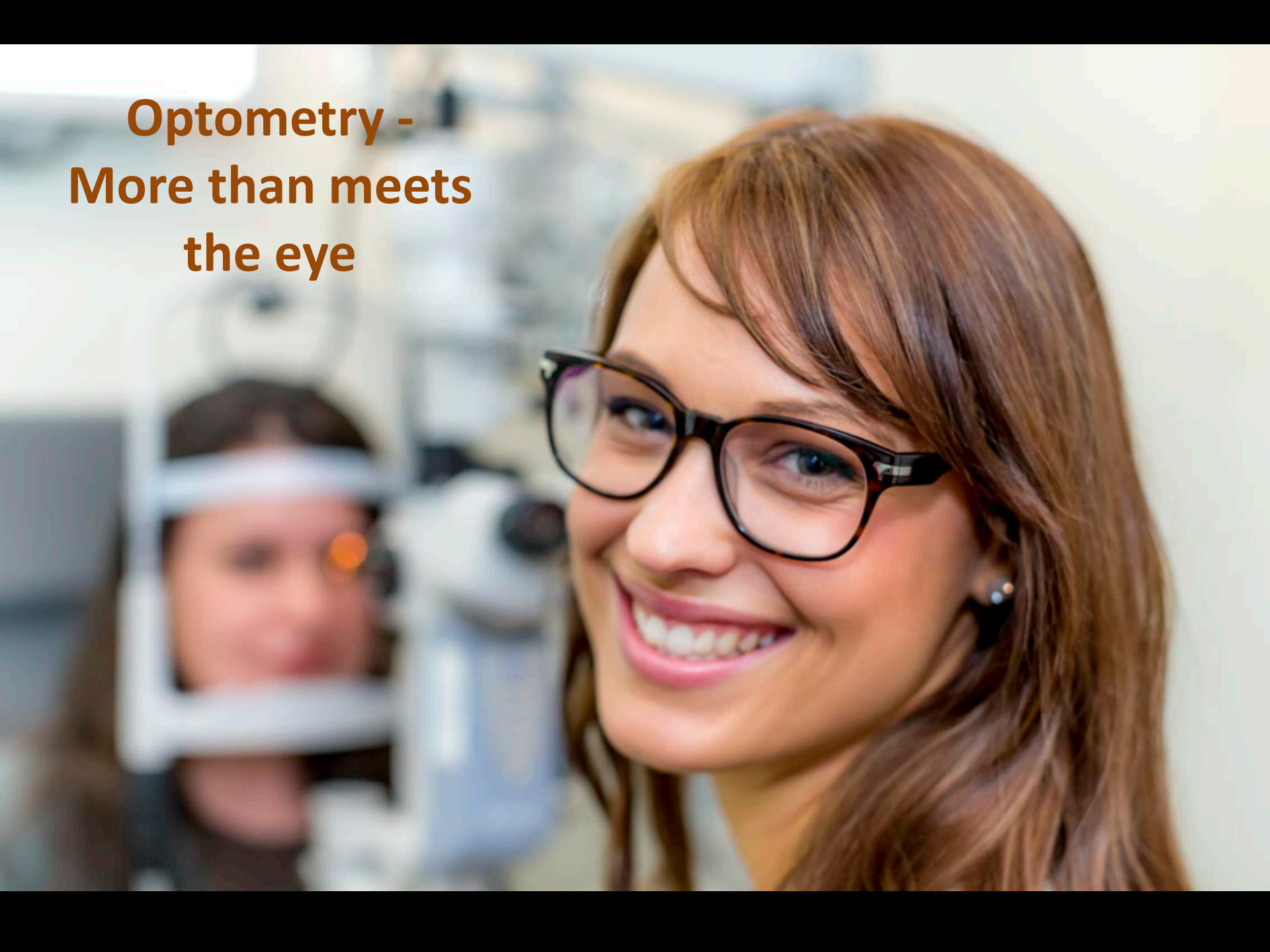


**Optometry -
More than meets
the eye**





Collaborating with your optometrist - common eye conditions

Simon Paul Hanna
National Clinical Policy Adviser
Optometry Australia

Overview

- Who's who and where to get help
- Eye health in Australia
- Preventing sight loss – what can we do?
- Anatomy and physiology of the eye
- Common eye conditions:
 - a) Infective Conjunctivitis
 - b) Allergic Red Eye
 - c) Dry Eye
 - d) Contact Lens related issues
 - e) Age-related macular degeneration (AMD)
 - f) Cataract
 - g) Diabetic retinopathy
 - h) Glaucoma
 - i) Refractive error
- Dealing with an eye health problem



Optometrist

- An optometrist is a primary eye care provider
- University course (Undergraduate/Masters/Post Graduate)
- Medicare provides a rebate on most optometry consultations
- Patients do not need a referral to see an optometrist
- Generally little or no waiting period for appointments
- Will fast-track referrals to ophthalmologists if necessary
- Over 50% of optometrists in Australia are therapeutically-endorsed
- To locate your nearest optometrist, please visit www.optometry.org.au



How optometry prescribing works

- Therapeutic endorsement is by Optometry Board of Australia
- Mandatory in all professional entry optometry degrees in Australia.
- Graduate Certificate in Ocular Therapeutics allows previous graduates to become endorsed.
- 45 topical eye medicines available on the PBS
- Glaucoma patients managed by independently managed by optometrists or co-managed with ophthalmologist.



What can optometrists prescribe in Victoria?

ANTI-INFECTIVES	STEROIDS & NSAIDS	GLAUCOMA	ANTI-ALLERGY	CYCLOPLEGICS
<p>Antibiotics</p> <ul style="list-style-type: none"> • Chloramphenicol • Gentamicin • Tobraycin • Tetracycline • Ciprofloxacin (P) • Ofloxacin (P) • Framycetin • Sulfacetamide <p>Antivirals</p> <ul style="list-style-type: none"> • Aciclovir 	<p>Steroids</p> <ul style="list-style-type: none"> • Hydrocortisone • Fluorometholone • Prednisolone • Dexamathasone <p>NSAIDS</p> <ul style="list-style-type: none"> • Flurbiprofen • Ketorolac • Diclofenac 	<ul style="list-style-type: none"> • Betaxolol • Timolol • Latanoprost • Travoprost • Bimatoprost • Dorzolamide • Brimonidine • Apraclonidine • Pilocarpine • Brinzolamide 	<ul style="list-style-type: none"> • Lodoxamide • Sodium cromoglycate • Ketotifen • Olopatadine • Levocabastine 	<ul style="list-style-type: none"> • Atropine • Homatropine

