BRISBANE
INTERACTIVE

Branching Out

The Growing Role of Optometry in Glaucoma Collaborative Care

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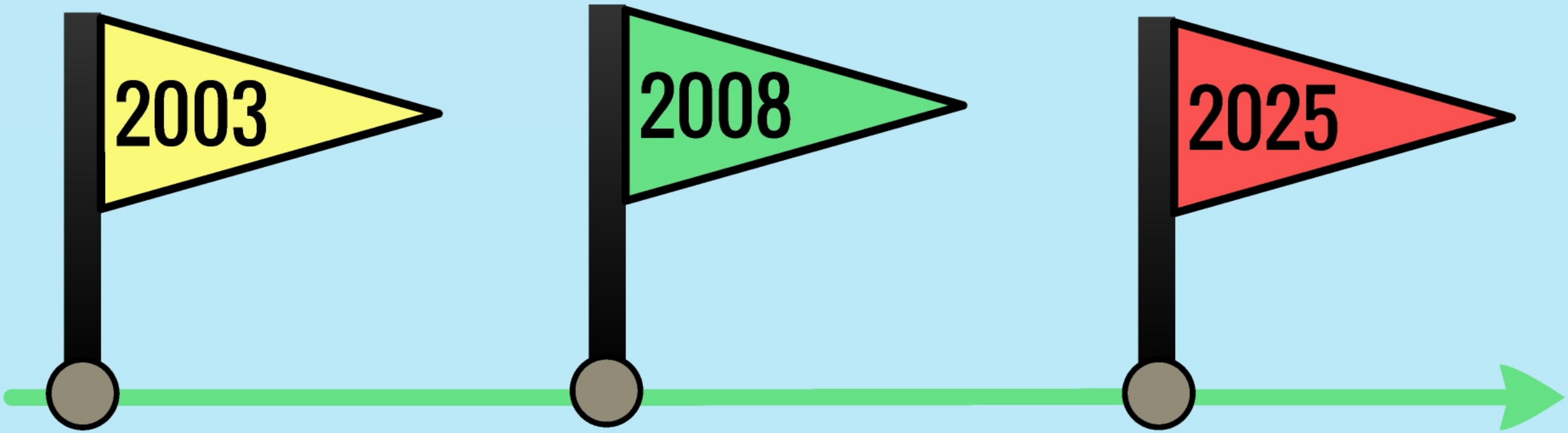
Optometry
QUEENSLAND
NORTHERN TERRITORY

Queensland optometrists are endorsed to prescribe S4 topical medications

Australian optometrists are able to prescribe topical medications on the PBS

Advanced Practice in Glaucoma is recognised through the OA APR Program



The Role of Optometry in Glaucoma Care

- identifying risk factors for glaucoma
- adequately monitoring glaucoma suspects
- providing education to patients and families (eg. adherence, risk)
- appropriately initiating / altering glaucoma medications when indicated, and understanding mechanisms of action
- monitoring glaucomatous disease and detecting progression through suitable recording, testing and correlation of data
- excluding copycat disease
- communicating and collaborating with other practitioners
- **recognising limitations in current scope of practice**

Case 1 : 44yo Mr LR

- **PC:** routine eye examination (due for new SVN)
- **GH:** good, no medications and no known significant childhood illness
- **FOH:** no known glaucoma
- **POH:** nil

- **REFRACTION:** **RE** -4.75/-1.75x20 (6/4.5)
  LE -4.50/-1.75x159 (6/4.5)
- **IOPs** **RE** 16mmHg **LE** 15mmHg
- ***What would you like to know next ?***

Case 1 : 44yo Mr LR

CCT

OCT

Discs

Slit Lamp

Gonio

VF

Case 1 : 44yo Mr LR

Q1. What is your provisional diagnosis? *(1 mark)*

Q2. What are two (2) differential diagnoses for this condition? *(2 marks)*

Q3. What are three (3) things that have been thought to potentially cause this condition (i.e. pathogenesis)? *(3 marks)*

Q4. What are three (3) common secondary ocular complications of this condition? *(3 marks)*

