

Early intervention in glaucoma and accident prevention

GLAUKOS

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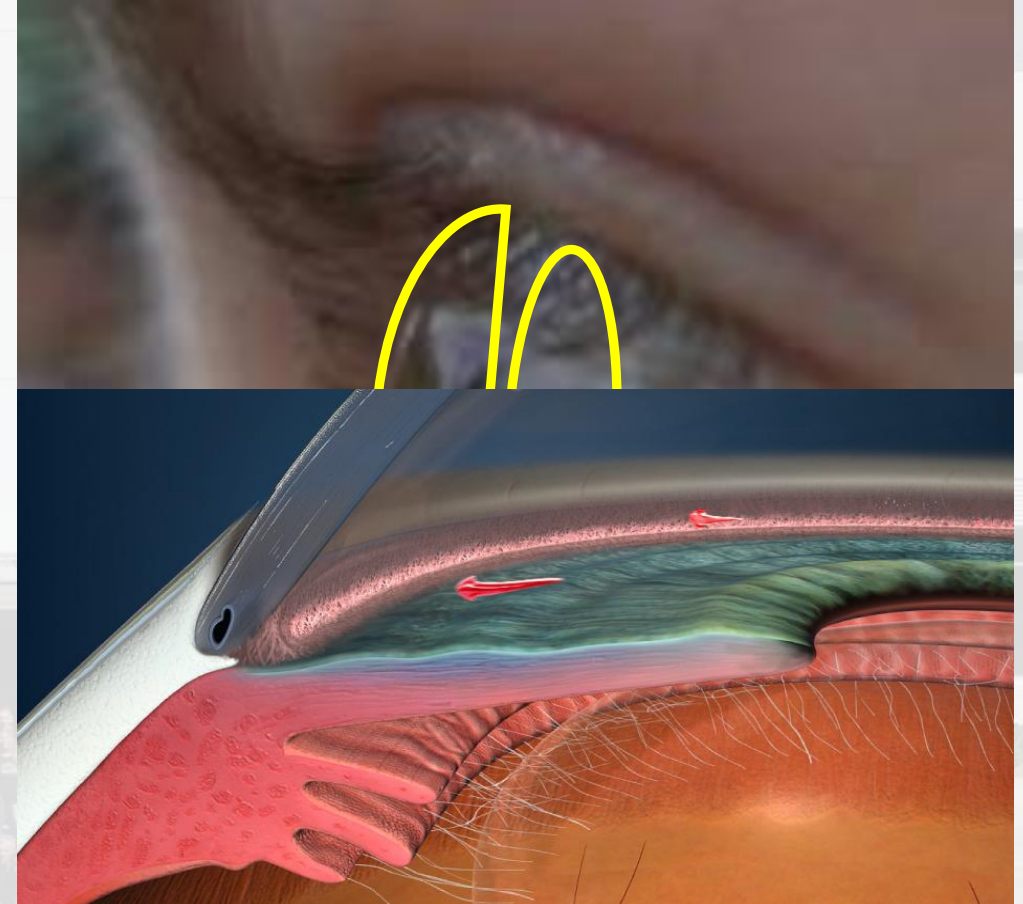
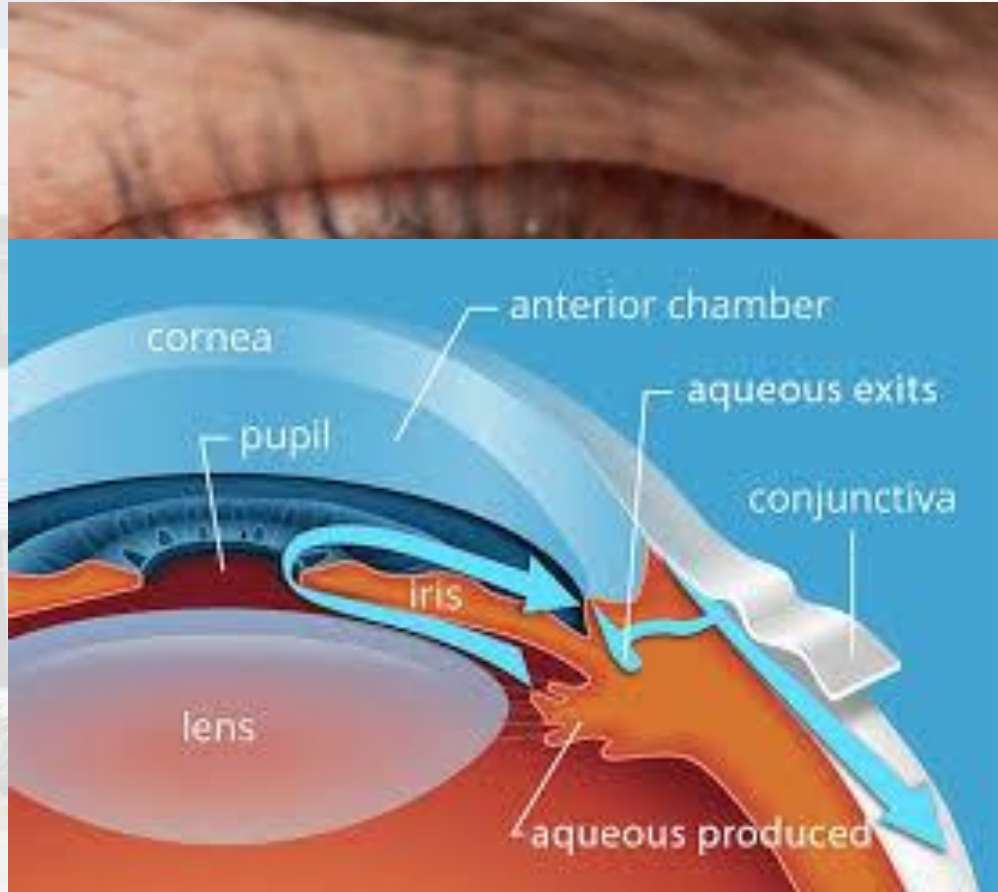
November 2025