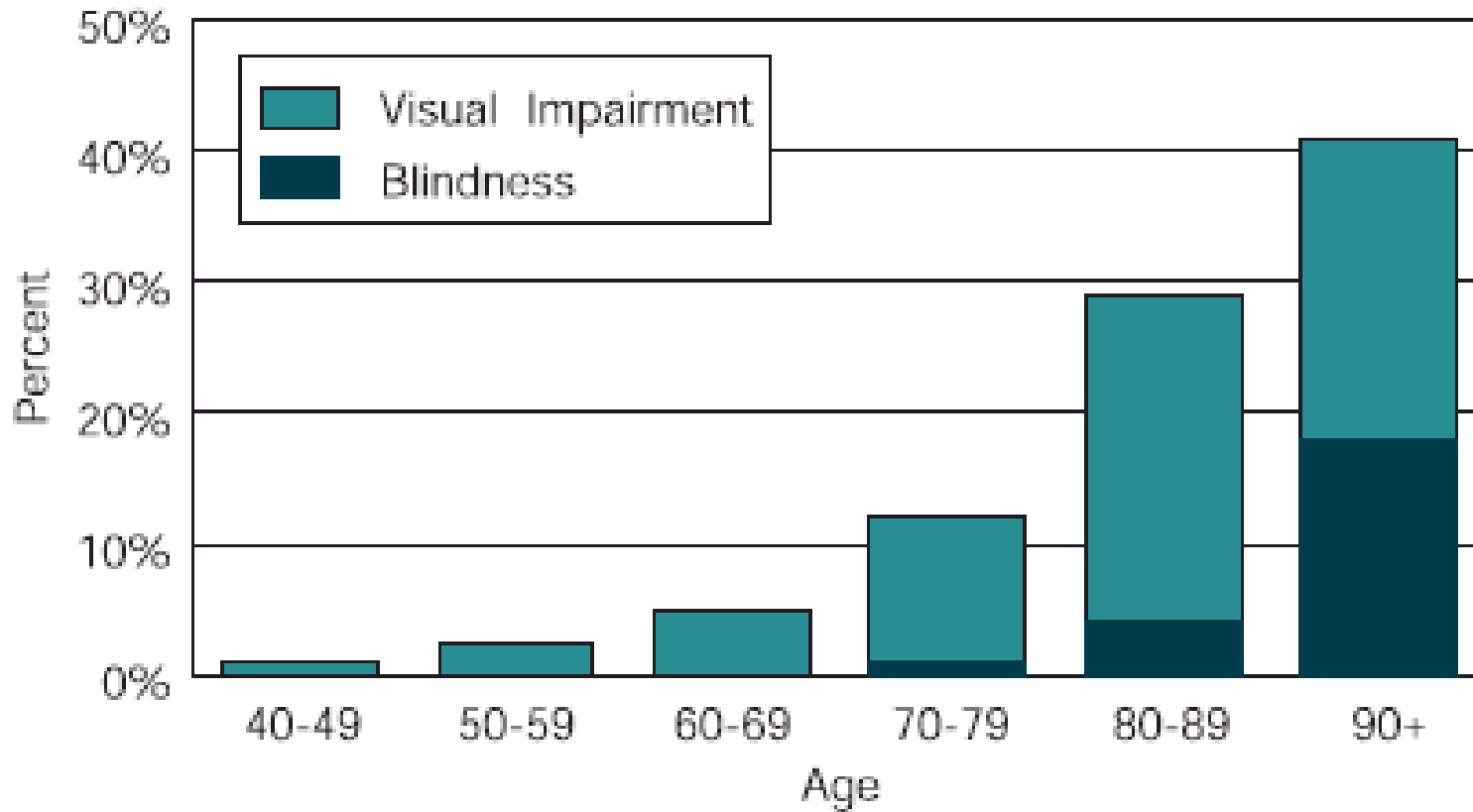
P – Private Rx only (non PBS)



Eye health in Australia

- As the population in Australia ages, the number of people who are blind or have vision loss is expected to be over 800,000 by 2020
- 75% of vision loss is preventable or treatable
- Prevalence increases threefold with each decade over 40 years
- 80% of vision loss is caused by five conditions (listed alphabetically):
 - Age-related Macular Degeneration (AMD)
 - Diabetic retinopathy
 - Cataract
 - Glaucoma
 - Under-corrected and uncorrected refractive error





Center for Eye Research Australia, 2004, *Investing in Sight - Strategic Interventions to Prevent Vision Loss in Australia*.



Preventing is the key

- Encourage your clients to – *Get Tested*, especially if:
 - there is a family history of eye disease
 - the client is over 40
 - the client has diabetes
 - the client has noticed a change in their vision
 - the client is of Aboriginal or Torres Strait Islander descent
- **Recognise** symptoms of common problems
- Know when and who to **refer** to
- **Talk** to your clients about their vision; vision loss maybe an underlying cause for another condition
- If you are concerned about a client's vision discuss your concerns with an **eye health professional**
- **Medicare** covers some of the costs associated with visiting an optometrist or ophthalmologist



Preventing is the key

People with vision impairment are at a greater risk of suffering from **secondary conditions:**

- a. falls
- b. depression
- c. early special accommodation
- d. increased risk of hip fracture
- e. increased early mortality
- f. social isolation

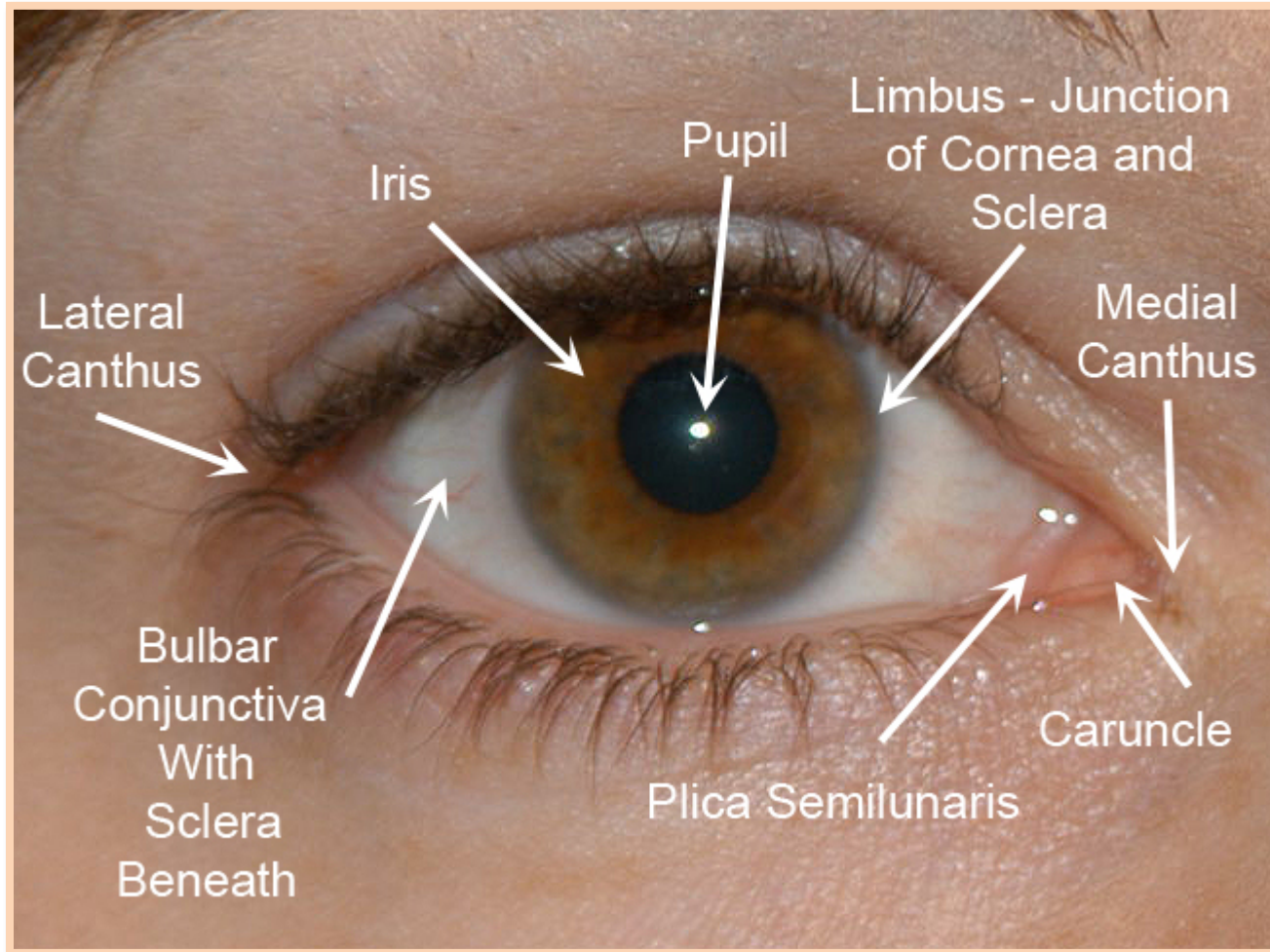


Advise your patients to:

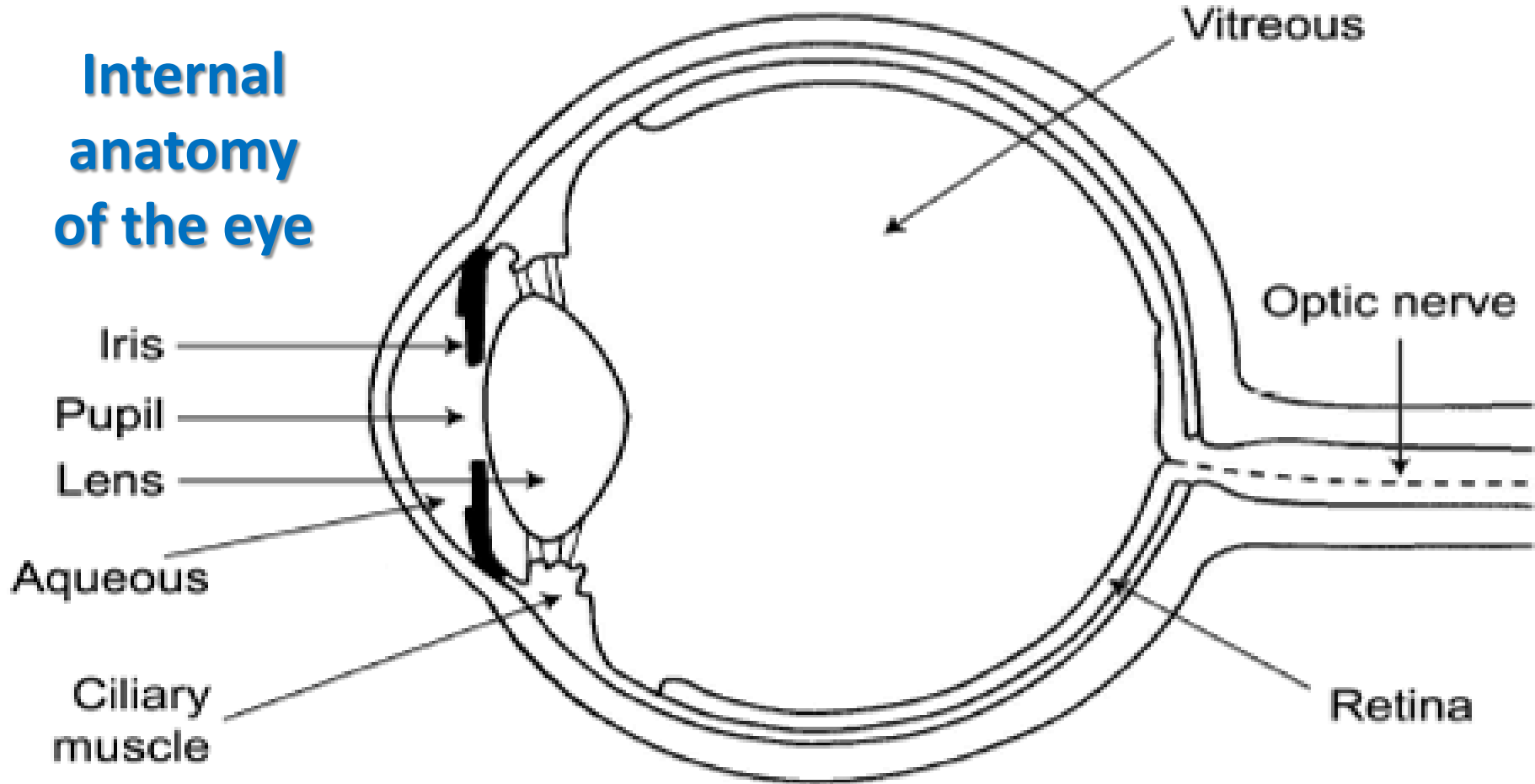
- a. stop smoking
- b. protect their eyes from injury
- c. protect their eyes from ultra violet light by:
 - i. wearing a hat
 - ii. wearing appropriate sunglasses
- d. maintain good general health



External anatomy of the eye



Internal anatomy of the eye



Retina

Optic Cup

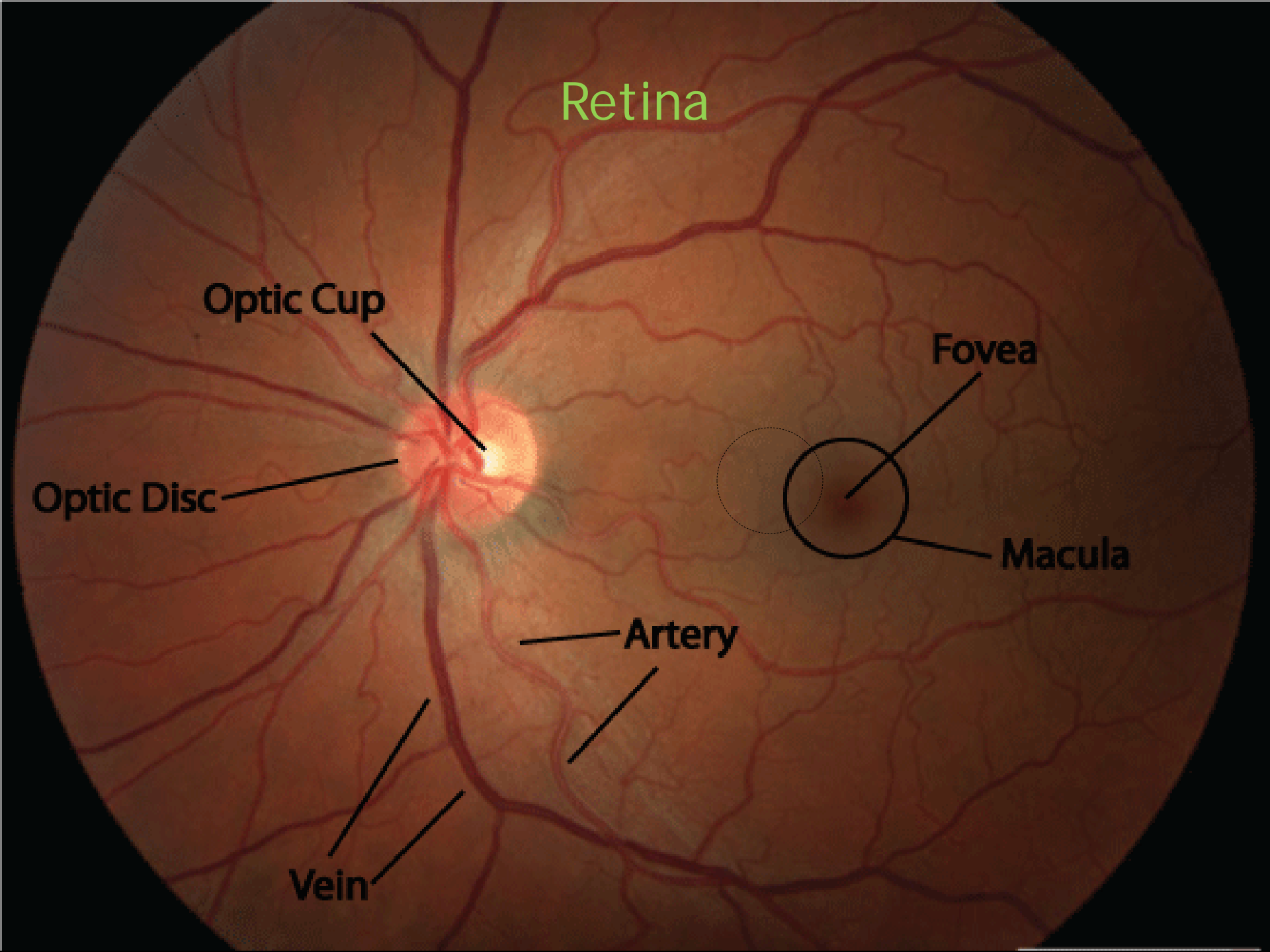
Optic Disc

Fovea

Macula

Artery

Vein





DO

YOU

SEE

WHAT

I

SEE

?