Fuchs Heterochromic Iridocyclitis

- 1900s : mild chronic inflammation, iris atrophy and secondary cataract
- 2-11% of all uveitis but FHI is likely under- or misdiagnosed
    - heterochromia can be absent or difficult to detect (brown irides)
    - medium-sized stellate KP and iris atrophy more common
    - otherwise commonly painless white eye
    - no posterior synechiae or CMO

topical corticosteroids often not required or ineffective

- commonly unilateral (10% bilateral)
- usually presents in 3rd to 4th decade of life
- delays in diagnosis common

	The RDC*	The SUN classification criteria	The La Hey criteria†
The change of iris	Diffuse iris depigmentation‡	Heterochromia OR Unilateral diffuse iris atrophy	Diffuse iris stromal atrophy‡
			Iris posterior pigment epithelium atrophy§
			Heterochromia§
Synechiae	Absence of posterior synechiae‡	–	Absence of synechiae‡
Anterior inflammation	Stellate or medium-sized keratic precipitates OR Minimal cells and flare in the aqueous (1+or 2+)‡	Stellate keratic precipitates	Characteristic keratic precipitates and/or minimal cells and flare in the aqueous (1+ or 2+)‡
		Anterior chamber cells	
		If vitreous cells are present, anterior chamber inflammation also should be present	
Symptoms	Absence of acute symptoms, generally presenting without severe redness§	–	Absence of acute symptoms (severe redness, pain and photophobia)‡
Vitreous opacities	Vitreous opacities§	–	Vitreous opacities§
Cataract	Cataract§	–	Subcapsular cataract§
Involvement	Mostly unilateral Involvement§	Unilateral uveitis	Unilaterality of the uveitis§
Iris nodule	Characteristic iris nodule§	–	–
Intraocular pressure	–	–	Elevated intraocular pressure§
Fundus	–	No evidence of active retinitis	Chorioretinal lesions§
Others	–	Neither endotheliitis nor nodular, coin-shaped endothelial lesions	–

*All essential findings were required for the diagnosis of Fuchs' uveitis syndrome, and were strengthened by the presence of associated findings in revised diagnosis criteria.
†All essential findings and at least two associated findings must be present in the La Hey criteria.
‡Essential findings in the criteria.
§Associated findings in the criteria.
SUN, Standardisation of Uveitis Nomenclature.

Yang P, Zhang W, Chen Z, Zhang H, Su G, Cao Q, Zhu Y, Zhong Z, Zhou C, Wang Y, Kijlstra A. Development of revised diagnostic criteria for Fuchs' uveitis syndrome in a Chinese population. British Journal of Ophthalmology 2022; 106: 1678.

Fuchs Heterochromic Iridocyclitis

- possible risk factors for secondary glaucoma
    - disease duration (cumulative risk of 39% at 4 years)
    - older age
    - male gender
    - OHT
    - presence of cataract at presentation
    - long-term / incorrect use of corticosteroids
    - anti-RV antibodies (and possibly other viruses) in aqueous humour

