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Your Vision, Our Mission

Screening for Vision

The Ageing Eye

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Visual Impairment & Blindness

- Prevalence increases exponentially with advancing age
- One of the most common disabilities
 - Eye disease ranks 3rd after arthritis and heart disease as the most common cause of functional impairment in elderly population
- Most feared

Visual Impairment & Blindness in the Elderly

- Negative impact on quality of life
- A/w increased
 - Accidents
 - Falls, injuries, hip fractures
 - Road traffic accidents
 - Mortality (3—4X higher; life expectancy reduced by 4 years)
 - Depression
- A/w decreased
 - Productivity
 - Functional independence

Emerging Challenge of Age-related Eye Diseases

- Increase in
 - Life expectancy
 - Proportion of elderly in population
- Corresponding increase in age-related eye diseases → major public health problem

3 QUO VADIS

TEXT ADJUNCT ASSOC PROF AU EONG KAH GUAN

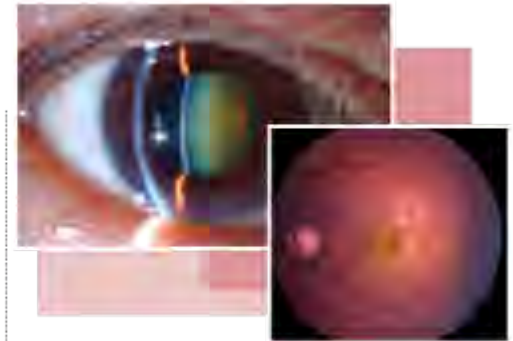
We are currently on the cusp of an enormous challenge and a great opportunity as well. Between 2000 and

2030, as the baby boomer generation in Singapore ages, the proportion of persons aged 65 years and older will almost triple from seven per cent to make up 19 per cent of the total population. As the prevalence of age-related eye diseases (AREDs) such as cataract, glaucoma and age-related macular degeneration increases exponentially with age, this translates into a huge increase in the number of people who will require medical care for these conditions.

Data from the Ministry of Health disclosed that ophthalmologists saw 318,275 subsidised outpatient attendances in government restructured hospitals in 2006, the highest volume of attendances among all outpatient specialties. At the Singapore National Eye Centre, patients aged 65 years or older made up 49 per cent of all attendances. As more Singaporeans live into their 60s and beyond, the number of people with AREDs will become a major public health challenge, particularly with blinding conditions such as age-related macular degeneration that are difficult to treat.

Beyond the number of patients with AREDs that require regular monitoring and treatment, there are members of the public who underutilise the eye care services. It has been shown that regular eye examinations over a five-year period are associated with a lower likelihood of developing new limitations in activities of daily living. Hence, our health care system faces critical challenges in providing more regular examinations for many more people in the near future. It is likely that an eye care system comprising mainly family physicians and ophthalmologists will be severely stretched in the near future if nothing is done in anticipation.

Thankfully, the Optometrists and Opticians Act 2007, which regulates the practice of optometry and opticianry,



An enormous challenge and a great opportunity

came into force in 2008. One of its expected effects is the increased role that optometrists will play in primary care settings at the community level.

Unknown to many, optometrists are trained to use ophthalmic equipment to examine a patient's eye and formulate a diagnosis for a visual complaint. As a result, their training in this area has been largely underutilised by the public. Therefore, a solution to our future challenges lies in having optometrists and family physicians in the community manage the less serious eye problems. In this way, they help to alleviate the burden of our ophthalmologists in managing the future patient load.

Another critical role that family physicians play in reducing visual disability is by managing systemic diseases with ocular consequences. Together with optometrists and opticians, they can ensure that patients receive timely specialty eye care when required. At the same time, they can also educate patients with regards to various common eye conditions. This, in turn, will improve

awareness among the public on when to seek professional help.

The pressures and challenges we face can provide an impetus to develop and implement innovative means to increase productivity. By applying innovations to increase productivity, we will be able to deliver care that is of equal or better quality at lower costs. Rapid advances in research over the coming decades will also improve treatment efficacy and outcomes.

