



**Vision
Initiative**

A partnership promoting eye health and vision care

Common Eye Conditions - and the role of the pharmacist

Speaker: Optometrists Association Australia

Pharmaceutical Society of Australia

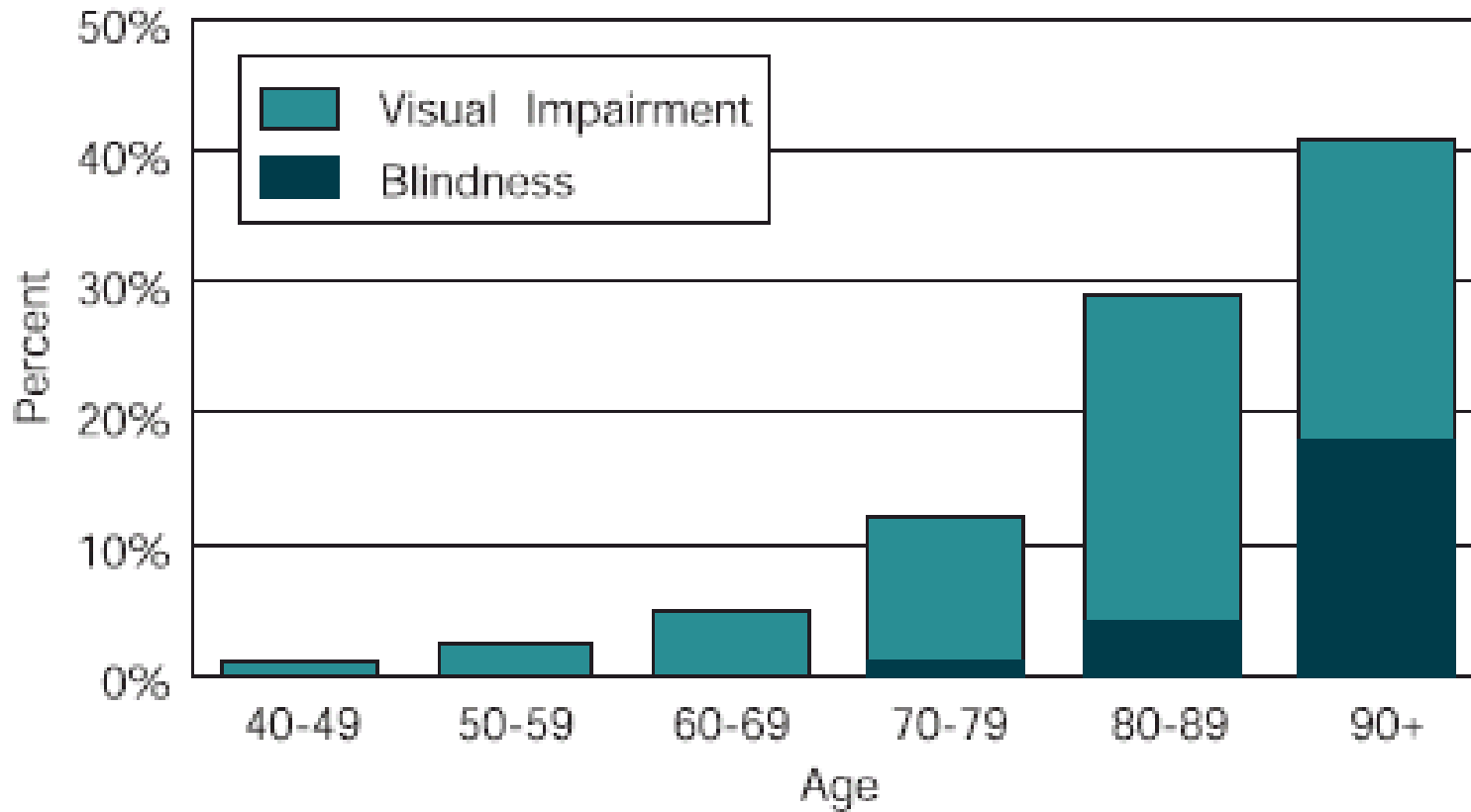
Overview

- Eye health in Australia
- Preventing sight loss
- Anatomy and physiology of the eye
- Common eye conditions (listed alphabetically):
 - Age-related macular degeneration (AMD)
 - Cataract
 - Diabetic retinopathy
 - Glaucoma
 - Refractive error
- Who's who and where to get help
- Dealing with an eye health problem.

