

SING VISION[®]

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

AT THE FOREFRONT:

FIRST IN THE
WORLD ARTIFICIAL
INTELLIGENCE
SYSTEM DETECTS
3 MAJOR EYE
CONDITIONS

ALL ABOUT EYES:

EYE EXAMS:
WHY ARE THEY
IMPORTANT?

HERE'S
LOOKING AT:
KAREN ZHANG

AN EYE FOR INSPIRATION

National paddler
Jason Chee's eye
cancer journey



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Eye Centre
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ACADEMIC MEDICAL CENTRE
OPHTHALMOLOGY
& VISUAL SCIENCES

Editor's Note

As we present you with the first issue of SINGVISION this year, we would like to thank you for your support in 2017. We look forward to bringing you more stories that will help protect and boost your eye health in the year ahead.

It takes extraordinary toughness and tenacity to experience multiple adversities and emerge stronger than before. In Cover Story (page 6), SINGVISION speaks with national paddler Jason Chee on his uplifting outlook on life despite his physical disabilities and the loss of his right eye to cancer. The inaugural winner of the VisionSave Inspirational Patient Award, Jason also recounts his patient journey with Singapore National Eye Centre (SNEC) and Singapore Eye Research Institute (SERI).

This issue, find out how you can play your part in transforming the lives of needy patients and build a future free from sight-threatening conditions and blindness through VisionSave (page 12). Turn to page 14 for an account of The Eye Ball 2017, a momentous event organised in conjunction with the fundraising campaign.

In addition, read about the launch of the Mobile Eye Bus (page 18) and other happenings at the VisionSave carnival held alongside the 18th National Eye Care Day (page 16). We also call attention to the importance of regular eye examinations for people of all ages (page 22).

For a better understanding of what an orthoptist does, check out our interview with Senior Orthoptist Karen Zhang, who details her roles and responsibilities (page 26). Don't miss out our handy guide on cataract surgery (page 28) and highlights of our contributions to SingHealth President's Challenge 2017 (page 31) in Snapshots.

We wish each and every one of you a happy and healthy 2018.

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Singapore National Eye Centre is the designated national centre within the public sector healthcare network.

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

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ALL YOU NEED TO KNOW

First in the world artificial intelligence (AI) system detects 3 major eye conditions

A new AI system co-developed by Singapore National Eye Centre (SNEC), Singapore Eye Research Institute (SERI) and National University of Singapore (NUS) School of Computing (SOC) is able to screen for diabetic retinopathy (DR), glaucoma and age-related macular degeneration.

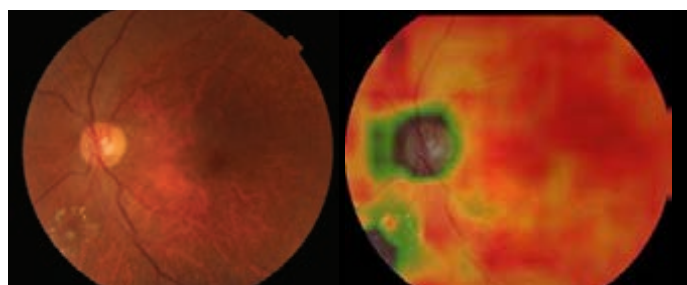
This study involved 30 co-investigators who used data sets comprising nearly 500,000 retinal images to evaluate the performance of the Deep Learning System (DLS). The system's sensitivity and specificity to detect the eye conditions are more than 90% and 85% respectively. The study was published in the Journal of American Medical Association (JAMA) on 12 December 2017. The co-inventors are Prof Wong Tien Yin and Asst Prof Daniel Ting from SNEC and SERI; and Prof Wynne Hsu, Prof Lee Mong Li, Janice and Dr Gilbert Lim from NUS SOC.

More efficiency, less costs

DR is the leading cause of preventable blindness among working adults in Singapore. One in three diabetic patients have DR, although five in six people with the eye condition are unaware of it.

To address the situation, the Singapore Integrated Diabetic Retinopathy Programme (SiDRP) was established. In 2017, it screened over 100,000 people across 18 polyclinics. However, SiDRP relies mostly on 'human assessment' of retinal photographs by a team of trained professional graders or optometrists.

As the prevalence of diabetes rises, the AI-based DLS will enhance access to DR screening and improve productivity of the healthcare system. "It will be easier to set up DR screening programmes in communities in the future, which could largely be done automatically by the DLS. It will also allow ophthalmologists and



Picture of a patient's eye with DR (left). The heat map (right) generated by the AI system shows the areas affected by DR

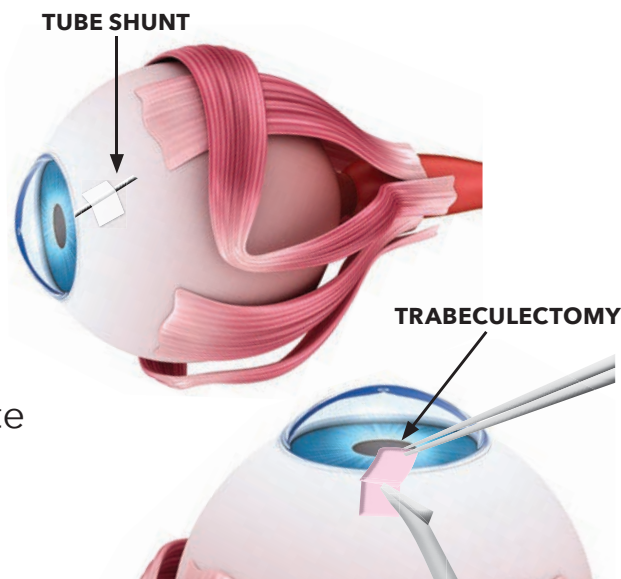
optometrists to concentrate on the treatment of DR cases," says Prof Wong Tien Yin, Medical Director of SNEC, Chairman of SERI and the study's senior author.

"AI is deemed the fourth industrial revolution in human history. We need to embrace this technology earlier to improve work efficiency, while maintaining a high standard of clinical care," adds Asst Prof Daniel Ting, US-ASEAN Fulbright Scholar 2017 and clinical lead of the AI team.

The AI system is currently being beta tested in the SiDRP alongside human graders. Meanwhile, the team aims to achieve five million images from around the world in the data sets over the next five years. Also in development are more complex algorithms for different DR severity levels, as well as predictive algorithms for DR incidence and progression, and diabetes-related complications, such as stroke, coronary disease and chronic kidney disease.

SNEC and SERI spearhead first Asia-wide trial in glaucoma surgery

Led by Singapore National Eye Centre (SNEC) and Singapore Eye Research Institute (SERI), the trial will study two of the most widely used glaucoma surgeries to guide treatment approaches for Asian patients.



Glaucoma is the leading cause of irreversible blindness worldwide. The eye condition affects more than 70 million people globally, with the figure estimated to rise to 80 million by 2020. In Singapore, approximately 3% and 12% of people aged above 50 and 70 respectively have glaucoma.

An imbalance between fluid production in the eye and its drainage builds up intraocular pressure (IOP). Glaucoma results when high IOP damages the delicate optic nerve fibres that are responsible for transporting visual impulses from the eye to the brain.

Currently, there are two main surgical procedures for advanced cases of glaucoma:

Trabeculectomy

This involves making a small opening in the sclera (white part of the eye), which creates a bubble on top of the conjunctiva (mucous membrane that covers the front of the eye), allowing eye fluid to drain and be absorbed by surrounding blood vessels. However, the incision may heal and close by itself after the procedure.

According to Prof Aung Tin, Deputy Medical Director (Research) of SNEC and Executive Director of SERI, post-operative scarring is more common among Asians than Caucasians.

Tube shunt (drainage implant surgery)

A small drainage tube is inserted into the eye to create a collection area where the fluid flows and is absorbed by nearby blood vessels. This technique overcomes the 'scarring response'.

Seeking gold standard

A randomised controlled trial to evaluate both surgeries was launched in November 2017. Funded by National Medical Research Council (NMRC), it will compare the efficacy and safety of the two procedures for patients with uncontrolled glaucoma and who have not undergone surgery previously. It will also study the long-term outcomes and complication rates in an Asian population.

In addition, the Singapore Clinical Research Institute (SCRI) will provide operational support such as data management, analysis and coordination for the trial, which aims to recruit 300 patients from more than 10 Asian countries, including at least 60 local patients.

"High-quality surgical trials in ophthalmology are rare in Asia. This is an important multi-centre study to address whether drainage implants are the new gold standard for glaucoma surgery," says Prof Aung Tin, who serves as the overall trial principal investigator.



Jason Chee sets sight on the positive

You can't keep a good man down. National paddler Jason Chee rises above his tribulations once again, after undergoing surgery to remove his cancer-afflicted right eye.

Even when life deals you a bad hand, you can still end up winning – if you have an unbeatable fighting spirit and tenacity like that of Jason Chee.