glaucoma secondary to FHI can be very difficult to control

FHI : The Role of Optometry

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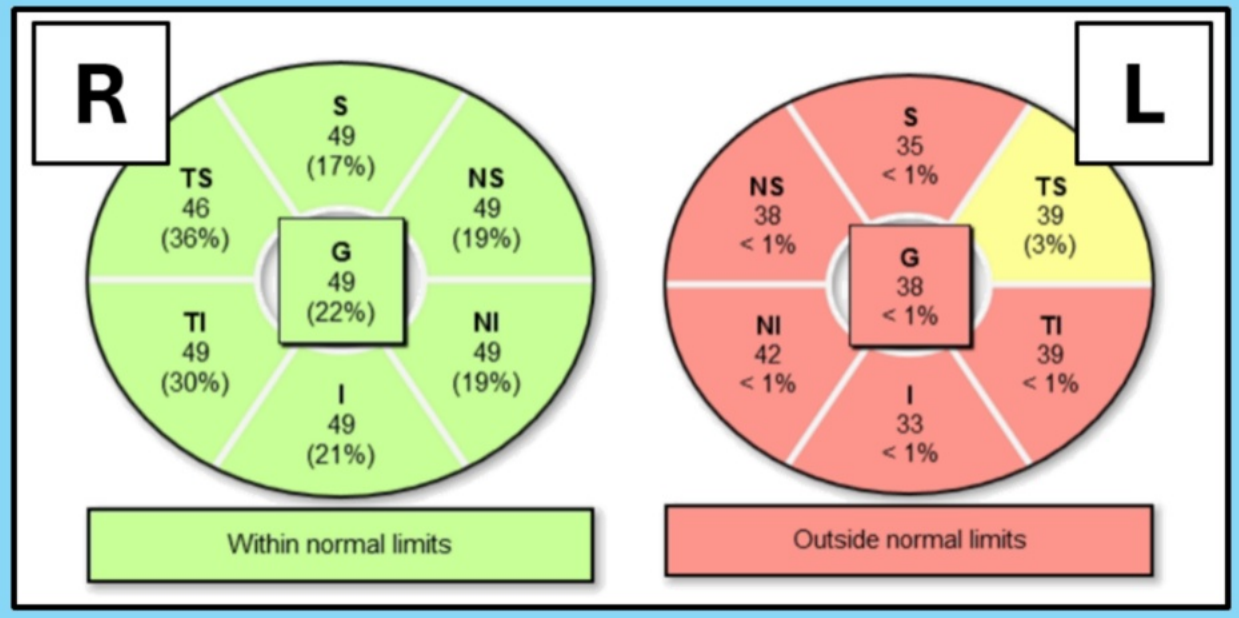
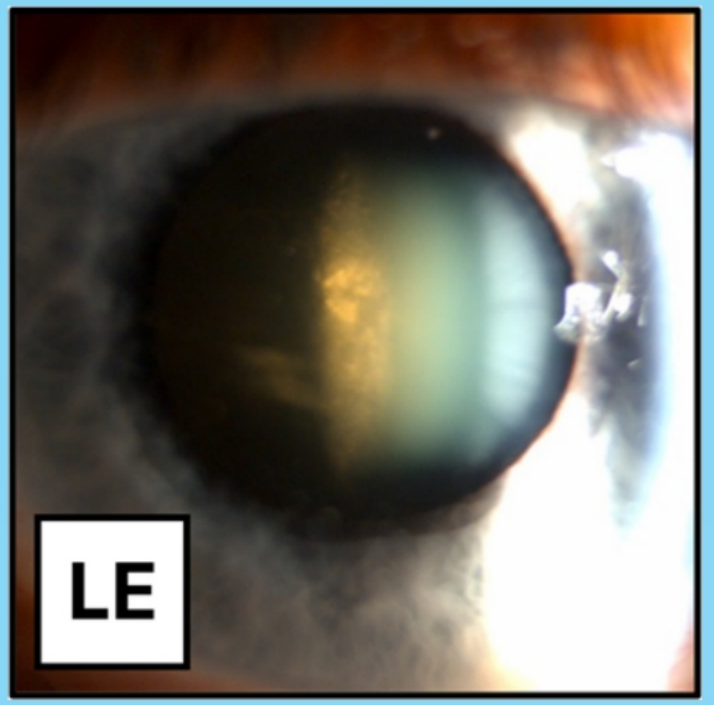
Case 1 : 44yo Mr LR

- **3 years later (monitored by optometry)**
  - **VA** R 6/4.5 L **6/30 (PHNI)**
  - IOPs R 16mmHg **L 32mmHg**
  - VF and RNFL stable
  - GCL





Case 1 : 44yo Mr LR

Q5. Is there a treatment option you would be cautious with using or recommending, and why? ***(1 mark)***

FHI : Take Home Messages

- optometrists are first-line eyecare practitioners - well-placed to recognise varied presentation of FHI (often incidental finding)
- optometrists are able to monitor for complications secondary to FHI
- optometrists can help collaboratively manage secondary OHT / glaucoma with topical treatment
- optometrists understand various mechanisms of action of medications and treatments, and which ones should be used judiciously in FHI
- optometrists understand glaucoma secondary to FHI can be aggressive, and can work collaboratively with ophthalmologists

