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A publication of Singapore National Eye Centre
& Singapore Eye Research Institute

THE MYOPIA CENTRE

SETTING SIGHTS ON BETTER VISION

MYOPIA CENTRE
By Singapore National Eye Centre

ISSUE 1/2019

APEX 30 YEARS 1988 2018 AWARDS FOR PUBLICATION EXCELLENCE

Singapore National Eye Centre
SingHealth

SINGAPORE EYE RESEARCH INSTITUTE

SingHealth DukeNUS ACADEMIC MEDICAL CENTRE
OPHTHALMOLOGY & VISUAL SCIENCES

Editor's Note

Due to the high prevalence of myopia here, Singapore is known as the "Myopia Capital of the World". In this issue's Cover Story (page 6), SINGVISION speaks to Assoc Prof Audrey Chia and Assoc Prof Marcus Ang, Co-Clinical Directors of the newly launched Myopia Centre in Bedok, to learn all about SNEC's efforts in tackling this growing epidemic.

On the same note, SNEC and SERI were the hosts of the joint meeting between World Health Organization (WHO), International Agency for the Prevention of Blindness (IAPB) and Brien Holden Vision Institute (BHVI) on "Developing Myopia Control Strategies" (page 4).

In line with our vision for innovation, a novel eye drop dispenser named OptoAid was born out of a collaborative project with Ngee Ann Polytechnic (page 16). In addition, SNEC has extended its services to people living in the north-east with the opening of a brand new eye clinic at Sengkang General Hospital (page 18).

It's not all doom and gloom when you suffer from an eye condition. Thanks to financial assistance from VisionSave, Steven Seow was spared from losing his eyesight to diabetic retinopathy. Read about his story on page 20.

Upskilling programmes and opportunities have accorded some Allied Ophthalmic Personnel (AOP) bigger roles and responsibilities. In Here's Looking At (page 22), meet Lee Jia Le and Jacqueline Ek, who are among the pioneer batch of SNEC nurses trained to administer eye injections independently.

Going on a vacation soon? Don't let vision problems affect your travels or even cause permanent damage. Check out the tips on page 24, and take care of your eyes while enjoying your well-deserved break!

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It spearheads and coordinates the provision of specialised ophthalmological services, with emphasis on quality education and research.

Contents

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SNEC and SERI host joint meeting on myopia

(From left to right) Dr Andreas Mueller, Advisor, WHO Regional Committee for Western Pacific, Prof Thomas Coffman, Dean, Duke-NUS Medical School, Dr Lam Pin Min, Senior Minister of State in the Ministry of Health and Ministry of Transport, Ms Amanda Davis, Chairperson, IAPB (Western Pacific) and Chief Executive Officer, BHVI Foundation, Prof Wong Tien Yin, Medical Director, SNEC, Prof Aung Tin, Executive Director, SERI

Organised by the World Health Organization (WHO), International Agency for the Prevention of Blindness (IAPB) and Brien Holden Vision Institute (BHVI), the event was held at the Academia on 13 and 14 November 2018.

As myopia rapidly becomes a major public health issue worldwide, it has become a subject of keen interest among eye professionals. Named "Developing Myopia Control Strategies", the joint meeting between the WHO, IAPB and BHVI gathered 40 scientists, researchers, clinical professionals and policymakers from the Western Pacific Region for a pivotal exchange of insights and ideas.

It served as a platform for key opinion leaders to present and discuss the research findings and interventions in their respective countries. Topics including the societal impact of myopia as well as the optical, pharmaceutical and environmental considerations for managing myopia were also reviewed.

MYOPIA CAPITAL

Vision disorders are the fourth leading cause of disease burden in Singapore, with myopia rates among the highest in the world. The figures are expected to rise along with the ageing population.

"The first line of defence against myopia is public awareness and education," says guest of honour Dr Lam Pin Min, Senior Minister of State in the Ministry of Health (MOH) and Ministry of Transport. He also cited MOH's support for international collaborations and clinical research, such as SERI's Atropine Treatment of Myopia (ATOM) trials.

In addition, Prof Wong Tien Yin, Medical Director of SNEC, presented a special lecture titled "Fighting Myopia – The Singapore Experience", where he shared lessons from SNEC and SERI's extensive clinical and research experience.

A panel of ophthalmologists and stakeholders elaborated on the successes and challenges of the fight against myopia in Singapore. Significantly, the eye professionals emphasised the need for different departments and sectors to collectively work towards closing existing gaps in the prevention and treatment of myopia.

At the joint meeting, SNEC also announced its plan to open a first-of-its-kind Myopia Centre [see page 6] this year.

SNEC, SERI and Johnson & Johnson Vision embark on S$36.35m collaboration

The strategic partnership is targeted at developing prevention and treatment solutions of myopia to address the rising burden of condition.

SNEC, SERI and Johnson & Johnson Vision (JJV) have announced a S$36.35 million (US$26.35 million) research collaboration to tackle myopia. Mr Heng Swee Keat, Deputy Prime Minister, Minister for Finance and Chairman of National Research Foundation (NRF), was the guest of honour at the launch event on 12 November 2018.

Worldwide, there has been an unprecedented rise in the prevalence of myopia. Left unchecked, the resulting human and financial toll could skyrocket in the coming decades.

East Asia and Singapore shoulder the greatest impact, with current prevalence rates among young people as high as 80% to 97%. Children who go on to develop high myopia are at a high risk for a lifetime of severe eye disease and permanent vision loss.

(From left to right) Mr Jorge Pinedo, Prof Aung Tin, Prof Wong Tien Yin, Minister Heng Swee Keat, Dr Xiao-Yu Song, Prof Ivy Ng and Dr Paul Stoffels pose at the signing ceremony for the SNEC-SERI-JJV Strategic Partnership on Myopia

LEVERAGING ON DIVERSE STRENGTHS

The research projects will focus on achieving deeper understanding of myopia causes and the underlying mechanisms behind its progression. Other key focus areas include developing predictive tools to identify those who may be susceptible to high myopia, and inventing enhanced products and care models to deliver superior treatment options.

A multidisciplinary approach is needed to stop the myopia epidemic. The collaboration will marry SNEC's excellence in clinical care, SERI's long-standing and strong research capabilities, and JJV's industry expertise and networks.

Furthermore, the partnership will build new capabilities in nurturing R&D talent. Researchers will work on cutting-edge research, knowledge transfer, and the creation of novel co-developed technology. This would strengthen our ecosystem to support global medical devices and pharmaceutical companies from Singapore and beyond.

Notably, this represents JJV's single largest commitment to an externally funded research programme, and the biggest collaborative project for myopia in Asia. Prof Wong Tien Yin, Medical Director of SNEC, believes that this three-year strategic partnership will contribute substantially to reduce the incidence of myopia, allow people with myopia to benefit from treatment early, and catalyse economic value for Singapore.

The Myopia Centre: Setting sights on better vision

Located in Bedok, the SNEC Myopia Centre is a one-stop hub that is aimed at tackling the escalating prevalence of short-sightedness, and enhancing access to comprehensive myopia care services in the community.

Myopia is a lifelong condition that is projected to afflict half of the global population by 2050. Singapore has one of the highest rates of myopia in the world, with the condition affecting 20% of children under the age of 7 and over 80% of young Singaporeans [see page 10].

Our eyesight is a priceless asset that can be taken away by myopia. Established to address the growing epidemic, SNEC's Myopia Centre was launched officially in August 2019.

This holistic one-stop hub is dedicated to the prevention, monitoring and treatment of myopia. It not only allows more specialised management of the eye condition, but also brings greater convenience to patients of all ages.

At its heart, the Centre serves to empower and engage patients with myopia through their journey to achieve improved vision.

SINGVISION speaks to Assoc Prof Audrey Chia and Assoc Prof Marcus Ang, Co-Clinical Directors of the Myopia Centre, on their goals and plans for the facility.

> *"The Myopia Centre will strive to recommend safe, reliable and effective treatment methods that have been proven by scientific studies or have consensus among experts worldwide.*

ALL-ENCOMPASSING, INTEGRATED, SEAMLESS

The Myopia Centre provides a full suite of services, ranging from primary eye care (eye screening and basic evaluation) to tertiary eye care (management of advanced conditions) for people of all age groups.

Designed to support patients every step of the way, the Centre houses optometrists and ophthalmologists who work closely together. They are readily available to answer patients' queries and offer professional advice. Services available include:

CLINICAL CARE

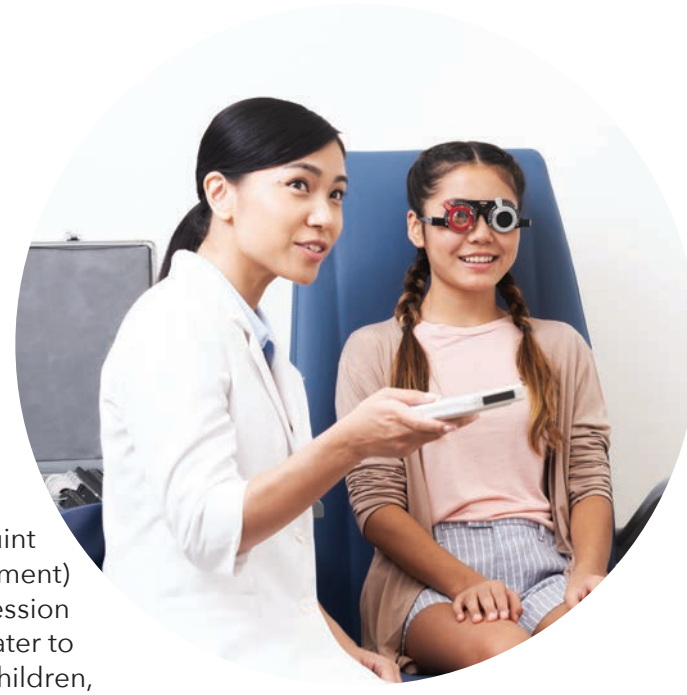
SNEC Myopia Centre will focus on providing evidence-based care. It will strive to recommend safe, reliable and effective treatment methods that have been proven by scientific studies or have consensus among experts worldwide, and supported by international standards such as that from the World Health Organization (WHO).

For adults

- Vision assessment (refraction testing)
- Screening for myopia complications
- In-depth evaluation (slit lamp examination, imaging and detailed scans)
- Specialist consultation (discussion, education, patient counselling)

For children

- Vision assessment (squint test, amblyopia assessment)
- Control myopia progression
- Special features that cater to kids (seating area for children, power points)

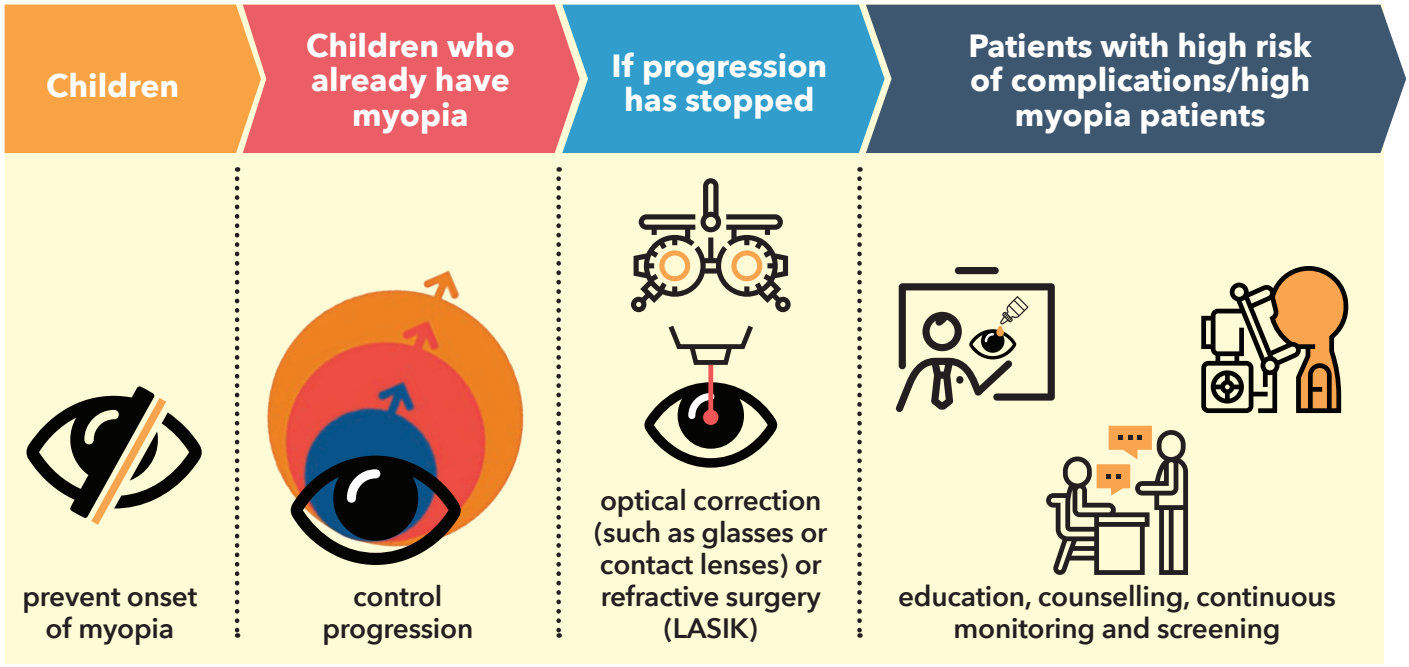


RESEARCH & INNOVATION

When the Centre becomes fully operational, it targets to serve 200-300 patients every week. With a centralised pool of patients, ophthalmologists and researchers will be able to gain deeper understanding of the condition and its complications.

Studies can also be conducted in a more structured fashion, which could lead to innovations that improve the efficacy of myopia management and enhanced patient care.

- Data collection
- Clinical and product trials
- Development of new treatments



EDUCATION

Public awareness

A large population of Singaporeans born in the 1980s are short-sighted, and are now entering the age of risk. Thus, the number of people who will suffer from myopia complications is expected to increase exponentially in the near future.

The higher your myopia, the more susceptible you are to complications. As symptoms of some eye disorders are not obvious, older patients may not recognise the threat to their eyesight. This is where the Centre plays a key role to identify those at risk and provide treatment before they start to lose vision.

- Myopia prevention and control education campaigns
- Enhanced patient counselling
- Informative pamphlets and posters
- Digital solutions (interactive screens, video content)
- Community engagement initiatives
- Event organisation (such as Myopia Awareness Week)

Medical education

An internship programme whereby students will be trained on dispensing skills, glasses and contact lens fitting, and operation of equipment is in the pipeline. The training will be carried out in the Optical Lab – a collaborative effort with Singapore Polytechnic, and the first of its kind for SNEC.

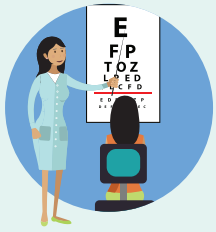
"Older patients may not recognise the threat to their eyesight. This is where the Centre plays a key role to identify those at risk and provide treatment before they start to lose vision.

Tackling myopia in 3 steps

PREVENTION

Small change, big difference

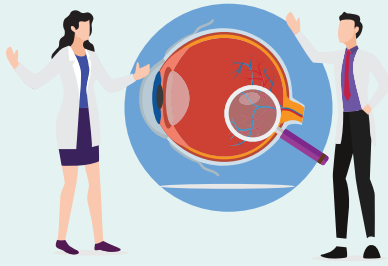
Introduce simple lifestyle modifications to delay the onset of myopia



MANAGEMENT

Detect and intervene early for better outcomes

Control and monitor myopia progression in high-risk children from 6 years old onwards to prevent further complications in adulthood



EDUCATION

Be in the know

Raise public awareness through education campaigns, patient counselling, and digital solutions

Myopia in Singapore

20%
of children have myopia by

7 years old

1 in 2
children develop myopia by

12 years old

75%
of teenagers

have myopia and rely on glasses

Over **80%**
of Singaporeans in their **20s to 40s**

have myopia

Annual direct cost of optical correction for myopia is estimated at

S$1.04 billion

WHAT IS MYOPIA?