In December 2012, a naval ship accident took away Jason's legs, left arm and three fingers on his right hand. Another unfortunate twist of fate happened in April 2017 when the 34-year-old was diagnosed with choroidal melanoma (a malignant eye tumour), which cost him his right eyeball. Incredibly, these ordeals have not dulled his cheerful personality and optimistic attitude towards life.

"When the ophthalmologist told me there's a tumour inside my eye and I had to remove the eyeball, my first reaction was shock. I asked, 'why is this happening to me? What have I done wrong? Why is my life so miserable?'" he recounts. "But I reminded myself to stay calm, be positive and resolve the problem step by step."

IN GOOD HANDS

Jason was on the way to work at Changi Naval Base when he started seeing flashes of light in his right eye. Soon, half of his vision in that eye went black. Sensing something amiss, he visited a Navy doctor who referred him to the Singapore National Eye Centre (SNEC) eye clinic located at Changi General Hospital. There, Dr Gavin Tan, Consultant in the Surgical Retina Department, examined Jason through dilated ophthalmoscopy (a test to assess the eye after the pupils are dilated) and diagnosed the presence of a tumour.

Dr Tan sent Jason to SNEC main centre at Outram to further investigate the tumour with ultrasound, optical coherence tomography and fluorescein angiography, which confirmed that the tumour was a choroidal melanoma measuring 1.5cm.

WHAT IS CHOROIDAL MELANOMA?

The choroid is a layer of blood vessels in the eyeball that is located between the retina and sclera (white of the eye). Choroidal melanoma refers to a malignant eye tumour. Expedient treatment is necessary to reduce the risk of tumour cells spreading to other organs in the body as this will optimise the patient's chance of long-term survival.

Symptoms

Choroidal melanomas remain asymptomatic for prolonged periods of time. They may be found incidentally during a routine eye examination. Symptoms include:

- Blurred vision
- Floaters
- Flashing lights
- Painless and progressive distortion or loss of vision
- Changes in colour perception

Diagnosis

An ophthalmologist can identify a choroidal melanoma through a series of tests, including:

- **Dilated ophthalmoscopy**
To screen for eye conditions that can affect the back of the eye
- **Specialised photography of blood vessels (fluorescein angiography)**
To examine circulation within the choroidal melanoma
- **Ultrasound examination**
To measure size of the tumour; evaluate internal tumour reflectivity; detect retinal detachment; determine if the tumour has extended beyond the back of the eye (extrascleral extension)
- **Biopsy by enucleation or fine needle aspiration**
To have definitive diagnosis with histologic confirmation
- **A complete medical check-up and specific tests**

Management

- **Observation**
For suspicious tumours measuring less than 3mm in height, observation may be recommended until growth is documented
- **Radiotherapy**
Some choroidal melanomas (up to 10mm in height) can be treated with low-energy radiation therapy (plaque brachytherapy). However, the amount of radiation required to destroy a tumour may cause damage to other structures of the eye. The eye will also be at risk of losing vision and may have to be secondarily removed
- **Enucleation**
The classic approach for large tumours that compromise visual function and for which other therapies prove ineffective
- **Determining the risk of spread**
This is performed by molecular pathological and histological analysis of the tumour removed. Fresh tissue and/or fixed tissue may be used to determine if the tumour has high risk of spread to other organs, typically the liver

Although two treatment options are available – radiotherapy and enucleation (surgical removal of an eye), Jason was advised to go for the latter as radiotherapy is only suitable for tumours smaller than 1cm. “If I went for radiotherapy on my right eye, the left eye may be affected too,” he explains.

Despite his apprehension, Jason sought second opinion at a private eye clinic, which offered the same advice. Following a full body check-up at National Cancer Centre Singapore, he returned to SNEC and met Dr Sunny Shen, Head and Senior Consultant of Oculoplastic Department, who would be his surgeon. Thankfully, the cancer did not spread to the rest of his body and he was physically fit to undergo enucleation.

“Dr Shen explained the procedure to me in detail, including the duration of surgery, risks, possible side effects like headache and muscle pain, and post-operation care. He gave me confidence by citing the surgery’s high success rate. His words helped allay my fears and concerns. I also met Prof Wong Tien Yin, Medical Director of SNEC and Chairman of Singapore Eye Research Institute (SERI), who reassured me that my treatment is well taken care of,” adds Jason.

“*The onset of my eye condition was so sudden. The same thing can happen to someone who cannot afford surgery. This is why VisionSave is important.*”

For uveal melanoma, genetic testing on the tissues can help predict the risk of cancer spread. Although this service is not yet available in Singapore, after Jason’s enucleation, Dr Anita Chan, Clinical Director of Ophthalmic Pathology Service at SNEC, initiated the tissue genetic testing at a renowned centre for this condition in Liverpool, United Kingdom, at no cost to the table tennis player. Since then, Dr Chan has worked closely with Singapore General Hospital’s Department of Pathology Cytogenetics to develop a similar service for the region.

PADDLING TO SUCCESS

Following the surgery, Jason went through two weeks of eye rehabilitation to adapt to the change in depth perception.

Undeterred by the loss of his right eye, he resumed training for the ASEAN Para Games 2017 shortly after completing his rehabilitation.

Even though he had to practise harder than before to adopt new postures and improve his skills on the right, the encouragement from his coaches and teammates kept him going.

“I am a sporty guy since young. I love watching sports on TV and I would buy football, basketball and shuttlecock to play with. After the accident, I tried various para-sports and table tennis was the best for me. I’ve been playing since June 2013 and I cannot give up. I just needed to focus and relax my mind,” he affirms.

His effort and determination paid off as he brought glory to the nation by clinching his first individual gold medal in the men’s singles Class 2 event at the Games in September last year.

POWER TO INSPIRE

Returning from Kuala Lumpur in triumph, Jason went for prosthetic eye fitting by Clinical Assoc Prof



Teoh Khim Hean at the SNEC-National Dental Centre Singapore (NDCS) Ocular Prosthetic Clinic.

"It looks like a real eye and moves when I shift my head. Some people don't even notice it. I feel more confident now," he says.

One custom-made prosthetic eye costs approximately S\$1,600 and is not covered by Medisave

and MediShield. It needs to be polished once or twice every year.

"The onset of my eye condition was so sudden. The same thing can happen to someone who cannot afford surgery. For patients with low income, it is also very challenging for them to get a prosthetic eye. This is why VisionSave is important.

While SNEC and SERI are doing a good job in developing new technologies and devices, it is crucial for people to step forward and contribute to this cause," Jason emphasises.

His exceptional resilience to overcome his ordeals was recognised by the VisionSave Inspirational Patient Award

presented at The Eye Ball 2017 [see page 14]. Jason is the inaugural recipient of the award, which acknowledges an individual's extraordinary courage and strength of character in the face of adversity and healthcare challenges. The national paddler's relentless fighting spirit has undoubtedly inspired many, and radiates hope for people who are confronted with similar or difficult circumstances in life.

When asked about his thoughts on winning the award, Jason expressed his happiness on being viewed as a role model. "It means a lot to me. I am very thankful towards my doctors and Prof Wong. Most importantly, I hope every patient would take me as a positive example," he reiterates.

Every three months, Jason visits SNEC for follow-up with Dr Shen. While waiting for his turn, he would take initiative to talk to fellow patients. "I would tell them my story and welcome them to share theirs. I'd motivate them by saying 'if I can persevere through my problems, you can do it too'."

A TRIBUTE TO MUM

In his own words, Jason's grit comes from his late mother. "For nine years, she never skipped a single kidney dialysis session or complained about pain. She is a very strong woman and I learned a lot from her. She always reminded me to be patient, keep my composure and take things one step at a time," he shares.

Despite his grief when she passed away in 2011, Jason picked himself

“*I would tell other patients my story and welcome them to share theirs. I'd motivate them by saying 'if I can persevere through my problems, you can do it too'.*”

up because of her final words – "to move on, to plan and execute my goals well, and never give up on life".

Besides juggling work and table tennis training, he is currently studying part-time at Singapore University of Social Sciences (SUSS) in pursuit of a mathematics degree. Although he sleeps less than six hours a day, he is resolute to complete the programme – something that he embarked on before the 2012 accident – to fulfill his mother's last wish.

AGAINST ALL ODDS

With a spirit that even an able-bodied person may lack, Jason

travels by public transport every day albeit his condition and busy schedule. He applies the core values of a Navy man to all aspects of his life. "I treat every table tennis match like a war; I endure through my surgeries. I like cooking, even if it takes me a long time to prepare a dish. I am determined to take on any challenge that comes my way," he concludes.

At the end of the interview, Jason gave a special shout-out to his family, friends, colleagues in the 191 Squadron and Navy doctors, as well as his medical care team at SNEC for supporting him throughout his patient journey.



5 THINGS TO KNOW ABOUT ENUCLEATION AND PROSTHETIC EYE

1

What is enucleation?

Enucleation is the surgical removal of an entire eye. Muscles that control the eyeball's movement and other soft tissues that surround the eye in the bony orbit are left intact. These muscles are attached to a round, marble-like implant that replaces the tissue volume lost when the eye is removed. This offers the patient some movement of the prosthetic eye after surgery.