Outline

- Glaucoma in two minutes
- Early intervention in glaucoma
- Glaucoma and trips and falls
- Prevention of disease progression as accident avoidance



Glaucoma



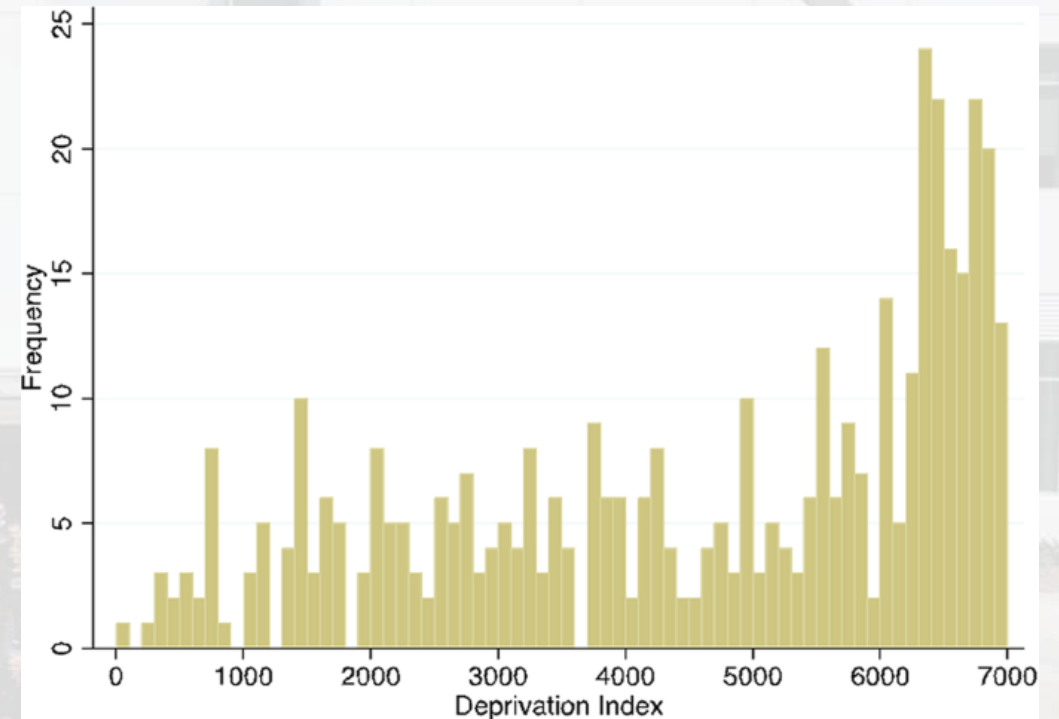
Glaucoma affects peripheral vision - but the brain covers up the gaps in sight

GLAUKOS



Link between deprivation and severity at diagnosis

Higher levels of deprivation were associated with worse glaucoma severity at presentation



Demand for services is increasing



Census 2021 results show the population of UK has continued to age since 2011.