A condition whereby a person is able to see near objects well but has difficulty seeing objects that are far away. It occurs when the eyeball is elongated, causing light rays to focus at a point in front of the retina, instead of directly on it. This results in blurry vision, which is referred to as a refractive error.

WHAT IS HIGH MYOPIA?

It is defined as short-sightedness of over 500 degrees. People with high myopia have greater risk of developing sight-threatening conditions including retinal detachment, glaucoma, early-onset cataract, and macular degeneration in their middle to late adulthood.

CAN MYOPIA LEAD TO BLINDNESS?

Possible. High myopia is more likely to lead to eye disorders and complications that can cause vision impairment or even vision loss.

WHEN DOES MYOPIA OCCUR?

Anytime, but usually in childhood. Myopia typically progresses rapidly in the first few years following its onset, and stabilises by the time a person turns 25. When you develop myopia at a young age, your condition will progress over a longer duration compared to someone whose onset is much later.

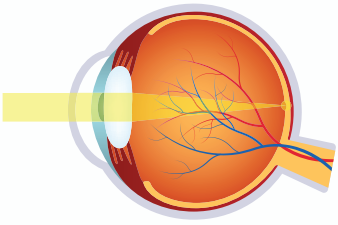
WHAT CAUSES MYOPIA?

Key causes are:

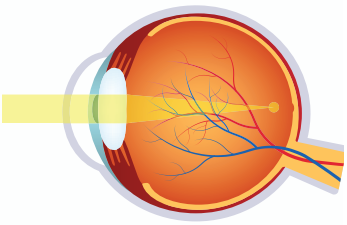
- Family history – The risk of developing myopia is significantly higher in a child with both parents who are short-sighted than a child with one or no parent who is short-sighted
- Modern lifestyle and environment – The advent of greater academic pursuit has led to more near work (such as reading, writing and exposure to digital devices) and less outdoor activity, which is a crucial risk factor for myopia

CAN MYOPIA BE CURED?

Once an eyeball is stretched, the change cannot be reversed. However, progression can be slowed through lifestyle modifications, good eye care habits [see page 11], intervention (such as atropine eye drops and optical aids), and continuous monitoring for myopia complications in adulthood.



Normal Vision



Myopia

Keep myopia at bay

Maintain good eye health with these tips:

- **Engage in outdoor activities**

Children should spend at least two hours outdoors every day (morning or early evening)

- **Take frequent eye breaks**

Follow the 20-20-20 rule – look away from the monitor every 20 minutes and gaze at a distant object (at least 20 feet away) for 20 seconds

- **Read from a distance**

Hold the book about 50–60cm from the eye

- **Have adequate lighting**

Avoid excessive sunlight coming in through a window or harsh interior lighting

- **Protect against UV rays**

Wear sunglasses and hat when outdoors

- **Improve desk ergonomics and sitting posture**

Stay at arm's length from the monitor; adjust chair height so knees are level with hips; install an anti-glare screen or apply a screen filter; use a desktop humidifier or keep artificial tears at hand to lubricate the eyes

- **Put on protective eye wear**

Wear safety glasses when doing activities that could cause eye injury; choose glasses that reduce exposure to blue light emitted by digital devices

- **Go for regular eye checks**

›› Babies (aged 3 and below)
Screened during regular paediatric appointments

›› Children and teenagers (aged 3 to 20)
A thorough eye check every one to two years during routine health check-ups or when getting fitted for corrective eyewear

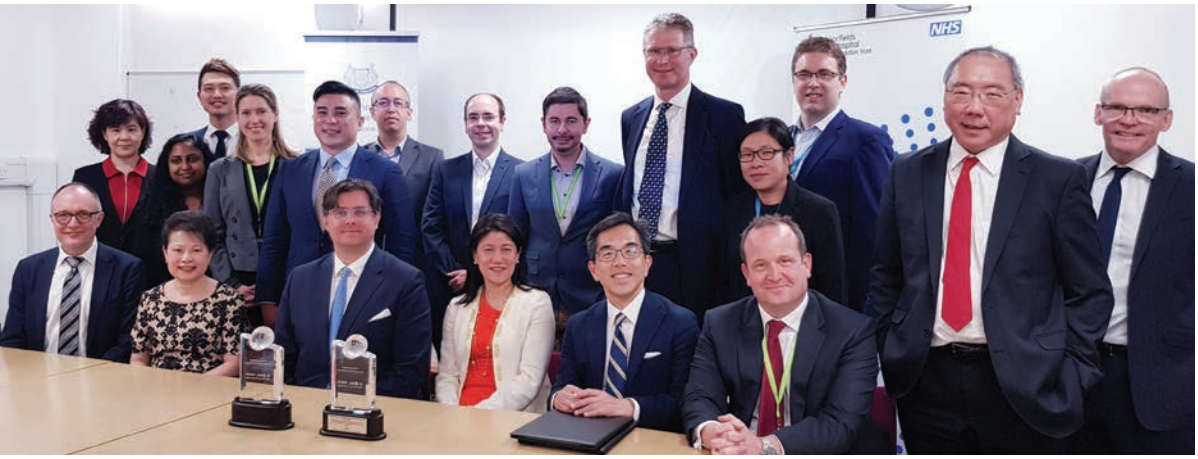
›› Young adults (aged 21 to 39)
A comprehensive eye examination if you have a family history of eye disease or if you are suffering from an eye injury

›› Adults and seniors (aged 40 and above)
Get a baseline eye disease screening when you turn 40, and seek the ophthalmologist's opinion for follow-up actions

›› Anyone with risk factors
If you have diabetes or high blood pressure, or are taking prescription medications that may affect the eyes, you should undergo eye checks more frequently. Seek advice on the ideal interval between check-ups

New partnership between Singapore and UK's leading eye centres

Groundbreaking eye research and world-class training are at the heart of this collaboration between SNEC, SERI, Moorfields Eye Hospital, and University College London's (UCL) Institute of Ophthalmology.



Singapore High Commissioner to the UK, Ms Foo Chi Hsia (seated 4th from left) was present with representatives from SNEC, SERI, Moorfields Eye Hospital and UCL's Institute of Ophthalmology at the MOU signing ceremony on 4 June 2019

Ever since SNEC was founded in 1990, it has worked closely with Moorfields Eye Hospital and UCL's Institute of Ophthalmology on eye research, academic secondments and medical education. This relationship was recently formalised with a Memorandum of Understanding (MOU).

The partnership will see two globally renowned eye centres and their respective research partners join forces in utilising advanced technology (such as artificial intelligence, big data analysis and teleophthalmology) to meet the growing demand for ophthalmic services across the world.

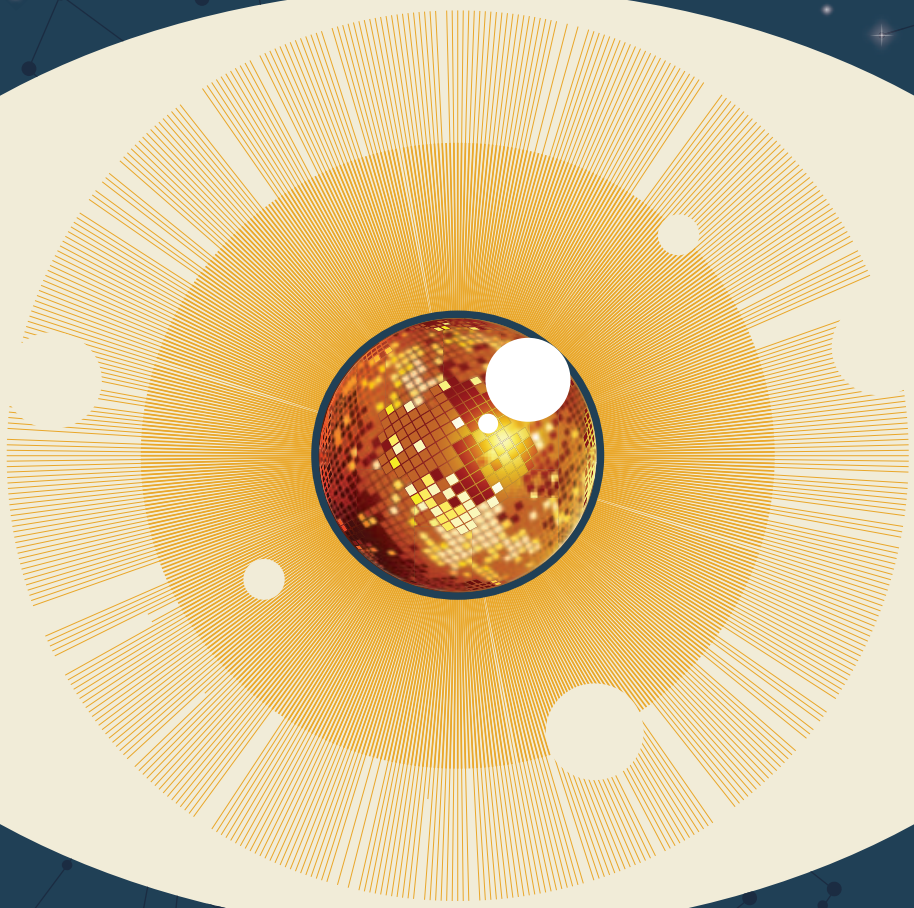
As part of the collaboration, scientists and clinicians from the four institutions will develop multidisciplinary research projects focusing on the detection, diagnosis, progression and treatment of eye conditions, as well as research targeted at eye care delivery and models of care.

Through high-impact research and sharing of knowledge, resources and best practices, the next significant breakthroughs in the search of cures for various eye diseases can be expected.

In addition, greater opportunities in education will also be explored. These include novel surgical training methods (such as simulation and virtual reality), an online educational platform for nursing, optometrists and allied health personnel, student and/or academic and administrative staff exchanges, and joint fellowship training programmes.

"Moorfields is recognised as the oldest, largest and most dynamic eye centre in Europe, while SNEC serves more than half the public's eye care needs in Singapore and receives regular referrals for complex eye cases from other Southeast Asian and Asian countries. SNEC looks forward to closer dialogue, faculty exchanges, and skills transfer as we introduce innovative care models in coping with a rapidly ageing demographic in both the UK and Singapore," said Prof Wong Tien Yin, Medical Director of SNEC.

A CHARITY EVENT IN AID OF VISION LOSS PREVENTION



THE EYE BALL 2019

THE RITZ-CARLTON, MILLENIA SINGAPORE
27.09.2019, FROM 6PM

SECRET CODE: GOLDEN EYE

VISIONSAVE

Singapore National Eye Centre SingHealth

SINGAPORE EYE RESEARCH INSTITUTE

SingHealth FUND

SINGAPORE TATLER

For further queries or to support VisionSave,
please contact Levarill Chng at (65) 6322 4505 or email: levarill.chng.x.y@snec.com.sg

Proceeds will go to SHF-SNEC, a charity fund under SHF, UEN No. 201624016E

Thyroid eye disease experts congregate at ITEDS Symposium

The Fifth International Thyroid Eye Disease Society (ITEDS) Symposium was held at SNEC from 20 to 23 February 2019.

Organised in Singapore for the first time, the ITEDS Symposium centred on the theme of "Current Perspectives in the Management of Thyroid Eye Disease: East Meets West". It is co-hosted by ITEDS, College of Ophthalmologists, Academy of Medicine Singapore, and SNEC.

Gathering more than 400 delegates from around the world, the Symposium saw the attendance of international authorities on thyroid eye disease (TED), renowned experts, allied health professionals and young faculties.

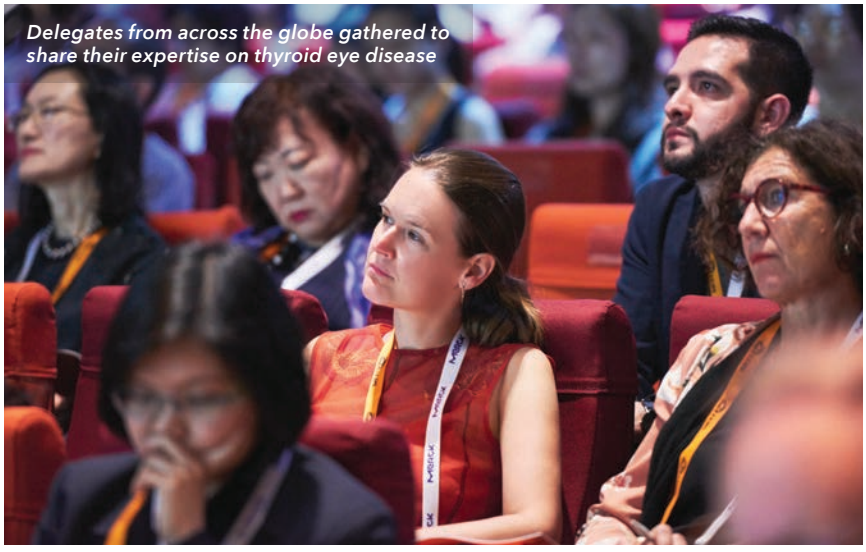
(Above) Adj Assoc Prof Seah Lay Leng, Organising Chairman of the ITEDS Symposium 2019, giving her welcome address (Left) Participants taking the opportunity to exchange ideas during a tea break

(Left) Dr Peter Dolman, past president of ITEDS, giving the Hong Leong Professorship Special Lecture on the evaluation and management of dysthyroid optic neuropathy
(Above left) Guest of honour Dr Lam Pin Min urging collaboration between TED experts in his speech
(Above right) Participants posing questions to the invited speakers

Dr Lam Pin Min, Senior Minister of State for Health and Transport, graced the event as the guest of honour. He spoke on the prevalence of TED worldwide, and the condition's impact on quality of life. "This is an excellent platform for knowledge sharing. Through the sharing of best practices, insights and experiences, it provides an opportunity for collaborative efforts and innovation," he said.

The Symposium consisted of three main components – a one-day ITEDS-SNEC Cadaveric Dissection Course; the Pre-Congress Teaching Course comprising a series of introductory lectures on various endocrine and ophthalmic aspects of TED and Graves' disease; and the Main Symposium, a two-day presentation by key opinion leaders on topics such as the latest advances in pathogenesis research, and up-to-date evidence-based clinical and treatment modalities.

Interactive segments, such as live quizzes and Q&A sessions where members of the audience discussed and exchanged ideas, enlivened the sessions.



Delegates from across the globe gathered to share their expertise on thyroid eye disease

Participants checking out exhibitor booths featuring eye-related products

SNEC and SERI launch eye drop dispenser

SNEC and SERI have collaborated with Ngee Ann Polytechnic to design and develop a novel assistive device named OptoAid, which enables safe, easy and accurate eye drop application.

Applying the right dosage of eye drops can be more difficult than it seems. The tendency to blink, shaky hands and inability to place the bottle correctly above the eye often lead to wastage, inaccurate dosages, and even contamination.

Seniors, in particular, face difficulty in positioning and administering medication into their eyes. Some may end up buying more medication than what they really need, which increases their financial burden. Studies have also found that unsuccessful self-instillation is linked to poor compliance, which results in therapeutic failure.

If you struggle to apply eye drops for yourself, your children or the elderly, OptoAid Eye Drop Guide – the latest innovation by SNEC and SERI, in collaboration with Ngee Ann Polytechnic – is a godsend.