When is enucleation necessary?

Conditions that commonly require enucleation include: eye cancers, severe trauma, uncontrollable infection, end-stage glaucoma and unmanageable pain in a blind eye. Patients with an unsightly blind eye can also remove the eyeball to rehabilitate the eye socket and to enhance their appearance.

2

What happens after enucleation surgery?

A small plastic conformer is placed behind the eyelids to maintain their shape. It serves as a placeholder for the artificial eye that would be fitted after swelling has reduced and sufficient healing has taken place. A pressure patch will also be applied immediately after the surgery. Depending on an individual's condition, the patch may be removed on the next day or left in place for a few days. Patients may experience nausea or headaches, but this can usually be managed with painkillers.

Why does a prosthetic eye need to be changed periodically?

At SNEC, we have a dedicated ocular prosthetic service that specialises in custom-made prosthetic eyes. Typically, a prosthetic eye needs to be polished once or twice every year. As the eye socket can change in shape over time, adjustments and refitting of the prosthetic eye may be required.

4

3

What is the post-surgery care required?

Anyone who has undergone enucleation and wears a prosthetic eye should put on glasses with impact-resistant lenses to protect his or her remaining natural eye. Contact lenses, which increase the risk of eye infections, and even a minor eye injury (such as mild corneal abrasion) can cause serious consequences. Therefore, extra personal care and medical monitoring is necessary for a person with only one functioning eye.

5





VISIONSAVE

Give the gift of sight

VisionSave serves as a bold and transformational effort to leverage on philanthropic contributions to holistically improve ophthalmology care delivery.

Inaugurated in July 2016, VisionSave was formed by Singapore National Eye Centre (SNEC) and Singapore Eye Research Institute (SERI) to aid us in the quest to save, restore and protect the eyesight of our patients.

Thanks to those who have come forward to donate, VisionSave raised S\$1.5 million in 2017, including S\$623,000 garnered from The Eye Ball [see page 14]. To date, we have cumulated approximately S\$5.8 million in total. However, we are still a distance away from the target of raising S\$25 million by 2020.

Every contribution counts towards better quality of life for those with impaired vision and a brighter future for eye care. By giving, we bring hope to those who have none. You too can be a part of this amazing journey.

Investing in Singapore's sight

Mr Ian Leo, Director of Development and Community Engagement at SNEC, who joined in July 2017 and now leads the VisionSave campaign, has made important leaps in enhancing our philanthropic services for donors and expanding awareness of our cause through multiple conduits.

Over the years, SNEC and SERI have produced some of the best research in the world, and nurtured a robust team of competent, caring healthcare professionals. Philanthropic support has an enormous impact on our efforts to obtain excellence in medical education.

Through the endeavours of Mr Leo and his team, VisionSave received a pledge of S\$2.5 million from the Lee Foundation for continuous innovation in cost-effective and quality care models. SNEC is



Mr Ian Leo

now building a Myopia Centre of Excellence to combat the increasing prevalence of short-sightedness in Singapore.

VisionSave is not only about raising funds, but also fostering meaningful relationships. Other than donating money, you can volunteer your time and expertise. In 2017, the Spirit of Humanity Award was introduced at SNEC and SERI's Annual Dinner & Dance to encourage and commend

VISIONSAVE SUPPORTS FIVE FOCUS AREAS



1

Provide financial assistance

for needy patients with sight-threatening diseases



2

Educate people in the area of saving sight

internal champions who went beyond the call of duty to connect grateful patients (people who benefitted from treatment and have the ability to pay it forward) with needy patients.

The impact of reaching out

As part of the campaign, The VisionSave Community outreach initiative to Save Sight (ACCESS) launched a fully equipped mobile eye bus to bring screening and eye care services to the elderly and underprivileged.

To further raise funds and awareness, Mr Leo planned charity events, such as collaborating with beauty brand L'OCCITANE to host a Digital Run with all proceeds going to VisionSave. In addition, the team leveraged on National Eye Care Day by organising the VisionSave Carnival, which sought to educate the public through a fun and engaging way [see page 16]. More than S\$25,000 was raised from the ticket sales.

"Giving puts you in a position to count your blessings. You never know if one day you may be on the receiving end of a kind gesture. Giving should be a way of life. It is a great value that everyone should strive to have. To inculcate this in our children, we need to start from ourselves," Mr Leo says.

We may not be able to help everyone, but if each of us does our small part, the collective good can be immense. The effect of your generosity spreads far and wide – your contributions ignite lives not just today, but also give flight to our envisioned future that is free from blindness and eye disease.

GRATEFUL RECIPIENTS

Patrick Koh

A deaf-mute who suffers from diabetic retinopathy, Patrick left his job due to his deteriorating vision and now works part-time as a deliveryman. Patrick and his wife, who is also a deaf-mute, have a teenage son who is still schooling.

As the couple has no other source of income, Patrick could ill afford injections for his eyes. Thanks to the facilitation by a SNEC ophthalmologist, he received financial aid through VisionSave funds donated by a fellow patient.



Dr Shweta Singhal

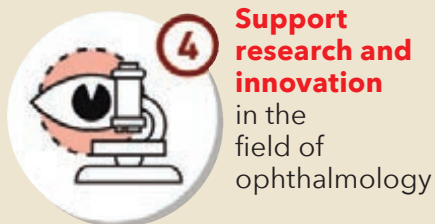
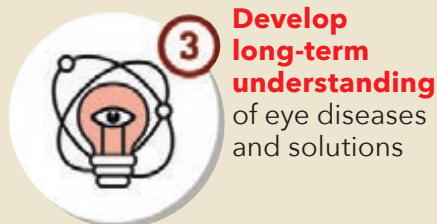
Philanthropic contributions to promote scientific training of clinicians helped fund Dr Singhal, Associate Consultant in the General Cataract & Comprehensive Ophthalmology Department at SNEC, through her PhD studies. Now as a qualified clinician scientist doing basic science research, her focus is on applying scientific advances towards the improvement of patient care. Donations through VisionSave provide the means to safely develop and translate these scientific advances into novel diagnostic and therapeutic modalities for blinding ocular conditions.

Share our Vision and support us.
Learn more from us at

Tel: (65) 6322 4541

Email: visionsave@sneec.com.sg

Website: www.visionsave.sg/donate



The Eye Ball returns for 7th year

Held at Goodwood Park Hotel on 4 November 2017, The Eye Ball 2017 was a stellar affair with rousing support, generosity and an abundance of goodwill from friends and supporters of Singapore National Eye Care (SNEC) and Singapore Eye Research Institute (SERI).



Themed 'Singapoptical', The Eye Ball 2017 saw the attendance of more than 370 esteemed guests, donors and supporters of SNEC and SERI. The event is an annual fundraising initiative held in conjunction with the VisionSave campaign [see page 12].

All tables were sold about 1.5 months prior to the event, an accomplishment that has left the organising committee deeply humbled and extremely grateful for the overwhelming support. In collaboration with the Helping Hands Group, an auction was conducted during The Eye Ball for the guests to bid on an array of attractive items for a good cause.

Total donations from The Eye Ball amounted to approximately S\$623,000, which significantly contributed to the cumulative sum of S\$1.5 million towards the VisionSave campaign last year. A series of videos showcasing how past donations have transformed the lives of patients was also shown as part of the evening's programme.

"The estimated prevalence of avoidable vision loss has increased due to population growth and ageing. There is still a large gap between our target in the fight against blindness and what has been achieved. A lot more needs to be done and with VisionSave, this gap can be minimised," says

Adjunct Assoc Prof Ho Ching Lin, chairman of The Eye Ball organising committee.

Besides the presentation of The Visionary Award to Dr Lee Seng Tee for his significant contributions in the advancement and betterment of society [see page 19], another highlight of the night was the inauguration of the VisionSave Inspirational Patient Award. This award recognises the resilience, extraordinary courage and strength of character demonstrated by a patient in the face of adversity and healthcare challenges. It was conferred to national para-athlete, Jason Chee, who truly embodies the qualities of strength, determination and

great tenacity as inscribed by this award [See Cover Story on page 6].

The Eye Ball was a culmination of support and help from numerous big-hearted people and organisations. The committee is greatly appreciative of the support rendered by local film-maker Eric Khoo, who was instrumental in securing a full sponsorship of the venue and a delectable curated cuisine for The Eye Ball 2017 courtesy of Goodwood Park Hotel.

Without a doubt, celebrity extraordinaire Dick Lee was the force behind the evening's programme, from

conceptualisation to the actual fronting of this important event. It was especially poignant as this was Dick's last year as the VisionSave ambassador.

Dick was also responsible for hand-picking the guest artistes for the evening so as to ensure a splendidly entertaining programme. These artistes include emcee Nikki Muller, and singers Tay Kewei, Mandy Ke, Vernon Cornelius and Rahimah Rahim Fernandez. The dazzling performances, coupled with amazing goodwill and the generous spirit of philanthropy that permeated throughout the evening, made The Eye Ball 2017 truly a night to remember!