I urge all physicians, optometrists and opticians to take up and overcome the emerging challenge of AREDs and to take this opportunity to carve for themselves new and exciting roles that are even more engaging and fulfilling. With the aid and support of primary eye care professionals, ophthalmologists will be able to provide quality eye care to those requiring it the most, without having to compromise due to excessive patient load. This, together with advances in medical care and technology, will ensure that we overcome the enormous challenge of AREDs brought about by our rapidly aging population.

No Room for Complacency

Editorial



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Prevention of Blindness in Singapore: No Room for Complacency

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It is now a well-known fact that Singapore's population is greying dramatically due to the ageing of the "baby boomers" – defined as those born between 1947 and 1964. In 2005, 1 in 12 Singapore residents was 65 years or older. By 2030, this is expected to escalate to 1 in 5.¹ The healthcare needs of our rapidly ageing population will therefore increase considerably. As in some other developed countries, this is expected to disproportionately affect ophthalmology.² Four major age-related eye diseases (AREDs) – cataract, glaucoma, age-related macular degeneration (AMD) and diabetic retinopathy – are expected to pose a growing challenge for healthcare professionals in the coming decades.

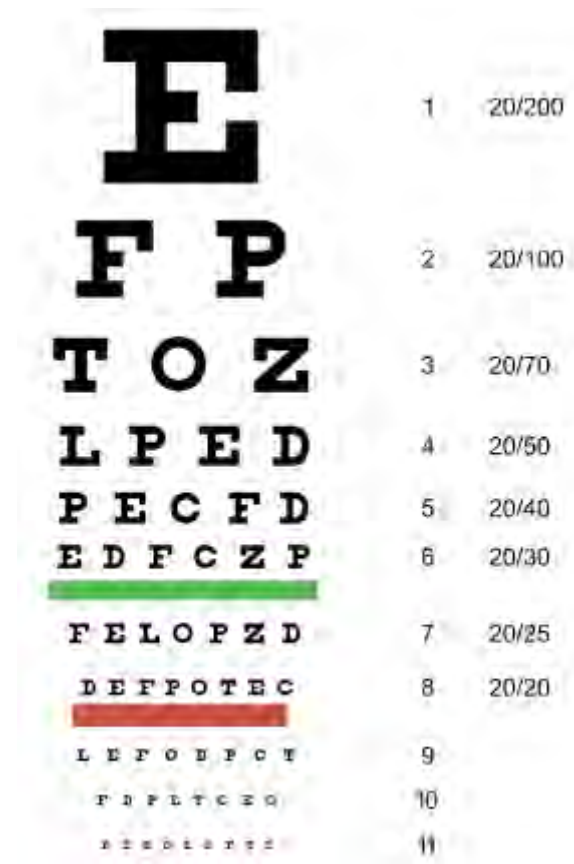
Data just released by the Singapore Ministry of Health show that ophthalmology outpatient attendances by government-subsidised patients rose by 39.1% from 2002

blindness is not a priority health problem in Singapore."⁵ Since Singapore's independence 42 years ago, improvement in socioeconomic circumstances and advances in ophthalmic care have certainly reduced or even eliminated some previously important causes of blindness. However, we must not lose sight of emerging "new" sight-threatening conditions.

Data on visual impairment and blindness in Singapore are rather limited. Using data from the Singapore Blind Registry maintained by the Singapore Association for the Visually Handicapped (formerly known as the Singapore Association for the Blind), it was initially estimated that the prevalence of blindness in Singapore appeared to be one of the lowest in the world, at 55 per 100,000 population or 0.05%.^{5,6} This is likely to be a gross underestimation of the true prevalence rate as the registry relies mainly on the

Visual Acuity

- Clinical measure of the eye's ability to distinguish details of the smallest identifiable letter or symbol
- Expressed as a fraction
- Eg, 6/60 describes the ability to see objects at 6 metres that the normal eye sees at 60 metres