2011
9.2 MILLION
(16.4%)

65+

2021
11 MILLION
(18.6%)

The Way Forward (2017) document from RCOphth modelled a **44% increase** in demand for **glaucoma services** between 2015-2035 due to the aging population, although suggested that because of improving diagnosis, this was likely to be an underestimate¹

Over two million people in the UK live with conditions that cause sight loss - more than those with dementia and chronic obstructive pulmonary disease combined¹.

A word cloud centered around the phrase "age related diseases". The words are arranged in a roughly circular pattern around the central text. The central text "age related diseases" is the largest and most prominent. Other words include "hearing", "hyperlipidemia", "vascular", "urinary", "depression", "chronic", "colorectal", "kidney", "syndromes", "stroke", "artery", "cataracts", "diabetes", "alzheimer's", "osteoarthritis", "incontinence", "anxiety", "dementia", "coronary", "disorders", "myelodysplastic", "type", "prostate", "loss", "cancer", "hypertension", "parkinson's", and "copd". The words are in various colors including purple, brown, and green.

age
related
diseases

hearing
hyperlipidemia
vascular
urinary
depression
chronic
colorectal
kidney
syndromes
stroke
artery
cataracts
diabetes
alzheimer's
osteoarthritis
incontinence
anxiety
dementia
coronary
disorders
myelodysplastic
type
prostate
loss
cancer
hypertension
parkinson's
copd

MANAGING GLAUCOMA

A Complex Challenge for Ophthalmologists

Ratio of follow up : new clinic appointments is much higher in glaucoma

The number of tests required makes the clinic process more complicated

Significant challenges with compliance and adherence to topical medication; the primary treatment modality.

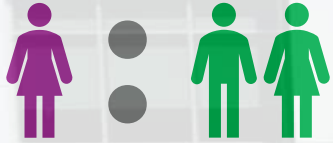
Vision lost due to glaucoma is not recoverable. Therefore, careful management is required.

MANAGING GLAUCOMA

A Complex Challenge for Ophthalmologists

Ratio of **new** : **follow up** clinic appointments is very different in glaucoma patients⁴ compared to other ophthalmic and non ophthalmic conditions

OTHER SPECIALITIES (2:1)



75% of UK NHS Providers don't have enough ophthalmologists to manage demand and >70% of departments are more concerned about backlogs – particularly those for glaucoma and medical retina – than a year ago²

OPHTHALMOLOGY (3:1)



Over 30% of NHS Hospital Eye Service attendances are related to OHT and suspected glaucoma³

GLAUCOMA (UP TO 40:1)



1 <https://www.rcophth.ac.uk/resources-listing/the-way-forward/>

2 RCOphth Workforce Survey 2023

3 <https://www.rcophth.ac.uk/wp-content/uploads/2024/03/Three-steps-to-future-proof-NHS-ophthalmology-services-1.pdf>

4 <https://www.rcophth.ac.uk/wp-content/uploads/2020/08/Glaucoma-Commissioning-Guide-Long-June-2016-Final.pdf>

MANAGING GLAUCOMA

A Complex Challenge for Ophthalmologists

The number of tests required makes the clinic process more complicated

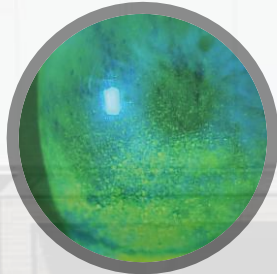
The clinic assessment process may require many different tests performed by different members of a multidisciplinary team. This can be time consuming and requires a high degree of coordination and teamwork.



VISUAL ACUITY



TONOMETRY



OSD MANAGEMENT



OCT SCAN



FUNDOSCOPY



PERIMETRY



PACHYMETRY



QOL ASSESSMENT

MANAGING GLAUCOMA

A Complex Challenge for Ophthalmologists

Vision lost due to glaucoma is not recoverable. Therefore, successful management of glaucoma requires lifelong monitoring and treatment to prevent or minimise further vision loss.