VisionSave carnival promotes importance of eye care

Organised in conjunction with the 18th National Eye Care Day, the VisionSave carnival was held at Singapore National Eye Centre (SNEC) on 25 November 2017.

It was a day of infotainment at the VisionSave carnival, which was graced by Dr Amy Khor, Senior Minister of State for Health and the Environment & Water Resources.

Attendees were treated to an array of food stalls, games, song

dedications and a photo booth, while the younger ones enjoyed animal kiddy rides, bouncy castle and balloon sculpting. Members of the SAVH (Singapore Association of the Visually Handicapped) were also on site to provide massage services.

Through mini exhibitions and public talks, the participants were given important information on ophthalmic conditions such as low vision, common refractive errors, childhood myopia, glaucoma, cataract, diabetic retinopathy and age-related macular degeneration, as well as tips to protect the eyes.

In addition, people aged above 55 who have diabetes and have yet to be examined by an ophthalmologist had the opportunity to go for free diabetic eye screening.

At the event, SNEC and SERI also launched the VisionSave Mobile Eye Bus that will bring free eye care to the doorstep of Singaporeans, especially the underprivileged community and elderly living alone and/or have poor mobility [see page 18].



At the launch of VisionSave Mobile Eye Bus (from left) Ms Low Siew Ngim, Ms Charity Wai, Prof Wong Tien Yin, Prof Ecosse Lamoureux, Guest of Honour Senior Minister of State for Health and the Environment & Water Resources Dr Amy Khor, Assoc Prof Clement Tan, Dr Yong Kailing (behind) and Dr Annabel Chew



VisionSave Mobile Eye Bus reaches out to needy communities

The vehicle will be driven to various locations in Singapore to enhance access to eye care for the elderly and underprivileged.



VisionSave, a philanthropic initiative by Singapore National Eye Centre (SNEC) and Singapore Eye Research Institute (SERI), funds the VisionSave Community OutreaCh Initiative to Save Sight (ACCESS) project, which aims to improve the eye health and quality of life of the old and disadvantaged. At the core of the project is the VisionSave Mobile Eye Bus, which houses a range of diagnostic equipment to conduct comprehensive eye evaluation in the community, especially for people with poor health and mobility.

Population studies conducted by SNEC and SERI suggest that visual impairment in the vulnerable communities often go undiagnosed and remain untreated due to lack of awareness, inadequate health education, poor access and financial issues. Statistics also suggest that one in three persons, with eye diseases detected during regular

community screening programmes, do not attend the necessary follow-up care as advised.

In view of this, SNEC and SERI have developed an innovative community eye care model with the launch of the bus, which adds additional support such as appropriate GP referral for tertiary appointments, free transport and eye health education – after the beneficiary is diagnosed with eye disease or visual impairment.

With ACCESS, those in need now have more opportunities to get their eyes checked and treated. One example is Mdm Gan, whose poor vision has affected her independence and mobility, since she is unemployed, lives alone and has no caregiver to take her to consult the doctor. When the Mobile Eye Clinic programme came to her community, she was found to have cataracts and has since undergone successful surgery in both eyes, and is seeing well again.



The Visionary Award presented for the second time

The award was presented to Dr Lee Seng Tee for his foresight and gracious contributions towards education and the arts that have led to the betterment of society.

The Visionary Award was introduced in conjunction with the VisionSave campaign at The Eye Ball 2016. Prof Tommy Koh was the inaugural recipient of this award. Last November, the award was conferred to Dr Lee Seng Tee at The Eye Ball 2017.

The Visionary Award recognises the commitment of an individual towards a vision that has benefitted Singapore society and beyond. It is a celebration of the recipient's outstanding achievements and selfless spirit that have made a positive impact on the country, region or even the world. Significantly, the award embodies the values and qualities that Singapore National Eye Centre (SNEC) and Singapore Eye Research Institute (SERI) deem as important, integral, and to be applauded.

Dr Lee is well regarded among the international arts and education communities as an established businessman, philanthropist and patron of the arts. He also serves as the Chairman of the Lee Foundation, Singapore's largest charitable foundation. His foresight and generosity have paved the way for the empowerment of the people



Dr Lee Seng Tee's granddaughter, Ms Dawn Chan, received The Visionary Award on his behalf at The Eye Ball 2017



through education, a strong support system for the underprivileged, and advancement of the arts.

It is an honour and privilege for SNEC and SERI to present The Visionary Award 2017 to Dr Lee who is indeed a man of great foresight and the embodiment of true generosity and humility. His commendable far-sightedness and stellar contributions in promoting the power of education towards the advancement and betterment of society, his commitment towards championing Asian culture and practices, as well as his passion in promoting the arts, undoubtedly reflect the very essence of The Visionary Award.

More effective therapy for severe dry eye

Singapore National Eye Centre (SNEC) has developed a treatment for dry eye syndrome that is derived from blood plasma, the clear portion of human blood.



WHAT IS DRY EYE?

The surface of the eye is coated with a constantly moving layer of tears which lubricates the eye, protects against infection and helps in wound healing. In dry eye syndrome, the quality and/or quantity of tear is abnormal. This results in damage of the ocular surface, eye irritation or visual disturbances.



WARNING SIGNS

- Heavy eyelids
- Itchy eyes
- Symptoms persist even after applying over-the-counter medications, such as lubricant eye drops (artificial tears)



ALTERNATIVE SOLUTION

Dry eye syndrome affects up to two million people in Singapore. In an effort

to create better treatment for the condition, SNEC's Assoc Prof Louis Tong led a team that conducted clinical trials using blood plasma. While that fluid is not chemically the same as tears, it contains a large amount of proteins, which nourishes the eye.

The trials show that the plasma is more effective in repairing the surface barrier of the eye than regular artificial tears. Over a six-week period, patients required eye drops less frequently and their quality of life improved. Another study is ongoing to understand the plasma's long-term effects.

How it works

- Blood plasma is extracted through a painless procedure
- Plasma is stored in drinking straw-like tubes
- Each tube is sealed in detachable segments for easy application

FACTORS THAT CAUSE OR AGGRAVATE DRY EYE

■ Ageing

■ Lifestyle

- Spending long hours on the computer
- Contact lens overuse

■ Certain eye and systemic diseases

- Meibomian gland dysfunction (blockage or abnormality of oil-producing meibomian glands in the eyelids)
- Tear gland damage due to inflammation

■ Environment

- Dust
- Air conditioning

■ Surgery

- Laser eye surgery

■ Medications

- Include antihistamines, decongestants, antidepressants, hormone replacement therapy, and medicines for high blood pressure and Parkinson's disease





In remembrance of Dr Khoo Chong Yew

The Founder-Member of Singapore National Eye Centre (SNEC) Medical Board passed away on 16 November 2017, aged 78.

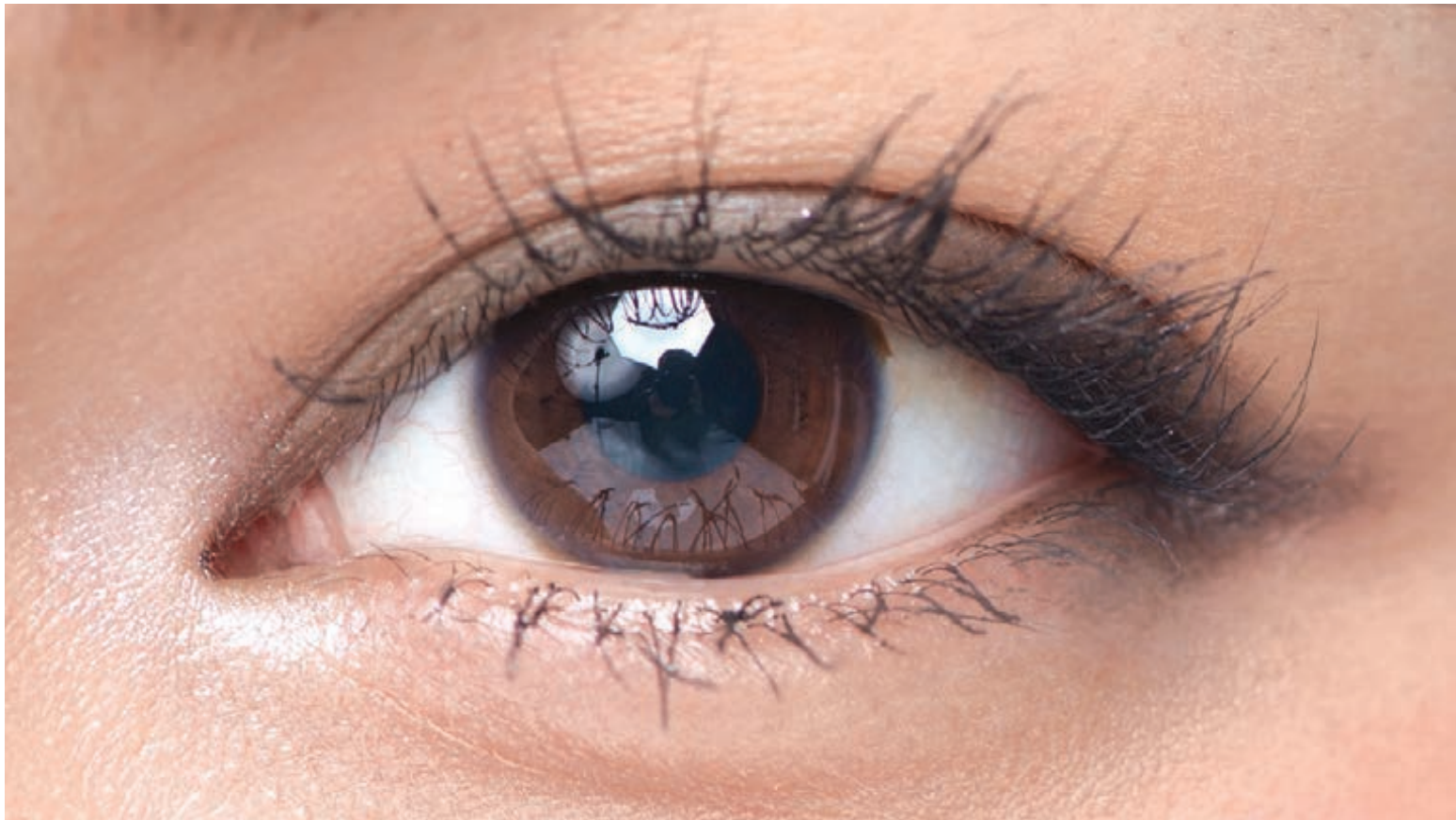
Since 1991, the late Dr Khoo was not only committed to his work as a visiting consultant at SNEC, but also contributed further to other areas. He helmed the Ethics Committee of SNEC and Singapore Eye Research Institute (SERI), and served as adviser to the then Cornea Division (Medical Contact Lens and Eye Bank). Dr Khoo was also the chairman of the Singapore Eye Bank.