WHO Definitions of Visual Impairment and Blindness

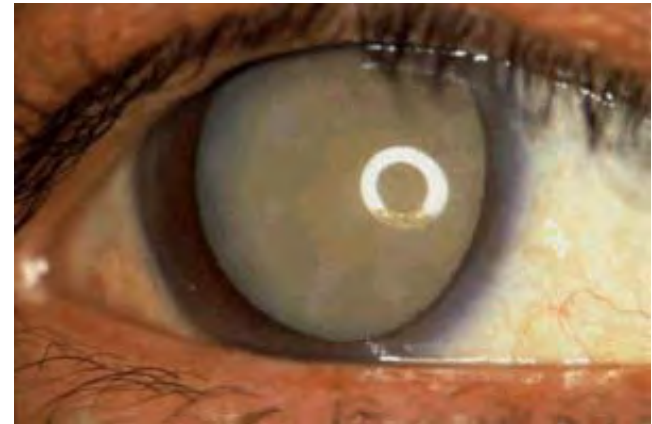
- Visual impairment – visual acuity worse than 6/18 but equal or better than 6/120 in the better eye
- Blindness – visual acuity worse than 6/120 in the better eye

Prevalence of Visual Impairment and Blindness

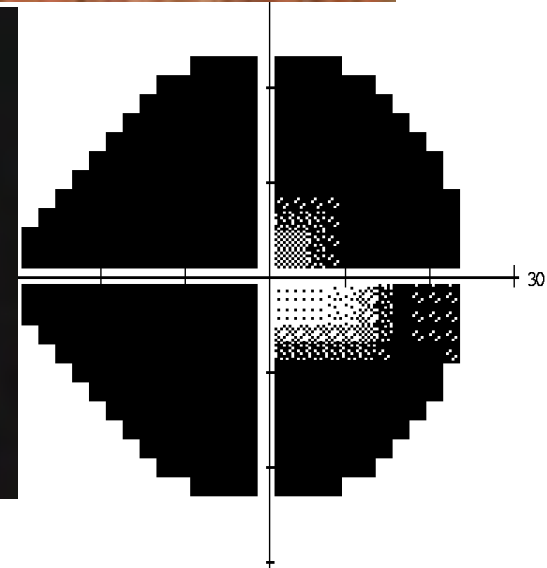
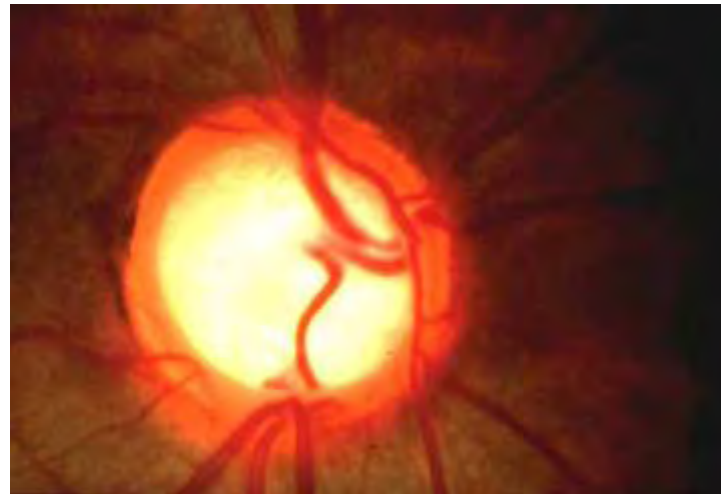
- Among Singaporean adults of Chinese origin aged 40-79 year old
 - 1.1% visually impaired in both eyes
 - 0.5% blind in both eyes

