

***DON'T
TURN
A
BLIND
EYE***



An Eye on Today's Growing Problems

Asia is greying, fast. The percentage of the population above the age of 65 is expected to double in just two or three decades¹, raising the possibility that Asia will 'be old before it is rich'.

And as age slowly but surely steals away the senses, the loss of vision is perhaps the most devastating, as it increases the risk of falls, depression and even premature death.

But it's not just the elderly that need to worry about vision. In the young, myopia can lead to serious complications such as retinal detachment, glaucoma and macular degeneration.

To stay ahead of these evolving public health challenges, we urgently need to invest in educational and research programmes that are 'future ready', for the sake of both young and old.



¹ Live Long and Prosper: Aging in East Asia and Pacific, World Bank 2016.

Understanding the Big Picture

Singapore's population is uniquely vulnerable to eye diseases and disorders.

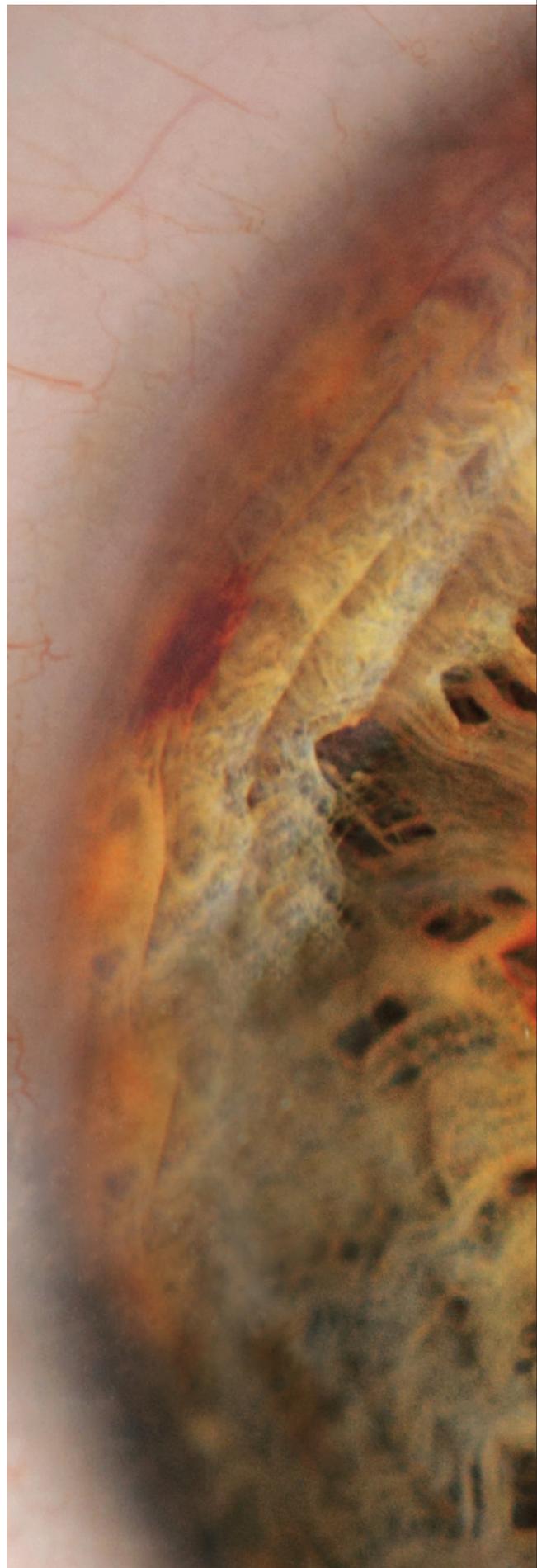
One in four six-year-olds is myopic, a figure that rises to over 80% by the time they turn 18. Overall, myopia is estimated to cost Singapore approximately S\$959 million each year; no wonder then that it is considered to be the 'myopia capital of the world'!

In working age adults, diabetic retinopathy is the leading cause of vision loss. According to a study led by researchers at SERI, diabetic retinopathy has to date claimed the sight of 600 Singaporeans², the use of an eye in 8,000 more, and caused visual impairment in a further 17,500.