Case 2 : 86yo Mr RO

- **PC:** 9 month NTG review, no changes reported in vision
- **POH:** - B/L cataract surgery and IOL insertion (2018) - emmetropic OU
  - diagnosed with L>R NTG in 2021 (peak IOPs R 21mmHg L 18mmHg)
  - commenced on **Xalatan 1gtt nocte OU** with target IOP of <13-14mmHg (30% reduction)
  - switched to **Azopt 1gtt BID OU** in 2022 (better tolerated)
  - also using **Hylo-Forte** and **ciclosporin 0.1% 1gtt nocte OU**
- **GH:** GORD, polygmyalgia rheumtica, hypercholesterolaemia
- **FOH:** no known glaucoma

Case 2 : 86yo Mr RO

OCT

Discs

IOP/CCT

VF

Case 2: 86yo Mr RO

Q1. What are two (2) additional things you would like to ask in history? *(2 marks)*

Q2. Describe the RNFL findings - are they consistent with glaucoma? Is there evidence of glaucoma progression? *(2 marks)*

Case 2: 86yo Mr RO

Q3. Comment on the visual field reliability and the visual field in 2025. Is there evidence of glaucoma progression? *(3 marks)*

Q4. What are three (3) additional tests that could be done to help achieve a diagnosis? *(3 marks)*

Neuro-optometry : The Role of Optometry

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- **recognising limitations in current scope of practice**

Neuro-Optometry : Take Home Messages

- revisit your case history and ask tailored questions when indicated
- always be wary when structure and function don't correlate
- assess perimetric defects both along the horizontal and vertical midlines - MD, PSD and VFI/GPA do not tell you everything!
- recall your neuro screening tools (VA, RAPD, CV, red desat, brightness perception)

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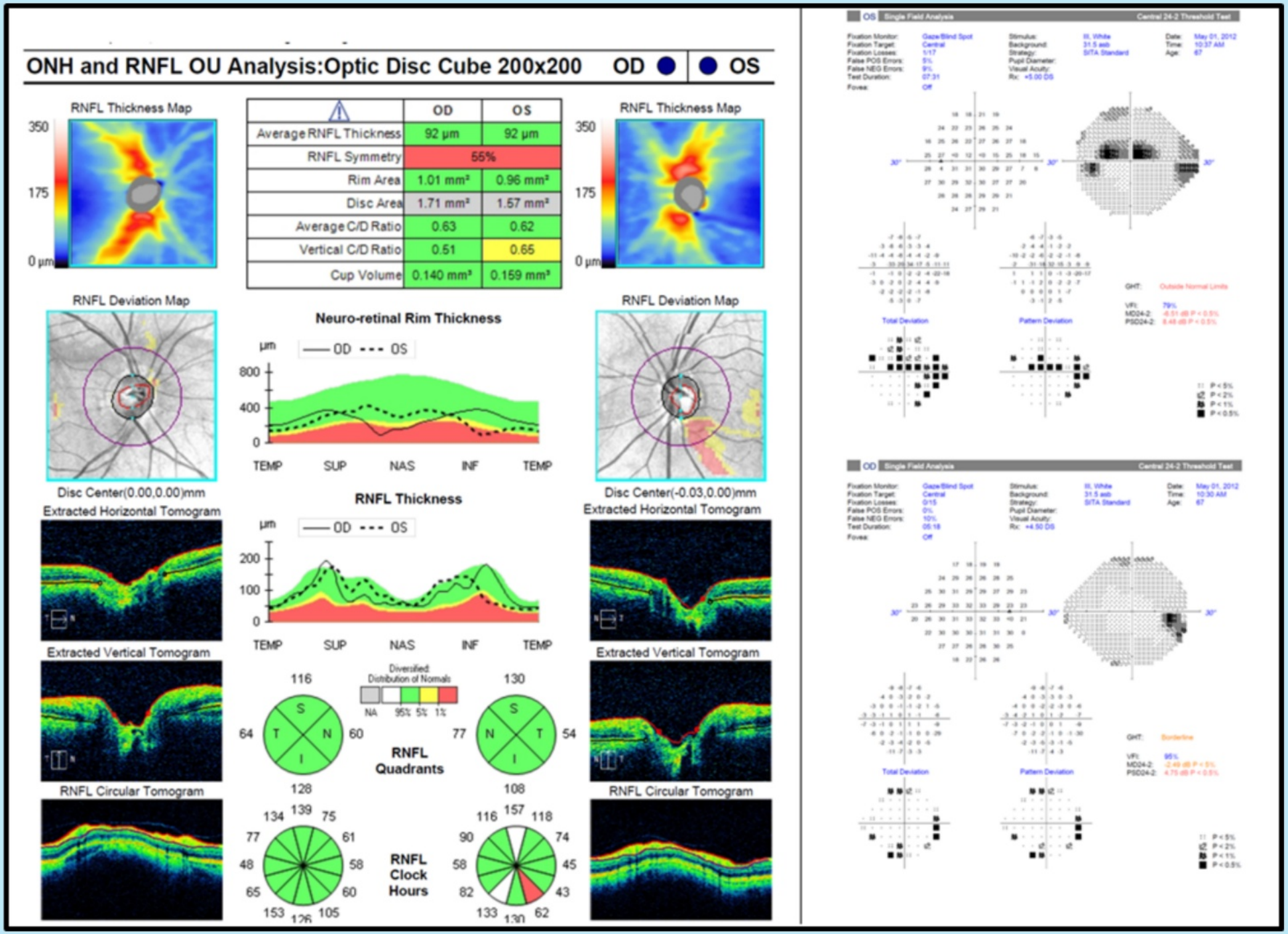
- revisit your case history and ask tailored questions when indicated
- always be wary when structure and function don't correlate
- assess perimetric defects both along the horizontal and vertical midlines - MD, PSD and VFI/GPA do not tell you everything!
- recall your neuro screening tools (VA, RAPD, CV, red desat, brightness perception)
- have a low threshold for screening for neurological involvement - collaborate with ophthalmologists and other medical providers as required

