

MEDICO

CUTTING EDGE

Holograms: A
Game-Changer
for Heart Surgery

IN ADDITION

Getting on Top
of Paediatric
Asthma

RESOURCES

Female Sexual
Dysfunction

UP CLOSE WITH

Assoc Prof James Yip,
Director of NUHCS

INSIGHTS

- Seeing Double?
- Treating Presbylarynx
with Rehabilitation
and Medialisation

SPOTLIGHT

NATIONAL UNIVERSITY HEART CENTRE, SINGAPORE (NUHCS)



IN THIS ISSUE



03 SPOTLIGHT

National University Heart Centre, Singapore (NUHCS)



09 CUTTING EDGE

Holograms: A Game-Changer for Heart Surgery



11 INSIGHTS

Seeing Double?



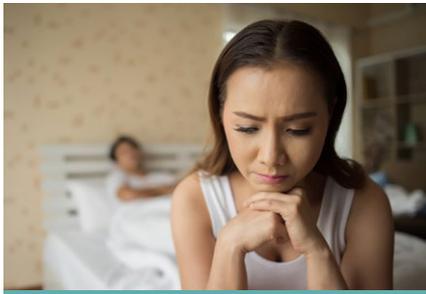
14 INSIGHTS

Treating Presbylarynx with Rehabilitation and Medialisation



17 IN ADDITION

Getting on Top of Paediatric Asthma



19 RESOURCES

Female Sexual Dysfunction



21 UP CLOSE WITH

Assoc Prof James Yip, Director of National University Heart Centre, Singapore (NUHCS)

NATIONAL UNIVERSITY HEART CENTRE, SINGAPORE (NUHCS)

A heart health community,
shaping medicine and
transforming care





Clinicians, nurses and allied health professionals from Heart Failure Team, Department of Cardiology, NUHCS.
Credit: NUHCS

The National University Heart Centre, Singapore (NUHCS), an entity of the National University Health System (NUHS), was set up to meet the growing need of providing care to the increasing number of people suffering from heart disease.

NUHCS brings together cardiac specialists from various medical and surgical disciplines to provide a comprehensive and holistic approach to the treatment of heart problems.

As a national centre, NUHCS helps shape the national strategy to improve cardiovascular health of the population through providing sustainable, value-driven patient-centric care. It is the only cardiac centre in Singapore to rank globally in Newsweek’s World’s Best Hospitals 2022 for Cardiac Surgery specialty, ranking top in Singapore and 57th globally.

In line with the holistic approach towards patient care and enhancing patient experience across the care

continuum, NUHCS has developed five Core Clinical Programmes and two Peaks of Excellence since its establishment.

CORE CLINICAL PROGRAMMES

HEART FAILURE PROGRAMME

As the ageing population in Singapore grows, the prevalence of cardiovascular risk factors in our population (e.g. hypertension, diabetes mellitus, obesity) also increases. This has resulted in an ever-escalating number of patients living with heart failure.

NUHCS’ Heart Failure Programme adopts a multi-disciplinary approach

towards the care of all patients suffering from heart failure, accompanying them through their journey by providing end-to-end aid.

Along with our partners, the programme serves as a tertiary referral centre for the diagnosis and management of patients with heart failure and cardiomyopathies. It leverages tele-health and Advanced Practiced Nurses / Allied Health Professionals (APNs/AHPs)-led care.

Our case managers and pharmacists also assist in patient education, counselling, tele-monitoring, drug titration, clinical pathway interventions and advanced care planning, among other services.



Credit: iStock

ACUTE CORONARY SYNDROME PROGRAMME

The NUHCS Acute Coronary Syndrome Programme aims to provide timely and efficient care for patients suffering from heart attacks.

By working with nurses and specialists from the NUH Emergency Medicine Department, the NUHCS team has reduced the door-to-balloon time – the duration between diagnosing a patient with a heart attack to the moment the patient’s heart is unblocked by coronary angioplasty – to 45 minutes, which is almost half the international standard of <90 minutes.