OptoAid is a magnetic snap-fit modular eye drop guide that allows accurate, convenient and independent application. Following tests at SNEC and SERI, the OptoAid has proved to be

effective in reducing wastage as well as preventing accidental over-dosage of eye medications, which may cause complications.

In addition, the product has been presented at the World Association of Eye Hospitals (WAEH) and received early interest from major eye hospitals around the world, including Moorfields Eye Hospital (UK), Duke University Medical Center (USA), and Royal Victorian Eye and Ear Hospital (AUS). The Eye Drop Guide is launched in 20 countries through a partnership with distributors Vivid Frontier and Life Bridge Partners.

One size fits all

OptoAid Eye Drop Guide is suitable for:

- People who regularly use eye drops for allergies, dry eyes or long-term contact lens wear
- Patients who need the right dosage and consistency to treat their conditions (such as glaucoma)
- Patients who require antibiotic and anti-inflammatory eye drops after cataract or other surgeries

Features and benefits

FEATURES

Universal Eye Drop Guide Cup

- Contoured cup structure fits the eye snugly
- Medical-grade soft silicone for durability and repeated use
- Magnetic snap for easy toggle between multiple eye drop bottle and minim holders
- Easy cleaning; simply wipe down after use

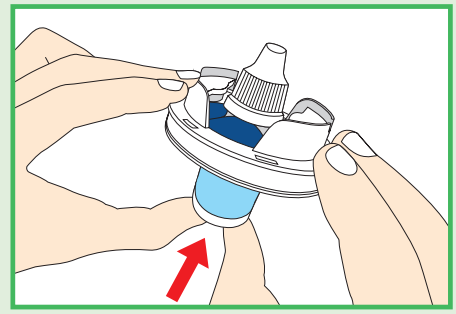
Eye Drop/Minim Bottle Holder

- Flexible rubber lock to fit a wide range of bottles
- Easy-to-use pinch levers allow accurate dosage of eye drops
- Eye drop/minim bottle locks in place for consistent application

BENEFITS

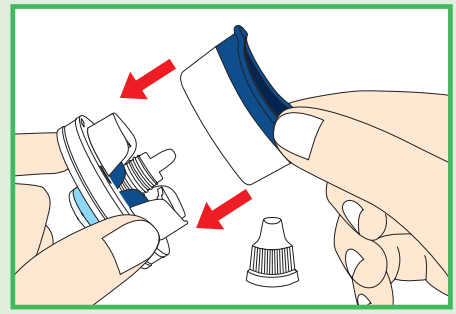
- Unique design fits most eye drop brands, bottle sizes, and single use vials/minims
- Holds the eye open comfortably
- Eye drops land accurately on the eye
- Prevents complications and wastage
- Reduces infection with no touching of bottle tips
- Easy self-application

3-Step Guide



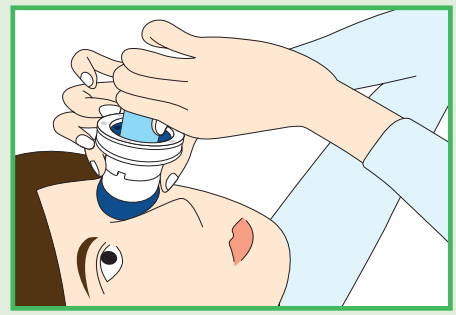
Step 1

Push the eye drop bottle/ minim through the OptoAid holder till you hear a **click**



Step 2

Snap the OptoAid eye cup and holder together after removing the cap of the eye drop bottle/minim



Step 3

Tilt your head and place OptoAid in position. Gently squeeze bottle/minim lever to apply prescribed amount

Where to buy?

Visit **www.optoaid.com** or **www.vividfrontier.com** to find out more. Also available in SNEC Pharmacy.

SNEC opens new eye clinic in Sengkang

The new eye clinic brings high-quality and holistic eye care to the doorstep of people living in the north-east.

Recognising the needs of the rapidly growing north-eastern community, SNEC has recently opened its latest eye clinic at the brand new Sengkang General Hospital (SKH). To address the rising demand for eye care, SNEC strives to expand and enhance its services to benefit patients in these ways:

1 GREATER CONVENIENCE

Located near Compass One shopping mall, SNEC Eye Clinic @ SKH is a 6-minute walk from Sengkang MRT station and is well connected by public transport. It is linked to Cheng Lim LRT station via a pedestrian bridge, and there are a number of bus services that stop close to the hospital.

2 WIDE RANGE OF SERVICES

Experienced specialists from SNEC work closely with a team of ophthalmic nurses, ophthalmic investigation technicians and allied health professionals to provide holistic care.

Common eye symptoms and signs we see:

- Blurred vision
- Eye pain
- Flashes and floaters
- Red eye and conjunctivitis
- Myopia and presbyopia ("lao hua")
- Eye/cornea infections and ulcers
- Lumps and bumps around the eye
- Droopy eyelids and other abnormal eyelid positions
- Watery/teary eyes

Eye screening and treatments offered:

- Comprehensive eye examination
- Cataract assessment and small-incision cataract surgery with intraocular lens implantation
- Investigation and diagnosis of cornea problems and degeneration
- Screening for early glaucoma and evaluation of glaucoma suspects
- Medical and laser treatment of glaucoma
- Evaluation and management of retinal conditions (such as diabetic retinopathy, age-related macular degeneration, retinal tears)
- Eyelid and other oculoplastic surgery

3 SUPPORTED BY ADVANCED EQUIPMENT

A suite of advanced investigative devices and ophthalmic laser machines complement the extensive services. These equipment include Humphrey Visual Field Analyser (HVF) and Optical Coherence Tomographer (OCT).

4 ACCESSIBLE TERTIARY CARE

Patients who require cataract surgery can undergo the procedure in dedicated operating theatres at SKH. The operating staff there maintain the same high surgical standards of SNEC, and use implants and equipment similar to those used in SNEC Main Centre. In addition, SNEC's ophthalmologists also perform urgent consultation and ophthalmic care for patients warded at SKH.

MAKE AN APPOINTMENT
SNEC Eye Clinic @ SKH
Sengkang General Hospital
Medical Centre, Level 8
110 Sengkang East Way
Singapore 544886
Main appointment line:
6227 7266
Email: appointments@snec.com.sg

OPENING HOURS
8.30am to 5.30pm
(Mondays to Fridays)

STANDING TALL AFTER A FALL

Steven Seow, who lost a limb to diabetes, had his sight salvaged by VisionSave, which provided financial assistance for his diabetic retinopathy treatment.

An accident at his workplace years ago sent Steven Seow's life into a downward spiral. He was conducting a routine site survey as a Safety Officer at an oil rig when he stumbled and fell. What the 55-year-old did not know then was that he has diabetes, and that the seemingly harmless bruise on his left knee would later lead to an amputation.

Shortly after, Steven was diagnosed with diabetic retinopathy (DR), a complication caused by damaged blood vessels at the back of the eye. Adding fuel to the fire, he lost his job, making his wife the sole breadwinner for their family of six.

Due to mounting household and medical expenses, saving money by choosing cheaper food options or sharing single portions became the norm. Steven's wife would compare prices of their favourite items, such as *achar*, across several supermarkets to get the best deals. There were days where their dinners consisted of only instant noodles.

> *"VisionSave has helped me and given me the courage to look for a job! This would not be possible if not for generous donors' support.*

That said, Steven, who now moves around with a prosthetic leg, is making a conscious effort to

watch what he eats. "I was already quite a healthy eater in the past, but now I can only eat a certain amount of white rice. Brown rice would be best. And I need to take drinks without sugar," he explains.

A beacon of light

To treat his DR, Steven goes for monthly steroid injections that are heavily subsidised by MediSave. Unfortunately, the first-line drugs soon proved ineffective, and he had to increase the medicinal dosage. This treatment, which is a long-term solution to prevent permanent blindness, would have cost him more than S$10,000 a year.

"Where am I going to get this money when I'm not working?" he asks. Luckily for Steven, SNEC's VisionSave came into the picture and played an instrumental role in funding his second-line treatment.

Despite his optimistic attitude, Steven hopes to find a job soon to help with the family expenses. His youngest daughter, who is still schooling, holds a part-time job to support herself. "I'm not doing well financially so my children have to work," he shares.

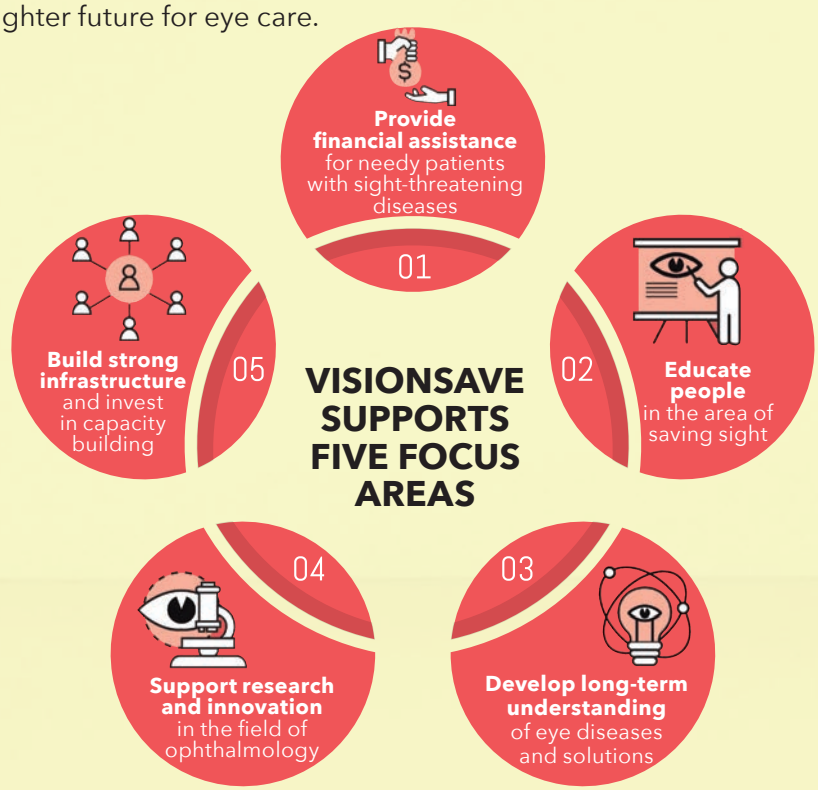
A concern of his, however, is his eye condition. "I have to attend medical appointments on a monthly basis. Which employer would want me?"

In the meantime, financial assistance from VisionSave has made his situation more bearable.

"Losing my leg to diabetes was painful. I don't take my eyesight for granted now. VisionSave has helped me and given me the courage to look for a job! This would not be possible if not for generous donors' support. Thank you so much," Steven says.

SAVE SIGHT, CHANGE LIVES

VisionSave is a fundraising campaign by SNEC and SERI to holistically enhance eye care delivery with the ultimate goal of saving, restoring and protecting our patients' vision. Your contribution goes a long way in improving the quality of life for needy patients and building a brighter future for eye care.



Scan to donate

Share our vision and support us.
Learn more about VisionSave:
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Email: visionsave@snec.com.sg
Website: www.visionsave.sg/donate

VISIONSAVE

NEW ROLE OF NURSES: PHYSICIAN EXTENDERS

Lee Jia Le and Jacqueline Ek are part of the pioneer batch of SNEC nurses who have been trained to administer eye injections.

After a year of training, eight nurses in SNEC have started performing intravitreal (IVT) injections for patients since January 2019. Among them are Lee Jia Le and Jacqueline Ek, who have worked at the eye centre for seven and four years respectively.

To obtain the skills for their new role, they completed one module of the Graduate Certificate in Clinical Nursing (Ophthalmology) course, and underwent more than 100 practical sessions under the supervision of Assoc Prof Ian Yeo, Senior Consultant of the Medical and Surgical Retina Department and Deputy Medical Director (Education).

While apprehensive initially, the nurses soon gained confidence with experience. "To be honest, it was really scary at first. But as we have watched doctors do these injections on a daily basis over the years, we are very familiar with the procedure," said Jacqueline. "I was nervous only for the first injection. It also helped that we had wet lab sessions before we started injecting patients."

Lee Jia Le (left) and Jacqueline Ek (right)

Empowered through upskilling

As the ageing population grows, the prevalence of conditions such as age-related macular degeneration (AMD) and diabetic retinopathy (DR) will continue to accelerate. To

preserve their vision, these patients require regular IVT injections. This in turn leads to an increased demand for nurse injectors.

Nurse injectors are tasked to perform all steps of the injection process independently [see sidebar]. This shifting of tasks has also earned them the title of "physician extenders".

With bigger responsibilities come greater pressures. "We always have to be very alert because there is no room for mistakes," Jia Le shared.

Win-win situation

Despite the additional duties, Jia Le feels that being a nurse injector not only boosts her resume, but it also significantly reduces waiting time for patients and benefits the team as a whole.

"Sometimes patients wait two to three hours just for a five-minute procedure, and we have to bear the brunt of their frustrations. Doctors are also happy to have nurse injectors share their load because they can devote more time to seeing other patients in their clinics," she explained.

On average, each nurse does between 25 and 30 injections every day. Patients range from young adults to elderly in their 90s. The consultants would determine which patients are to be managed by nurses and which ones to handle personally.

The response has been encouraging so far. "Patients are appreciative of the shorter waiting time, and some even say that we are more gentle than doctors!" Jacqueline quipped.

However, there are still people who are doubtful of the nurses' competency. "I've encountered patients who questioned me: 'Are you sure you know how to do it? What if I turn blind?'," Jacqueline confided. "We went through the same training as Medical Officers and had even more intensive practices, so we hope patients can have more faith in us."

Currently, more nurse injectors are undergoing training by Assoc Prof Yeo and Dr Wong Chee Wai, Consultant in the General Cataract & Comprehensive Ophthalmology Department. This programme is also assisted by nurse leaders, who are involved in the setting up of guidelines, as well as coordination of work and training sessions.

Facts & Figures

16,000
injections done in SNEC every year

120
injections performed by nurses every day

8
Current no. of nurse injectors

3
No. of nurses undergoing training

30-90 mins
Waiting time for doctor to give injections

5 mins
Waiting time for nurse to give injections

Steps of an IVT injection

Step 1
Put eye drops

Step 3
Perform IVT injection

Step 2
Carry out "time-out" protocol
(verify patient details, such as drug allergy and type of injection)

7 Ways To Care For The Eyes During Travel

Vision problems and eye discomfort can increase the challenges of navigating a new city. Serious eye conditions can even lead to permanent damage to your eyes if not treated promptly and appropriately. Here are some tips to protect your eyes while enjoying your well-deserved vacation.

1 PREPARE FOR POTENTIAL EYE PROBLEMS

Air quality in planes and changes in climate can make our eyes dry, itchy and sore. Switch to glasses during the flight, and always pack your contact lens case and solution in the carry-on baggage. Bring eye drops for lubrication and to alleviate discomfort. A portable humidifier or moisture chamber eye goggles may also help in situations that expose you to excessive air conditioning.

Eye discomfort and itching can also be caused by allergies, which may be triggered by new environments – equip yourself with over-the-counter antihistamine eye drops or tablets if you are prone to allergies. Avoid areas where there is a lot of smoke, dust or pollen as it can worsen eye allergies. Refrain from rubbing your eyes as this can increase discomfort. Cold compresses and lubricants can also soothe allergy-led eye discomfort.

2 PRACTISE GOOD EYELID HYGIENE

Even after a long day, make an effort to remove your make-up before sleeping, especially if you are wearing mascara and eyeliner. Keeping your eyelids clean will help prevent styes – a common inflammation or infection of the eyelid that causes a tender, red lump at the edge of the eyelid. When oil glands in your eyelids are clogged by dirt or debris, a small collection of pus may form, and this results in the stye. Warm compresses and lid hygiene can help reduce swelling. If a stye is persistent or worsens, consult a doctor for topical antibiotic ointments or to perform incision and drainage.