Case 3 : 80yo Mrs DR

- **PC:** - re-presented to clinic after a 10 year absence (returned to Brisbane)
  - aware of deteriorating vision in RE (VA R 6/6 L 6/7.5)
- **POH:** - diagnosed with L>R normal tension glacoma (NTG) in 2012
  - peak baseline IOPs R 21mmHg L 20mmHg
  - baseline CDR R 0.35 (normal NRR) L 0.65 (inferior notch), corresponding RNFL and VF findings
  - referred to general ophthalmologist and underwent MRI scan
  - commenced on **Xalatan 1gtt nocte OU** and achieved target IOP of <13-14mmHg (30% reduction)
- **FOH:** no family history of glaucoma

- 2012 baseline:



Case 3 : 80yo Mrs DR

- **POH:** - on re-presentation, had B/L cataract surgery and IOL insertion (2016)
  - bilateral SLT (180 degrees) (2021) - ceased topical medications

- **GH:** - famciclovir 250mg daily PO (genital herpes)
  - candersartan 8mg daily PO (systemic hypertension)
  - nitrazepam 5mg nocte OU (sedative - doesn't sleep well, often tired)
  - sulfa allergy
  - history of migraines
  - vertebral crush fracture (2013) with vascular incompetence to both legs
  - underwent 3-hour spinal surgery in October 2023 (transforaminal lumbar interbody fusion (TLIF))

Case 3 : 80yo Mrs DR

IOP/CCT

OCT

Discs

Other Tests

VF

Case 3: 80yo Mrs DR

Q1. Is the presentation consistent with the former diagnosis of normal tension glaucoma (NTG)? Why/why not? ***(1 mark)***