Eye health in Australia

- More than 500,000 Australians have vision loss
- prevalence of eye disease is predicted to double over the next ten years
- 75 per cent of vision loss is preventable or treatable
- prevalence increases threefold with each decade over 40 years
- 80 per cent of vision loss is caused by five conditions (listed alphabetically):
 - Age-related Macular Degeneration (AMD)
 - Cataract
 - Diabetic retinopathy
 - Glaucoma
 - Under-corrected and uncorrected refractive error

Blindness and vision impairment in Australia



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

Preventing vision loss

-what pharmacists can do

- 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 where to refer

Preventing vision loss

-what pharmacists can do

- 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 the treating GP or eye health professional
- Medicare covers most of the costs associated with visiting an optometrist or ophthalmologist

Preventing vision loss

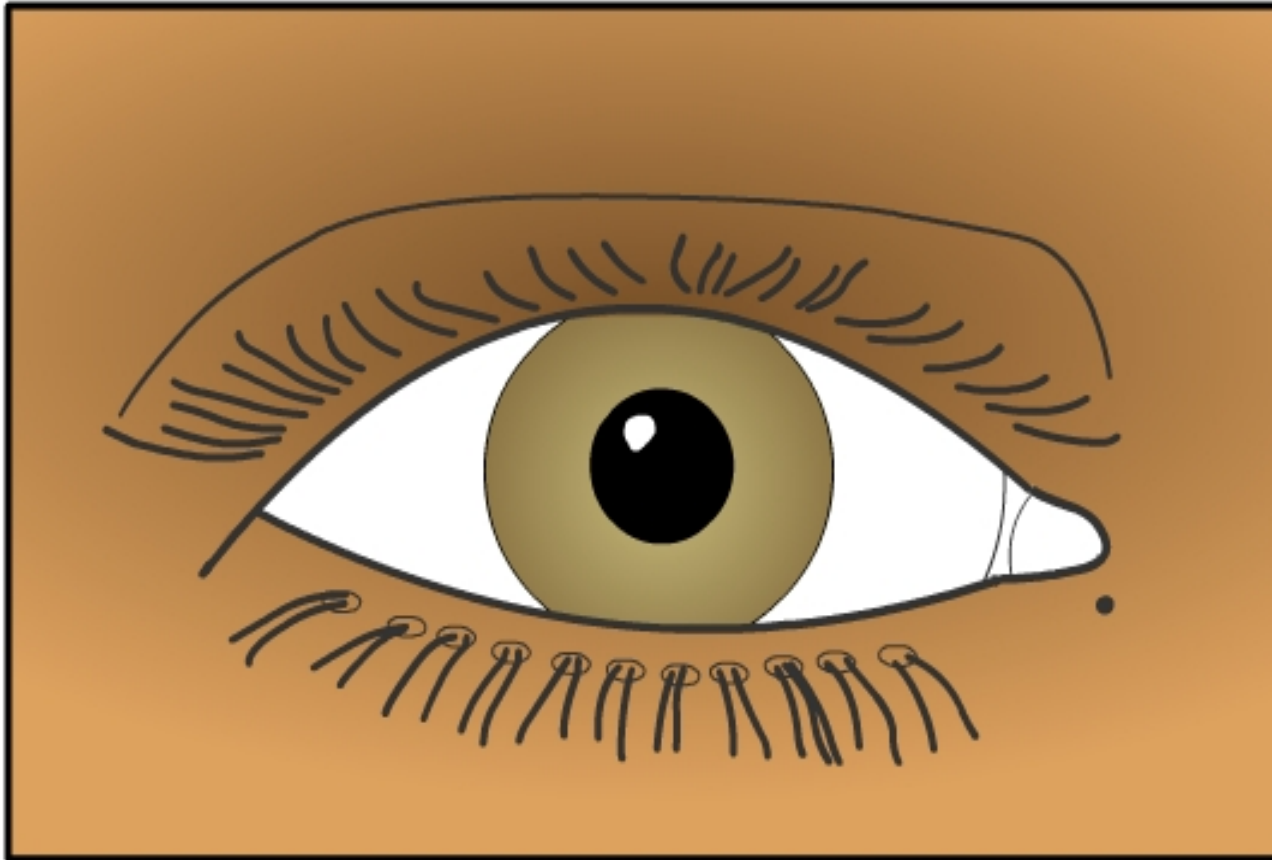
- People with vision impairment are at a greater risk of suffering from secondary conditions:
 - falls
 - depression
 - early special accommodation
 - increased risk of hip fracture
 - increased early mortality
 - social isolation