Recognised locally and globally for his achievements in the contact lens subspecialty, Dr Khoo was the chairman of the International Contact Lens Council of Ophthalmology. In addition, he undertook the role of a clinical teacher at the National University of Singapore and the National University Hospital. Besides delivering numerous lectures around the world, he also co-authored a book titled *Contact Lenses: Medical Aspects*.

Dr Khoo's other accolades include serving as president of the Singapore Medical Association for two terms (1985 and 1987) and elected member of the Singapore Medical Council between 1990 and 1993. Furthermore, he was invited by the Ministry of Health to sit on several subcommittees, such as the Health Advisory Council, the Committee of Specialists Register and the Committee for Medisave for Private Hospitals.

From 1998 to March 2009, Dr Khoo was appointed as chairman of the Institutional Review Board (IRB) at SERI. Subsequently, he chaired the SingHealth Centralised IRB from 2009 to October 2017.

His distinguished career and tremendous efforts will be remembered as we strive for greater excellence in ophthalmology care.



Eye Exams: Why are they important?

Eyes are windows of the soul. Even if you are not experiencing any vision abnormalities, it is advisable to go for regular checks to ensure your eyes are healthy.

Out of all five senses, eyesight is arguably the most essential. Vision is created through a complex and intricate process of gathering, focusing and converting light into electric signals, which are then translated into images via the brain.

As we get older, our eyes become more susceptible to damage and disease. Staying alert to changes in vision is

important to pick up eye problems early. Some conditions, such as glaucoma, have little to no symptoms until they are in advanced stages.

Therefore, regular eye examinations are vital to prompt diagnosis and treatment of any condition. Early detection and management can slow down or even reverse the progression of eye diseases.



What happens during an eye exam?

The ophthalmologist will usually conduct a basic eye exam that consists of an external check of your eyes, eyelids and surrounding areas. Parts of the eye, such as conjunctiva, sclera, cornea and iris, will also be inspected for signs of disease. The process is pain-free.

What does a complete eye exam include?

- Vision test (with and without corrective eyewear)
- Assessment of pupil reflexes
- Checking of eye muscle function
- Peripheral (side) vision test
- Examining the front of the eye using an upright microscope (slit lamp)
- Eye pressure test
- Examining the back of the eye

KEEP AN EYE ON YOUR VISION



Babies (aged 3 and below)

Ensure that your child's eyes are screened during regular paediatric appointments. Some common childhood eye conditions to look out for include strabismus (crossed eyes) and amblyopia (lazy eye). The tests can also rule out rare diseases, such as congenital cataract and retinoblastoma (eye tumour).



Children and teenagers (aged 3 to 20)

Your child should undergo a thorough eye check every one to two years during routine health check-ups or when getting fitted for corrective eyewear, such as glasses for myopia.



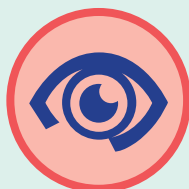
Young adults (aged 21 to 39)

Go for a comprehensive eye exam if you have a family history of eye disease or are suffering from an eye injury.



Adults and seniors (aged 40 and above)

Over time, age-related eye conditions are more likely to occur. To monitor vision changes, you should get a baseline eye disease screening at age 40 and seek the ophthalmologist's opinion on how often you need to return for follow-up tests.



Anyone with risk factors

Risk factors for eye diseases include diabetes, high blood pressure, family history of eye disease, and medications that may affect the eyes. If you have any of the above-mentioned risk factors, you should visit the eye clinic more frequently. Your ophthalmologist will advise you on the ideal interval between check-ups.

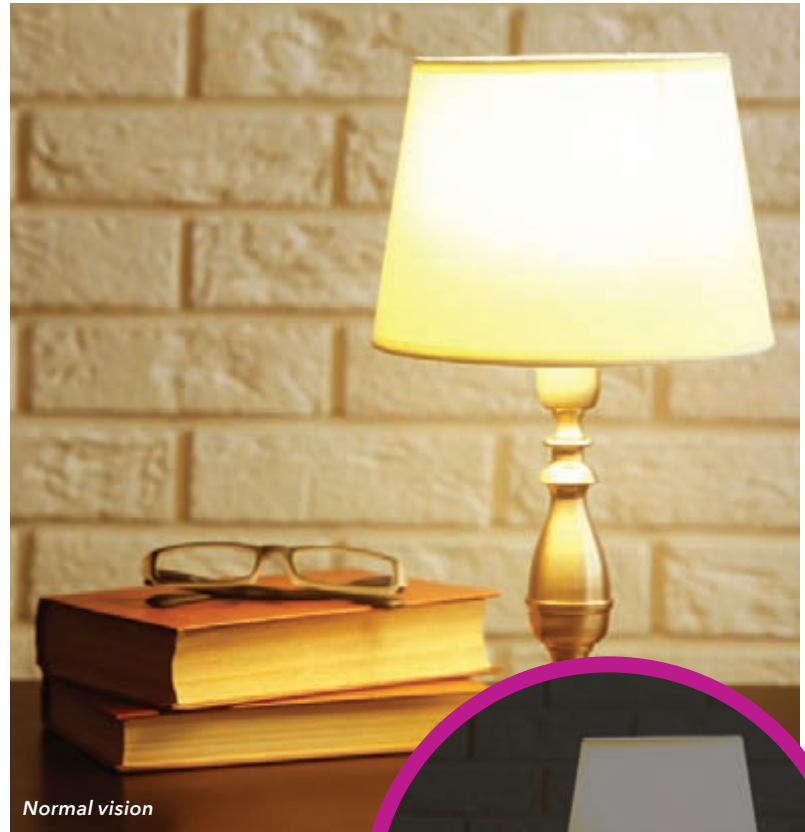
What's wrong with my eyes, doc?

I have trouble moving around my house at night, even with small light fixtures. I also avoid driving at night. Is this a natural sign of ageing or cause for concern?

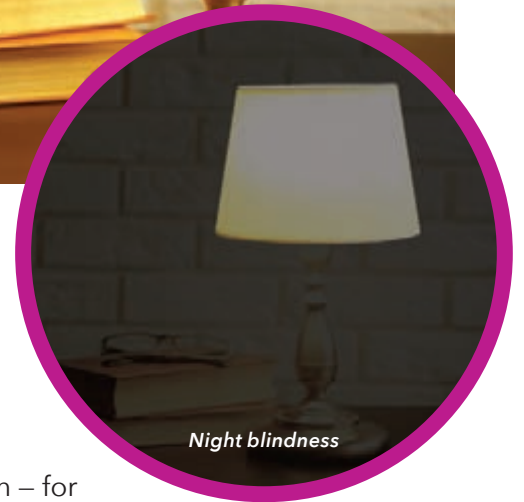
You may be experiencing night blindness (nyctalopia). Night blindness is not a disease in itself, but is usually a symptom of an underlying eye disease. Impaired night vision can range in severity from slightly poorer vision under dim light to complete loss of vision under low light conditions.