Common Sight-threatening Age-related Eye Diseases

- Cataract

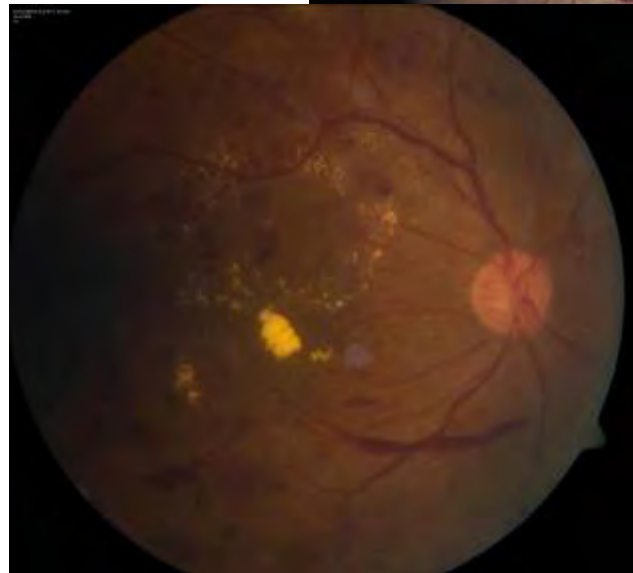


- Glaucoma



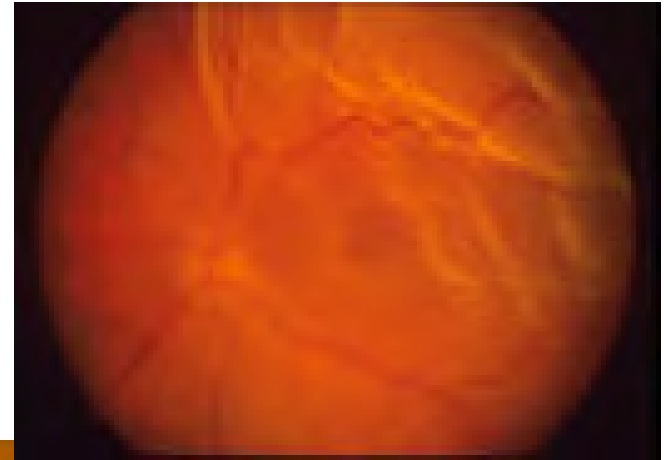
Common Sight-threatening Age-related Eye Diseases

- Age-related macular degeneration
- Diabetic retinopathy



Other Sight-threatening Eye Diseases in Older Persons

- Retinal detachment

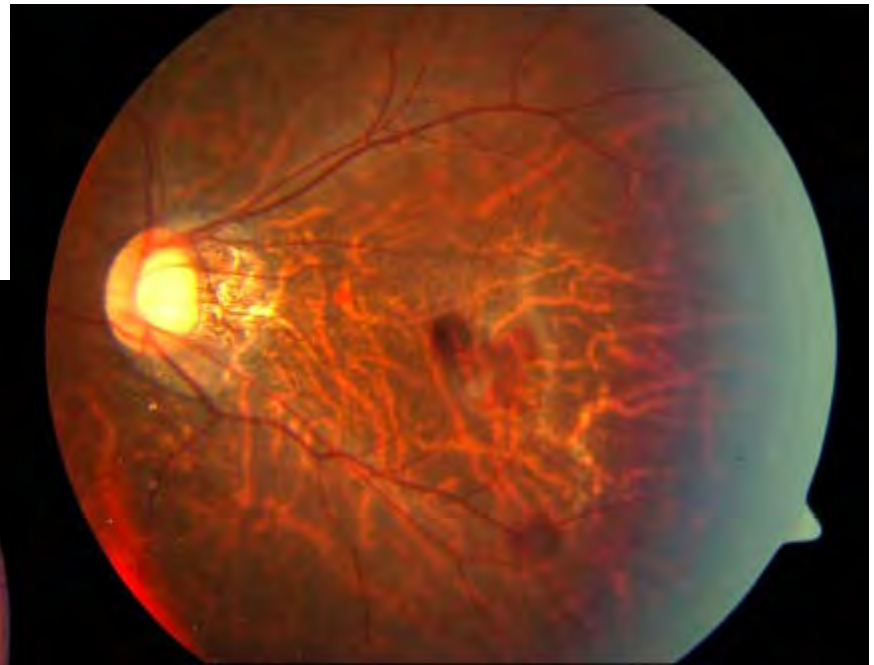
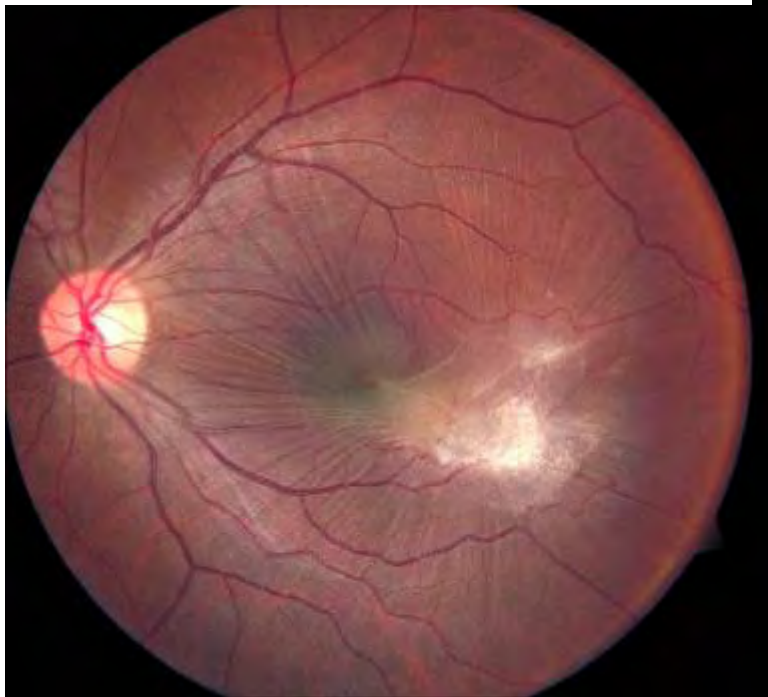