Preventing vision loss

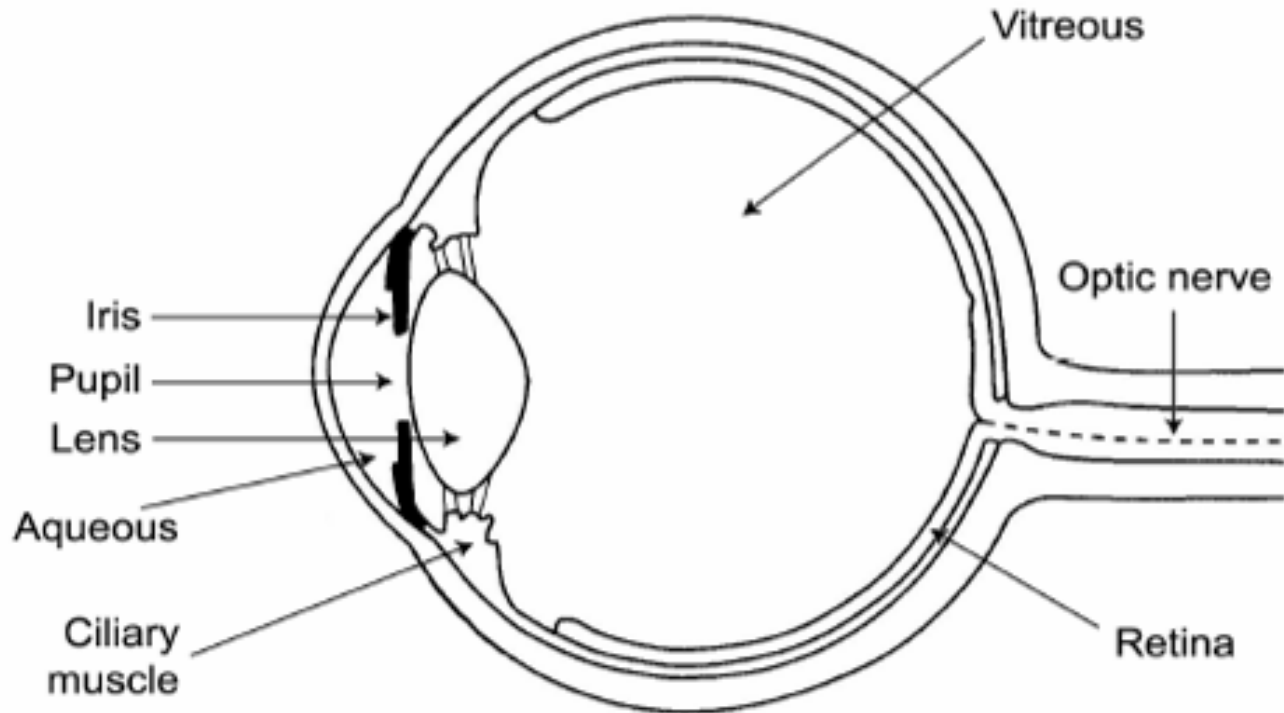
Advise your clients to:

- stop smoking
- protect their eyes from injury
- protect their eyes from ultra violet light
by:
 - wearing a hat
 - wearing appropriate sunglasses
- maintain good general health