Q2. How would you grade the severity of disease in each eye? ***(1 mark)***

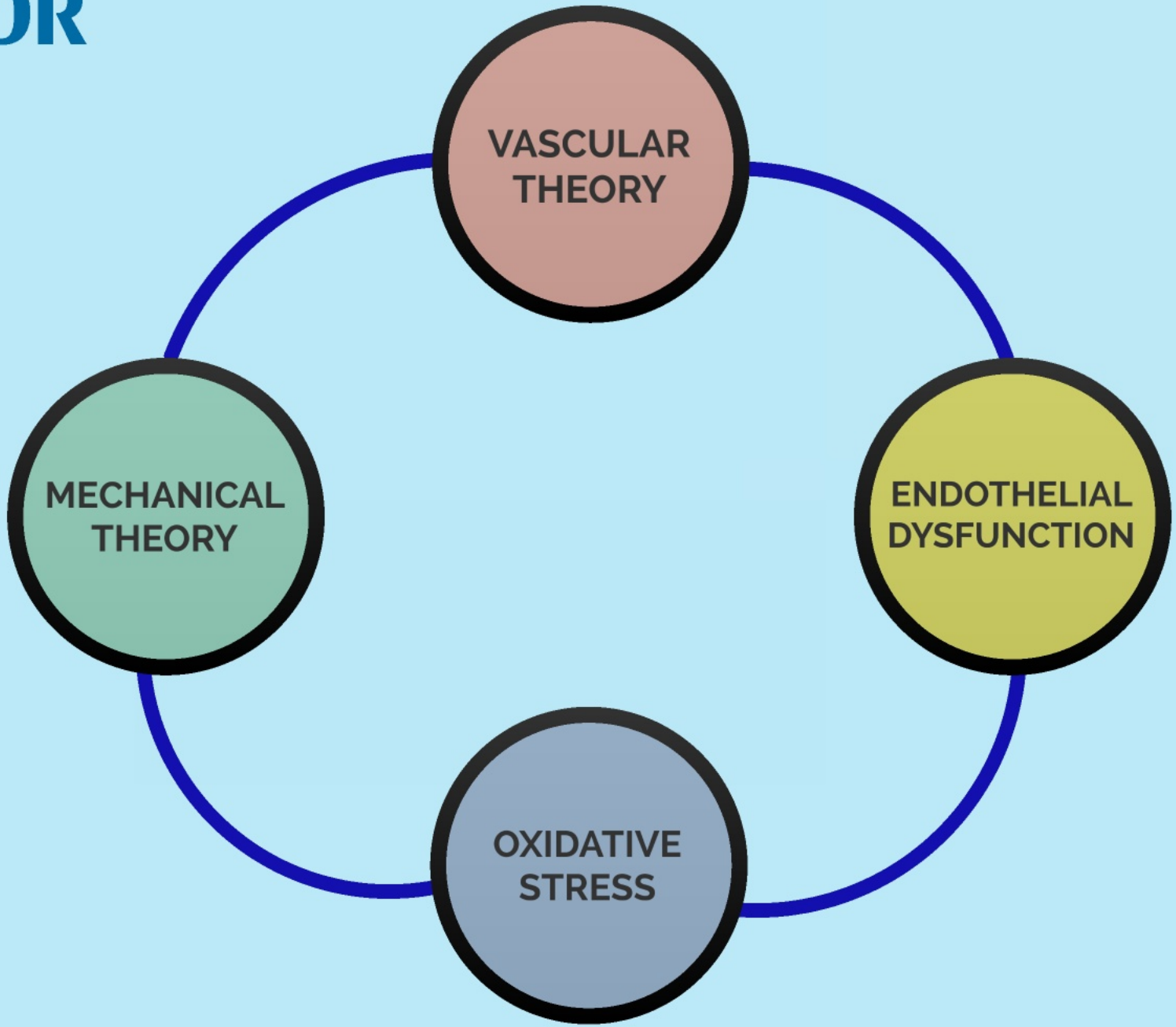
Case 3: 80yo Mrs DR

Q3. What are three (3) risk factors this patient has for progression? ***(3 marks)***

Q4. What is one (1) differential diagnosis for the progression of disease?
(1 mark)

Case 3 : 80yo Mrs DR

- NTG = irreversible loss of retinal ganglion cells (RGCs)



MECHANICAL THEORY

certain individuals may be susceptible to RGC loss even at relatively "normal" IOPs, or may be prone to diurnal variations in IOP