- Macular hole



Other Sight-threatening Eye Diseases in Older Persons

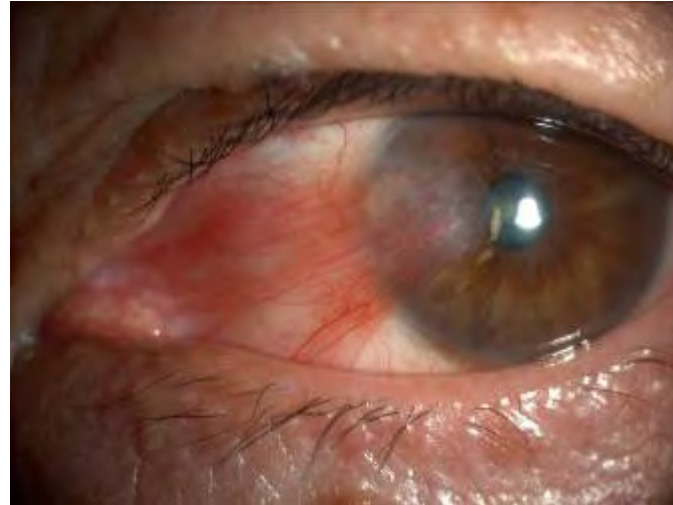
- Myopic macular degeneration



Macular pucker

Other Sight-threatening Eye Diseases in Older Persons

- Advanced pterygium
- Retinal vein occlusion



Primary Prevention of Age-related Eye Diseases

- Primary prevention – preventing disease from occurring in the first place
- Currently no primary preventive approach of proven effectiveness for many age-related eye diseases
- Reduce risk factors
 - Sunglasses – cataract
 - Diabetes control – diabetic retinopathy
 - Smoking – cataract & AMD



Secondary Prevention of Age-related Eye Diseases

- Secondary prevention – prevent disease from getting worse after onset of disease
- More valuable approach than primary prevention
- Early detection and timely intervention
 - Decreases visual impairment and blindness
 - Improves quality of life
 - Decreases associated morbidity and mortality

Visual Screening

- VA chart (eg Snellen chart) – usual method for screening for visual impairment in primary eye settings and in eye clinics
- The best VA should be obtained in each eye with the person's habitual optical correction (glasses or contact lenses) and/or pinhole if necessary

Visual Screening

- Screening questions are not as accurate as VA testing for identifying visual impairment
- Evidence is limited on the use of other vision tests including Amsler grid and funduscopy in screening in the primary care setting to detect visual impairment due to AMD or cataract