10%

Approximately 10% of UK blindness registrations are related to glaucoma⁴

MANAGING GLAUCOMA

THE DRUGS DON'T WORK (WHEN PATIENTS DON'T TAKE THEM)

Non-adherence to eye drops is a major reason for disease progression in glaucoma

- 90% patients don't fully adhere to their medication regimen, with 50% in some studies purposely discontinuing within 6 months¹.
- The reasons for non-adherence are well understood, and include forgetfulness, dispensing challenges, difficulty in installation, side effects and more².
- Several studies have shown that patients still progress to advanced disease and vision loss while under treatment with topical medications^{3,4}.
- Despite the problems with relying on patients to adhere to medical therapy, and the evidence that shows Selective Laser Trabeculectomy should be the primary treatment in glaucoma⁶, medication is still widely used in Scotland.
- RCOphth BOSU study showed glaucoma patients were experiencing harm including vision loss and blindness due to delays to follow up care
- There were 9,625,979 prescriptions in UK for topical glaucoma medications in 2022/23 (12 months)⁵.

1 Nordstrom BL, Friedman DS, Mozaffari E, Quigley HA, Walker AM. Persistence and adherence with topical glaucoma therapy. American journal of ophthalmology. 2005 Oct 1;140(4):598-e1.

2 Tsai JC, McClure CA, Ramos SE, Schlundt DG, Pichert JW. Compliance barriers in glaucoma: a systematic classification. Journal of glaucoma. 2003 Oct 1;12(5):393-8.

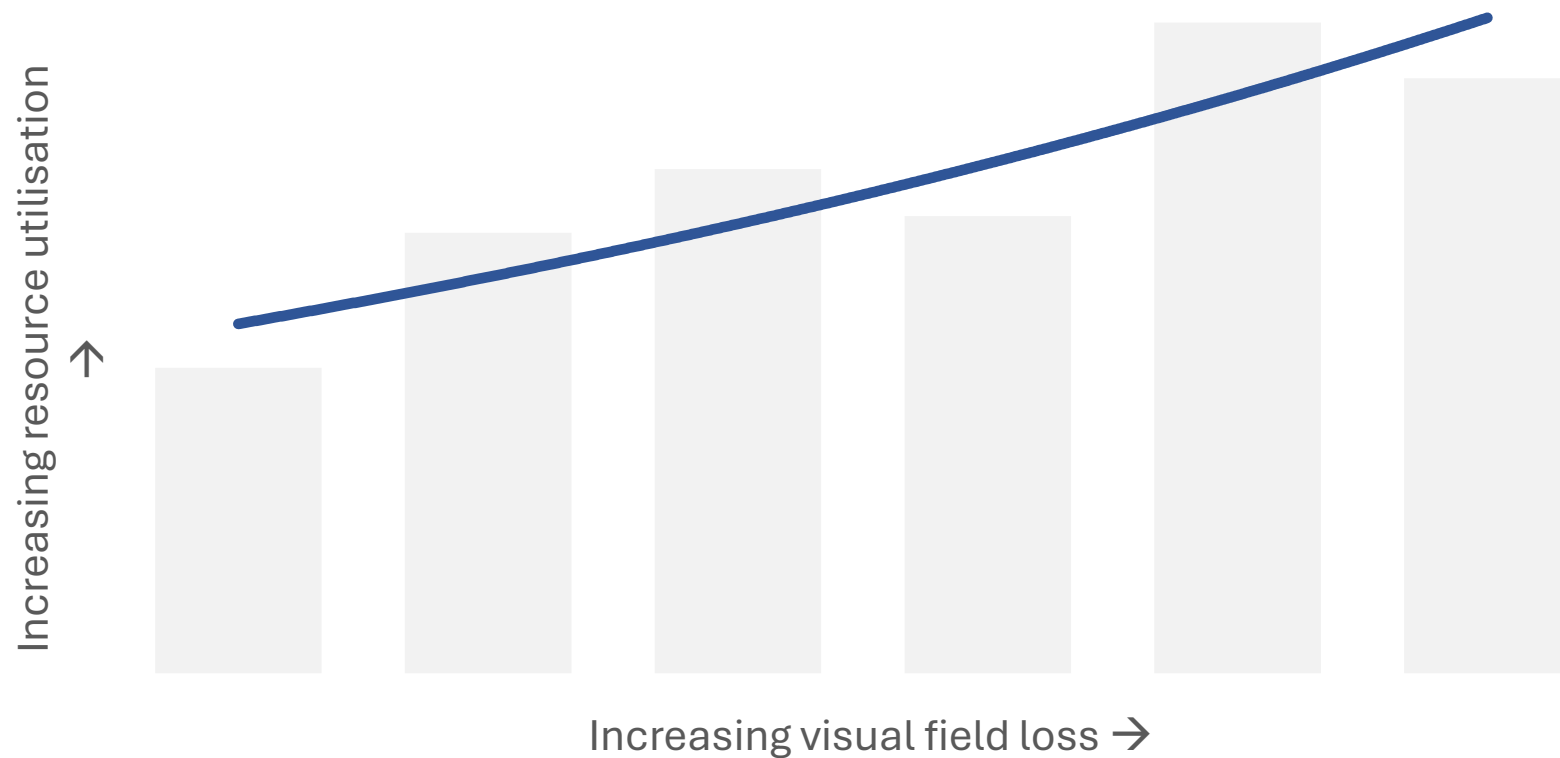
3 Malihi M, Moura Filho ER, Hodge DO, Sit AJ. Long-term trends in glaucoma-related blindness in Olmsted County, Minnesota. Ophthalmology. 2014 Jan 1;121(1):134-41.