The problem only worsens over the years, with the risk of blindness increasing fifteen-fold for Singaporeans aged 50 to 80 and above.

² Huang OS, Tay WT, Ong PG, Sabanayagam C, Cheng C-Y, Tan GS, Cheung GCM, Lamoureux EL, Wong TY. Prevalence and determinants of undiagnosed diabetic retinopathy and vision-threatening retinopathy in a multiethnic Asian cohort: the Singapore Epidemiology of Eye Diseases (SEED) study. *Br J Ophthalmol*. 2015 May; e-pub before print.

³ Rosman M, Wong TY, Tay WT, Tong L, Saw SM. Prevalence and risk factors of undercorrected refractive errors among Singaporean Malay adults: the Singapore Malay Eye Study. *Invest Ophthalmol Vis Sci* 2009; 50:3621-8.





Top 4 Causes of Blindness in Singapore

MYOPIA

Refractive errors, especially short-sightedness, remain uncorrected in about 5% of the population. According to the 2006 Singapore Malay Eye Study³, undercorrected refractive errors were responsible for causing blindness in almost 20% of people who lost their vision in both eyes.

GLAUCOMA

Glaucoma is a condition where the high fluid pressure within the eye damages the delicate fibres of the optic nerve. It is usually asymptomatic (or silent) in the early stages.

This damage is irreversible and can lead to blindness in advanced cases. Glaucoma accounts for 40% of blindness in Singapore.

Those at risk should be screened for the disease.

MACULAR DEGENERATION

Age-related macular degeneration causes the macula, or the centre of the retina, to deteriorate. It is estimated that one in four people aged 60 and above in Singapore suffers from the condition.

DIABETIC RETINOPATHY

Also known as diabetic eye disease, diabetic retinopathy is a common complication which affects the small blood vessels in the retina. About 60% of patients with diabetes for 15 years or more will have some blood vessel damage in their eyes. Because early stage diabetic retinopathy is asymptomatic, screening is important.

“The only thing worse than
being blind is having sight,
but no vision.”

HELEN KELLER

Numbers at a Glance

23

international meetings organised

130

local & 100 overseas fellows
trained in SNEC

65

ophthalmologists in practice

1,000

members of staff

10

subspecialties to provide
a comprehensive range of
specialised eye services

630

nurses, allied health, ancillary
and administrative staff serving the
eye care needs of singapore

300,000

patients visits annually

A 20/20 Vision for the Future of Eye Care

Established in 1990, the Singapore National Eye Centre (SNEC) is a national and international tertiary referral centre dedicated to providing the best possible eye care for all Singaporeans.

SNEC is led by home-grown Singaporean talents and key thought leaders who put a firm focus on patients, education and translational research.

At SNEC, we are enthusiastic about giving back to the community through free eye screenings at our Mobile Eye Clinic and during National Eye Care Day. Our outreach efforts include giving public talks, exhibitions and humanitarian efforts to countries such as Myanmar.

“SNEC will be a national centre with highest quality clinical care, most innovative teaching methods and cutting edge research.”

PROFESSOR ARTHUR LIM
FOUNDING MEDICAL DIRECTOR, SNEC

8,000

laser procedures performed annually

30,000

people screened in our annual national eye care day since 2000

27,000

surgeries performed annually

30,000

students reached through eye care talks conducted in 30 schools since 2012

000

2,652

scientific papers published

1,3
studies on
of eye

SINGAPORE EYE RESEARCH INSTITUTE

Translational Research, Tangible Outcomes

The Singapore Eye Research Institute (SERI) has grown from strength to strength since its inception in 1997 as the research arm of SNEC and the first research clinic embedded in a hospital.

Our work at SERI contributes in significant ways to the field of ophthalmology through articles published in top international journals such as Nature Genetics, New England Journal of Medicine, JAMA and The Lancet.

In addition to generating an impressive publication track record, the SERI Technology Development and Commercialisation Office is proactively pursuing the translation of SERI's research into tangible products, encompassing therapeutics, devices, diagnostics and software, for the benefit of our patients.