Common Eye Conditions

- A. Glaucoma
- B. Diabetic Retinopathy
- C. Red Eyes



Glaucoma



What is glaucoma?

- It is a disease that affects the optic nerve at the back of the eye due to increased Intraocular Pressure
- Relieving pressure on the nerve reduces progression of the disease
- Early detection and treatment can slow the vision loss

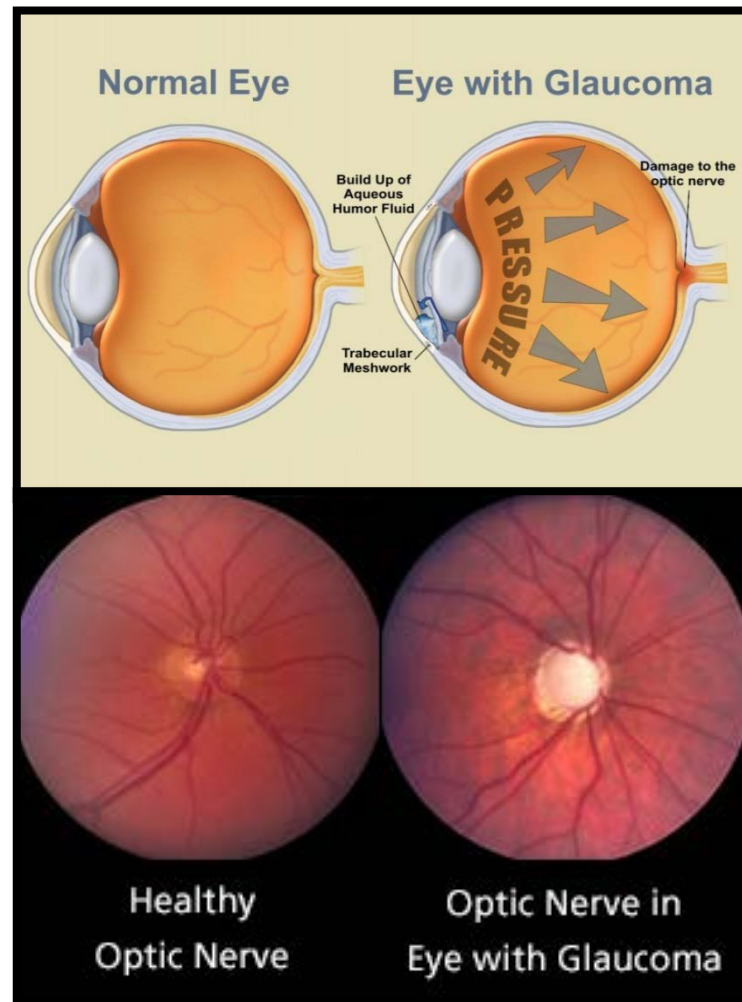
Prevalence of glaucoma

- People over the **age of 40** are more likely to develop glaucoma than young people.
- Almost 3% of the Australian population over 55 years are affected
- Glaucoma has a genetic link and can occur in families.
 - First degree blood relative = **eight times** more likely to develop the disease



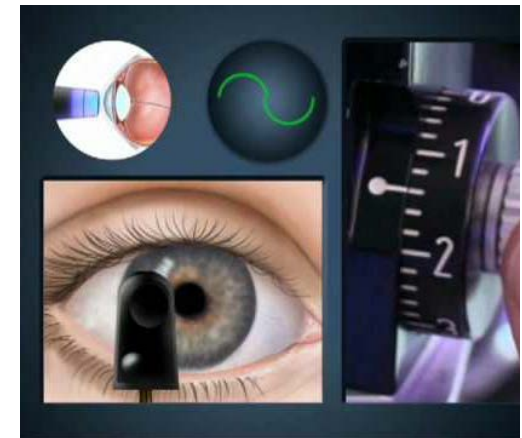
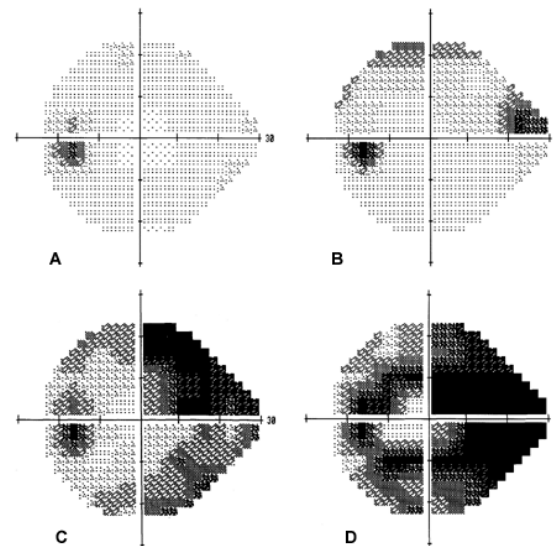
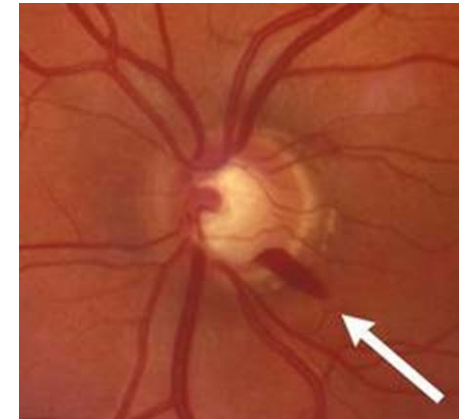
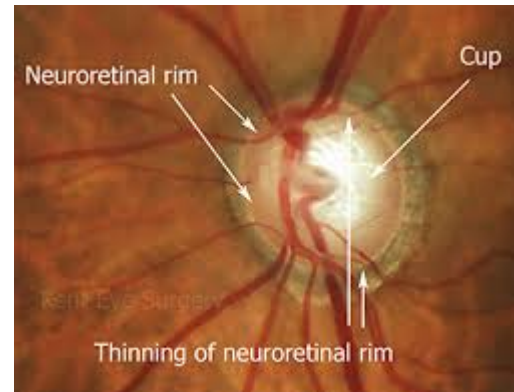
Risk Factors for Glaucoma

- Age
- Elevated Intraocular Pressures
- Race
- Gender
- Family History of Glaucoma
- Extreme refractive error
- Diabetes
- Cataracts
- Previous eye injuries
- Use of Corticosteroids



Clinical Signs of Glaucoma

- Elevated Intraocular Pressures
- Increased optic nerve cupping
- Neuroretinal Rim thinning
- Optic Disc Haemorrhage
- Blood vessels at Optic Disc
- Retinal Nerve Fibre layer defects
- Peripapillary atrophy
- Visual Field defect
- **Headaches???**



Functional Implications of Glaucoma

- No functional implications in early stages
- Silent disease
- Difficulty adjusting to lighting changes (e.g. between indoors and outdoors)
- Occasional blurred vision
- Seeing a halo around lights (angle closure)
- Increased sensitivity to glare and light
- Difficulty identifying the edge of steps or road
- Tripping over or bumping into objects
- Driving difficulty