Night blindness is commonly noticed when you transit from a bright environment to an area of low light, such as when you enter the cinema from a brightly lit mall, or when driving at night.

Several common eye conditions can lead to impaired night vision, including short-sightedness (myopia), cataract and glaucoma. Impaired night vision is not uncommon in older adults due to the development of cataract. Severe night blindness accompanied by decreased peripheral vision and/or a family history of night blindness may be indicative of an inherited retinal disease known as retinitis pigmentosa.



Normal vision



Night blindness

If your ability to see in low light is impaired, it is important to see an ophthalmologist to determine the underlying cause. Once the cause is identified, you can take steps to correct your vision – for instance, getting a new prescription for glasses or having cataracts removed.



Dr Wong Chee Wai, Consultant, General Cataract & Comprehensive Ophthalmology Department, SNEC

I spend a lot of time outdoors and I am worried about the exposure to the sun. There are many types of sunglasses out there. How do I choose the right pair that keeps my eyes safe?

Ultraviolet (UV) radiation from the sun can cause a host of eye conditions, including cataract, macular degeneration and skin cancer around the eyelids.

While sunglasses need not be costly to safeguard the eyes, it is advisable to invest in a good pair. This is especially important for people in Singapore who are exposed to abundant sunlight throughout the year. Since UV rays are present even on a cloudy or hazy day, both adults and children should put on sunglasses when outside to prevent damage to the eyes in the long run.

The sunglasses should clearly indicate the amount of UV radiation the wearer could be protected from. For example, its label should state that 99% to 100% of UV rays are blocked. A good way to test the optical quality of the sunglasses is to focus on a vertical edge or line and move the lens from side to side, allowing your eyes to sweep across the lenses. Any deviation in the line may hint at a defect and you should choose another pair in this case.



Besides well-fitting sunglasses, wear clothing with UV-blocking coating and add a wide brim hat to your outfit for extra protection, particularly when spending long hours outdoors.

BEFORE BUYING

Consider these important factors:

DARKNESS AND COLOUR OF THE TINT

Due to the additional intensity of glare and UV rays reflected off the surface of water and snow, the risk of eye damage is higher at the beach and on the ski slopes. Select sunglasses with a darker colour tint to reduce glare.

FRAME

Wraparound glasses provide the most protection.

TYPE OF LENSES

- Polycarbonate lenses are impact-resistant and provide the best UV coverage.
- Photochromic (light-sensitive) lenses are effective outdoors as they darken when exposed to sunlight. However, they return to their clear state if you sit inside a car and become non-protective against the glare.
- Polarised and mirrored sunglasses reduce the amount of light transmission but may not necessarily block UV rays.
- Glass lenses are heavy and break easily.

IMPACT PROTECTION

If you regularly take part in activities such as biking, skiing and ball sports, pick eyewear that has strong impact resistance.



Ms Lisa Ong, Principal Optometrist, Optometry Service, SNEC

KAREN ZHANG

As a member of allied health professionals, the orthoptist sheds light on her scope of work, which keeps her grounded and motivated every day, even after a decade in the job.

Karen's maiden encounter with the ophthalmic profession happened when she took up the Singapore National Eye Centre (SNEC) Orthoptics Scholarship after her A-Levels. She was the first scholar under this programme.

Her journey began with a four-year course at La Trobe University in Melbourne, Australia. Besides returning to SNEC for attachment every year, she was also given the opportunity to train at the renowned Moorfields Eye Hospital in London. After graduating with a Bachelor of Orthoptic and Ophthalmic Sciences (Honours) degree, she officially joined SNEC as an orthoptist in 2008.

An eye physiotherapist

Orthoptists conduct comprehensive tests to detect conditions like ocular misalignment and defective vision, and manage patients non-surgically via eye exercises and rehabilitative care. They also monitor patients who are going for surgery through pre- and post-procedure assessments.

"Generally, orthoptists specialise in the non-surgical treatment of patients with strabismus, whereas ophthalmologists manage the surgical aspect and optometrists focus on refraction-related work, such as checking degree and prescribing glasses," Karen explains. "Nevertheless, we work closely together as a multidisciplinary team to come up with a holistic management plan for our patients."

More than just a job

Over the past decade, Karen has seen patients from as young as four months old to those in their 90s. As eye symptoms and the way people communicate vary with age, the 33-year-old gets to learn something new every day – a process she enjoys immensely.



With experience, Karen has harnessed rich insights on managing young patients. "Children may be intimidated by the environment, which is partly why we don't wear white coats. We adjust the way we talk, play with them and try to be their friend before doing the tests. It takes time and patience, but once the kids trust you, they are more likely to cooperate," she notes.

Similarly, older patients inspire her greatly. Karen recounts the story of a disease-stricken patient,

Generally, orthoptists specialise in the non-surgical treatment of patients with strabismus, whereas ophthalmologists manage the surgical aspect.

“Despite being struck by different cancers, she remains positive and hopeful. When I meet such patients, my own problems become insignificant. They give me strength and allow me to reflect on life. I learn not to take things for granted and to be content.”

Orthoptics is a meaningful profession where the effects of treatment can appear relatively quickly. “Some patients come in looking sad and stressed, but they leave happy after being able to see well again simply with the help of a prism,” she affirms. “It’s also fun because we get to relive our childhood with the toys in the clinic! As we communicate with kids a lot, we are all rather young at heart.”

Leading change through education

Apart from her clinical duties, Karen is actively involved in research and education. Notably, her work in a needs assessment on orthoptics e-learning won her a Merit Award at the recent 3rd SingHealth Duke-NUS Education Conference. A member of SNEC’s education research committee, she initiates programmes to develop fellow healthcare professionals. She also helms various projects in her department, including one that experiments with online teaching for residents.

In addition, Karen chaired the organising committees for the SingHealth Allied Health Community Day in 2015 as well as the SNEC and SERI Annual Dinner & Dance in 2017. In her spare time, she gives back to the community through volunteer work.

Having completed a course at Harvard Macy Institute recently, she aims to put the valuable lessons into

practice. In her opinion, multidisciplinary collaboration is essential to fully utilise the many talents within SNEC, to provide the best clinical care for patients.

“It is an honour to be given these opportunities. My goal is not just to be a good orthoptist. I hope to make a greater difference through education and innovation,” Karen reiterates.

ORTHOPTIC SERVICE AT SNEC

Established in 1992, the department houses the biggest team of orthoptists in Singapore. With a good patient load and diverse cases, SNEC makes an ideal training ground. The team is supported by an extensive range of equipment, such as the synoptophore and a computerised vision testing system.

In 2013, the department launched a mobile application called MyEyeGym that contains interactive images to encourage young patients to perform their eye exercises. Complemented by features like reminder alarms and games, the app proved to be popular among local and overseas users. It was conferred the GEM (Groundbreaking, Effective, Momentous) award at the 2014 SingHealth Allied Health Innovative Practice Awards, which recognises innovations that help transform patient care. The app also garnered a bronze in the Best Social & Community Product category from the Singapore Infocomm Technology Federation in the same year.

WHAT DOES AN ORTHOPTIST DO?

Three common conditions and treatment methods

	WHAT IS IT	TREATMENT
1 Squint (strabismus)	Misalignment of the eye	Eye exercises (for certain types of squints)
2 Lazy eye (amblyopia)	Poor vision in one eye or both eyes, and it does not improve completely with glasses	Patching (covering the good eye)
3 Double vision (diplopia)	Seeing two images of one object	Prism correction, occlusion

A guide to cataract surgery

Patients who are listed for cataract surgery at Singapore National Eye Centre (SNEC) will be given a new booklet with easy-to-understand pictorial instructions.

This booklet contains useful information that answers all questions about cataract surgery. It explains what a patient should expect before, during and after the procedure so that each individual, his caregiver and family can have a sense of assurance.