Perhaps most importantly, being at the heart of the region's medical and research ecosystem, SERI is perfectly positioned to further explore the Asian phenotype, and research diseases that are clinically relevant to Asia.

“At SERI, we are developing therapeutics and diagnostics that cater especially to the needs of the Asian patient.”

PROFESSOR WONG TIEN YIN
CHAIRMAN, SERI
MEDICAL DIRECTOR, SNEC

Focusing on the Figures

17

Research Groups

117

Patents Filed

89

all aspects research

\$221

million in grant funding secured

383

national and international awards

217

Researchers, Doctors, Clinicians, Clinical Scientists and Administrators

180

Masters, PhD, Post-doctoral Students

47

Principal Investigators

24

PhD Scientists

18

Clinician Scientists

15

MD-PhDs

Best in Asia,
Second Worldwide

Singapore has been ranked second globally and first in Asia Pacific for both the quantity and quality of their eye research. An independent study published in PeerJ puts Singapore ahead of the US, UK and China, highlighting Singapore's leading role in global ophthalmology research.

“Vision is perhaps our greatest strength. It has kept us alive to the power and continuity of thought through the centuries, it makes us peer into the future, and it lends shape to the unknown.”

LI KA-SHING



THE VISIONSAVE CAMPAIGN

Investing in Singapore's Sight

The VisionSave Campaign, a joint effort between the Singapore National Eye Centre (SNEC) and the Singapore Eye Research Institute (SERI), seeks to bring the importance of eye health into the spotlight.

Through this initiative, we are engaging the broader community, including our private and commercial partners, and empowering our patients who have benefited and are keen to give back.

With the support of our partners and donors, we are developing complex, cutting-edge and novel therapies and surgical techniques for sight-threatening eye diseases.



Disruptive Innovation in Eye Research

Our world-leading research makes it possible to help patients who cannot be treated with existing interventions. In 2004, SERI led a multi-disciplinary team to perform the first “tooth in eye” surgery in Southeast Asia to restore sight to a patient with end-stage corneal disease.

Innovations such as the Singapore Integrated Diabetic Retinopathy Programme (SIDRP) have helped make screening more accurate and cost-effective for Singaporeans. On the global stage, a swift response from SNEC clinicians helped to avert an outbreak of blindness caused by the fungal contamination of contact lens cleaning solution.





FUTURE-FOCUSED EDUCATION

Nurturing the Next Generation

In the pursuit of excellence, we have not lost sight of preparing the next generation to surpass our achievements. Right from their induction into the SNEC/SERI community, medical students and ophthalmology residents receive rigorous training in the essentials of excellent care.

This culture of excellence extends to our clinical and research fellows, practicing physicians as well as other related healthcare professionals. Apart from academic courses and a year-round calendar of conferences and workshops, our staff are kept up to date with the latest research and best practices through tailor-made training programmes.



INFRASTRUCTURE & CAPACITY BUILDING

Connecting Hardware with Software

In the face of Singapore's rapidly aging population, the need for innovative eye care is more urgent than ever before. Not only do we hope to increase our capacity to cope with the growing demand, we also aspire to develop high quality infrastructure for a holistic eye care experience.

To achieve our goals, we have identified four key priorities:

- **the elderly**
- **our youngest patients**
- **research & innovation to augment care delivery**
- **competency building through education & professional development.**

Impacting Singapore and Beyond

Through events such as our annual National Eye Care Day and Mobile Eye Clinic, we actively create awareness about vision loss and bring screening to the patients who need it the most. Our patient support groups facilitate communication between patients and are a lifeline of shared experiences and self-help.

Beyond Singapore's shores, we have a presence in countries like Myanmar, India, Tibet, Indonesia and Vietnam, where we work with various NGOs to provide urgently needed eye care services.