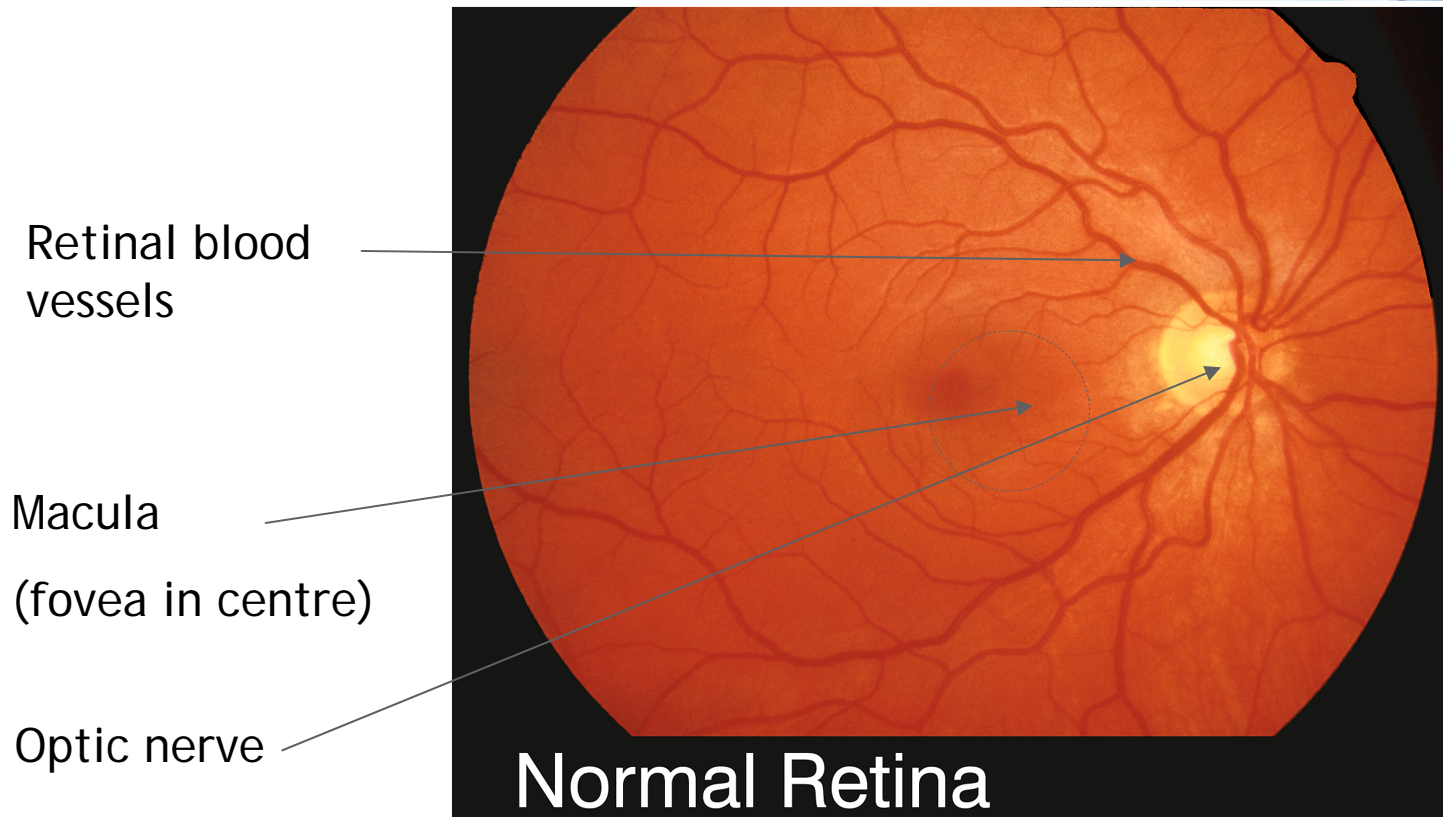
External anatomy of the eye



Internal anatomy of the eye



The retina



Common eye conditions - prevalence

80 per cent of vision impairment and blindness in the population over the age of 40 is caused by five conditions (listed alphabetically):

- Age-related Macular Degeneration (AMD) - 10 per cent
- Cataract - 14 per cent
- Diabetic retinopathy - 2 per cent
- Glaucoma - 3 per cent
- Under-corrected or uncorrected refractive error - 62 per cent

What is age-related macular degeneration (AMD)?