4 Peters D, Bengtsson B, Heijl A. Lifetime risk of blindness in open-angle glaucoma. American journal of ophthalmology. 2013 Oct 1;156(4):724-30.

5 Prescription Cost Analysis data (UK, 2022/23)

Disease Progression = Resource Usage

The direct costs and resource needed to treat glaucoma increase as the disease progresses¹



- Number of times a patient is seen
- Where they are managed
- Who they are managed by
- Medication and dispensing costs
- Unscheduled service touch points
- Need for further intervention
- Likelihood of trips and falls requiring bed days
- Social care costs
- Blindness costs

Glaucoma is an independent risk factor for trips and falls

Women with binocular visual field loss are at greater risk of future frequent falls

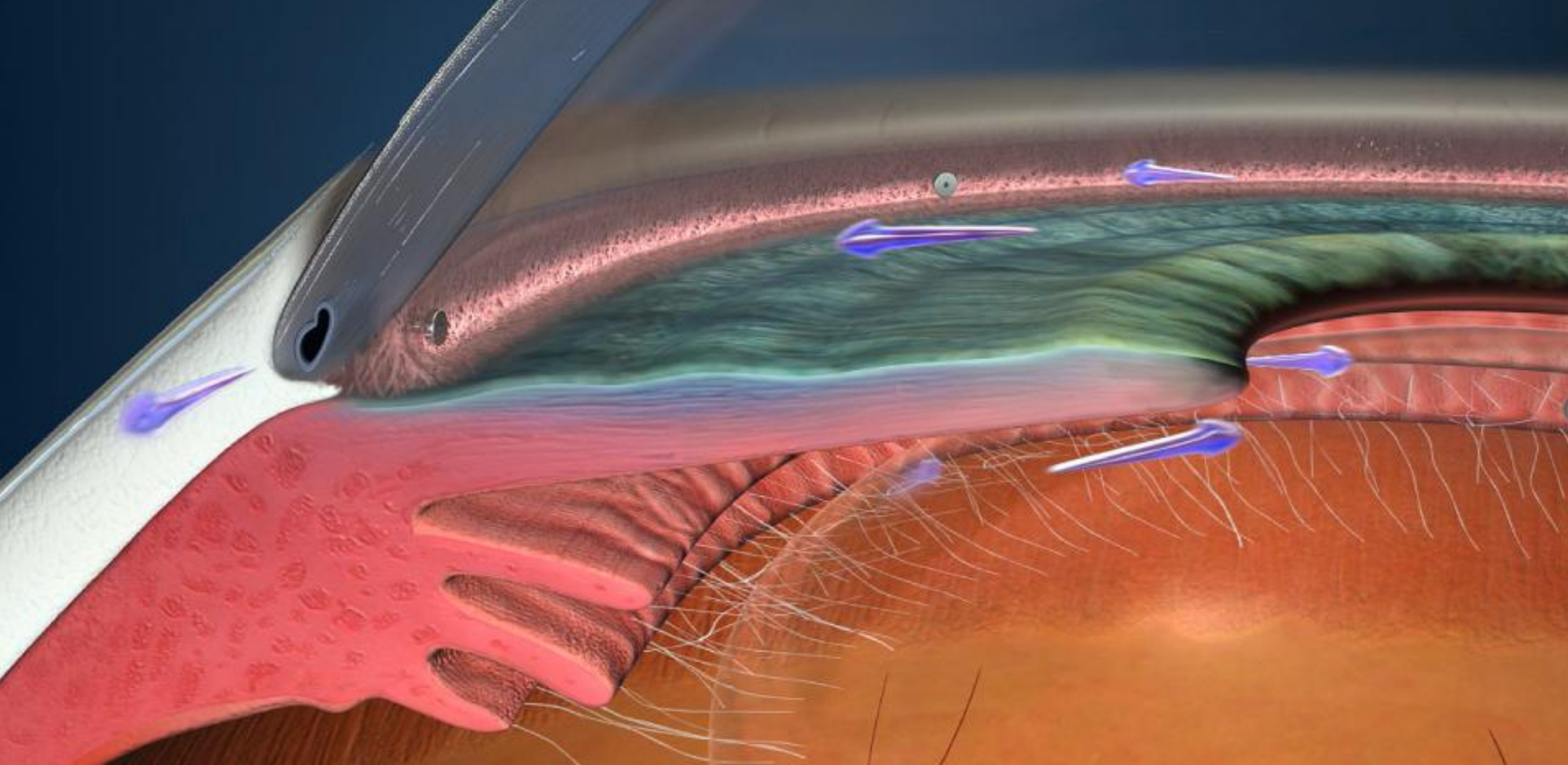
Glaucoma was the most prevalent eye condition in those who had experienced a fall