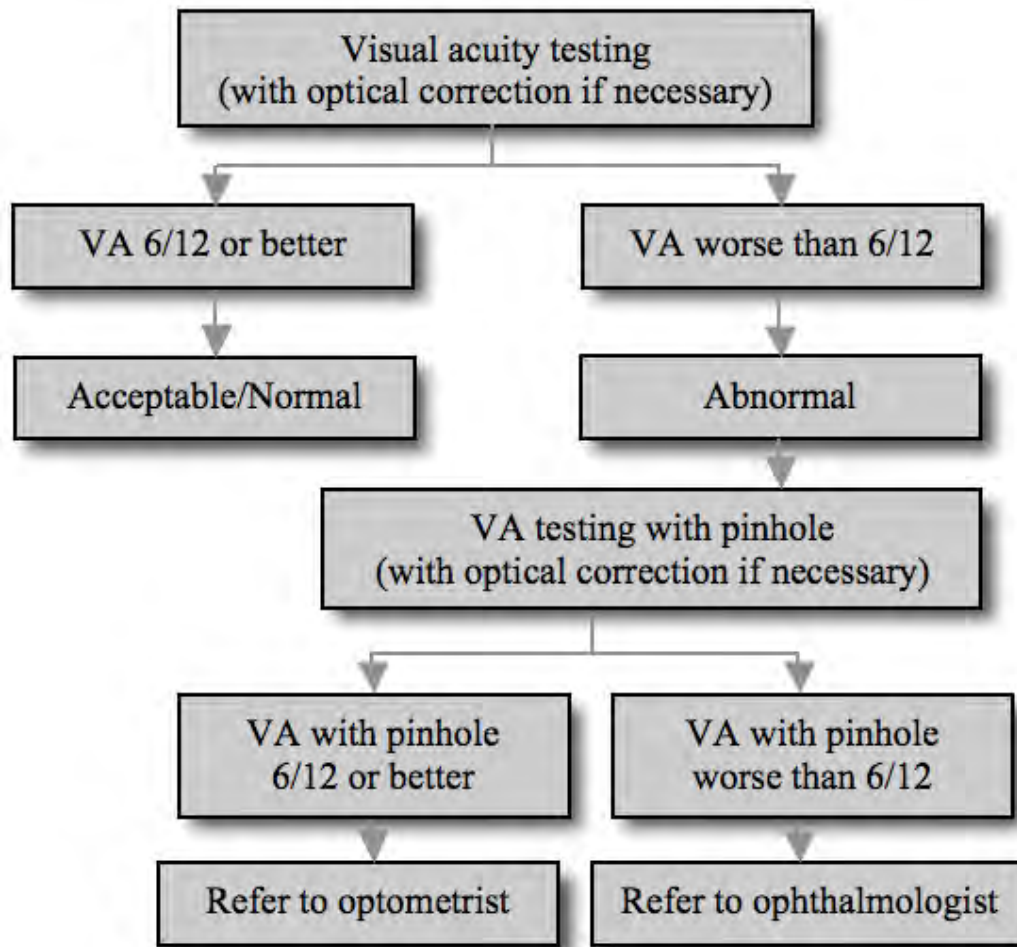
US Preventive Services Task Force

- Concludes that there is insufficient evidence to indicate whether screening older adults for visual impairment improves functional outcomes
- Balance of benefits and harm cannot be determined

Visual Screening

- On the basis that visual impairment is common in older adults and that treatment is available for the majority of causes of impaired vision, it is beneficial for community-dwelling adults to be screened for visual impairment

Suggested Algorithm for Vision Screening



Post-Screening Follow-up

- Older adults with VA 6/12 or better should be screened every 1-2 years
- Individuals with VA worse than 6/12 on initial screening should have VA test repeated with pinhole

Post-Screening Follow-up

- Individuals with pinhole VA 6/12 or better are likely to have a refractive error and should be referred to an optometrist/optical outlet
- Individuals with pinhole VA worse than 6/12 may have eye conditions other than refractive error and should be referred to an ophthalmologist

Summary

- Visual screening in older adults can reduce blindness and its associated negative impacts
 - Decreases mortality
 - Decreases morbidity
 - E.g. depression, increased accidents / injuries / falls / hip fractures
 - Increases quality of life

Thank You

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