- A chronic degenerative condition that affects the central vision.
- progression of the condition is likely
- ten per cent of people with macular degeneration have the “wet form” which may respond to treatment
- the majority of people have the “dry form”
- two out of three people will be affected by AMD in their lifetime.

Prevalence and risk factors of AMD

- Ageing is the greatest risk factor with prevalence trebling with each decade over 40 years
- AMD is present in 13 per cent of people between the ages of 70-75 and is the leading cause of vision impairment in Australia
- Smoking increases the risk of developing AMD
- Family history is also a risk factor -
genes have been identified and linked with AMD

Age-related Macular Degeneration (AMD)



Age Related Macular Degeneration

Functional implications of AMD

- Difficulty distinguishing people's faces
- Difficulty with close work
- Perceiving straight lines as distorted or curved
- Unable to differentiate between the footpath and road
- Difficulty identifying the edge of steps if there is no colour contrast
- Unable to determine traffic light changes
- Difficulty reading, with blurred words and letters running together

Treatment of AMD

- Treatment options are improving with new technology
- The wet form can be treated with intravitreal injections that aim to prevent further vision loss
- Lost vision cannot be recovered - early detection to identify those who can receive treatment is the key

Prevention of AMD

- Early detection of AMD is crucial:
 - In the wet form of the disease, vision loss may be arrested with early treatment by an ophthalmologist
 - Regular eye examinations are the key to early detection of disease before vision loss occurs
 - If there are any changes in the quality of vision, refer to GP to arrange an appropriate referral to an eye health professional
 - Advise your clients to stop smoking

What is a cataract?

- A cataract is the clouding of the lens inside the eye. With a cataract, light is scattered as it enters the eye, causing blurred vision

Prevalence and risk factors of cataract

- 31 per cent of the population over the age of 55 has a cataract
- Long term use of corticosteroids can increase risk of cataracts
- Exposure to UV light can also increase the risk
- Ageing, smoking and having diabetes can increase the risk of developing cataract.

Cataract



Functional implications of cataract

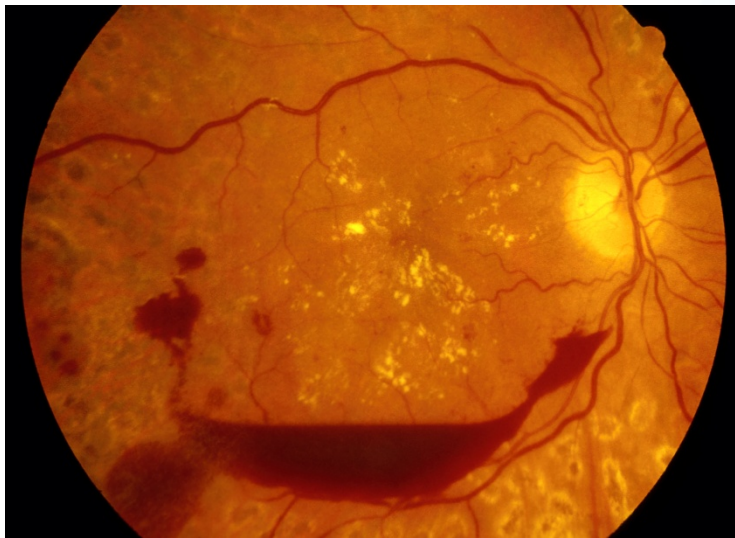
- Blurred vision
- Reduced contrast
- Having difficulty judging depth
- Seeing a halo or double vision around lights at night
- Seeing images as if through a veil/smoke
- Being particularly sensitive to glare and light
- Having dulled colour vision.