Glaucoma patients with vision loss at increased risk of injurious falls

12% of admissions for falls were patients with a secondary diagnosis of glaucoma

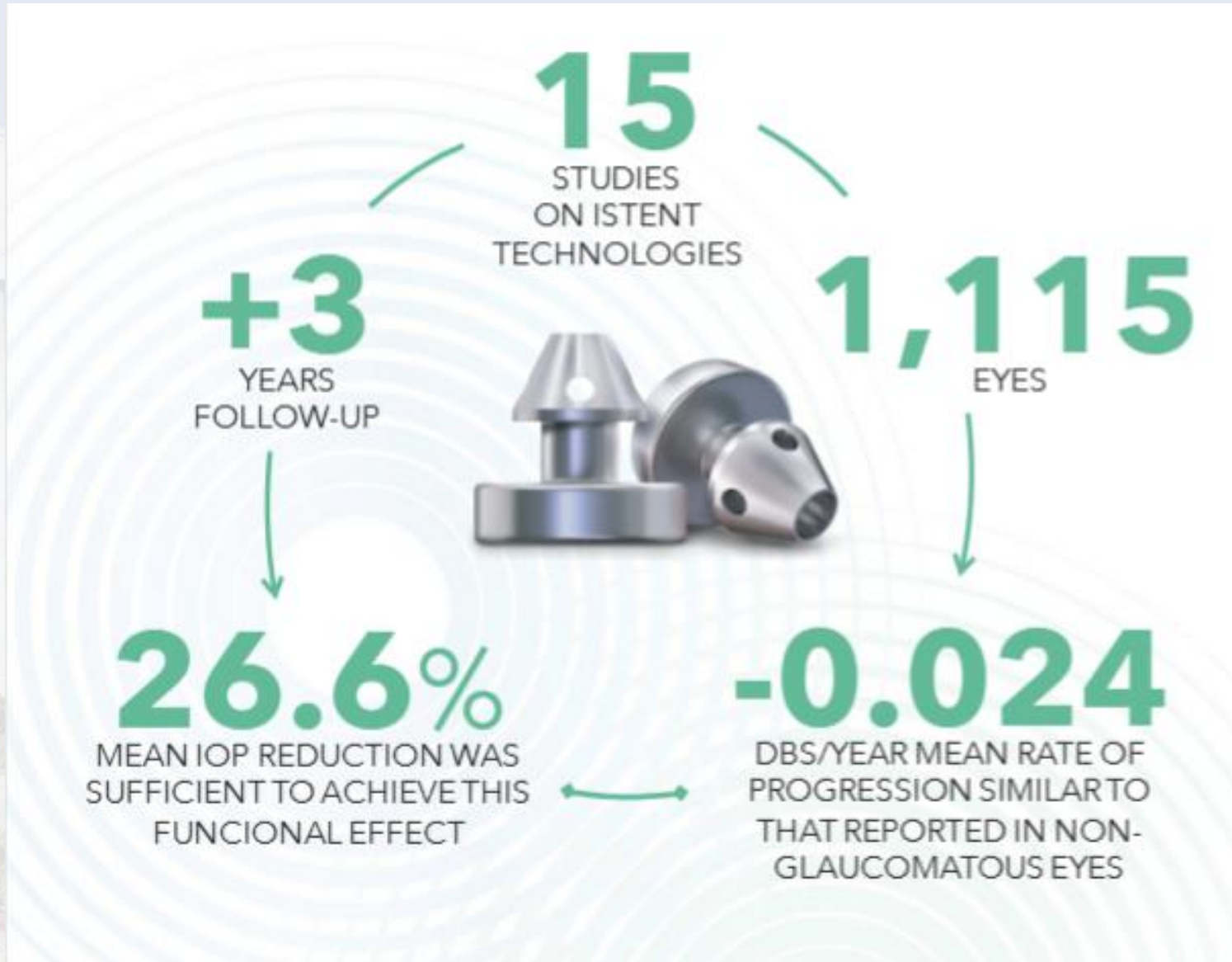
10,056 admissions/year, at a cost of £28.6 million across the UK