Bringing Treatment Within Reach

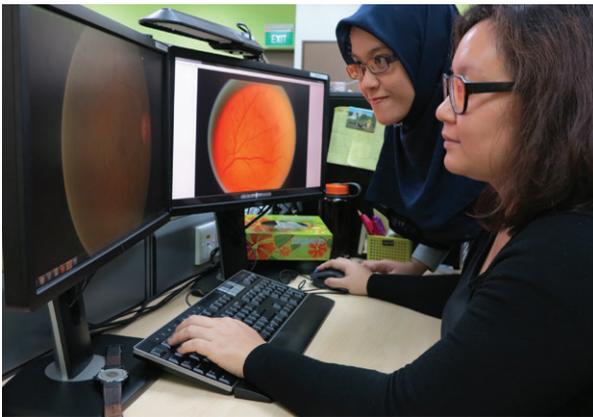
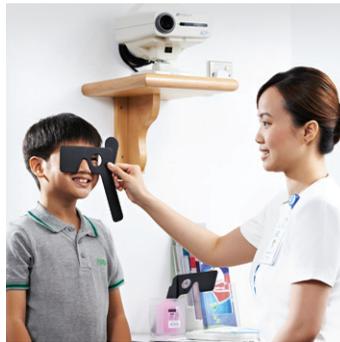
Highly innovative therapies provide a way out for many patients seeking to save their sight. Unfortunately, these novel and complex interventions are often very costly, and are frequently not covered by government subsidies.

In some cases, means testing may exclude certain patients from receiving help. This is particularly problematic for the elderly—the main patient population with eye problems—as they may be asset rich but cash poor. For some retirees, saving their sight may come at the expense of losing their homes.



“We can only see a short distance ahead, but we can see plenty there that needs to be done.”

ALAN TURING





GIVE THE GIFT OF SIGHT TODAY

A Virtuous Cycle of Talent, Research and Capability

Our goal is to build an **academic medical centre**—a powerful partnership between a hospital, a research institute and a university.

In doing so, we hope to create a **self-sustaining, virtuous cycle** where top clinicians attract patients and build capacity, and great clinical care drives the need for research to improve care. Research achievements will in turn lead to better care and international recognition, attracting top clinicians and research talent.

Help us realise our vision, which is to provide **innovative training** for future generations, develop a diverse talent pool, and strengthen **research and clinical partnerships**.



HOW YOU CAN HELP

Ushering in a New Standard of Eye Care

\$25 million

Building on our track record of research excellence, the **SNEC Centre for Innovation in Eye Care** hopes to be a one-stop Centre for Excellence in eye care, creating new models of care with innovative methods.

Supporting the Next Generation of Eye Care Professionals

\$10 million

The **FuturE-Focused EdUcation for the Next GeneRation of Eye Care ProfessionAls (EURECA)** programme, which focuses on **certification and credentialing courses**, will ensure that Singapore and the region will remain at the forefront of the field of ophthalmology.

\$3 million

Continuing education through **scholarships, bursaries and fellowships** will ensure that Singapore has a steady supply of skilled eye care professionals armed with future-proof skills and capabilities.

Impacting the Whole of Asia

\$5 million

There is emerging evidence of significant differences between how Westerners and Asians respond to treatment for age-related macular degeneration (AMD). Our **programme to fight Asian AMD** will contribute to developing therapies tailored to Singapore and other Asian populations

Making Treatment Accessible

\$3 million

Cutting-edge treatments for complex diseases are available, but not all can afford them. Your **financial assistance** could save the sight of patients suffering from severe, end-stage forms of blindness who have run out of other options.

\$5 million

Singapore has the highest rate of childhood myopia in the world. Greater in-depth research into the complex disease is needed to find the elusive cure and **preserve our children's eyesight**.

Grooming World-class Leadership

\$3 million

Building on SNEC's efforts towards spearheading innovative and world-leading eye care and research, this **professorship in ophthalmology** will help establish a pipeline of thought leaders in the field.

Apart from these initiatives, we would love to hear your ideas and are open to discussion on how you can support our quest to save the sight of Singaporeans.



Give the Gift of Sight

I would like to donate to the following causes:

SNEC Health Endowment Fund (HEF)

Financial assistance for complex, cutting-edge & novel therapies / surgeries for sight-threatening eye diseases

•

Public Education / Community Outreach / Humanitarian Efforts

•

Infrastructure / Capacity Building

•

Future-Focused Education

SNEC Health Research Endowment Fund (HREF)

Research & Innovation

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