Additionally, the team collaborates with Ng Teng Fong General Hospital (NTFGH) and the Singapore Civil Defence Force (SCDF) ambulance service in providing a common on-call pool of interventional cardiologists and catheterisation laboratory emergency response team at NUHCS after office hours. Also known as the Western ST-segment Elevation Myocardial Infarction (STEMI) Network, this

collaboration between the two healthcare providers promptly provides emergency medical care to patients suffering from heart attacks in Western Singapore. This represents a significant paradigm shift in the healthcare delivery model.

STRUCTURAL HEART DISEASE PROGRAMME

Structural heart disease is among maladies related to the structure or anatomy of the heart. It can originate from birth (“congenital”) or develop later in life. This group of conditions can include inappropriate connections between chambers of the heart, “holes” in the dividing walls of the heart, or valve disorders – whether it be too tight or loose.

The NUHCS Structural Heart Disease Programme has developed an end-to-end service encompassing diagnosis, investigation as well as treatment (including minimally invasive or transcatheter therapy) to ensure that patients receive high-quality care

throughout their treatment journey. The programme is anchored by expert physicians in diagnostics and treatment, and offers a strong and complementary suite of transcatheter and surgical treatment options to provide care for all patients.

Our care for patients extends beyond hospital boundaries. Case managers and nurses are in close communication with all patients under our service to provide medical advice and support. After undergoing invasive treatment or prolonged hospital stay, patients are guided through an individualised rehabilitation programme to maximise their functional outcomes.

In recognition of the excellent patient-care outcomes, including reducing the length-of-stay to less than seven days and patient treatment costs by 40%, the team was awarded the Excellence Award under the “Best in Financial Improvement” category at the 2021 Hospital Management Asia (HMA) Awards.



From left to right: Dr Chan Po Fun, Consultant; Dr Sim Hui Wen, Associate Consultant; Dr Low Ting Ting, Clinical Director; Dr Laureen Wang and Dr Jeanne Ong, Associate Consultants; Women’s Heart Health Programme, NUHCS.

Credit: NUHCS

WOMEN’S HEART HEALTH PROGRAMME

Cardiovascular disease (CVD) is the leading cause of death of women in Singapore. In the past few decades, research has established profound gender differences in numerous cardiac diseases.

In line with this, the Women’s Heart Health Programme was set up by NUHCS to deliver personalised and multi-disciplinary care to women at risk of and living with heart disease. The team works closely with specialists and health professionals from other medical fields to provide one-stop patient care.

The team is also actively involved in developing the Cardiology Preventive Programme for women, with Alexandra

Hospital anchoring this initiative in providing a menopause heart health screening programme.

The Women’s Heart Health Programme also raises awareness on the importance of heart disease in women, through health coaching and the creation of platforms for their advocacy, as well as involvement in community campaigns such as ‘Go Red for Women’, International Women’s Day and World Heart Day.

HEART RHYTHM PROGRAMME

Heart rhythm conditions (otherwise known as arrhythmias) often require complex treatment procedures. The NUHCS’ Heart Rhythm Programme, or Arrhythmia Service,

has partnered with the NUHCS Heart Failure Programme to co-manage high-risk patients by focusing on the implantation of cardiac devices such as biventricular pacemakers and defibrillators, to improve outcomes and quality of life in patients with heart failure.

The Heart Rhythm Programme also manages rhythm disorders with electrophysiological studies and ablation services. In addition to having experience in these tertiary-level cardiovascular services and treatment procedures, NUHCS is also a regional referral centre for arrhythmia and heart failure-related disorders.



The surgical team led by A/Prof Theodoros Kofidis, Head of Department of Cardiac, Thoracic & Vascular Surgery (CTVS), NUHCS, performing a Minimally Invasive Cardiothoracic Surgery (MICS).

Credit: NUHCS

PEAKS OF EXCELLENCE

MINIMALLY INVASIVE CARDIOTHORACIC SURGERY (MICS) PROGRAMME

NUHCS' MICS Programme has achieved broad excellence in clinical outcomes and a substantial level of international recognition. MICS, or 'keyhole' surgery, encompasses surgeries on the heart coronary arteries, rhythm and valves. These are performed with smaller incisions without opening the chest bone, thus providing less trauma to the patient and reduces recovery time.

With the aim to expand MICS to be at the forefront of clinical, education and research platforms, NUHCS will also focus on achieving national, regional and international recognition for MICS as an academic surgical programme.