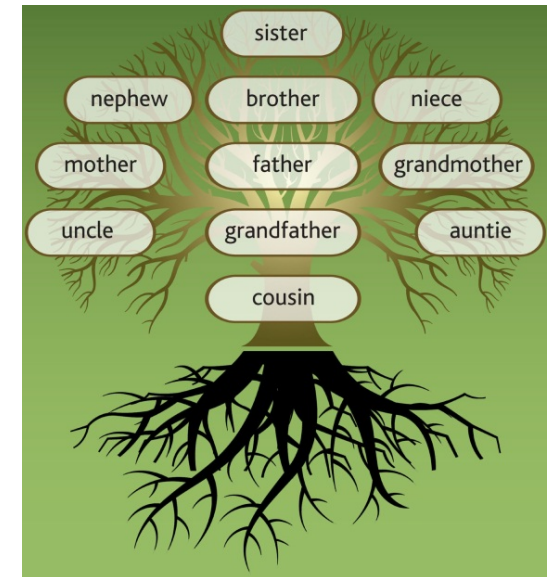
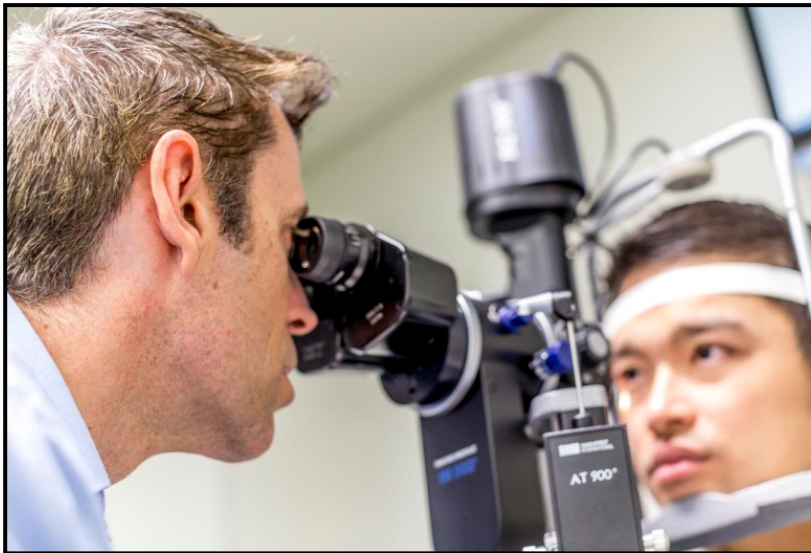
Treatment of glaucoma

- Treatments are available but **early detection** is the key
- Lost vision can not be recovered. Treatment aims to **prevent** further vision loss
- Treatment may involve medication (eye drops), laser and/or other surgery as well as regular monitoring
- Early glaucoma is often **asymptomatic**. Regular eye tests are most important
- **Long term compliance a major concern, 1/3 or more of patients indicate poor adherence to drop therapy**
 1. Asymptomatic
 2. Inability to instill drops



Prevention of vision loss from glaucoma

- Regular eye examinations to ensure early detection and treatment are the only way to control glaucoma and prevent vision loss
- 50% of people with glaucoma are unaware that they have it

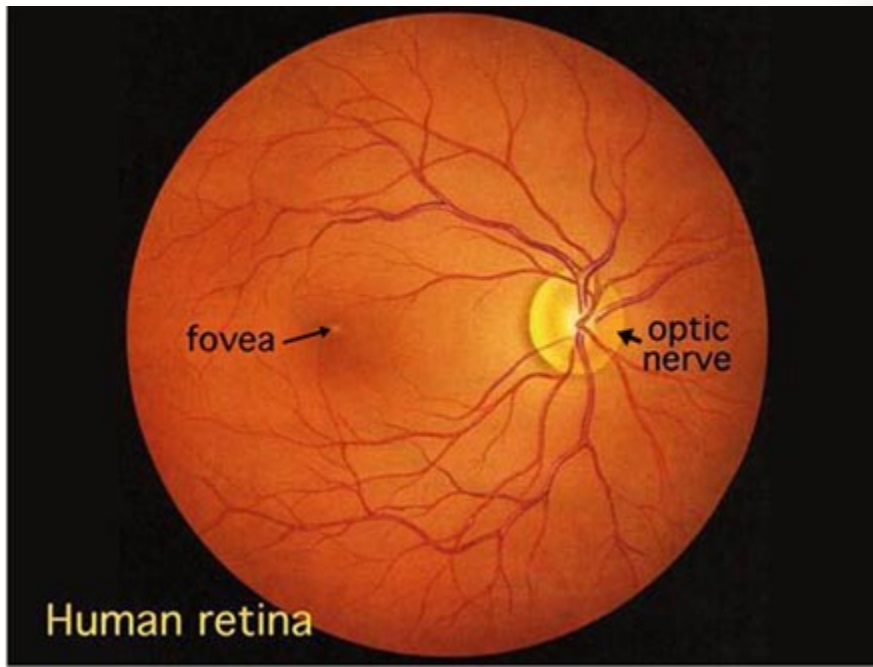


Diabetes

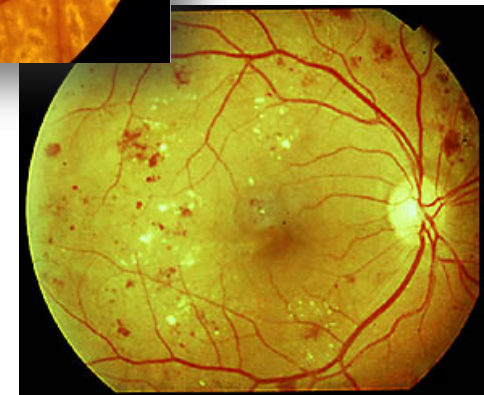
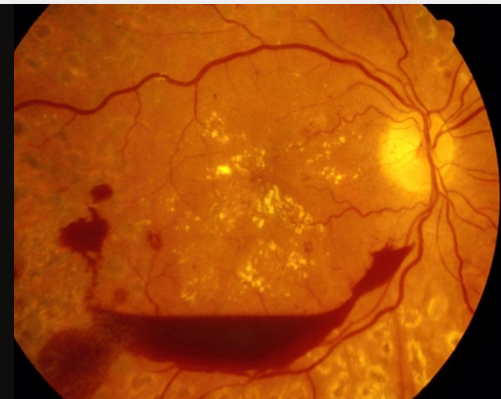


What is diabetic retinopathy?

- This condition is a complication of diabetes
- It affects the small blood vessels of the retina
- Blood vessels begin to leak and bleed inside the eye



Healthy Retina



Diabetic
Retinopathy



Prevalence and risk factors of diabetic retinopathy

- It is estimated that 3% of the population aged over 55 years have diabetic retinopathy
- **22% of people with known Type 2 diabetes have some form of retinopathy related to their diabetes**
- Within 15 years of being diagnosed with diabetes, **three out of four** diabetics will have diabetic retinopathy
- Greater Risk of Diabetic Retinopathy:
 - Duration
 - Diabetic Kidney Disease
 - Type I DM
- Diabetic retinopathy is the primary vision threatening condition for Aboriginal and Torres Strait Islander people



Diabetic retinopathy - Functional implications

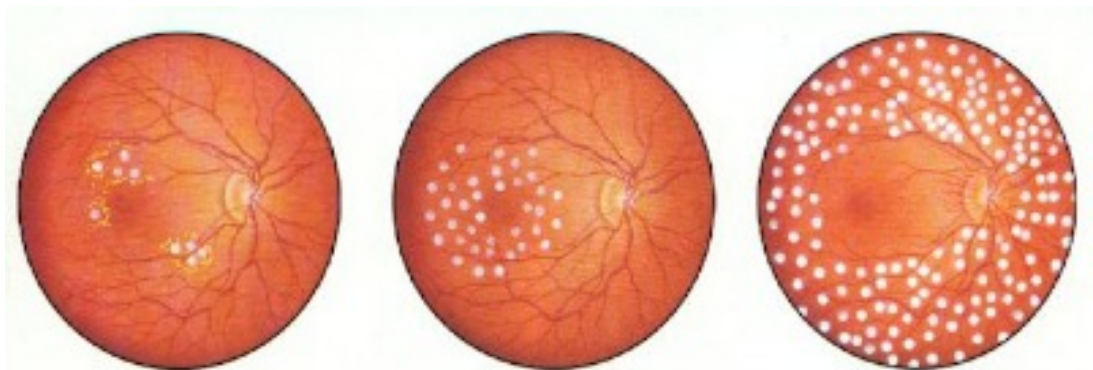
- Difficulty with fine details (e.g. when reading or watching television)
- Fluctuations in vision from hour to hour or day to day
- Blurred, hazy or double vision
- Difficulty seeing at night or in low light
- Being particularly sensitive to glare and light
- Having difficulty focusing



Treatment and prevention of diabetic retinopathy

- Early detection and timely treatment is essential
- 98% of severe vision loss can be prevented with early detection and timely laser treatment
- Reduction to the severity of eye disease can be achieved with optimal control of

- ✓ Blood Sugar Levels
- ✓ Blood Pressure
- ✓ Cholesterol Levels



Focal treatment is used to treat macular edema due to focal leakage.