3 USE PROPER EYEWEAR

Choose sunglasses that shield your eyes from harmful UV rays and harsh glare, whether you are going to the beach or the ski slopes. UV protection safeguards your eyes from common degenerative conditions such as cataract, pterygium and macular degeneration. Key features of a good pair of sunglasses include lightweight but sturdy wraparound frames, UV protection, and polarised lenses. Wear glasses on a windy day to reduce evaporation of tears that can result in dry eyes. If you will be engaging in water activities, put on goggles to stop water from entering your eyes, as this would increase the risk of infections.

4 CARE FOR CONTACT LENSES

Before your vacation, check that your contact lenses and contact lens solution have not expired. If you are using disposable lenses, pack extra pairs in case you lose them and bring your glasses as backup. Change your contact lenses as and when needed, and avoid sleeping, bathing or swimming with them on. Store them only in contact lens solution as other liquids (such as tap water) may contain bacteria that can cause eye infections. If you experience eye pain, redness or blurred vision while wearing contact lenses, remove them immediately and seek medical treatment.

5 BRING YOUR PRESCRIPTION

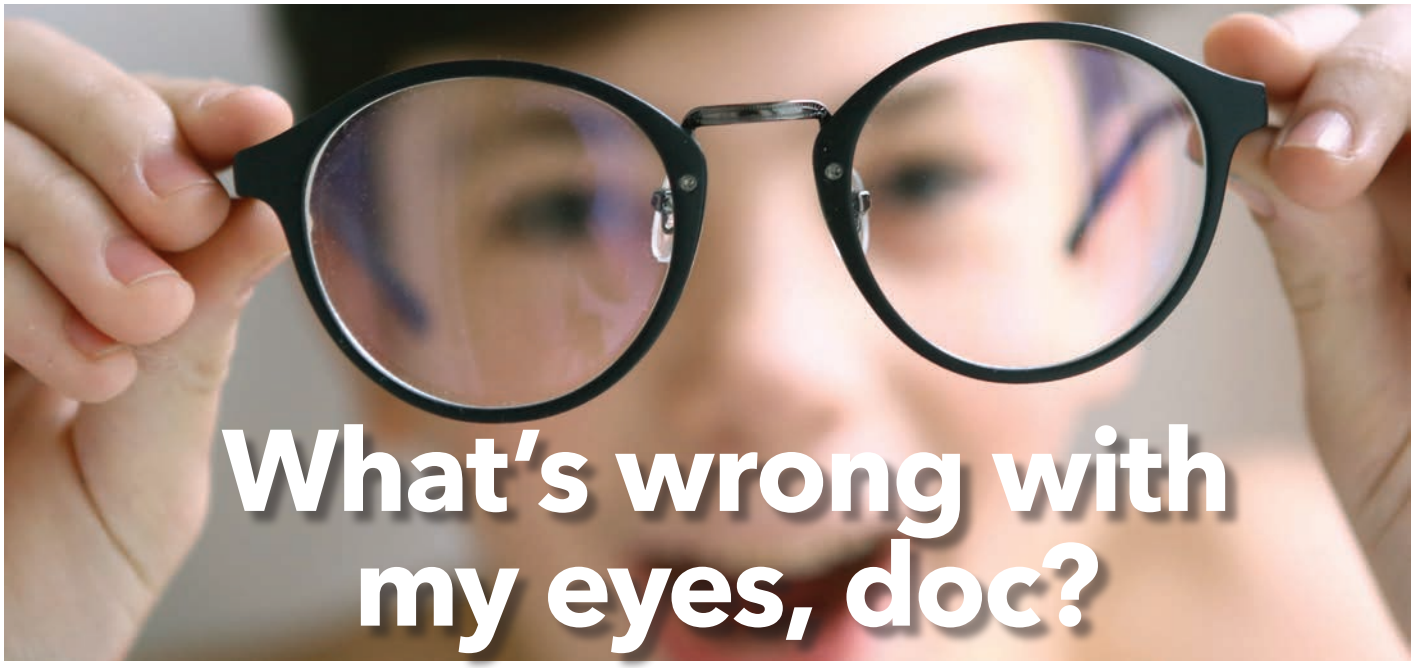
It is better to be safe than sorry. By bringing your prescription, you don't have to worry about losing your contact lenses or breaking your glasses. If you use prescription eye drops, be sure to prepare spare unopened bottles, as they may not be available in other countries.

6 CHECK WITH YOUR DOCTOR

If you have an existing eye condition or underwent eye surgery recently, seek an ophthalmologist's opinion on whether you are fit for travel. For example, people who have had retinal detachment surgery may not be fit to fly.

7 BEWARE OF CHANGES IN YOUR VISION

Don't wait until you get home to see an ophthalmologist if you have any acute eye symptoms. Prompt diagnosis and treatment of rarer but serious problems (such as retinal detachment, acute glaucoma, serious eye infections or severe eye trauma) during your travels can avert permanent damage to the eyes. If you experience symptoms such as severe eye pain, sudden loss of vision, and appearance of floaters and flashes, you should seek immediate medical attention.



What's wrong with my eyes, doc?

Is it possible for adults in their 20s to develop myopia, even if they have had perfect vision previously?

Myopia is not solely a children's problem. Over 80% of Singaporeans in their 20s to 40s are short-sighted, and the risk of vision loss associated with myopia increases with age.

Myopia may develop in adults due to visual stress, excessive amount of near work, environmental factors or other underlying health conditions.

People with high myopia have a bigger risk of developing early cataract, glaucoma, macular degeneration and retinal detachment in their mid- to late adulthood.

Therefore, it is important to control and monitor myopia progression to prevent further complications later in life.

DEBUNKING MYTHS ABOUT MYOPIA

- **Myopia will not cause blindness** — FALSE

  Myopia (high myopia in particular) can be a complex condition associated with major eye diseases. These may result in visual impairment and require early intervention.

- **Myopia can be easily treated by a pair of glasses or contact lenses** — FALSE

  Myopia is a refractive error caused by the elongation of the eyeball. Prescription glasses and contact lenses can correct the blurry distance vision caused by myopia, but they are not a cure for the underlying condition and its sight-threatening complications.

- **Wearing pinhole glasses can reverse myopia** — FALSE

  Myopia cannot be reversed, but it can be managed by slowing down its progression during childhood through lifestyle modifications and atropine eye drops.

- **Taking supplements such as vitamin A will prevent myopia** — FALSE

  Myopia is not caused by vitamin A deficiency. Taking vitamin A may help for people with night blindness, but it will not prevent myopia or improve vision in myopia patients.

See Cover Story [page 6] for more information on myopia.

Dr Loh Kai-Lyn, Associate Consultant, General Cataract & Comprehensive Ophthalmology Department and Myopia Centre, SNEC

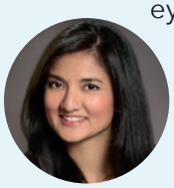
Q I recently went to the beach on a windy day. After the excursion, I found myself blinking more frequently than usual, as my eyes felt discomfort and watery. Should I visit a doctor?

Any material such as dust or sand that gets into the eye is called a foreign body. Superficial foreign bodies stick to the front of the eye or get trapped underneath the eyelid, but do not enter the eye; penetrating foreign bodies enter the eye by piercing through its outer layer (cornea or sclera) – they usually travel at high speed and are commonly made of metal.

Superficial foreign bodies are generally not serious, but may cause discomfort, red eyes and gritty sensation. If they are stuck underneath the eyelid, you may experience pain when blinking.

Any foreign object that penetrates the eye at an accelerated speed poses a high risk for eye injury, and may even lead to blindness if not detected and treated promptly. Seek medical attention immediately if a foreign body entered your eye during high-velocity activities such as grinding or hammering metal, and caused severe pain or blurred vision.

Superficial eye debris can be removed via gentle rinsing with warm water. This can be done with an eye bath on your own, or you can get someone to help rinse your eye from the side while you lie down. Avoid rubbing the eyes, and do not use cotton buds or sharp objects (such as tweezers) to remove the foreign body. Consult a doctor if the eye debris is large or if it continues to cause irritation.



Dr Yap Zhu Li, Consultant, Glaucoma Department, SNEC

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Dr Boey Pui Yi
Senior Consultant, Glaucoma Department, SNEC

Dr Laurence Lim
Senior Consultant, Surgical Retina Department, SNEC

Dr Gavin Tan
Senior Consultant, Surgical Retina Department, SNEC

Dr Wesley Chong
Consultant, General Cataract & Comprehensive Ophthalmology Department, SNEC

Dr Daniel Ting
Consultant, General Cataract & Comprehensive Ophthalmology Department, SNEC

Dr Andrew Tsai
Consultant, General Cataract & Comprehensive Ophthalmology Department, SNEC

Dr Yap Zhu Li
Consultant, Glaucoma Department, SNEC

Dr Kelvin Teo
Consultant, Medical Retina Department, SNEC

Dr Shweta Singhal
Consultant, Neuro-Ophthalmology Department, SNEC

Dr Gillian Teh
Consultant, Oculoplastic Department, SNEC

Dr Yong Kailing
Consultant, Oculoplastic Department, SNEC

Dr Daniel Chua
Consultant, Refractive Surgery Department, SNEC

Dr Danny Cheung
Consultant, Surgical Retina Department, SNEC

Dr Fiona Lim
Associate Consultant, General Cataract & Comprehensive Ophthalmology Department, SNEC

Dr Tan Licia
Associate Consultant, General Cataract & Comprehensive Ophthalmology Department, SNEC

Dr Samanthila Waduthantri
Senior Resident Physician, Clinical Service Department, SNEC

Dr Dan Dexter
Staff Registrar, Clinical Service Department, SNEC

Dr Janika Narendra Shah
Staff Registrar, Clinical Service Department, SNEC

JOINT SNEC/SERI AND DUKE-NUS APPOINTMENT

Prof Jonathan Crowston
Professor and Senior Clinician Scientist,
Duke-NUS Centre for Vision Research

PROFESSOR (WITH TENURE), OPHTHALMOLOGY & VISUAL SCIENCES ACADEMIC CLINICAL PROGRAMME (EYE ACP)

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Deputy Vice Chair (Research), EYE ACP;
Head & Senior Consultant,
Corneal & External Eye Disease
Department, SNEC;
Deputy Executive Director, SERI

Prof Louis Tong
Senior Consultant, Corneal & External
Eye Disease Department, SNEC;
Head, Ocular Surface Research
Group & Research Training &
Development Platform, SERI

PROFESSOR, OPHTHALMOLOGY & VISUAL SCIENCES ACADEMIC CLINICAL PROGRAMME (EYE ACP)

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Head, Retina Research Group, SERI

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Head & Senior Consultant, Paediatric
Ophthalmology & Adult Strabismus
Department, SNEC; Co-Clinical
Director, Myopia Centre, SNEC;
Head, Ophthalmology Service, KKH

Assoc Prof Marcus Ang
Consultant, Corneal &
External Eye Disease
Department, SNEC;
Co-Clinical Director,
Myopia Centre, SNEC

ADJUNCT ASSOCIATE PROFESSOR, OPHTHALMOLOGY & VISUAL SCIENCES ACADEMIC CLINICAL PROGRAMME (EYE ACP)

Adj Assoc Prof Mohamad Rosman
Head & Senior Consultant,
Refractive Surgery Department, SNEC

Congratulations to these inspiring individuals!

AWARDS

PROFESSOR, SINGHEALTH DUKE-NUS KWAN IM THONG HOOD CHO TEMPLE PROFESSORSHIP IN OPHTHALMOLOGY

Prof Aung Tin
Deputy Medical Director (Research), SNEC; Senior Consultant, Glaucoma Department, SNEC; Executive Director, SERI; Academic Vice Chair (Research), Ophthalmology & Visual Sciences Academic Clinical Programme (EYE ACP), SingHealth Duke-NUS Academic Medical Centre

NATIONAL DAY AWARDS 2018
Long Service Medal
Dr Ti Seng Ei
Adj Assoc Prof Sharon Tow
Adj Assoc Prof Edmund Wong
Assoc Prof Ian Yeo

SINGAPORE MANUFACTURING FEDERATION
Singapore Manufacturing Federation Award 2018
Adj Assoc Prof Seah Lay Leng
Dr Livia Teo

EYE AND VISION HEALTH AWARD 2018
Visionary Award
Prof Aung Tin

AMERICAN SOCIETY OF CATARACT AND REFRACTIVE SURGERY (ASCRS)
Cataract Olympics - Silver and Gold Medal
Prof Chee Soon Phaik

AMERICAN ACADEMY OF OPHTHALMOLOGY 2018
Senior Achievement Award
Prof Chee Soon Phaik

AAO Achievement Award
Dr Anshu Arundhati

12TH ASIA-PACIFIC VITREO-RETINA SOCIETY (APVRS) CONGRESS
APVRS Constable Lecture
Prof Gemmy Cheung

EUROPEAN SOCIETY OF RETINA SPECIALISTS (EURETINA)
Euretina Lecture
Prof Wong Tien Yin

WORLD OPHTHALMOLOGY CONGRESS
Cataract Olympics Freestyle - Gold Medal
Prof Chee Soon Phaik

PHILIPPINE GLAUCOMA SOCIETY
Manuel B. Agulto Award
Prof Aung Tin

SINGHEALTH DUKE-NUS SCIENTIFIC CONGRESS 2018
Best Poster Award
Dr Preeti Gupta

SINGHEALTH EXCELLENCE AWARDS 2018
Distinguished Young Researcher Award
Dr Daniel Ting

SINGHEALTH PUBLISH! AWARD
Dr Chetna Dhand
Dr Daniel Ting

RiSE (RESIDENCY IN SINGHEALTH EXCELS) AWARDS
Faculty Appreciation Award
Assoc Prof Audrey Chia

Outstanding Faculty Award
Assoc Prof Shamira Perera
Assoc Prof Tina Wong
Dr Nathalie Chiam
Dr Olivia Huang
Dr Ng Si Rui
Dr Nicole Sie Ming
Dr Melissa Wong

Inspiring Resident-Educator Award
Dr Olivia Huang

Residents Committee Appreciation Award
Dr Reuben Foo

Partners in Education
Ms Zainorah Alias

SNEC provides eye treatment for the full spectrum of eye conditions:

- General Cataract & Comprehensive Ophthalmology
- Cataract Subspecialty
- Corneal & External Eye Disease
- Glaucoma
- Neuro-Ophthalmology
- Ocular Inflammation & Immunology
- Oculoplastic
- Paediatric Ophthalmology & Adult Strabismus
- Refractive Surgery
- Medical & Surgical Retina

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Where We Are

11 Third Hospital Avenue
Singapore 168751
www.snec.com.sg

Opening Hours

8:30am to 5:30pm
Mondays to Fridays
No clinic sessions on Saturdays, Sundays and Public Holidays

Valet Service

- Valet service is available for SNEC patients at $3.00. Parking charges of $0.036 per minute (or $2.16 per hour) applies on top of the valet parking fee.
- Operating hours: 7:00am to 5:30pm Mondays to Fridays

GP Hotline: 6322 9399

A dedicated line for GPs attending to patients with eye conditions.