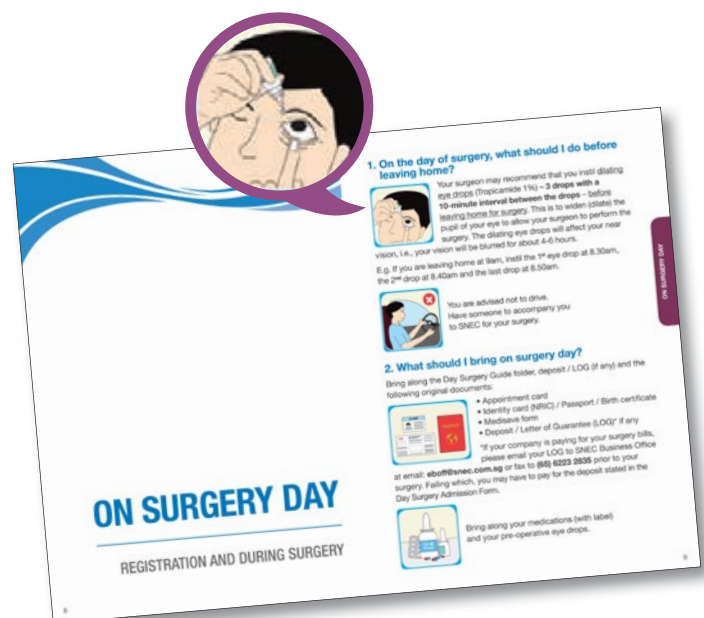
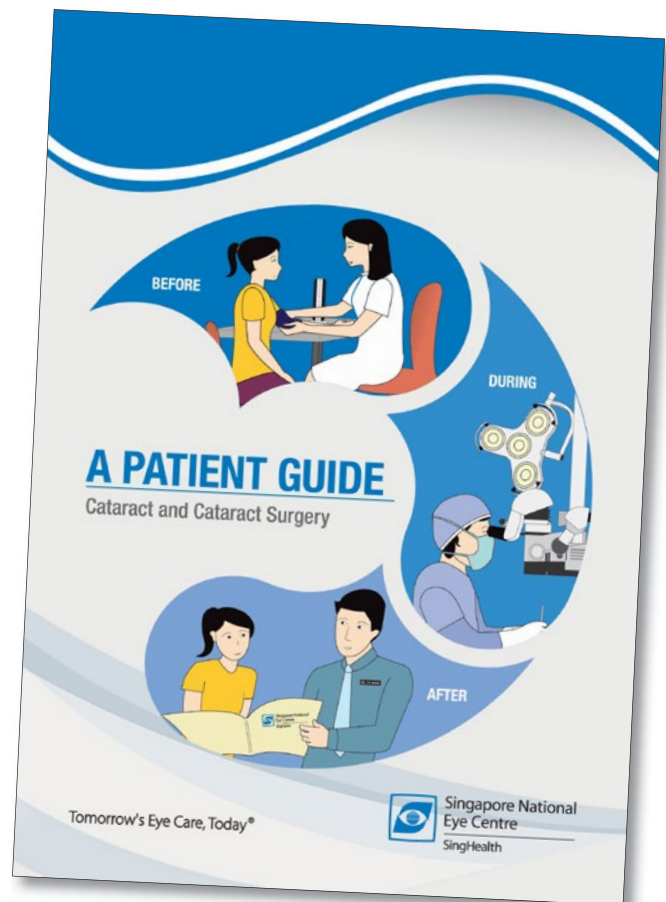
Patients who are prepared for surgery and who take part in their eye care can recover in less time and with fewer complications.

IMPROVED PROCESSES

• Self-administration of dilating eye drops

Your surgeon may recommend that you instil dilating eye drops (Tropicamide 1%) – 3 drops with a 10-minute interval between each drop – before going for surgery. For example, if you are leaving your house at 9am, instil the first eye drop at 8.30am, the second drop at 8.40am and the last drop at 8.50am.

This is to widen the pupil of your eye to allow the surgeon to perform the surgery. The dilating eye drops will affect your near vision, resulting

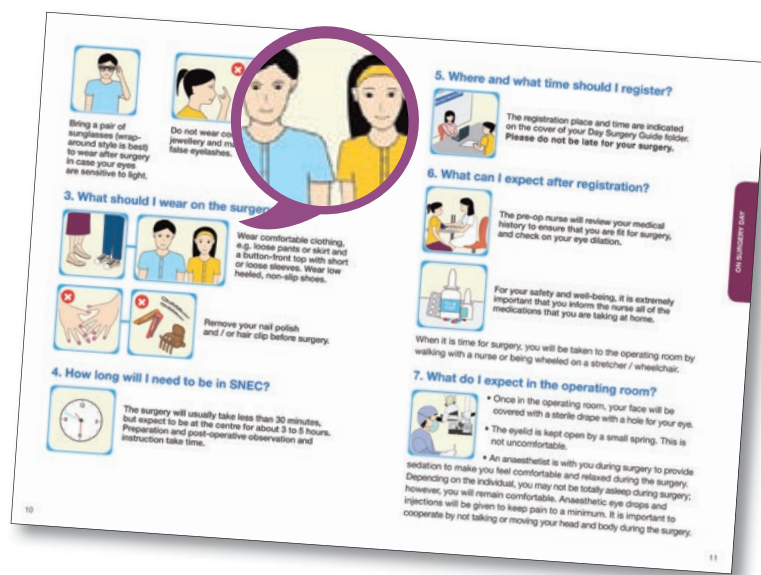


in blurred vision for about four to six hours. It is advisable not to drive. Have someone accompany you to SNEC for the procedure.

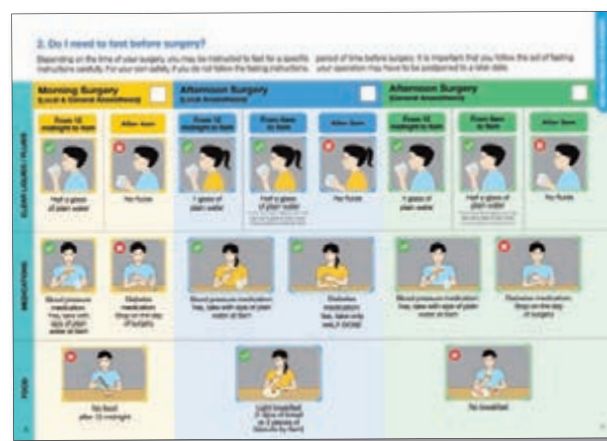
• No need to change out of home clothes

Wear comfortable clothing, such as loose pants or skirt, button front top with short or loose sleeves, and low heel, non-slip shoes. Remove nail polish and/or hair clip before surgery. By following these instructions, you will not be required to change into surgery gown, which shortens the duration of the procedure.

Through these tips given in the booklet, patients can save time and enjoy a better overall experience at SNEC. Our range of comprehensive services is continually enhanced to reinforce SNEC's position as the go-to institution for all your eye care needs.



Patients who are prepared for surgery and who take part in their eye care can recover in less time and with fewer complications.



Bringing eye care to Ambon



A team of ophthalmologists and scrub nurses led by SingHealth and Singapore National Eye Centre (SNEC) recently conducted its inaugural humanitarian trip to Ambon, Indonesia to perform free consultations and cataract surgeries.

In collaboration with Ambon-Vlissingen Eye Clinic and with support from the Mayor of Ambon, SNEC ophthalmologists Dr Wesley Chong and Dr Yap Zhu Li, together with nurses Kang Poh Geok and Nur Farahin Bte Marwasi, completed a total of 28 cataract surgeries and one pterygium excision over one and a half days.

Despite the limited resources of a single operating table and surgical microscope, the results were very successful, with the patients recovering well. It was also the first time phacoemulsification cataract surgery was performed at the eye clinic.

Ambon is a seaport city and the capital of the Maluku islands. As there are only four local ophthalmologists to cater to the entire Maluku population of 1.7 million people, there is a pressing need for eye care and cataract surgery in the area.

In view of this, we hope to make the humanitarian trip a regular affair. The goal is to increase capacity by having more operating tables, scopes and phacoemulsification machines, and teach local ophthalmologists so that more cataract surgeries can be done for the needy.





Playing our part for President's Challenge

Singapore National Eye Centre (SNEC) and Singapore Eye Research Institute (SERI) contributed to SingHealth President's Challenge 2017 through various charitable efforts by our staff.

Based on the theme of 'Healing Hands, Compassionate Hearts', SingHealth President's Challenge 2017 signifies how the network of hospitals, national specialty centres and polyclinics work together to care for patients and contribute to the community. Beneficiaries include

Alzheimer's Disease Association, Singapore Association of the Visually Handicapped and Singapore National Paralympic Council.

SNEC and SERI raised close to S\$22,000 for the campaign through fundraising and community engagement activities that kicked off in June last year. These efforts include a pledge card donation drive, sale of movie tickets for *Transformers: The Last Knight* and participation in the SingHealth 'Urban Race'. A team of five staff from SERI took part in the race comprising pit stops across the country, with SNEC being one of them.

The finale event was held on 28 October 2017 at the Academia. Staff and beneficiaries were invited to celebrate the fundraising endeavour with President Halimah Yacob, who graced the occasion to receive the cheque for SingHealth President's Challenge 2017.

Clinical Training Merit Award



Singapore National Eye Centre (SNEC) bagged the award for its distinguished teaching and assessment of medical students in Academic Year 2016/2017.

Scores for the Clinical Training Merit Award were tabulated based on student feedback on the adequacy of training facilities, amenities and physical resources, as well as the effectiveness of teaching by the SNEC doctors in helping them achieve educational goals and learning objectives.

Scoring above the national average and Singapore General Hospital's average, SNEC's Training & Education Department was presented with the award during the annual NUS Yong Yoo Lin School of Medicine Dean's visit.

The SNEC undergraduate training programme encompasses a host of lectures, video teaching sessions, clinical attachments and skill transfer demonstrations. There are also small group sessions that focus on differential diagnoses, clinical examination skills and the use of ophthalmic instruments. Students are treated with hospitality and our doctors make every effort to teach them despite the high patient load in their clinics.