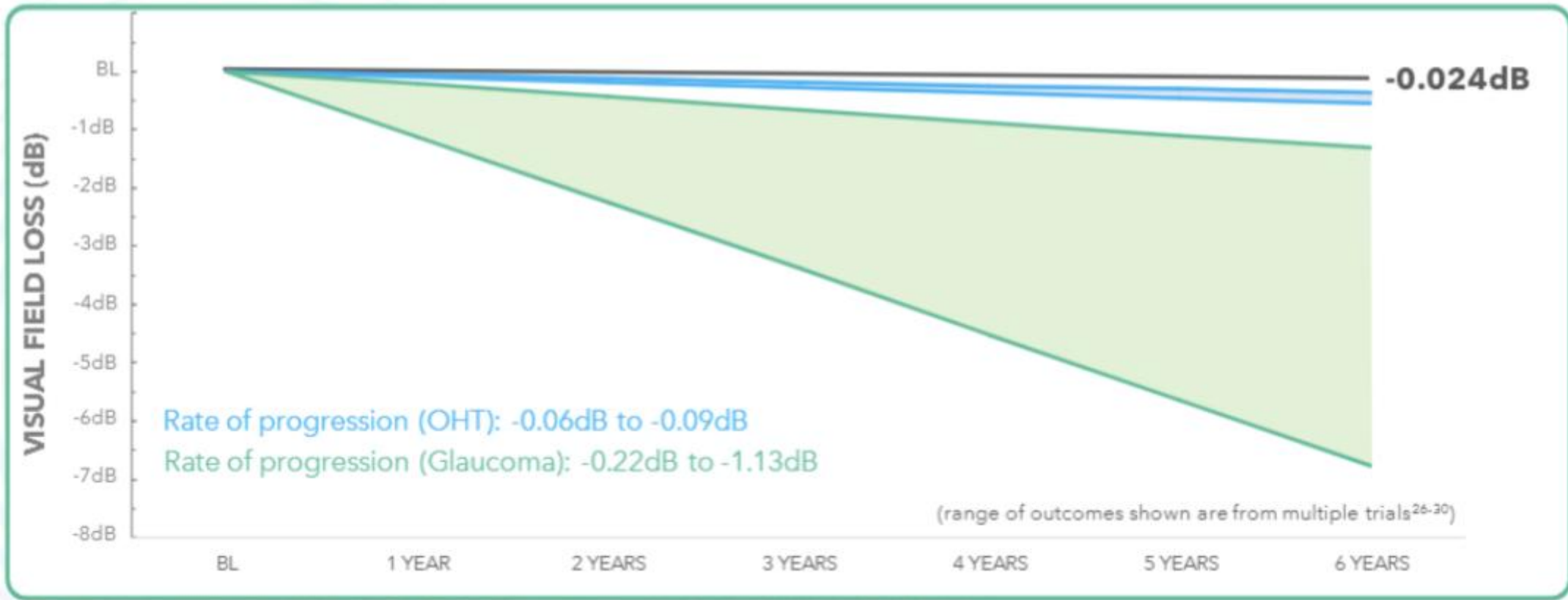
Delaying Disease Progression – Visual Fields meta-analysis