SNEC

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CENTRAL

1 SNEC Eye Associates Gleneagles Hospital
6A Napier Road #02-39/40,
Annexe Block
Singapore 258500
Tel: 6835 1188

2 Singapore National Eye Centre
11 Third Hospital Ave
Singapore 168751
Tel: 6227 7266

3 SNEC Eye Clinic @ NHCS National Heart Centre Singapore
5 Hospital Drive, Level 4, 4C
Singapore 169609
Tel: 6704 8289

4 SNEC Retina Centre Diabetes & Metabolism Centre (DMC), SGH
17 Third Hospital Avenue,
#02-00 Singapore 168752
Tel: 6421 8500

5 KK Eye Centre KK Women's & Children's Hospital
100 Bukit Timah Road,
Level 1, Children's Tower
Singapore 229899
Tel: 6394 1930 / 6394 1931

EAST

NEW

6 SNEC Eye Clinic @ Bedok
Blk 212 Bedok North Street 1,
#03-147 Singapore 460212
Tel: 6843 5001

NEW

7 Myopia Centre
Blk 212 Bedok North Street 1,
#03-147 Singapore 460212
(Located at SNEC Eye Clinic @ Bedok)
Tel: 6843 5060
Whatsapp: 9139 1712

8 SNEC Eye Clinic @ CGH Changi General Hospital
2 Simei Street 3, Level 1
Singapore 529889
Tel: 6850 1450 / 6850 1470

NORTH EAST

NEW

9 SNEC Eye Clinic @ SKH Sengkang General Hospital
Medical Centre, Level 8
110 Sengkang East Way
Singapore 544886
Tel: 6930 2802

NEW

10 SNEC Community Eye Clinic @ Punggol Polyclinic
Blk 681 Punggol Drive,
Oasis Terraces, #04-12
Singapore 820681
Tel: 6718 2590

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Email: appointments@snec.com.sg Visit us: www.snec.com.sg

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Editor's Note

Due to the high prevalence of myopia here, Singapore is known as the "Myopia Capital of the World". In this issue's Cover Story (page 6), SINGVISION speaks to Assoc Prof Audrey Chia and Assoc Prof Marcus Ang, Co-Clinical Directors of the newly launched Myopia Centre in Bedok, to learn all about SNEC's efforts in tackling this growing epidemic.

On the same note, SNEC and SERI were the hosts of the joint meeting between World Health Organization (WHO), International Agency for the Prevention of Blindness (IAPB) and Brien Holden Vision Institute (BHVI) on "Developing Myopia Control Strategies" (page 4).

In line with our vision for innovation, a novel eye drop dispenser named OptoAid was born out of a collaborative project with Ngee Ann Polytechnic (page 16). In addition, SNEC has extended its services to people living in the north-east with the opening of a brand new eye clinic at Sengkang General Hospital (page 18).

It's not all doom and gloom when you suffer from an eye condition. Thanks to financial assistance from VisionSave, Steven Seow was spared from losing his eyesight to diabetic retinopathy. Read about his story on page 20.

Upskilling programmes and opportunities have accorded some Allied Ophthalmic Personnel (AOP) bigger roles and responsibilities. In Here's Looking At (page 22), meet Lee Jia Le and Jacqueline Ek, who are among the pioneer batch of SNEC nurses trained to administer eye injections independently.

Going on a vacation soon? Don't let vision problems affect your travels or even cause permanent damage. Check out the tips on page 24, and take care of your eyes while enjoying your well-deserved break!

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It spearheads and coordinates the provision of specialised ophthalmological services, with emphasis on quality education and research.

Contents

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SNEC and SERI host joint meeting on myopia

(From left to right) Dr Andreas Mueller, Advisor, WHO Regional Committee for Western Pacific, Prof Thomas Coffman, Dean, Duke-NUS Medical School, Dr Lam Pin Min, Senior Minister of State in the Ministry of Health and Ministry of Transport, Ms Amanda Davis, Chairperson, IAPB (Western Pacific) and Chief Executive Officer, BHVI Foundation, Prof Wong Tien Yin, Medical Director, SNEC, Prof Aung Tin, Executive Director, SERI

Organised by the World Health Organization (WHO), International Agency for the Prevention of Blindness (IAPB) and Brien Holden Vision Institute (BHVI), the event was held at the Academia on 13 and 14 November 2018.

As myopia rapidly becomes a major public health issue worldwide, it has become a subject of keen interest among eye professionals. Named "Developing Myopia Control Strategies", the joint meeting between the WHO, IAPB and BHVI gathered 40 scientists, researchers, clinical professionals and policymakers from the Western Pacific Region for a pivotal exchange of insights and ideas.

It served as a platform for key opinion leaders to present and discuss the research findings and interventions in their respective countries. Topics including the societal impact of myopia as well as the optical, pharmaceutical and environmental considerations for managing myopia were also reviewed.

MYOPIA CAPITAL

Vision disorders are the fourth leading cause of disease burden in Singapore, with myopia rates among the highest in the world. The figures are expected to rise along with the ageing population.

"The first line of defence against myopia is public awareness and education," says guest of honour Dr Lam Pin Min, Senior Minister of State in the Ministry of Health (MOH) and Ministry of Transport. He also cited MOH's support for international collaborations and clinical research, such as SERI's Atropine Treatment of Myopia (ATOM) trials.

In addition, Prof Wong Tien Yin, Medical Director of SNEC, presented a special lecture titled "Fighting Myopia – The Singapore Experience", where he shared lessons from SNEC and SERI's extensive clinical and research experience.

A panel of ophthalmologists and stakeholders elaborated on the successes and challenges of the fight against myopia in Singapore. Significantly, the eye professionals emphasised the need for different departments and sectors to collectively work towards closing existing gaps in the prevention and treatment of myopia.

At the joint meeting, SNEC also announced its plan to open a first-of-its-kind Myopia Centre [see page 6] this year.

SNEC, SERI and Johnson & Johnson Vision embark on S$36.35m collaboration

The strategic partnership is targeted at developing prevention and treatment solutions of myopia to address the rising burden of condition.

SNEC, SERI and Johnson & Johnson Vision (JJV) have announced a S$36.35 million (US$26.35 million) research collaboration to tackle myopia. Mr Heng Swee Keat, Deputy Prime Minister, Minister for Finance and Chairman of National Research Foundation (NRF), was the guest of honour at the launch event on 12 November 2018.

Worldwide, there has been an unprecedented rise in the prevalence of myopia. Left unchecked, the resulting human and financial toll could skyrocket in the coming decades.

East Asia and Singapore shoulder the greatest impact, with current prevalence rates among young people as high as 80% to 97%. Children who go on to develop high myopia are at a high risk for a lifetime of severe eye disease and permanent vision loss.

(From left to right) Mr Jorge Pinedo, Prof Aung Tin, Prof Wong Tien Yin, Minister Heng Swee Keat, Dr Xiao-Yu Song, Prof Ivy Ng and Dr Paul Stoffels pose at the signing ceremony for the SNEC-SERI-JJV Strategic Partnership on Myopia

LEVERAGING ON DIVERSE STRENGTHS

The research projects will focus on achieving deeper understanding of myopia causes and the underlying mechanisms behind its progression. Other key focus areas include developing predictive tools to identify those who may be susceptible to high myopia, and inventing enhanced products and care models to deliver superior treatment options.

A multidisciplinary approach is needed to stop the myopia epidemic. The collaboration will marry SNEC's excellence in clinical care, SERI's long-standing and strong research capabilities, and JJV's industry expertise and networks.

Furthermore, the partnership will build new capabilities in nurturing R&D talent. Researchers will work on cutting-edge research, knowledge transfer, and the creation of novel co-developed technology. This would strengthen our ecosystem to support global medical devices and pharmaceutical companies from Singapore and beyond.

Notably, this represents JJV's single largest commitment to an externally funded research programme, and the biggest collaborative project for myopia in Asia. Prof Wong Tien Yin, Medical Director of SNEC, believes that this three-year strategic partnership will contribute substantially to reduce the incidence of myopia, allow people with myopia to benefit from treatment early, and catalyse economic value for Singapore.

The Myopia Centre: Setting sights on better vision

Located in Bedok, the SNEC Myopia Centre is a one-stop hub that is aimed at tackling the escalating prevalence of short-sightedness, and enhancing access to comprehensive myopia care services in the community.

Myopia is a lifelong condition that is projected to afflict half of the global population by 2050. Singapore has one of the highest rates of myopia in the world, with the condition affecting 20% of children under the age of 7 and over 80% of young Singaporeans [see page 10].

Our eyesight is a priceless asset that can be taken away by myopia. Established to address the growing epidemic, SNEC's Myopia Centre was launched officially in August 2019.

This holistic one-stop hub is dedicated to the prevention, monitoring and treatment of myopia. It not only allows more specialised management of the eye condition, but also brings greater convenience to patients of all ages.

At its heart, the Centre serves to empower and engage patients with myopia through their journey to achieve improved vision.

SINGVISION speaks to Assoc Prof Audrey Chia and Assoc Prof Marcus Ang, Co-Clinical Directors of the Myopia Centre, on their goals and plans for the facility.

> *"The Myopia Centre will strive to recommend safe, reliable and effective treatment methods that have been proven by scientific studies or have consensus among experts worldwide.*

ALL-ENCOMPASSING, INTEGRATED, SEAMLESS

The Myopia Centre provides a full suite of services, ranging from primary eye care (eye screening and basic evaluation) to tertiary eye care (management of advanced conditions) for people of all age groups.

Designed to support patients every step of the way, the Centre houses optometrists and ophthalmologists who work closely together. They are readily available to answer patients' queries and offer professional advice. Services available include:

CLINICAL CARE

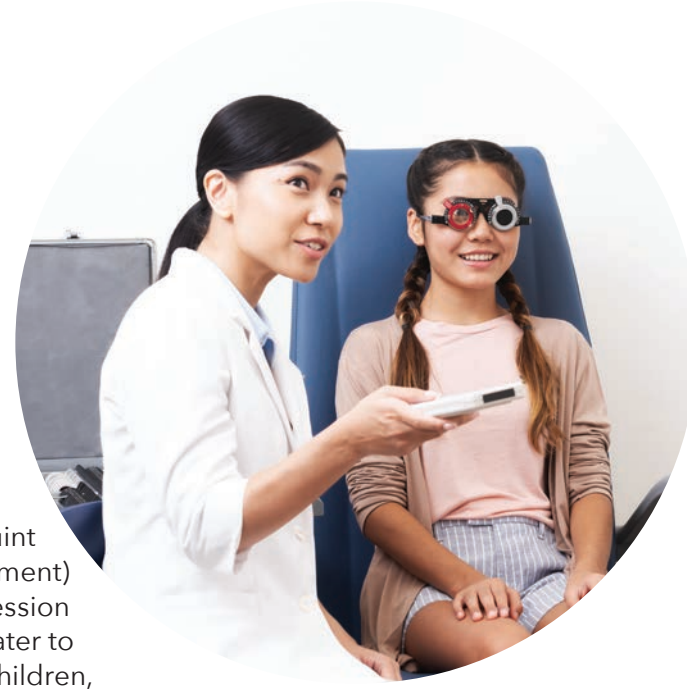
SNEC Myopia Centre will focus on providing evidence-based care. It will strive to recommend safe, reliable and effective treatment methods that have been proven by scientific studies or have consensus among experts worldwide, and supported by international standards such as that from the World Health Organization (WHO).

For adults

- Vision assessment (refraction testing)
- Screening for myopia complications
- In-depth evaluation (slit lamp examination, imaging and detailed scans)
- Specialist consultation (discussion, education, patient counselling)

For children

- Vision assessment (squint test, amblyopia assessment)
- Control myopia progression
- Special features that cater to kids (seating area for children, power points)

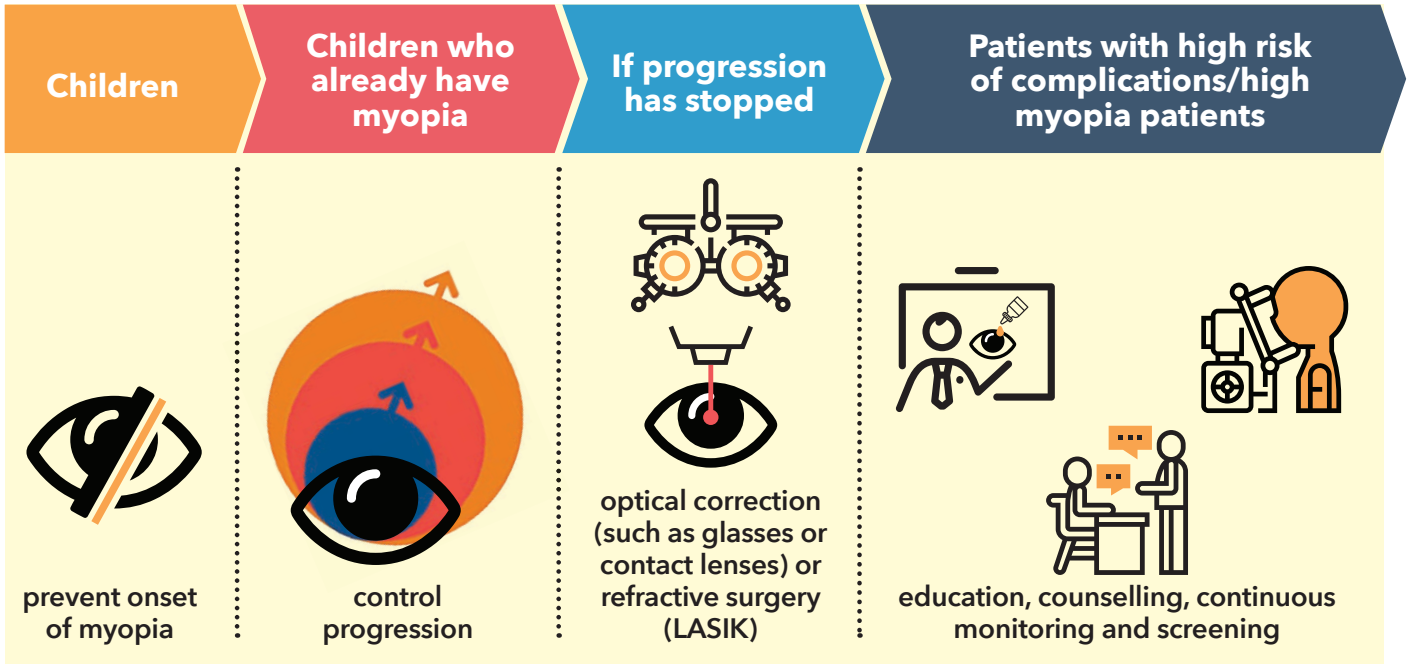


RESEARCH & INNOVATION

When the Centre becomes fully operational, it targets to serve 200-300 patients every week. With a centralised pool of patients, ophthalmologists and researchers will be able to gain deeper understanding of the condition and its complications.

Studies can also be conducted in a more structured fashion, which could lead to innovations that improve the efficacy of myopia management and enhanced patient care.

- Data collection
- Clinical and product trials
- Development of new treatments



EDUCATION

Public awareness

A large population of Singaporeans born in the 1980s are short-sighted, and are now entering the age of risk. Thus, the number of people who will suffer from myopia complications is expected to increase exponentially in the near future.

The higher your myopia, the more susceptible you are to complications. As symptoms of some eye disorders are not obvious, older patients may not recognise the threat to their eyesight. This is where the Centre plays a key role to identify those at risk and provide treatment before they start to lose vision.

- Myopia prevention and control education campaigns
- Enhanced patient counselling
- Informative pamphlets and posters
- Digital solutions (interactive screens, video content)
- Community engagement initiatives
- Event organisation (such as Myopia Awareness Week)

Medical education

An internship programme whereby students will be trained on dispensing skills, glasses and contact lens fitting, and operation of equipment is in the pipeline. The training will be carried out in the Optical Lab – a collaborative effort with Singapore Polytechnic, and the first of its kind for SNEC.

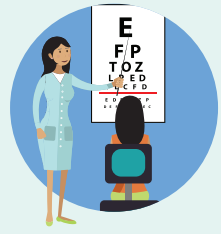
"Older patients may not recognise the threat to their eyesight. This is where the Centre plays a key role to identify those at risk and provide treatment before they start to lose vision.