Treatment of cataract

- Updating glasses can help with early cataract
- Surgery: 180,000 cataract operations are done in Australia annually:
 - usually in and out of hospital on same day
 - no general anaesthetic is required (in most cases)
 - the cloudy lens inside the eye is removed, except for the back capsule
 - an intraocular lens implant (IOL), a new lens is inserted into the eye

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



Prevalence and risk factors of diabetic retinopathy

- It is estimated that three per cent of the population aged over 55 years have diabetic retinopathy
- 22 per cent 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
- People who have had diabetes for many years, have diabetic kidney disease or have Type 1 diabetes have a greater risk of developing diabetic retinopathy
- Diabetic retinopathy is the primary vision threatening condition for Aboriginal and Torres Strait Islander people

Diabetic retinopathy



Diabetic Eye Disease

Functional implications of diabetic retinopathy

- 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 per cent of severe vision loss can be prevented with early detection and timely laser treatment
- Good control of:
 - blood sugar levels
 - blood pressure
 - cholesterol

can help reduce the severity of eye disease

What is glaucoma?

- It is a disease that affects the optic nerve at the back of the eye
- 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 three per cent of the Australian population over 55 years are affected
- Glaucoma has a genetic link and can occur in families. People with a first degree blood relative with glaucoma are eight times more likely to develop the disease than the general population and should regularly visit their eye health professional

Risk factors for glaucoma

- Extreme refractive error
- Diabetes
- Migraine cataracts
- Previous eye injuries
- Sleep apnoea
- Gender, males higher risk
- Corticosteroids can increase the risk of developing glaucoma

Glaucoma



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

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 patients indicate poor adherence to drop therapy

Prevention of glaucoma

- Regular eye examinations to ensure early detection and treatment are the only way to control glaucoma and prevent vision loss
- 50 per cent of people with glaucoma are unaware that they have it
- People with a family history of glaucoma are four times more likely to be at risk and should get tested

What is refractive error?

- Refractive error is a focusing disorder of the eye
- Most common cause of vision impairment in Australia
- Over the age of 40 years, 22 per cent of the population has refractive error
- It is correctable by wearing glasses or contact lenses or refractive laser surgery (selected cases)

Prevalence and risk factors of refractive error

- All age groups can be affected by refractive error
- People over the age of 40 should have regular eye tests to eliminate refractive error as a cause of any vision impairment
- Family history of refractive error is a risk factor

Refractive error



Functional implications of refractive error

Functional implications depend on the type of severity of refractive error:

- long-sightedness (hyperopia)
 - difficulty seeing near objects
- short-sightedness (myopia)
 - difficulty seeing things in the distance
- astigmatism
 - blurred vision
- presbyopia (age focus difficulty)
 - difficulty seeing near objects occurs from 40 and onwards

Treatment of refractive error

- Refractive error is often treatable with:
 - glasses
 - contact lens
 - laser eye surgery
- Low vision aids assist people when other treatments can no longer improve vision
 - magnifiers
 - lighting
 - adaptive technology

Ready-made spectacles

Wearing ready-made spectacles can be:

- convenient
- accessible (“I lost my glasses”)

But there can be downsides:

- headaches, asthenopia (eye strain) can occur (they won't damage your eyes)
- wearing them may delay people from getting an eye examination

What you can do as a pharmacist

- Be prepared to discuss eye health with people purchasing ready-made spectacles, especially for the first time
- Ask them
 - when was the last time the patient had an eye test?
 - do they have any symptoms, have they noticed any sudden changes in vision?
 - are they aware of their local eye care practitioners?
- In some states, ready-mades must be sold with a sticker reminding people of the importance of regular eye health check-ups

Who's who in the eye care sector

- The following slides provide a brief introduction to who's who in the eye care sector, the services they offer and how to access them
- More information is also available on the Vision Initiative website

www.visioninitiative.org.au

Vision 2020 Australia

- National peak body for the vision care and eye health sector
- Represents close to 60 members and associates
- Provides a platform for collaboration
- Part of VISION 2020: The Right to Sight
- www.vision2020australia.org.au

The Vision Initiative

- Program aimed at raising awareness of eye health and vision care to the general community and health care professionals
- Funded by the Victorian Department of Health
- Victoria's public health response to the *National Framework for Action to Promote Eye Health and Prevent Avoidable Blindness and Vision Loss*