Grid treatment is used to treat macular edema due to diffuse leakage.

Panretinal treatment may be used to treat pre-proliferative and proliferative retinopathy.

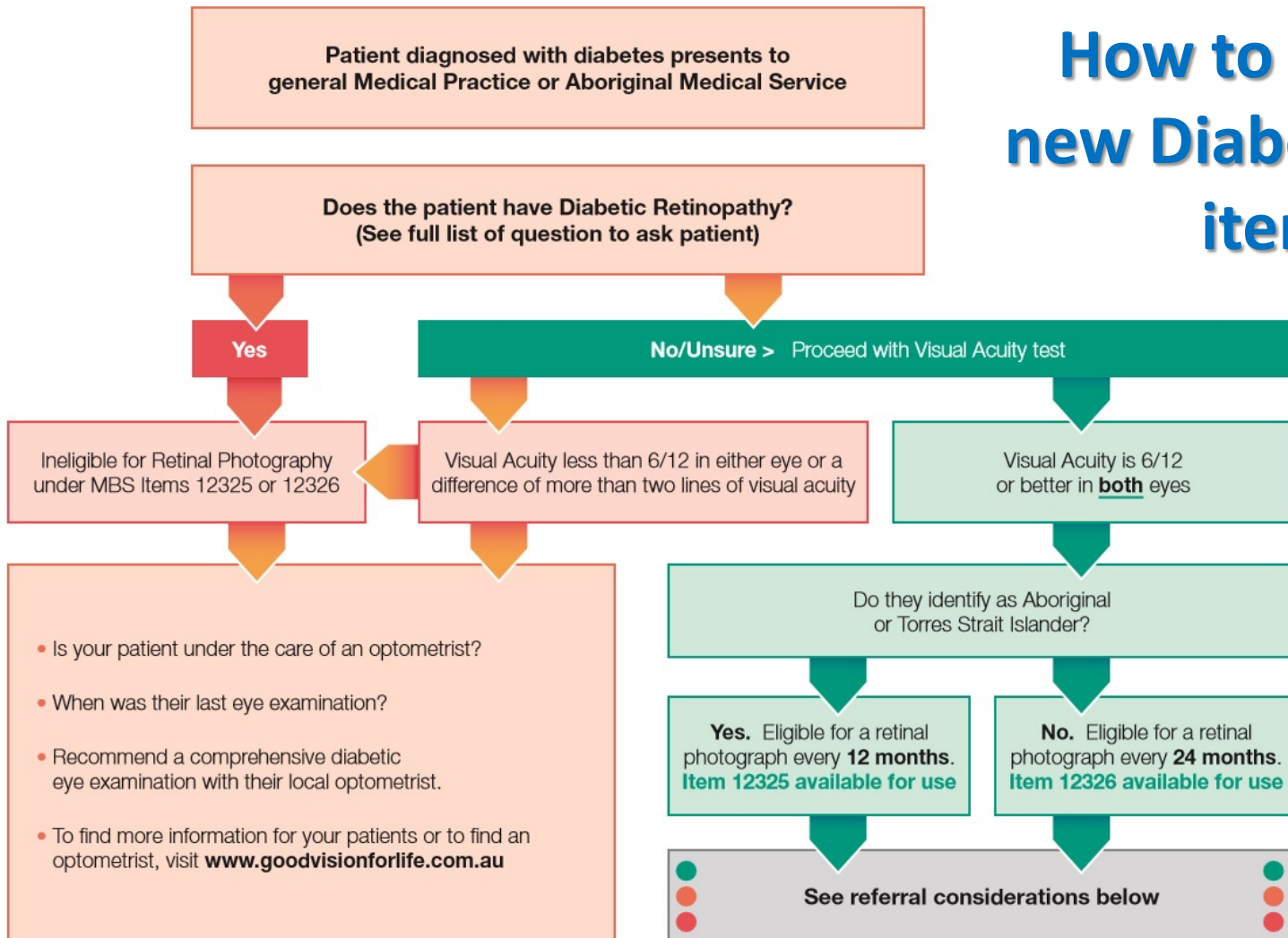


GPs role in Prevention of Diabetic Retinopathy

- New MBS Items for Retinal Photography
- Visual Acuity and Bilateral Retinal Photography using Non-Mydriatic retinal camera
- Item 12325 – for Aboriginal and Torres Strait Islander People
- Item 12326 – for Non-Indigenous people
- Fee: \$50
- 1st November, 2016



How to use the new Diabetes MBS items



How to use the new Diabetes MBS items

Referral Considerations

No Diabetic Retinopathy
or other pathology identified

- **Indigenous:** Repeat Digital Retinal Imaging in **12 months**
- **Non-Indigenous:** Repeat Digital Imaging in **24 months**
- Recommended that patients also see their optometrist for comprehensive diabetic eye examination

Minimal to Moderate
Non-Proliferative Diabetic Retinopathy
or other non-diabetic pathology
OR POOR IMAGE QUALITY

- **Refer to Optometrist** for comprehensive diabetic eye examination

Severe Non-Proliferative
Diabetic Retinopathy or
Proliferative Diabetic Retinopathy
with/without macular oedema

- **Refer to Ophthalmologist** for comprehensive diabetic eye examination and potential surgical/laser intervention

* Information current 1 September 2016
Effective 1 November, 2016

A guide for General Practitioners on the use of Digital Retinal Photography

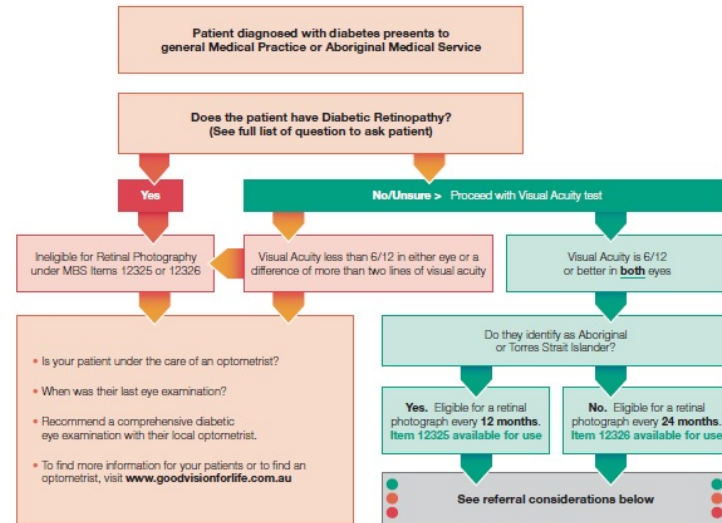
MBS Items 12325 and 12326 *

Want a copy of the guide on the use of Digital Retinal Photography MBS items?