Tackling myopia in 3 steps

PREVENTION

Small change, big difference

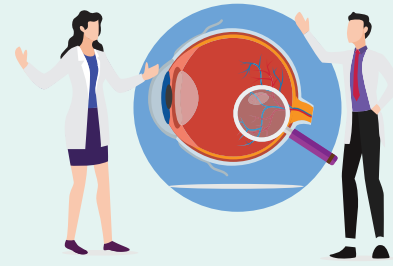
Introduce simple lifestyle modifications to delay the onset of myopia



MANAGEMENT

Detect and intervene early for better outcomes

Control and monitor myopia progression in high-risk children from 6 years old onwards to prevent further complications in adulthood



EDUCATION

Be in the know

Raise public awareness through education campaigns, patient counselling, and digital solutions

Myopia in Singapore

20%
of children have myopia by

7 years old

1 in 2
children develop myopia by

12 years old

75%
of teenagers

have myopia and rely on glasses

Over **80%**
of Singaporeans in their **20s to 40s**

have myopia

Annual direct cost of optical correction for myopia is estimated at

S$1.04 billion

WHAT IS MYOPIA?

A condition whereby a person is able to see near objects well but has difficulty seeing objects that are far away. It occurs when the eyeball is elongated, causing light rays to focus at a point in front of the retina, instead of directly on it. This results in blurry vision, which is referred to as a refractive error.

WHAT IS HIGH MYOPIA?

It is defined as short-sightedness of over 500 degrees. People with high myopia have greater risk of developing sight-threatening conditions including retinal detachment, glaucoma, early-onset cataract, and macular degeneration in their middle to late adulthood.

CAN MYOPIA LEAD TO BLINDNESS?

Possible. High myopia is more likely to lead to eye disorders and complications that can cause vision impairment or even vision loss.

WHEN DOES MYOPIA OCCUR?

Anytime, but usually in childhood. Myopia typically progresses rapidly in the first few years following its onset, and stabilises by the time a person turns 25. When you develop myopia at a young age, your condition will progress over a longer duration compared to someone whose onset is much later.

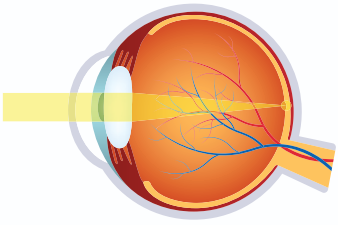
WHAT CAUSES MYOPIA?

Key causes are:

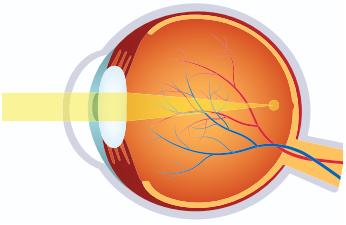
- Family history – The risk of developing myopia is significantly higher in a child with both parents who are short-sighted than a child with one or no parent who is short-sighted
- Modern lifestyle and environment – The advent of greater academic pursuit has led to more near work (such as reading, writing and exposure to digital devices) and less outdoor activity, which is a crucial risk factor for myopia

CAN MYOPIA BE CURED?

Once an eyeball is stretched, the change cannot be reversed. However, progression can be slowed through lifestyle modifications, good eye care habits [see page 11], intervention (such as atropine eye drops and optical aids), and continuous monitoring for myopia complications in adulthood.



Normal Vision



Myopia

Keep myopia at bay

Maintain good eye health with these tips:

- **Engage in outdoor activities**

Children should spend at least two hours outdoors every day (morning or early evening)

- **Take frequent eye breaks**

Follow the 20-20-20 rule – look away from the monitor every 20 minutes and gaze at a distant object (at least 20 feet away) for 20 seconds

- **Read from a distance**

Hold the book about 50–60cm from the eye

- **Have adequate lighting**

Avoid excessive sunlight coming in through a window or harsh interior lighting

- **Protect against UV rays**

Wear sunglasses and hat when outdoors

- **Improve desk ergonomics and sitting posture**

Stay at arm's length from the monitor; adjust chair height so knees are level with hips; install an anti-glare screen or apply a screen filter; use a desktop humidifier or keep artificial tears at hand to lubricate the eyes

- **Put on protective eye wear**

Wear safety glasses when doing activities that could cause eye injury; choose glasses that reduce exposure to blue light emitted by digital devices

- **Go for regular eye checks**

  ›› Babies (aged 3 and below)
  Screened during regular paediatric appointments

  ›› Children and teenagers (aged 3 to 20)
  A thorough eye check every one to two years during routine health check-ups or when getting fitted for corrective eyewear

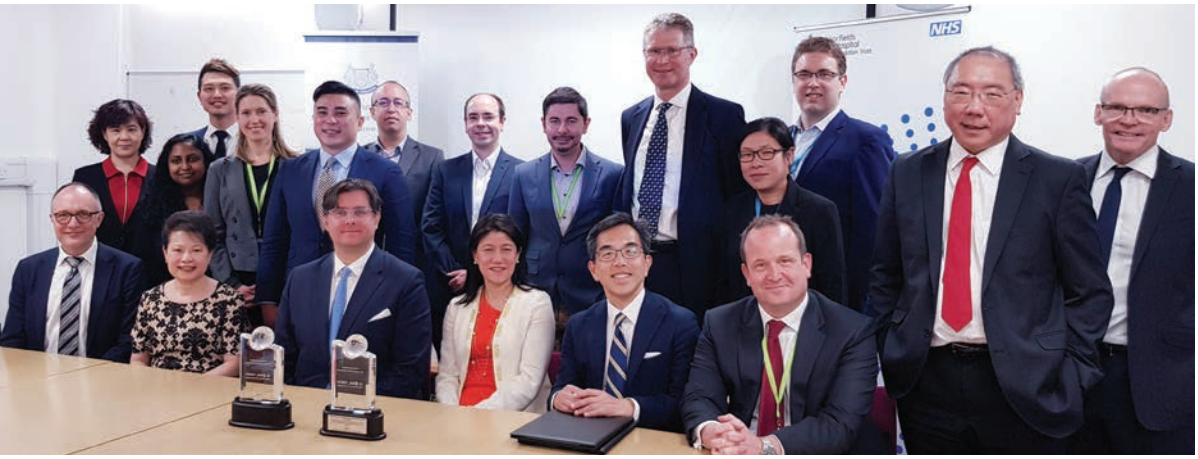
  ›› Young adults (aged 21 to 39)
  A comprehensive eye examination if you have a family history of eye disease or if you are suffering from an eye injury

  ›› Adults and seniors (aged 40 and above)
  Get a baseline eye disease screening when you turn 40, and seek the ophthalmologist's opinion for follow-up actions

  ›› Anyone with risk factors
  If you have diabetes or high blood pressure, or are taking prescription medications that may affect the eyes, you should undergo eye checks more frequently. Seek advice on the ideal interval between check-ups

New partnership between Singapore and UK's leading eye centres

Groundbreaking eye research and world-class training are at the heart of this collaboration between SNEC, SERI, Moorfields Eye Hospital, and University College London's (UCL) Institute of Ophthalmology.



Singapore High Commissioner to the UK, Ms Foo Chi Hsia (seated 4th from left) was present with representatives from SNEC, SERI, Moorfields Eye Hospital and UCL's Institute of Ophthalmology at the MOU signing ceremony on 4 June 2019

Ever since SNEC was founded in 1990, it has worked closely with Moorfields Eye Hospital and UCL's Institute of Ophthalmology on eye research, academic secondments and medical education. This relationship was recently formalised with a Memorandum of Understanding (MOU).

The partnership will see two globally renowned eye centres and their respective research partners join forces in utilising advanced technology (such as artificial intelligence, big data analysis and teleophthalmology) to meet the growing demand for ophthalmic services across the world.

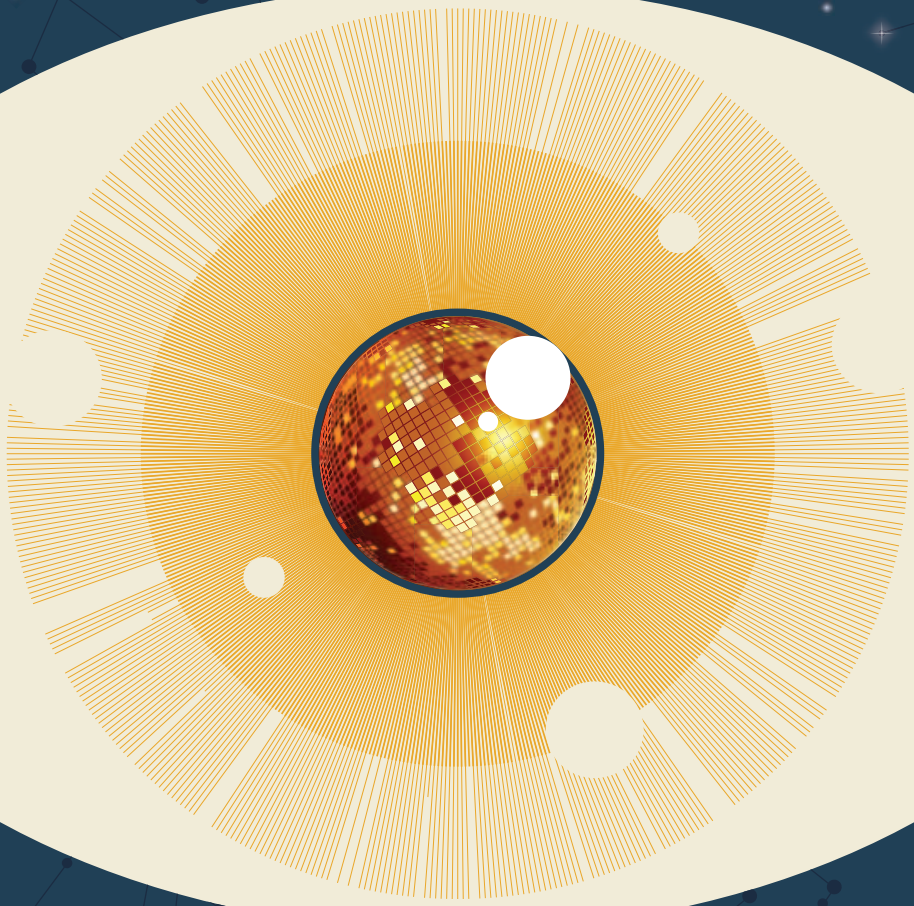
As part of the collaboration, scientists and clinicians from the four institutions will develop multidisciplinary research projects focusing on the detection, diagnosis, progression and treatment of eye conditions, as well as research targeted at eye care delivery and models of care.

Through high-impact research and sharing of knowledge, resources and best practices, the next significant breakthroughs in the search of cures for various eye diseases can be expected.

In addition, greater opportunities in education will also be explored. These include novel surgical training methods (such as simulation and virtual reality), an online educational platform for nursing, optometrists and allied health personnel, student and/or academic and administrative staff exchanges, and joint fellowship training programmes.

"Moorfields is recognised as the oldest, largest and most dynamic eye centre in Europe, while SNEC serves more than half the public's eye care needs in Singapore and receives regular referrals for complex eye cases from other Southeast Asian and Asian countries. SNEC looks forward to closer dialogue, faculty exchanges, and skills transfer as we introduce innovative care models in coping with a rapidly ageing demographic in both the UK and Singapore," said Prof Wong Tien Yin, Medical Director of SNEC.

A CHARITY EVENT IN AID OF VISION LOSS PREVENTION



THE EYE BALL 2019

THE RITZ-CARLTON, MILLENIA SINGAPORE
27.09.2019, FROM 6PM

SECRET CODE: GOLDEN EYE

VISIONSAVE

Singapore National Eye Centre SingHealth

SINGAPORE EYE RESEARCH INSTITUTE

SingHealth FUND

SINGAPORE TATLER

For further queries or to support VisionSave,
please contact Levarill Chng at (65) 6322 4505 or email: levarill.chng.x.y@snec.com.sg

Proceeds will go to SHF-SNEC, a charity fund under SHF, UEN No. 201624016E

Thyroid eye disease experts congregate at ITEDS Symposium

The Fifth International Thyroid Eye Disease Society (ITEDS) Symposium was held at SNEC from 20 to 23 February 2019.

Organised in Singapore for the first time, the ITEDS Symposium centred on the theme of "Current Perspectives in the Management of Thyroid Eye Disease: East Meets West". It is co-hosted by ITEDS, College of Ophthalmologists, Academy of Medicine Singapore, and SNEC.

Gathering more than 400 delegates from around the world, the Symposium saw the attendance of international authorities on thyroid eye disease (TED), renowned experts, allied health professionals and young faculties.

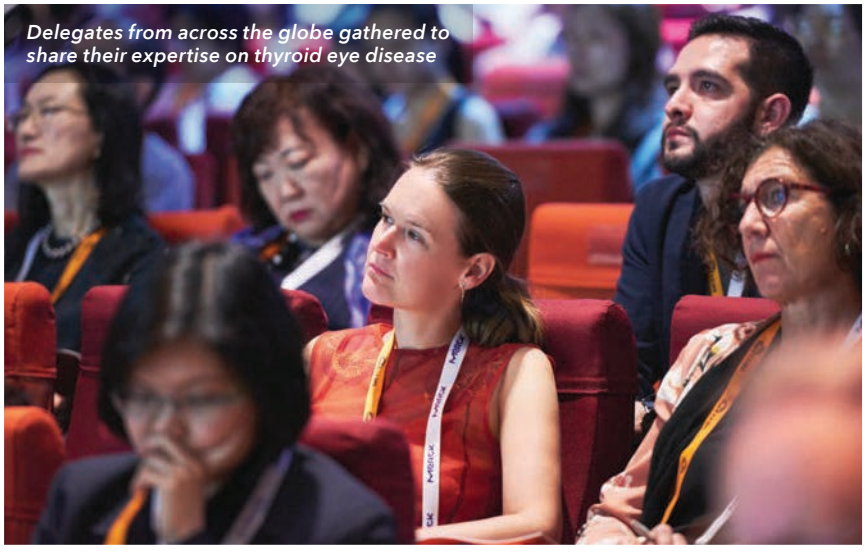
(Above) Adj Assoc Prof Seah Lay Leng, Organising Chairman of the ITEDS Symposium 2019, giving her welcome address (Left) Participants taking the opportunity to exchange ideas during a tea break

(Left) Dr Peter Dolman, past president of ITEDS, giving the Hong Leong Professorship Special Lecture on the evaluation and management of dysthyroid optic neuropathy
(Above left) Guest of honour Dr Lam Pin Min urging collaboration between TED experts in his speech
(Above right) Participants posing questions to the invited speakers

Dr Lam Pin Min, Senior Minister of State for Health and Transport, graced the event as the guest of honour. He spoke on the prevalence of TED worldwide, and the condition's impact on quality of life. "This is an excellent platform for knowledge sharing. Through the sharing of best practices, insights and experiences, it provides an opportunity for collaborative efforts and innovation," he said.

The Symposium consisted of three main components – a one-day ITEDS-SNEC Cadaveric Dissection Course; the Pre-Congress Teaching Course comprising a series of introductory lectures on various endocrine and ophthalmic aspects of TED and Graves' disease; and the Main Symposium, a two-day presentation by key opinion leaders on topics such as the latest advances in pathogenesis research, and up-to-date evidence-based clinical and treatment modalities.

Interactive segments, such as live quizzes and Q&A sessions where members of the audience discussed and exchanged ideas, enlivened the sessions.



Delegates from across the globe gathered to share their expertise on thyroid eye disease

Participants checking out exhibitor booths featuring eye-related products

SNEC and SERI launch eye drop dispenser

SNEC and SERI have collaborated with Ngee Ann Polytechnic to design and develop a novel assistive device named OptoAid, which enables safe, easy and accurate eye drop application.

