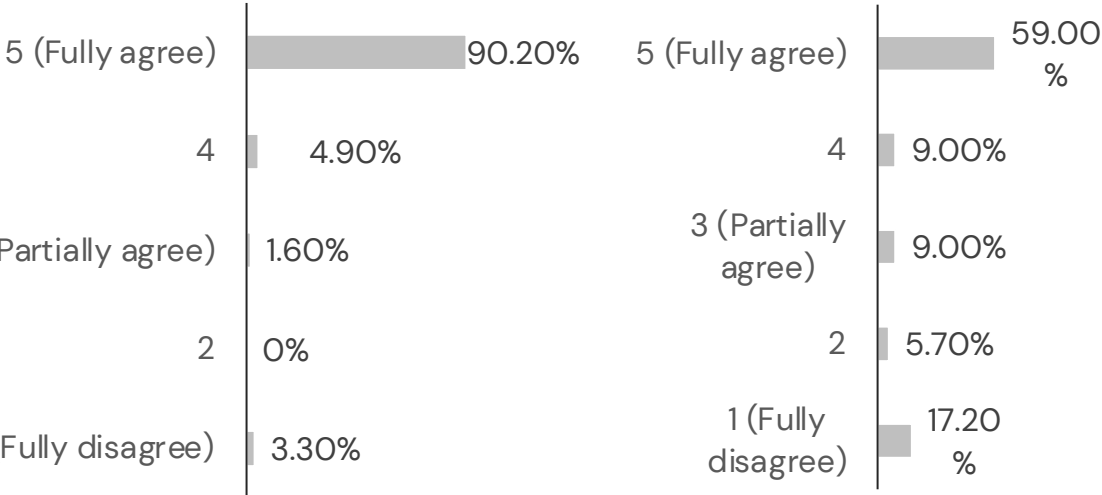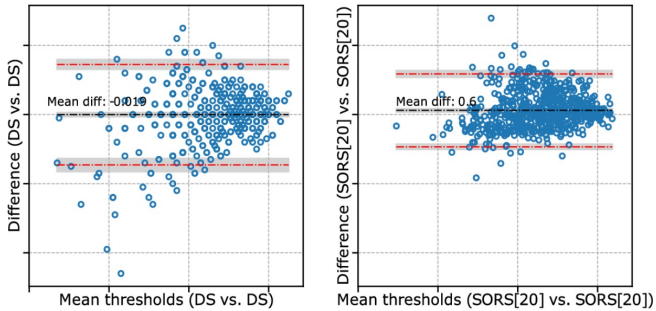**70% less examination time**

**High patient compliance**

**Improved workflow**



*"I found the system easy to use", in % of respondents*

| | |
|---|---|
| 5 (Fully agree) | 90.20% |
| 4 | 4.90% |
| 3 (Partially agree) | 1.60% |
| 2 | 0% |
| 1 (Fully disagree) | 3.30% |

*"I dare to use the VR glasses myself to measure the field of view without outside help", in % of respondents*

| | |
|---|---|
| 5 (Fully agree) | 59.00% |
| 4 | 9.00% |
| 3 (Partially agree) | 9.00% |
| 2 | 5.70% |
| 1 (Fully disagree) | 17.20% |

**Total procedure time [min.]**

| CURRENT SETUP | PERIVISION |
|---|---|
| 20 | 10.3 |

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# PeriVision is boosting efficiency in glaucoma care

**+30%**

Additional patient volume with PeriVision estimated by eye doctors

**–65%**

Technician time for visual field with automation / VR assistant

**–99%**

Space requirement for visual field test with portable headset

**95%**

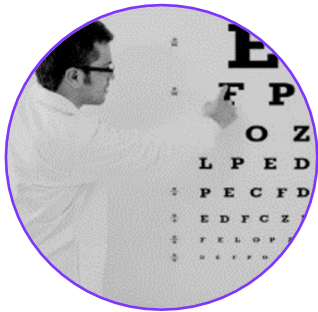Patients perceiving system as easy to use driving higher compliance

Sources: PeriVision market study (N = 32); PeriVision analysis of NHS procurement challenge data; Kucur et al. 2021

# Perimetry is the first step towards multi-testing platform
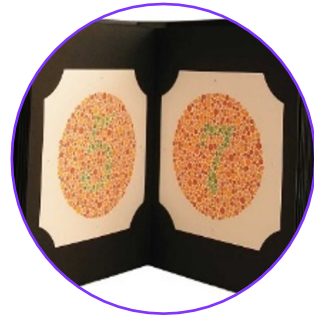
**Micro-perimetry**

⌄

**Age-related macular degeneration (196M)**

**Visual acuity**

⌄

**Any eye disease**

**Colour vision**

⌄

**Colour vision defects (300M) & neurological disorders**
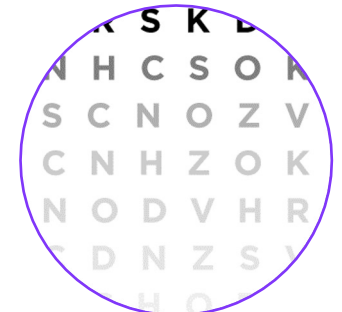
**Dark adaptation**

⌄

**Age-related macular degeneration (196M)**

**Pupillometry**

⌄

**Neurological disorders**

**Contrast sensitivity**

⌄

**Cataract (94M), Diabetic retinopathy (146M)**

**PeriVision creates new care pathways bringing fairness in clinical practice and research**



Home monitoring

Efficient clinics

Near-patient monitoring

Non-specialists

Mobile eye care

Remote clinical trials

Population health management

# PeriVision's concrete steps towards more accessible glaucoma care

> National procurement challenge for remote glaucoma monitoring by NHS

> Pilot showcase for remote clinical trials with relevant industrial partners

> Exploring remote glaucoma management in 250+ elderly homes in the US

## PeriVision, working with the West of Scotland Innovation Hub

Validation of remote perimetry workflow for glaucoma monitoring

In November 2022, PeriVision was selected to participate in a national procurement challenge for glaucoma monitoring by NHS Scotland funded by the Scottish Government Chief Scientist Office. The aim is to develop and implement remote patient monitoring (RPM) concepts to ease pressure on the NHS and prepare for national procurement in two phases.

STARTUP CREASPHERE
Powered by PLUGANDPLAY

PILOT SHOWCASE

**EXPO: Startup Creasphere Meets The Swiss Innovation Ecosystem**

Roche    peri vision

# We reimagine eye care to save precious eye sight

Thank you.

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