A series of classes for 12 groups of students is conducted between July and January, with each posting spanning two weeks. The programme is constantly remodelled and enhanced to meet changing needs.

All education projects in SNEC are under the purview of Assoc Prof Ian Yeo, Deputy Medical Director (Education). The undergraduate training programme is led by five senior consultants –



Adj Assoc Prof Seah Lay Leng (left), Programme Director, Undergraduate Training Programme, SNEC, receiving the award from Assoc Prof Yeoh Khay Guan, Dean, NUS Yong Loo Lin School of Medicine.

Adj Assoc Prof Seah Lay Leng (Programme Director), Dr Anshu Arundhati, Dr Chan Tat Keong, Dr Sonal Farzavandi and Dr Loo Jing Liang – who work together with a team of optometrists, nurses and administrative staff to optimise learning outcomes.

Lifetime Achievement Award

The Eye & Vision Health Awards recognise eye care professionals and corporate companies who have made significant contributions to this field. In September 2017, Dr Yvonne Ling, Senior Consultant in the Paediatric Ophthalmology & Adult Strabismus Department at Singapore National Eye Centre (SNEC), was conferred the Lifetime Achievement Award.

A pioneer in paediatric ophthalmology in Singapore, Dr Ling helped establish and develop various departments in SNEC, from Paediatric Ophthalmology & Adult Strabismus to Orthoptic and Low Vision services. She contributed a large part to the prevention of blindness caused by Retinopathy of Prematurity, when screening of newborn babies was introduced in local hospitals from the mid-1980s.

For over 30 years, Dr Ling has mentored many local and international ophthalmology residents and fellows. She is part of the National Myopia Prevention Steering Committee (Health Promotion Board) and on the board of Rainbow Centre for children with special needs, and has served as a member of the Optometry and Opticians Board (Ministry of Health) and a past president of the Singapore Association of the Visually Handicapped.

Today, she remains passionate about improving the care of both adults and children with low vision. In addition to her clinical and teaching work, she continues to dedicate time to community service.



Dr Yvonne Ling (right) receiving her award from Dr Lee Bee Wah, Member of Parliament for Nee Soon GRC

President's Volunteerism and Philanthropy Awards 2017



Presented by President Halimah Yacob in November 2017, the awards recognise those who have set benchmarks of excellence for encouraging the spirit of giving in Singapore. Dr Marcus Ang, Consultant in the Corneal & External Eye Disease Department at SNEC, was conferred the award in the adult individual category.

For the past 11 years, Dr Ang has volunteered at numerous eye screening programmes and noticed that many people – especially the needy elderly – do not seek proper treatment for their eyes until it is too late. This inspired him to visit void decks and community day care

centres with portable equipment to provide free eye examinations, which then spawned the launch of the Mobile Eye Clinic (MEC) project.

To date, the MEC has helped more than 3,000 beneficiaries mainly aged above 60. Beyond initial screenings and consultations, patients can now receive follow-up eye care, medications and glasses, and even surgery. This has raised the follow-up rate among elderly patients by over 30%. Dr Ang, who serves as programme director for the MEC, strives to continue empowering patients with knowledge and management know-how for their eye conditions.

PROMOTIONS



Dr Khor Wei Boon

Senior Consultant
Corneal & External
Eye Disease Department, SNEC

.....



Dr Wong Chee Wai

Consultant
General Cataract & Comprehensive
Ophthalmology Department, SNEC

.....



Dr Woo Jyh Haur

Consultant
General Cataract & Comprehensive
Ophthalmology Department, SNEC

.....



Dr Saadia Zohra Farooqui

Associate Consultant
General Cataract & Comprehensive
Ophthalmology Department, SNEC

.....



Dr Aditi Mohla

Staff Physician
Clinical Services Department, SNEC

.....

EYE ACP AWARDS

THE 22ND CONGRESS OF CHINESE OPHTHALMOLOGICAL SOCIETY

2017 International Gold Award of Chinese Ophthalmological Society

Prof Wong Tien Yin

Medical Director, Singapore National Eye Centre (SNEC); Deputy Group Chief Executive Officer (Research & Education), SingHealth; Vice Dean, Office of Academic and Clinical Development, Duke-NUS Medical School; Academic Chair, Ophthalmology & Visual Sciences Academic Clinical Program (Eye ACP), SingHealth Duke-NUS Academic Medical Centre

AMERICAN ACADEMY OF OPHTHALMOLOGY (AAO) 2017

Senior Achievement Award

Assoc Prof Jodhbir Mehta

Head & Senior Consultant, Corneal & External Eye Disease Department, SNEC; Deputy Executive Director, SERI; Deputy Vice Chair (Research), Ophthalmology & Visual Sciences Academic Clinical Program (Eye ACP), SingHealth Duke-NUS Academic Medical Centre

Achievement Award

Assoc Prof Gemmy Cheung

Deputy Head & Senior Consultant, Medical Retina Department, SNEC; Head, Ocular Imaging Department, SNEC; Head, Retina Research Group, SERI

Dr Choo Chai Teck

Senior Consultant (Aesthetic Eyeplastic), Oculoplastic Department, SNEC

Assoc Prof Cheng Ching-Yu

Senior Clinician Scientist, Glaucoma Department, SNEC; Principal Clinician Scientist, SERI; Head, Ocular Epidemiology Research Group & Statistics Research Platform, SERI

NATIONAL MEDICAL RESEARCH COUNCIL

Clinician Scientist Award

Assoc Prof Louis Tong

Senior Consultant, Corneal & External Eye Disease Department, SNEC; Head, Ocular Surface Research Group, SERI

Assoc Prof Yasuo Yanagi

Senior Clinician Scientist, Medical Retina Department, SNEC; Clinician Scientist & Co-Head, Santen-SERI Open Innovation Centre, SERI

Transition Award

Dr Liu Yu-Chi

Clinician Scientist, Corneal & External Eye Disease Department, SNEC; Clinician Scientist, Tissue Engineering & Stem Cell Groups, SERI

SINGHEALTH DUKE-NUS ACADEMIC MEDICAL CENTRE RESEARCH FORUM

SingHealth Research Publish! Award

Dr Veluchamy Amutha Barathi

Junior Principal Investigator, SERI; Assistant Director, Translational Pre-clinical Model Platform, SERI; Head, Translational Pre-clinical Model Support Platform, SERI

Dr Chetna Dhand

Research Fellow, Biomarkers & Anti-Infectives Groups, SERI

3RD SINGHEALTH DUKE-NUS EDUCATION CONFERENCE 2017

Best Oral Presentation - Winner

Dr Kiew Sieh Yien

Resident, Training & Education Department, SNEC

Best Oral Presentation - 2nd Runner-up

Ms Aw Ai Tee

Assistant Director, Nursing - Dayward Department, SNEC

Merit Poster Award

Ms Karen Zhang

Senior Orthoptist, Orthoptic Service, SNEC

11TH ASIA-PACIFIC VITREO-RETINA SOCIETY CONGRESS


Electronic Poster Award - 2nd Prize

Dr Kelvin Teo


Associate Consultant, General Cataract & Comprehensive Ophthalmology Department, SNEC

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

 **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

Consultation by appointment:

 **Tel: 6227 7266**

 **Email: appointments@snec.com.sg**

 **Visit us: www.snec.com.sg**

Like us on:  /@SNEC.SERI

GP Hotline: 6322 9399

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

SNEC

Branches and Affiliated Clinics

**SNEC Alexandra Branch
Alexandra Hospital**
378 Alexandra Road,
Block 28 Singapore 159964
Clinic A (Level 1)
Tel: 6379 3230
Fax: 6379 3239
Clinic C (Level 2)
Tel: 6379 3500
Fax: 6379 3519
(operational till second
quarter 2018)

**SNEC Eye Clinic @ CGH
Changi General Hospital**
2 Simei Street 3, Level 1
Singapore 529889
Tel: 6850 1450/6850 1470
Fax: 6784 8718/6544 0087

**SNEC Eye Clinic @ NHCS
National Heart
Centre Singapore**
5 Hospital Drive, Level 4, 4C
Singapore 169609
Tel: 6704 8289
Fax: 6385 5673

**SNEC Retina Centre
Diabetes & Metabolism Centre
(DMC), SGH**
17 Third Hospital Avenue,
#02-00 Singapore 168752
Tel: 6421 8500
Fax: 6221 4857

**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
Fax: 6394 1929

**SNEC Eye Associates Clinic
Gleneagles Hospital**
6A Napier Road #02-39/40,
Annexe Block Singapore 258500
Tel: 6835 1188
Fax: 6835 1009

NEW

SNEC Eye Clinic @ Bedok
Blk 212 Bedok North Street 1,
#03-147 Singapore 460212
(operational in first quarter 2018)

NEW

**SNEC Eye Clinic @ SKH
Sengkang General Hospital**
Medical Centre, Level 8
110 Sengkang East Way
Singapore 544886
(operational in third quarter 2018)