Applying the right dosage of eye drops can be more difficult than it seems. The tendency to blink, shaky hands and inability to place the bottle correctly above the eye often lead to wastage, inaccurate dosages, and even contamination.

Seniors, in particular, face difficulty in positioning and administering medication into their eyes. Some may end up buying more medication than what they really need, which increases their financial burden. Studies have also found that unsuccessful self-instillation is linked to poor compliance, which results in therapeutic failure.

If you struggle to apply eye drops for yourself, your children or the elderly, OptoAid Eye Drop Guide – the latest innovation by SNEC and SERI, in collaboration with Ngee Ann Polytechnic – is a godsend.

OptoAid is a magnetic snap-fit modular eye drop guide that allows accurate, convenient and independent application. Following tests at SNEC and SERI, the OptoAid has proved to be

effective in reducing wastage as well as preventing accidental over-dosage of eye medications, which may cause complications.

In addition, the product has been presented at the World Association of Eye Hospitals (WAEH) and received early interest from major eye hospitals around the world, including Moorfields Eye Hospital (UK), Duke University Medical Center (USA), and Royal Victorian Eye and Ear Hospital (AUS). The Eye Drop Guide is launched in 20 countries through a partnership with distributors Vivid Frontier and Life Bridge Partners.

One size fits all

OptoAid Eye Drop Guide is suitable for:

- People who regularly use eye drops for allergies, dry eyes or long-term contact lens wear
- Patients who need the right dosage and consistency to treat their conditions (such as glaucoma)
- Patients who require antibiotic and anti-inflammatory eye drops after cataract or other surgeries

Features and benefits

FEATURES

Universal Eye Drop Guide Cup

- Contoured cup structure fits the eye snugly
- Medical-grade soft silicone for durability and repeated use
- Magnetic snap for easy toggle between multiple eye drop bottle and minim holders
- Easy cleaning; simply wipe down after use

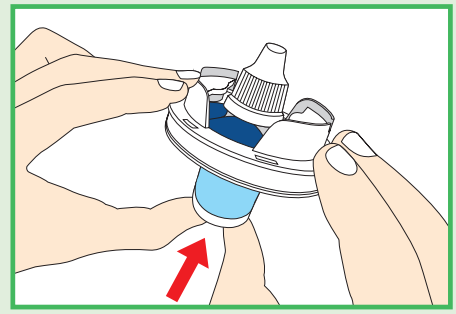
Eye Drop/Minim Bottle Holder

- Flexible rubber lock to fit a wide range of bottles
- Easy-to-use pinch levers allow accurate dosage of eye drops
- Eye drop/minim bottle locks in place for consistent application

BENEFITS

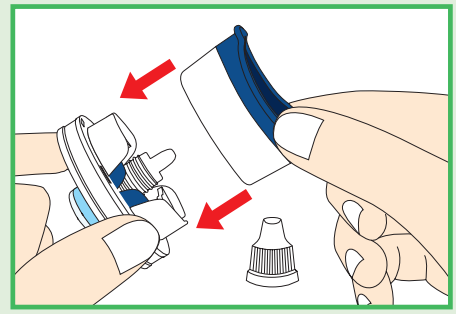
- Unique design fits most eye drop brands, bottle sizes, and single use vials/minims
- Holds the eye open comfortably
- Eye drops land accurately on the eye
- Prevents complications and wastage
- Reduces infection with no touching of bottle tips
- Easy self-application

3-Step Guide



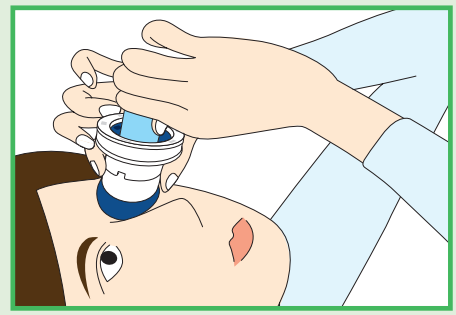
Step 1

Push the eye drop bottle/ minim through the OptoAid holder till you hear a **click**



Step 2

Snap the OptoAid eye cup and holder together after removing the cap of the eye drop bottle/minim



Step 3

Tilt your head and place OptoAid in position. Gently squeeze bottle/minim lever to apply prescribed amount

Where to buy?

Visit **www.optoaid.com** or **www.vividfrontier.com** to find out more. Also available in SNEC Pharmacy.

SNEC opens new eye clinic in Sengkang

The new eye clinic brings high-quality and holistic eye care to the doorstep of people living in the north-east.

Recognising the needs of the rapidly growing north-eastern community, SNEC has recently opened its latest eye clinic at the brand new Sengkang General Hospital (SKH). To address the rising demand for eye care, SNEC strives to expand and enhance its services to benefit patients in these ways:

1 GREATER CONVENIENCE

Located near Compass One shopping mall, SNEC Eye Clinic @ SKH is a 6-minute walk from Sengkang MRT station and is well connected by public transport. It is linked to Cheng Lim LRT station via a pedestrian bridge, and there are a number of bus services that stop close to the hospital.

2 WIDE RANGE OF SERVICES

Experienced specialists from SNEC work closely with a team of ophthalmic nurses, ophthalmic investigation technicians and allied health professionals to provide holistic care.

Common eye symptoms and signs we see:

- Blurred vision
- Eye pain
- Flashes and floaters
- Red eye and conjunctivitis
- Myopia and presbyopia ("lao hua")
- Eye/cornea infections and ulcers
- Lumps and bumps around the eye
- Droopy eyelids and other abnormal eyelid positions
- Watery/teary eyes

Eye screening and treatments offered:

- Comprehensive eye examination
- Cataract assessment and small-incision cataract surgery with intraocular lens implantation
- Investigation and diagnosis of cornea problems and degeneration
- Screening for early glaucoma and evaluation of glaucoma suspects
- Medical and laser treatment of glaucoma
- Evaluation and management of retinal conditions (such as diabetic retinopathy, age-related macular degeneration, retinal tears)
- Eyelid and other oculoplastic surgery

3 SUPPORTED BY ADVANCED EQUIPMENT

A suite of advanced investigative devices and ophthalmic laser machines complement the extensive services. These equipment include Humphrey Visual Field Analyser (HVF) and Optical Coherence Tomographer (OCT).

4 ACCESSIBLE TERTIARY CARE

Patients who require cataract surgery can undergo the procedure in dedicated operating theatres at SKH. The operating staff there maintain the same high surgical standards of SNEC, and use implants and equipment similar to those used in SNEC Main Centre. In addition, SNEC's ophthalmologists also perform urgent consultation and ophthalmic care for patients warded at SKH.

MAKE AN APPOINTMENT
SNEC Eye Clinic @ SKH
Sengkang General Hospital
Medical Centre, Level 8
110 Sengkang East Way
Singapore 544886
Main appointment line:
6227 7266
Email: appointments@snec.com.sg

OPENING HOURS
8.30am to 5.30pm
(Mondays to Fridays)

STANDING TALL AFTER A FALL

Steven Seow, who lost a limb to diabetes, had his sight salvaged by VisionSave, which provided financial assistance for his diabetic retinopathy treatment.

An accident at his workplace years ago sent Steven Seow's life into a downward spiral. He was conducting a routine site survey as a Safety Officer at an oil rig when he stumbled and fell. What the 55-year-old did not know then was that he has diabetes, and that the seemingly harmless bruise on his left knee would later lead to an amputation.

Shortly after, Steven was diagnosed with diabetic retinopathy (DR), a complication caused by damaged blood vessels at the back of the eye. Adding fuel to the fire, he lost his job, making his wife the sole breadwinner for their family of six.

Due to mounting household and medical expenses, saving money by choosing cheaper food options or sharing single portions became the norm. Steven's wife would compare prices of their favourite items, such as *achar*, across several supermarkets to get the best deals. There were days where their dinners consisted of only instant noodles.

> *"VisionSave has helped me and given me the courage to look for a job! This would not be possible if not for generous donors' support.*

That said, Steven, who now moves around with a prosthetic leg, is making a conscious effort to

watch what he eats. "I was already quite a healthy eater in the past, but now I can only eat a certain amount of white rice. Brown rice would be best. And I need to take drinks without sugar," he explains.

A beacon of light

To treat his DR, Steven goes for monthly steroid injections that are heavily subsidised by MediSave. Unfortunately, the first-line drugs soon proved ineffective, and he had to increase the medicinal dosage. This treatment, which is a long-term solution to prevent permanent blindness, would have cost him more than S$10,000 a year.

"Where am I going to get this money when I'm not working?" he asks. Luckily for Steven, SNEC's VisionSave came into the picture and played an instrumental role in funding his second-line treatment.

Despite his optimistic attitude, Steven hopes to find a job soon to help with the family expenses. His youngest daughter, who is still schooling, holds a part-time job to support herself. "I'm not doing well financially so my children have to work," he shares.

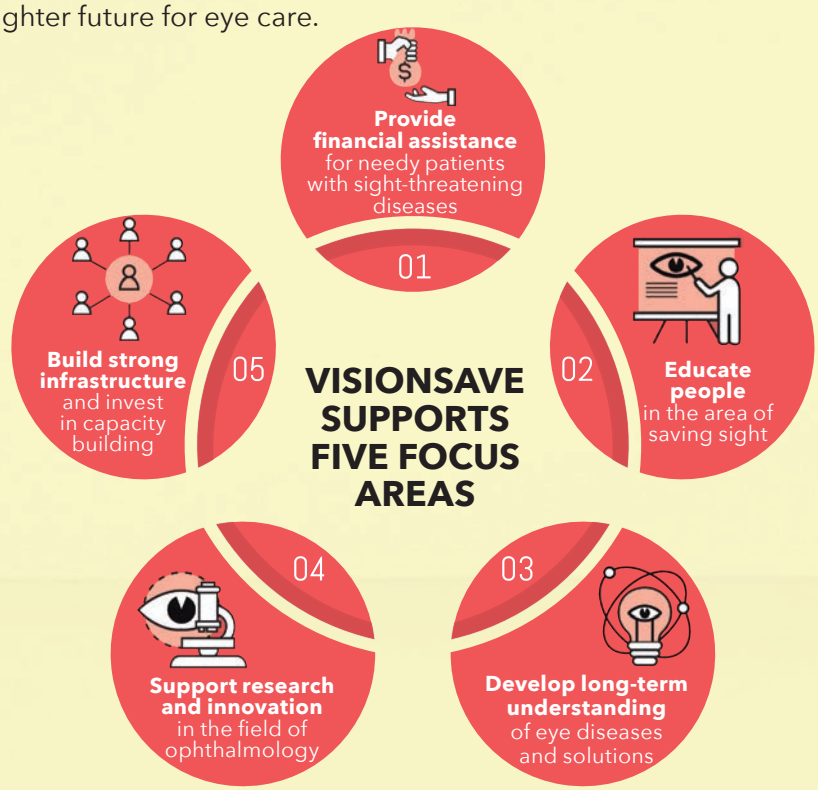
A concern of his, however, is his eye condition. "I have to attend medical appointments on a monthly basis. Which employer would want me?"

In the meantime, financial assistance from VisionSave has made his situation more bearable.

"Losing my leg to diabetes was painful. I don't take my eyesight for granted now. VisionSave has helped me and given me the courage to look for a job! This would not be possible if not for generous donors' support. Thank you so much," Steven says.

SAVE SIGHT, CHANGE LIVES

VisionSave is a fundraising campaign by SNEC and SERI to holistically enhance eye care delivery with the ultimate goal of saving, restoring and protecting our patients' vision. Your contribution goes a long way in improving the quality of life for needy patients and building a brighter future for eye care.



Scan to donate

Share our vision and support us.
Learn more about VisionSave:
Tel: 6322 4541
Email: visionsave@snec.com.sg
Website: www.visionsave.sg/donate

VISIONSAVE

NEW ROLE OF NURSES: PHYSICIAN EXTENDERS

Lee Jia Le and Jacqueline Ek are part of the pioneer batch of SNEC nurses who have been trained to administer eye injections.

After a year of training, eight nurses in SNEC have started performing intravitreal (IVT) injections for patients since January 2019. Among them are Lee Jia Le and Jacqueline Ek, who have worked at the eye centre for seven and four years respectively.

To obtain the skills for their new role, they completed one module of the Graduate Certificate in Clinical Nursing (Ophthalmology) course, and underwent more than 100 practical sessions under the supervision of Assoc Prof Ian Yeo, Senior Consultant of the Medical and Surgical Retina Department and Deputy Medical Director (Education).

While apprehensive initially, the nurses soon gained confidence with experience. "To be honest, it was really scary at first. But as we have watched doctors do these injections on a daily basis over the years, we are very familiar with the procedure," said Jacqueline. "I was nervous only for the first injection. It also helped that we had wet lab sessions before we started injecting patients."

Lee Jia Le (left) and Jacqueline Ek (right)

Empowered through upskilling

As the ageing population grows, the prevalence of conditions such as age-related macular degeneration (AMD) and diabetic retinopathy (DR) will continue to accelerate. To

preserve their vision, these patients require regular IVT injections. This in turn leads to an increased demand for nurse injectors.

Nurse injectors are tasked to perform all steps of the injection process independently [see sidebar]. This shifting of tasks has also earned them the title of "physician extenders".

With bigger responsibilities come greater pressures. "We always have to be very alert because there is no room for mistakes," Jia Le shared.

Win-win situation

Despite the additional duties, Jia Le feels that being a nurse injector not only boosts her resume, but it also significantly reduces waiting time for patients and benefits the team as a whole.

"Sometimes patients wait two to three hours just for a five-minute procedure, and we have to bear the brunt of their frustrations. Doctors are also happy to have nurse injectors share their load because they can devote more time to seeing other patients in their clinics," she explained.

On average, each nurse does between 25 and 30 injections every day. Patients range from young adults to elderly in their 90s. The consultants would determine which patients are to be managed by nurses and which ones to handle personally.

The response has been encouraging so far. "Patients are appreciative of the shorter waiting time, and some even say that we are more gentle than doctors!" Jacqueline quipped.

However, there are still people who are doubtful of the nurses' competency. "I've encountered patients who questioned me: 'Are you sure you know how to do it? What if I turn blind?'," Jacqueline confided. "We went through the same training as Medical Officers and had even more intensive practices, so we hope patients can have more faith in us."

Currently, more nurse injectors are undergoing training by Assoc Prof Yeo and Dr Wong Chee Wai, Consultant in the General Cataract & Comprehensive Ophthalmology Department. This programme is also assisted by nurse leaders, who are involved in the setting up of guidelines, as well as coordination of work and training sessions.

Facts & Figures

16,000
injections done in SNEC every year

120
injections performed by nurses every day

8
Current no. of nurse injectors

3
No. of nurses undergoing training

30-90 mins
Waiting time for doctor to give injections

5 mins
Waiting time for nurse to give injections

Steps of an IVT injection

Step 1
Put eye drops

Step 3
Perform IVT injection

Step 2
Carry out "time-out" protocol
(verify patient details, such as drug allergy and type of injection)

7 Ways To Care For The Eyes During Travel

Vision problems and eye discomfort can increase the challenges of navigating a new city. Serious eye conditions can even lead to permanent damage to your eyes if not treated promptly and appropriately. Here are some tips to protect your eyes while enjoying your well-deserved vacation.

1 PREPARE FOR POTENTIAL EYE PROBLEMS

Air quality in planes and changes in climate can make our eyes dry, itchy and sore. Switch to glasses during the flight, and always pack your contact lens case and solution in the carry-on baggage. Bring eye drops for lubrication and to alleviate discomfort. A portable humidifier or moisture chamber eye goggles may also help in situations that expose you to excessive air conditioning.