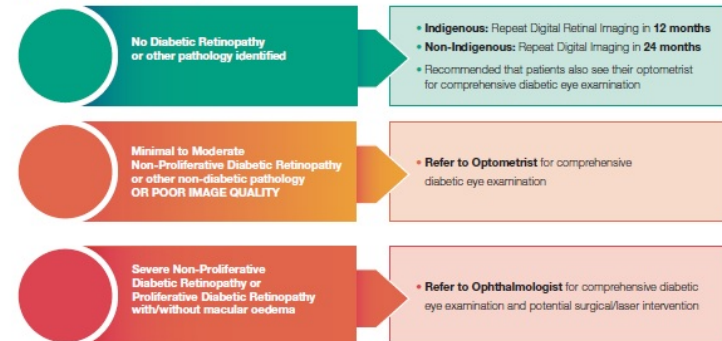
email: policy@optometry.org.au

Or

hardcopy: back of the room



Referral Considerations



How your local Optometrists can help with Diabetic Retinopathy

- What if it's not DR?

Examples of pathology other than DR that may be seen on retinal images

- Age related Macular Degeneration
- Hypertensive Retinopathy
- Artery or vein occlusions
- Glaucoma
- Choroidal or other ocular tumours
- Hollenhorst Plaque – retinal emboli
- Epiretinal membranes



How your local Optometrists can help with Diabetic Retinopathy

- What if I can't get a good image?

Reasons for poor image quality

- Dry eye
 - Cataract
 - Small pupils
 - Vitreous opacities or floaters
 - Lid ptosis
 - Eyelashes
 - Photophobia and blinking
 - Corneal pathology
 - Poor fixation
 - Vitreous haemorrhage
-



Actual uptake of GP items (Nov 2016 – August 2017)

ITEM	NSW	VIC	QLD	SA	WA	NT	Total
12325	5	45	235	20	129	144	578
12326	76	138	87	14	36	1	352
Total	81	183	322	34	165	145	930



Red Eye



What could it be?

- Conjunctivitis
- Dry eye
- Bacterial Keratitis
- Foreign Body
- CL associated red eye
- Viral Herpetic Ulcer
- Scleritis or Episcleritis
- Acute angle closure glaucoma
- Uveitis



Differentiating Conjunctivitis

Bacterial

- ✓ Mucopurulent
- ✓ Eye lids stuck together on waking
- ✓ Can be contagious
- ✓ May self-resolve
- ✓ **Antibiotic treatment**

Viral

- ✓ Watery discharge
- ✓ Cause: often common cold
- ✓ Usually self limiting
- ✓ Can be transferred to other eye
- ✓ **Cold Compressors** – reduce discomfort and burning



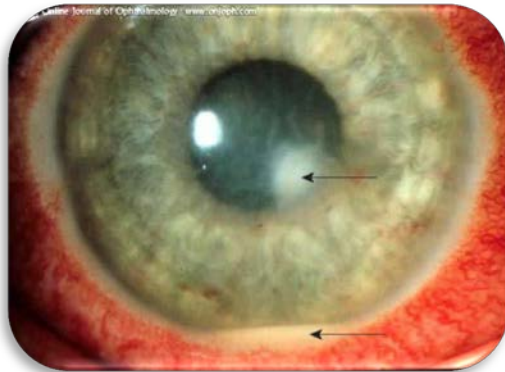
Allergic

- ✓ Usually seasonal
- ✓ Can be perennial
- ✓ Typically bilateral
- ✓ Itchy and burning
- ✓ Mild redness
- ✓ **Anti Histamine - Zaditen**
- ✓ **Mast Cell Stabiliser - Patanol**



Corneal Ulcer vs. Infiltrate

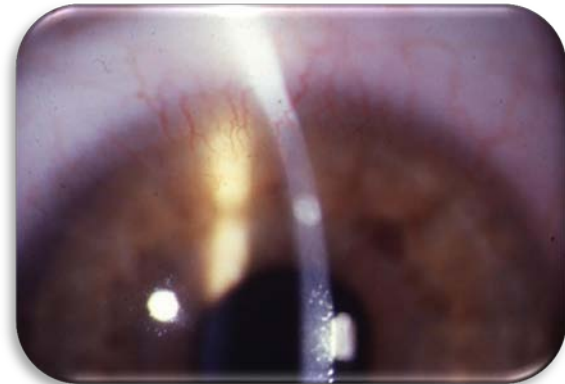
Corneal Ulcer (Infective)



- P – Pain
- E – Epithelium Defect
- D – Discharge
- A – Anterior Chamber
- L – Location

VS.

Corneal infiltrate (Sterile)



Reduction or absence of
infective symptoms

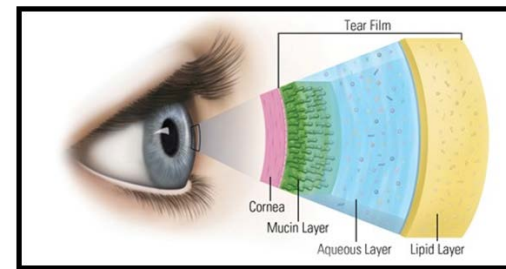


Symptoms and Causes of Dry Eye

Symptoms

- Sore or stinging eyes
- Itchy eyes
- Red eyes
- Watery eyes
- Blurred vision
- Pulling or tugging sensation
- Difficulty wearing contact lenses

THE HUMAN TEAR FILM



Internal Factors

- a) Ageing
- b) Gender and Hormonal changes
- c) Medication
- d) Blepharitis
- e) Arthritis and autoimmune conditions

External Factors

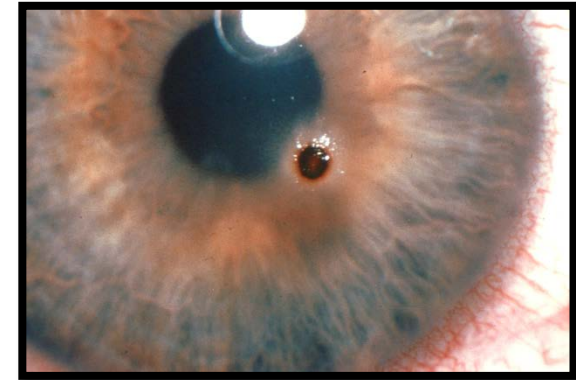
- a) Environment
- b) Concentration
- c) Eye Surgery
- d) Exposure
- e) Contact Lenses



Not sure how deep?

Corneal Foreign Body

- Slit lamp allows binocular view
- Slit lamp allows for depth and cross section
- MBS Item for Optometrists to remove CFB
- Trained and qualified
- Therapeutic endorsement
- Tonometry
- Sodium Fluorescein
- Flexible review appointments



When to refer to an ophthalmologist?

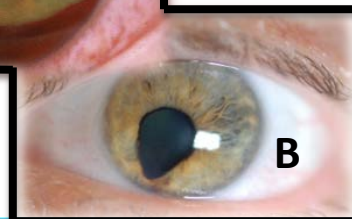
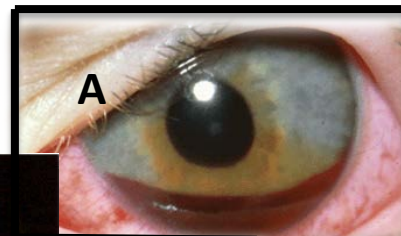
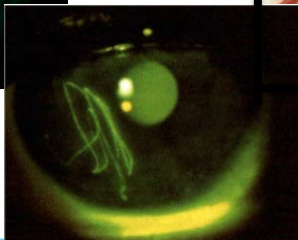
Penetrating foreign body

Intraocular foreign body

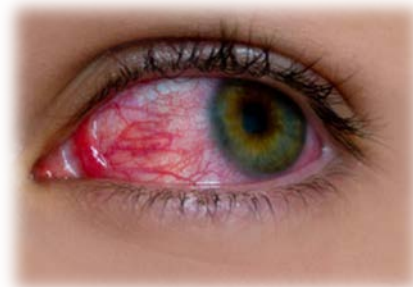
Leaking of aqueous humour

Blood in the anterior chamber ^A

Pupil dilated or abnormal shape ^B



The Red Eye – Refer or Treat?