A 2024 meta-analysis showed that iStent inject slowed visual field loss and glaucoma disease progression with a favourable risk-benefit ratio

Delaying Disease Progression – iStent inject

Observed visual field mean deviation (MD) progression following implantation of iStent technologies (grey line) compared with the rates of progression reported in the literature for ocular hypertension (blue lines) and treated glaucoma (green lines).



Gillmann, Kevin, and Dana M. Hornbeak. "Rates of visual field change and functional progression in glaucoma following trabecular microbypass implantation of iStent technologies: a meta-analysis." *BMJ Open Ophthalmology* 9.1 (2024): e001575.

26-Heijl, Anders, et al. "Reduction of intraocular pressure and glaucoma progression: results from the Early Manifest Glaucoma Trial." *Archives of ophthalmology* 120.10 (2002): 1268-1279. 27-Garway-Heath, David F., et al. "Latanoprost for open-angle glaucoma (UKGTS): a randomised, multicentre, placebo-controlled trial." *The Lancet* 385.9975 (2015): 1295-1304. 28-Heijl, Anders, et al. "Rates of visual field progression in clinical glaucoma care." *Acta ophthalmologica* 91.5 (2013): 406-412. 29-Aptel, Florent, et al. "Progression of visual field in patients with primary open-angle glaucoma—P rog F study 1." *Acta Ophthalmologica* 93.8 (2015): e615-e620. 30- Kirwan, J. F., et al. "Portsmouth visual field database: an audit of glaucoma progression." *Eye* 28.8 (2014): 974-979.

Cataract surgery is an opportunity

- 45,000 cataract procedures performed each year, most common procedure performed by NHS Scotland
- Most studies show that roughly 10% of cataract patients are comorbid with glaucoma.
- Safety profile of cataract + iStent procedure similar to cataract surgery alone
- Procedure approved by NICE (IPG 575) for use with standard measures for consent, governance and audit
- Approved and used in 85% UK NHS providers performing cataract surgery
- UKEGS (UK and Eire Glaucoma Society) Guidelines said providers should ensure “all glaucoma patients undergoing cataract surgery are offered MIGS and made aware of the potential benefits”
- Barriers preventing wider implementation include the difficulty getting approval for new technology in individual health boards

~5000 glaucoma patients undergoing cataract surgery/year in NHS Scotland

Combined cataract + glaucoma procedures well established in some services

Currently only ~800 combined cataract + glaucoma procedures being performed in Scotland

Many Health Boards do not offer combined procedures at all

**Prioritise
Intervention
in Glaucoma
at the time of
cataract
surgery**

**Adhere to the
UKEGS
guidelines for
glaucoma
patients at
cataract**

**Reduce trips
and falls
where
glaucoma is a
factor**

**Reduce
disease
progression
due to non-
adherence to
eye drops**

**Prioritise
Intervention
in Glaucoma
at the time of
cataract
surgery**



**Increase uptake of eye tests,
especially in areas with high
deprivation**

**Speed up roll out of virtual
and community clinics to
manage stable/low risk
cases**



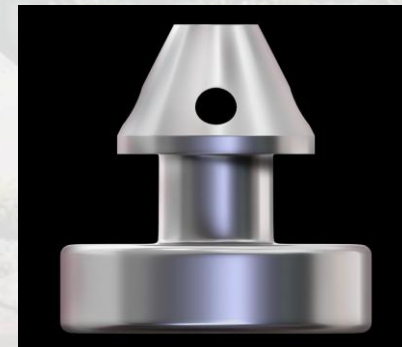
**Core elements of an accident
prevention strategy focussing
on glaucoma and vision loss.**

**Vision loss contributes to
falls and other injuries,
particularly among older
people, and glaucoma is a
risk factor.**



Covered

- Glaucoma in two minutes
- Early intervention in glaucoma
- Glaucoma and trips and falls
- Prevention of disease progression as accident avoidance



Early intervention in glaucoma and accident prevention

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