Ophthalmologist

- Ophthalmologists are specialist eye health providers
- Qualified medical doctors
- 5 year postgraduate course
- Surgical and medical treatment of eye disease
- Laser refractive surgery
- Referral from a GP, medical specialist or optometrist is required in order to obtain the Medicare rebate
- Waiting time for appointments can vary according to the condition (if urgent, a GP, optometrist or specialty ophthalmologist can bring this forward)

Optometrist

- An optometrist is a primary eye care provider
- University qualification
- Medicare provides a full rebate on most optometry consultations
- Patients do not need a referral to see an optometrist
- Little or no waiting period for appointments
- Will fast-track referrals to ophthalmologists if necessary
- More than one third are therapeutically endorsed in Victoria
- To locate your nearest optometrist, please visit www.optometrists.asn.au

How optometry prescribing works

- Endorsement is by Optometrist Registration Board (optometry is part of new national registration scheme, July 2010)
- Mandatory part of optometry degree in Victoria since 2002 (additional 1 year training). Now mandatory in NSW and Qld degrees
- Graduate Certificate in Ocular Therapeutics allows previous graduates to become endorsed
- Many optometrists endorsed to prescribe about topical eye medicines
- Glaucoma patients managed through shared care with ophthalmologists.

What can optometrists prescribe in Victoria?

ANTI-INFECTIVES

Antibiotics

chloramphenicol
gentamicin
tobraycin
tetracycline
ciprofloxacin
ofloxacin
framycetin
sulfacetamide

Antivirals

aciclovir

STEROIDS & NSAIDS

hydrocortisone
fluorometholone
prednisolone
dexamathasone

NSAIDS

flurbiprofen
ketorolac
diclofenac

GLAUCOMA

betaxolol
timolol
latanoprost
travoprost
bimatoprost
dorzolamide
brimonidine
apraclonidine
pilocarpine
brinzolamide

ANTI-ALLERGY

Iodoxamide
sodium cromoglycate
ketotifen
olopatadine
levocabastine

CYCLOPLEGICS

cyclopentolate
atropine
homatropine
phenylephrine

LOCAL ANAESTHETICS

amethocaine
lignocaine
oxybuprocaine
proxymetacaine

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

- 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?
- Is the patient in severe pain?
- Are the symptoms accompanied by other suspicious symptoms (e.g. slurred speech, severe headache or pain, loss of physical coordination, or mental confusion?)

Attend emergency department TODAY if new or sudden symptoms:

- Vision loss in one or both eyes
- 'Darkening' of vision, sometimes described as dense shadow or curtain falling over vision (could be retinal detachment)
- Sudden double vision (diplopia), especially with any neurological symptoms, no explanation or previous history
- Severe eye injuries/trauma/object in eye
- Severe eye pain
- Severe swelling around eye(s)
- Visual symptoms accompanied by severe headache/slurred or confused speech and/or mental confusion
- If a known serious eye condition has suddenly worsened

Make an appointment TODAY with an optometrist or GP

If you have new eye symptoms (less than 2 days of symptoms) such as:

- blurred vision
- red eyes - particularly for contact lens wearers
- a unilateral red eye
- a foreign body in the eye

An appointment is recommended within 1-2 days for:

Symptoms that have persisted for more than two days.

Symptoms may be:

- mild blurring
- mild red eye(s)
- floaters or flashing lights

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: now 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

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.

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
Herpes zoster ophthalmicus	'Red eye'	N	3 days	Mild permanent vision loss, severe pain, delay in antiviral treatment

When should I refer red eyes?

The referral triggers:

- red eye accompanied by pain, photophobia or blurred vision
- beware the unilateral red eye: should be viewed with greater suspicion than bilateral red eyes
- if the red eye is a recurrence of a known recent condition
- if the patient's symptoms worsen over next 24 hours

If in doubt, always refer to optometrist or medical practitioner

Always suggest the patient they should self-review make an immediate appointment with their optometrist or doctor if the condition worsens or fails to improve within the next 24 hours

And finally ...

Thank you!

For any further queries please contact

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A partnership promoting eye health and vision care