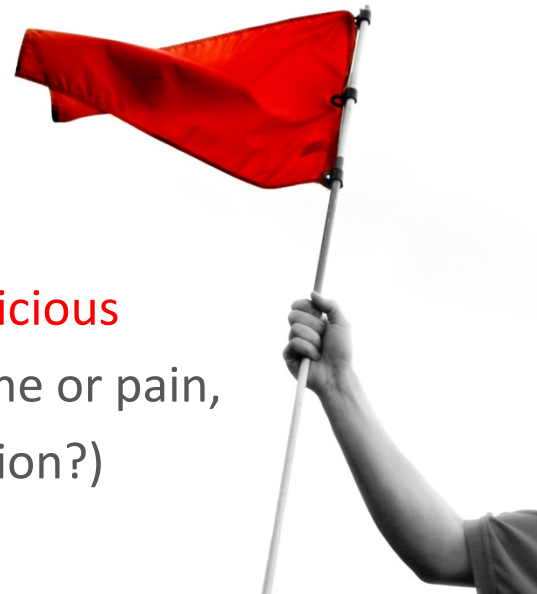
Treat when...	Refer when...
Mild red eye	Unilateral
Itchy eyes	Blurred Vision
Allergic	Pain
Viral	Intolerant to contact lens wear
Chronic/Sub-Acute Bacterial	Neurological/Visual Field involvement



Am I dealing with an eye emergency? Use these quick questions to guide you

RED FLAGS

- Is this an eye problem with **sudden onset** symptoms?
- Are the symptoms **severe**?
- Has the patient **lost** vision in one/both eyes?
- Is there **injury** or trauma to the eye?
- Are the symptoms accompanied by other **suspicious** symptoms (e.g. slurred speech, severe headache or pain, loss of physical coordination, or mental confusion?)



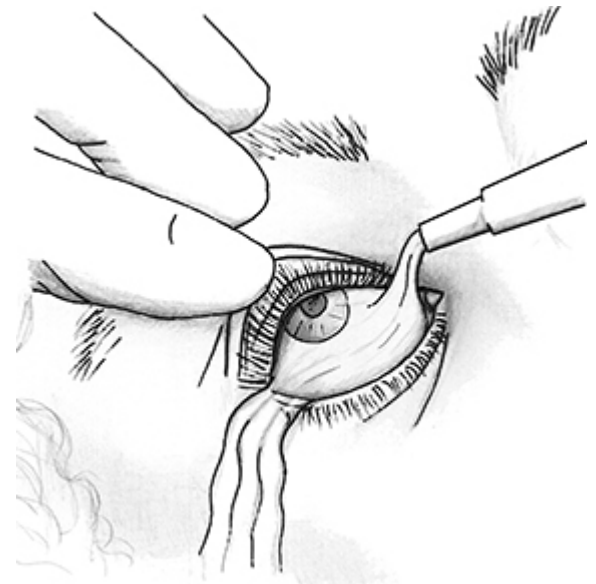
Signs and Symptoms - When to refer to an ED?

- | |
|------------------------------|
| • Visual Field loss |
| • Darkening of vision |
| • Sudden double vision |
| • Vision Loss |
| • Trauma |
| • Severe Pain |
| • Foreign Body (Penetrating) |
| • Severe swelling |
| • Neurological involvement |



Emergency advice for chemical burns or splashes

- **Irrigate** affected eye(s) with water for at least 15 minutes, then attend emergency department of hospital
- Don't apply drops, ointments, or other treatment
- Patient to **remove contact lenses** where possible



Chloramphenicol: to OTC or not OTC?

- Chloramphenicol: Schedule 3 treatment
- Most common indications in eye problems: conjunctivitis and superficial infection with susceptible organisms
- Importance of differential diagnosis ... it's not just a matter of failing "The Chlorsig Test"
- Potential problems in making a diagnosis
 - ✓ Are the symptoms really consistent with 'just conjunctivitis'?
 - ✓ Is the person a contact lens wearer?
 - ✓ Will the organism be susceptible to this drug?
 - ✓ How can I really see what is going on in the anterior eye?



Chloramphenicol: When a differential diagnosis matters

Primary care diagnosis	Confirmed ophthalmological diagnosis	Chloramphenicol Indicated by confirmed diagnosis?	Delay in referral	Preventable adverse outcome
'Red eye'	Acute anterior uveitis	N	8 days	Severe permanent vision loss; pain
Conjunctivitis	Acute anterior uveitis	N	7 days	Moderate permanent vision loss
Conjunctivitis	Bacterial keratitis	N	2 days	Severe pain
'Red eye' - Conjunctivitis	Herpes zoster ophthalmicus (HZO)	N	3 days	Mild permanent vision loss, severe pain, delay in antiviral treatment

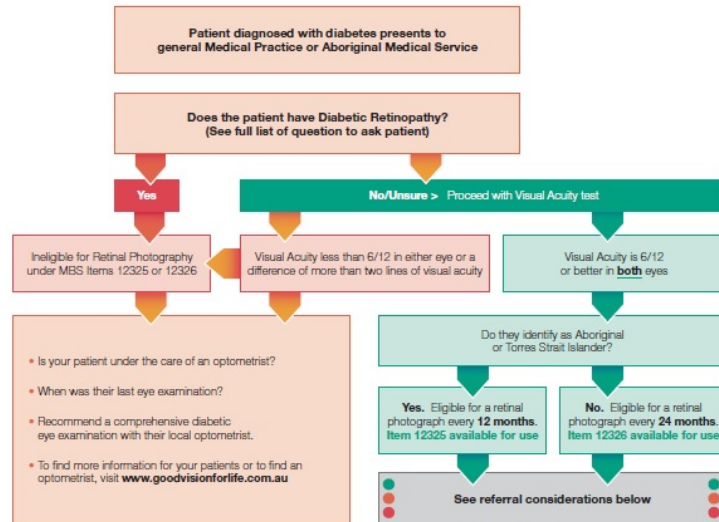
Statham M, Sharma A and Pane A. Misdiagnosis of acute eye diseases by primary health care providers: incidence and implications, *MJA* 2008; 189(7) 402-4.



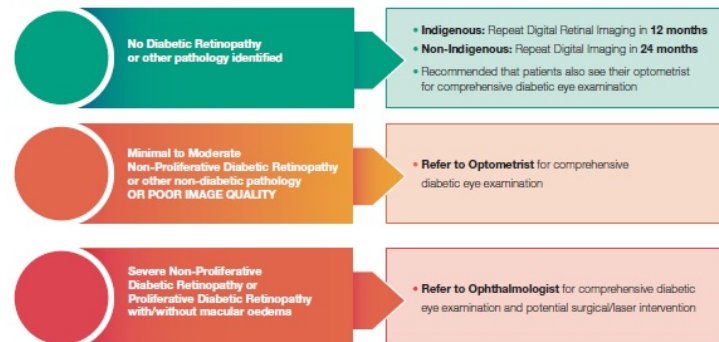
A guide for General Practitioners on the use of Digital Retinal Photography



MBS Items 12325 and 12326 *



Referral Considerations



* Information current 1 September 2016

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email: policy@optometry.org.au

or

hardcopy: back of the room



And finally ... Thank you!

For any further queries please contact:
Optometry Australia on (03) 9668 8500

Useful Links

<http://www.optometry.org.au/find-an-optometrist/>

<http://www.optometrists.asn.au/your-eyes/your-eye-health/eye-diseases/diabetic-retinopathy.aspx>

<http://www.optometryboard.gov.au/Policies-Codes-Guidelines.aspx>