VASCULAR THEORY

ischaemic insult to optic nerve head, usually via reduced ocuar perfusion pressure (OPP) or underlying systemic disease

ENDOTHELIAL DYSFUNCTION

dysregulation of vascular endothelium and endothelium in trabecular meshwork

OXIDATIVE STRESS

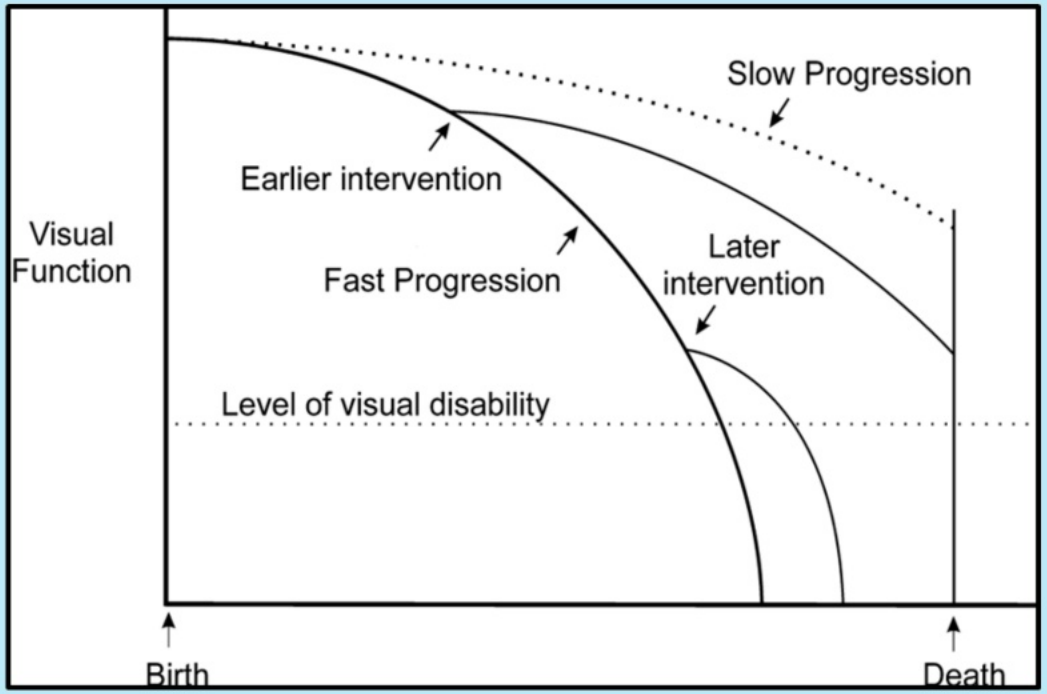
hypoxic conditions resulting in mitochondrial dysfunction and RGC apoptosis

Case 3 : 80yo Mrs DR

- as per **Collaborative of NTG Study (CNTGS)**, IOP-lowering by 30% still remains gold standard of managing NTG

  . . .***but*** 20% of NTG patients still progress despite achieving this

  and some untreated or sub-optimally controlled patients never progress



- higher risk for progression
  - Caucasian
  - female gender
  - migraine history
  - baseline disc haemorrhage
  - possibly thinner CCT

Caprioli J. The Importance of Rates in Glaucoma. American journal of ophthalmology 2008; 145: 191-2

Case 3: 80yo Mrs DR

Q5. For each of the glaucoma medication classes listed below, why would their use in this case be relatively indicated or contraindicated? ***(2 marks)***

- **Prostaglandin analogues (PGA):**
- **Beta-blockers:**
- **Alpha-2 adrenergic agonists:**
- **Carbonic Anydrase Inhibitors (CAI):**

Case 3 : 80yo Mrs DR

- commenced on **Alphagan P 1gtt TDS OU**
  - IOPs lowered to R 10mmHg (further 33% reduction, 52% from baseline)
    L 8mmHg (further 43% reduction, 60% from baseline)

- also referred to ophthalmology given severity of glaucoma

NTG defects tend to be more central;
not necessarily faster to progress but more threat to vision