Eye discomfort and itching can also be caused by allergies, which may be triggered by new environments – equip yourself with over-the-counter antihistamine eye drops or tablets if you are prone to allergies. Avoid areas where there is a lot of smoke, dust or pollen as it can worsen eye allergies. Refrain from rubbing your eyes as this can increase discomfort. Cold compresses and lubricants can also soothe allergy-led eye discomfort.

2 PRACTISE GOOD EYELID HYGIENE

Even after a long day, make an effort to remove your make-up before sleeping, especially if you are wearing mascara and eyeliner. Keeping your eyelids clean will help prevent styes – a common inflammation or infection of the eyelid that causes a tender, red lump at the edge of the eyelid. When oil glands in your eyelids are clogged by dirt or debris, a small collection of pus may form, and this results in the stye. Warm compresses and lid hygiene can help reduce swelling. If a stye is persistent or worsens, consult a doctor for topical antibiotic ointments or to perform incision and drainage.

3 USE PROPER EYEWEAR

Choose sunglasses that shield your eyes from harmful UV rays and harsh glare, whether you are going to the beach or the ski slopes. UV protection safeguards your eyes from common degenerative conditions such as cataract, pterygium and macular degeneration. Key features of a good pair of sunglasses include lightweight but sturdy wraparound frames, UV protection, and polarised lenses. Wear glasses on a windy day to reduce evaporation of tears that can result in dry eyes. If you will be engaging in water activities, put on goggles to stop water from entering your eyes, as this would increase the risk of infections.

4 CARE FOR CONTACT LENSES

Before your vacation, check that your contact lenses and contact lens solution have not expired. If you are using disposable lenses, pack extra pairs in case you lose them and bring your glasses as backup. Change your contact lenses as and when needed, and avoid sleeping, bathing or swimming with them on. Store them only in contact lens solution as other liquids (such as tap water) may contain bacteria that can cause eye infections. If you experience eye pain, redness or blurred vision while wearing contact lenses, remove them immediately and seek medical treatment.

5 BRING YOUR PRESCRIPTION

It is better to be safe than sorry. By bringing your prescription, you don't have to worry about losing your contact lenses or breaking your glasses. If you use prescription eye drops, be sure to prepare spare unopened bottles, as they may not be available in other countries.

6 CHECK WITH YOUR DOCTOR

If you have an existing eye condition or underwent eye surgery recently, seek an ophthalmologist's opinion on whether you are fit for travel. For example, people who have had retinal detachment surgery may not be fit to fly.

7 BEWARE OF CHANGES IN YOUR VISION

Don't wait until you get home to see an ophthalmologist if you have any acute eye symptoms. Prompt diagnosis and treatment of rarer but serious problems (such as retinal detachment, acute glaucoma, serious eye infections or severe eye trauma) during your travels can avert permanent damage to the eyes. If you experience symptoms such as severe eye pain, sudden loss of vision, and appearance of floaters and flashes, you should seek immediate medical attention.

What's wrong with my eyes, doc?

Is it possible for adults in their 20s to develop myopia, even if they have had perfect vision previously?

Myopia is not solely a children's problem. Over 80% of Singaporeans in their 20s to 40s are short-sighted, and the risk of vision loss associated with myopia increases with age.

Myopia may develop in adults due to visual stress, excessive amount of near work, environmental factors or other underlying health conditions.

People with high myopia have a bigger risk of developing early cataract, glaucoma, macular degeneration and retinal detachment in their mid- to late adulthood.

Therefore, it is important to control and monitor myopia progression to prevent further complications later in life.

DEBUNKING MYTHS ABOUT MYOPIA

- **Myopia will not cause blindness** — FALSE

  Myopia (high myopia in particular) can be a complex condition associated with major eye diseases. These may result in visual impairment and require early intervention.

- **Myopia can be easily treated by a pair of glasses or contact lenses** — FALSE

  Myopia is a refractive error caused by the elongation of the eyeball. Prescription glasses and contact lenses can correct the blurry distance vision caused by myopia, but they are not a cure for the underlying condition and its sight-threatening complications.

- **Wearing pinhole glasses can reverse myopia** — FALSE

  Myopia cannot be reversed, but it can be managed by slowing down its progression during childhood through lifestyle modifications and atropine eye drops.

- **Taking supplements such as vitamin A will prevent myopia** — FALSE

  Myopia is not caused by vitamin A deficiency. Taking vitamin A may help for people with night blindness, but it will not prevent myopia or improve vision in myopia patients.

See Cover Story [page 6] for more information on myopia.

Dr Loh Kai-Lyn, Associate Consultant, General Cataract & Comprehensive Ophthalmology Department and Myopia Centre, SNEC

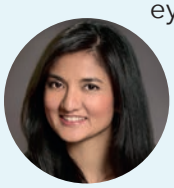
I recently went to the beach on a windy day. After the excursion, I found myself blinking more frequently than usual, as my eyes felt discomfort and watery. Should I visit a doctor?

Any material such as dust or sand that gets into the eye is called a foreign body. Superficial foreign bodies stick to the front of the eye or get trapped underneath the eyelid, but do not enter the eye; penetrating foreign bodies enter the eye by piercing through its outer layer (cornea or sclera) – they usually travel at high speed and are commonly made of metal.

Superficial foreign bodies are generally not serious, but may cause discomfort, red eyes and gritty sensation. If they are stuck underneath the eyelid, you may experience pain when blinking.

Any foreign object that penetrates the eye at an accelerated speed poses a high risk for eye injury, and may even lead to blindness if not detected and treated promptly. Seek medical attention immediately if a foreign body entered your eye during high-velocity activities such as grinding or hammering metal, and caused severe pain or blurred vision.

Superficial eye debris can be removed via gentle rinsing with warm water. This can be done with an eye bath on your own, or you can get someone to help rinse your eye from the side while you lie down. Avoid rubbing the eyes, and do not use cotton buds or sharp objects (such as tweezers) to remove the foreign body. Consult a doctor if the eye debris is large or if it continues to cause irritation.



Dr Yap Zhu Li, Consultant, Glaucoma Department, SNEC

PROMOTIONS

Dr Jean Chai
Senior Consultant, Corneal & External Eye Disease Department, SNEC

Dr Boey Pui Yi
Senior Consultant, Glaucoma Department, SNEC

Dr Laurence Lim
Senior Consultant, Surgical Retina Department, SNEC

Dr Gavin Tan
Senior Consultant, Surgical Retina Department, SNEC

Dr Wesley Chong
Consultant, General Cataract & Comprehensive Ophthalmology Department, SNEC

Dr Daniel Ting
Consultant, General Cataract & Comprehensive Ophthalmology Department, SNEC

Dr Andrew Tsai
Consultant, General Cataract & Comprehensive Ophthalmology Department, SNEC

Dr Yap Zhu Li
Consultant, Glaucoma Department, SNEC

Dr Kelvin Teo
Consultant, Medical Retina Department, SNEC

Dr Shweta Singhal
Consultant, Neuro-Ophthalmology Department, SNEC

Dr Gillian Teh
Consultant, Oculoplastic Department, SNEC

Dr Yong Kailing
Consultant, Oculoplastic Department, SNEC

Dr Daniel Chua
Consultant, Refractive Surgery Department, SNEC

Dr Danny Cheung
Consultant, Surgical Retina Department, SNEC

Dr Fiona Lim
Associate Consultant, General Cataract & Comprehensive Ophthalmology Department, SNEC

Dr Tan Licia
Associate Consultant, General Cataract & Comprehensive Ophthalmology Department, SNEC

Dr Samanthila Waduthantri
Senior Resident Physician, Clinical Service Department, SNEC

Dr Dan Dexter
Staff Registrar, Clinical Service Department, SNEC

Dr Janika Narendra Shah
Staff Registrar, Clinical Service Department, SNEC

JOINT SNEC/SERI AND DUKE-NUS APPOINTMENT

Prof Jonathan Crowston
Professor and Senior Clinician Scientist,
Duke-NUS Centre for Vision Research

PROFESSOR (WITH TENURE), OPHTHALMOLOGY & VISUAL SCIENCES ACADEMIC CLINICAL PROGRAMME (EYE ACP)

Prof Jodhbir Mehta
Deputy Vice Chair (Research), EYE ACP;
Head & Senior Consultant,
Corneal & External Eye Disease
Department, SNEC;
Deputy Executive Director, SERI

Prof Louis Tong
Senior Consultant, Corneal & External
Eye Disease Department, SNEC;
Head, Ocular Surface Research
Group & Research Training &
Development Platform, SERI

PROFESSOR, OPHTHALMOLOGY & VISUAL SCIENCES ACADEMIC CLINICAL PROGRAMME (EYE ACP)

Prof Gemmy Cheung
Head & Senior Consultant,
Medical Retina Department, SNEC;
Head, Retina Research Group, SERI

ASSOCIATE PROFESSOR, OPHTHALMOLOGY & VISUAL SCIENCES ACADEMIC CLINICAL PROGRAMME (EYE ACP)

Assoc Prof Audrey Chia
Vice Chair, Faculty & Professional
Development, EYE ACP;
Head & Senior Consultant, Paediatric
Ophthalmology & Adult Strabismus
Department, SNEC; Co-Clinical
Director, Myopia Centre, SNEC;
Head, Ophthalmology Service, KKH

Assoc Prof Marcus Ang
Consultant, Corneal &
External Eye Disease
Department, SNEC;
Co-Clinical Director,
Myopia Centre, SNEC

ADJUNCT ASSOCIATE PROFESSOR, OPHTHALMOLOGY & VISUAL SCIENCES ACADEMIC CLINICAL PROGRAMME (EYE ACP)

Adj Assoc Prof Mohamad Rosman
Head & Senior Consultant,
Refractive Surgery Department, SNEC

Congratulations to these inspiring individuals!

AWARDS

PROFESSOR, SINGHEALTH DUKE-NUS KWAN IM THONG HOOD CHO TEMPLE PROFESSORSHIP IN OPHTHALMOLOGY

Prof Aung Tin
Deputy Medical Director (Research), SNEC; Senior Consultant, Glaucoma Department, SNEC; Executive Director, SERI; Academic Vice Chair (Research), Ophthalmology & Visual Sciences Academic Clinical Programme (EYE ACP), SingHealth Duke-NUS Academic Medical Centre

NATIONAL DAY AWARDS 2018
Long Service Medal
Dr Ti Seng Ei
Adj Assoc Prof Sharon Tow
Adj Assoc Prof Edmund Wong
Assoc Prof Ian Yeo

SINGAPORE MANUFACTURING FEDERATION
Singapore Manufacturing Federation Award 2018
Adj Assoc Prof Seah Lay Leng
Dr Livia Teo

EYE AND VISION HEALTH AWARD 2018
Visionary Award
Prof Aung Tin

AMERICAN SOCIETY OF CATARACT AND REFRACTIVE SURGERY (ASCRS)
Cataract Olympics - Silver and Gold Medal
Prof Chee Soon Phaik

AMERICAN ACADEMY OF OPHTHALMOLOGY 2018
Senior Achievement Award
Prof Chee Soon Phaik

AAO Achievement Award
Dr Anshu Arundhati

12TH ASIA-PACIFIC VITREO-RETINA SOCIETY (APVRS) CONGRESS
APVRS Constable Lecture
Prof Gemmy Cheung

EUROPEAN SOCIETY OF RETINA SPECIALISTS (EURETINA)
Euretina Lecture
Prof Wong Tien Yin

WORLD OPHTHALMOLOGY CONGRESS
Cataract Olympics Freestyle - Gold Medal
Prof Chee Soon Phaik

PHILIPPINE GLAUCOMA SOCIETY
Manuel B. Agulto Award
Prof Aung Tin

SINGHEALTH DUKE-NUS SCIENTIFIC CONGRESS 2018
Best Poster Award
Dr Preeti Gupta

SINGHEALTH EXCELLENCE AWARDS 2018
Distinguished Young Researcher Award
Dr Daniel Ting

SINGHEALTH PUBLISH! AWARD
Dr Chetna Dhand
Dr Daniel Ting

RiSE (RESIDENCY IN SINGHEALTH EXCELS) AWARDS
Faculty Appreciation Award
Assoc Prof Audrey Chia

Outstanding Faculty Award
Assoc Prof Shamira Perera
Assoc Prof Tina Wong
Dr Nathalie Chiam
Dr Olivia Huang
Dr Ng Si Rui
Dr Nicole Sie Ming
Dr Melissa Wong

Inspiring Resident-Educator Award
Dr Olivia Huang

Residents Committee Appreciation Award
Dr Reuben Foo

Partners in Education
Ms Zainorah Alias

SNEC provides eye treatment for the full spectrum of eye conditions:

- General Cataract & Comprehensive Ophthalmology
- Cataract Subspecialty
- Corneal & External Eye Disease
- Glaucoma
- Neuro-Ophthalmology
- Ocular Inflammation & Immunology
- Oculoplastic
- Paediatric Ophthalmology & Adult Strabismus
- Refractive Surgery
- Medical & Surgical Retina

Consultation by appointment:

Tel: 6227 7266

Email: appointments@snec.com.sg

Visit us: www.snec.com.sg

Like us on: /@SNEC.SERI

Where We Are

11 Third Hospital Avenue
Singapore 168751
www.snec.com.sg

Opening Hours

8:30am to 5:30pm
Mondays to Fridays
No clinic sessions on Saturdays, Sundays and Public Holidays

Valet Service

- Valet service is available for SNEC patients at $3.00. Parking charges of $0.036 per minute (or $2.16 per hour) applies on top of the valet parking fee.
- Operating hours: 7:00am to 5:30pm Mondays to Fridays

GP Hotline: 6322 9399

A dedicated line for GPs attending to patients with eye conditions.

SNEC

Branches and Affiliated Clinics

CENTRAL

1 SNEC Eye Associates Gleneagles Hospital
6A Napier Road #02-39/40,
Annexe Block
Singapore 258500
Tel: 6835 1188

2 Singapore National Eye Centre
11 Third Hospital Ave
Singapore 168751
Tel: 6227 7266

3 SNEC Eye Clinic @ NHCS National Heart Centre Singapore
5 Hospital Drive, Level 4, 4C
Singapore 169609
Tel: 6704 8289

4 SNEC Retina Centre Diabetes & Metabolism Centre (DMC), SGH
17 Third Hospital Avenue,
#02-00 Singapore 168752
Tel: 6421 8500

5 KK Eye Centre KK Women's & Children's Hospital
100 Bukit Timah Road,
Level 1, Children's Tower
Singapore 229899
Tel: 6394 1930 / 6394 1931

EAST

NEW

6 SNEC Eye Clinic @ Bedok
Blk 212 Bedok North Street 1,
#03-147 Singapore 460212
Tel: 6843 5001

NEW

7 Myopia Centre
Blk 212 Bedok North Street 1,
#03-147 Singapore 460212
(Located at SNEC Eye Clinic @ Bedok)
Tel: 6843 5060
Whatsapp: 9139 1712

8 SNEC Eye Clinic @ CGH Changi General Hospital
2 Simei Street 3, Level 1
Singapore 529889
Tel: 6850 1450 / 6850 1470

NORTH EAST

NEW

9 SNEC Eye Clinic @ SKH Sengkang General Hospital
Medical Centre, Level 8
110 Sengkang East Way
Singapore 544886
Tel: 6930 2802

NEW

10 SNEC Community Eye Clinic @ Punggol Polyclinic
Blk 681 Punggol Drive,
Oasis Terraces, #04-12
Singapore 820681
Tel: 6718 2590

Consultation by appointment: 6227 7266 GP Hotline: 6322 9399
Email: appointments@snec.com.sg Visit us: www.snec.com.sg

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