- **Q6. Other than glaucoma medications, what are two (2) other management options you could recommend, and what is the evidence for/against? *(2 marks)***

NTG : The Role of Optometry

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NTG : Take Home Messages

- sub-type / continual spectrum of POAG, not a separate disease
- several theories for pathogenesis (vascular theory vs mechanical theory; oxidative stress; endothelial dysfunction)
- some cases of NTG never progress, and others can be more aggressive - initial monitoring to determine rates of progression (if any) can be useful
- IOP-lowering remains gold standard of management in NTG but consider patient's other risk factors and optimise these if possible (BP, migraines, OSA, positioning during spinal surgery)
- collaborate with other medical providers (ophthalmologist, GP) as required

Case 4 : 86yo Mr BL

- **PC:** re-referred by optometrist back to ophthalmology for difficulties with reading since undergoing chemo for stomach cancer (slow N5 with NRx)

- **POH:** - bilateral cataract extraction surgery (2013)
  - noted to be glaucoma suspect at the time due to asymmetric CDR and mild RNFL thinning, optometric monitoring recommended

- **FOH:** no family history of glaucoma

- **GH:** Clopridogrel since stroke (2022)

Patient Medical History

Hypertension	No
Diabetes	No
Allergies	** No Allergies
Current medication	-

Examinations	***Right Eye***	***Left Eye***
Visual acuity	6 / 7.5	6 / 7.5
Visual correction	best corrected	best corrected
Intraocular pressure	9.0	7.0
Refraction	+0.75 / -2.75 x 96 add+2.75	+0.75 / -3.00 x 106 add+2.75

Reason for referral

Other

Details

I would be grateful if you're able to see [redacted] who has noticed deterioration in his reading VA since undergoing chemotherapy for stomach cancer. His refraction has not changed much but he reports that his vision is like looking through a dirty window (? PCO). History of stroke in 2022 but ophthal post-stroke noted no concerns.

Case 4 : 86yo Mr BL

Q1. What are two (2) differential diagnoses for this patient at the current time? ***(2 marks)***

Q2. What are three (3) clinical tests you could perform to help support or exclude your diagnoses? ***(3 marks)***

Case 4 : 86yo Mr BL

IOP/CCT

OCT

DFE

Slit Lamp

VF

Case 4 : 86yo Mr BL

Q3. How would you describe the visual field? Be as comprehensive as possible. *(1 mark)*

Q4. What is the most likely diagnosis and cause for the patient's symptoms? *(1 mark)*

Case 4 : 86yo Mr BL

Q5. Anatomically, where is the location of the pathology? Be as comprehensive as possible. (2 marks)

CVA VF Defects : The Role of Optometry

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CVA : Take Home Messages

- patients are not always accurate historians and their symptoms don't always match with what the textbooks say!
- follow your gut - perform additional testing as required
- understand the relationship between visual pathway and visual field defects
- collaborate with other medical providers and vision rehabilitation services (this patient was referred to Vision Australia for mobility training and reading assistance)

Optometry Australia Advanced Practitioner Recognition (APR) Program

- credentials optometrists with advanced clinical skills, starting with glaucoma
- aims to enhance collaborative care with colleagues (eg. other optometrists and ophthalmologists)
- provides career progression pathways within optometry

Optometry Australia APR Program

- must have 5+ years of optometric experience

- multi-step assessment

  (1) Submit Expression of Interest and CV
  (2) Recognition of prior experience (case logs, lecture, publications, advanced certificates)
  (3) Submit two Case Reports
  (4) Demonstrate leadership competencies
  (5) Participate in a Clinical Discussion Interview (VIVA)

- upon completion, use of "**OACAP-G**" post-nominal

Optometry Australia APR Program

- pilot completed in early 2025
- OA current refining framework for official launch
- applications for first public intake will open in coming weeks

Scan me!

- Improved patient access to specialised eye care
- Enhanced co-management pathways with ophthalmologists and healthcare teams
- Career advancement opportunities and recognition of advanced skills

For more details, visit Optometry Australia or email policy@optometry.org.au

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Thank You!

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