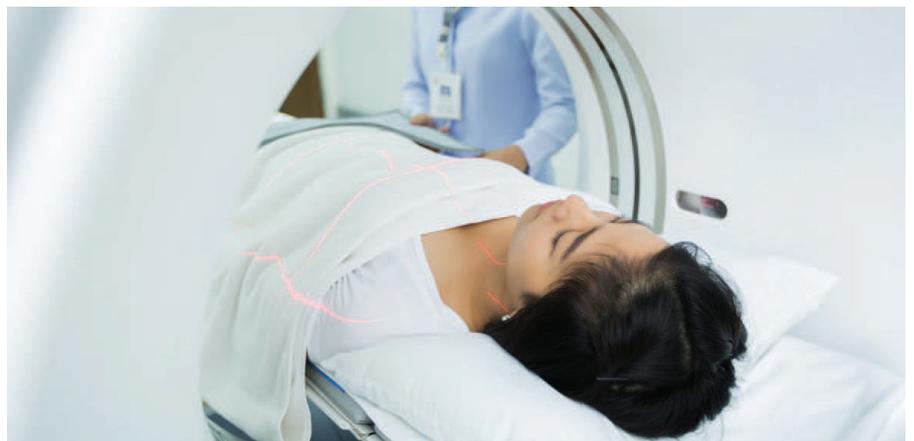
NUHCS is also embarking on the Robotic Cardiothoracic Surgical Programme and aims to be a recognised robotic hub in cardiothoracic surgery as part of the MICS Peak of Excellence.

VASCULAR HEALTH / AORTIC CENTRE

The NUHCS Aortic Centre offers patients with aortic disease specialised care by a multi-disciplinary team of doctors consisting of vascular surgeons,

cardiac surgeons, interventional radiologists, vascular medicine cardiologists, stroke physicians and cardiovascular anesthesiologists.

NUHCS plans to centralise complex aortic work in NUH and aims to increase referrals of complex cases from Ng Teng Fong, Khoo Teck Puat and Tan Tock Seng hospitals. Continuous training programmes and research are also conducted to improve clinical outcomes benchmarked against international standards.



CT scan of the whole aorta.

Credit: NUHCS

NUHCS IN THE COMMUNITY

One of NUHCS' key priorities is to drive seamless care integration across all sites to deliver accessible, value-driven, cost-effective and quality care to the population.

In addition to developing the Western STEMI network to reduce fragmentation of care for heart attack patients in the western region of Singapore, NUHCS has also established the national Extracorporeal Life Support (ECLS) network programme with joint protocols with Ng Teng Fong General, Khoo Teck Puat, Tan Tock Seng and Changi hospitals for Extracorporeal Membrane Oxygenation (ECMO) retrieval service for a more cost-effective standard of care with improved outcomes.

With the Ministry of Health's directive of an increased focus on primary care, NUHCS has put in place a six-pronged approach to improve the cardiovascular health of the community. This is done with a special focus on upstream intervention and better disease control, thereby reducing downstream complication and hospitalisation rates. The approaches are:

- Cardiovascular Prevention Programme
- Women's Heart Health (WHH) Programme
- Rapid Access Chest Pain Clinic at Ng Teng Fong General Hospital
- Post-Acute Myocardial Infarction (AMI) Care Management
- Tele-collaborative Consult Service
- Cardiac Rehabilitation



NUHCS spans across three acute hospitals:

- **NUHCS @ Kent Ridge**
National University Hospital, 5 Lower Kent Ridge Road, Singapore 119074
- **NUHCS @ Jurong**
Ng Teng Fong General Hospital, 1 Jurong East Street 21, Singapore 609606
- **NUHCS @ Alexandra**
Alexandra Hospital, 378 Alexandra Road Singapore 159964

Opening Hours

8.30am to 5.30pm

Mondays to Fridays. Closed on Weekends and Public Holidays

Appointments

Call 6908 2222 or email: appointment@nuhs.edu.sg

Follow us on our socials:

Website: www.nuhcs.com.sg

Instagram: [@nuhcsofficial](https://www.instagram.com/nuhcsofficial)

Facebook: www.facebook.com/nuhcs

Youtube: www.youtube.com/NUHCS

Linkedin: www.linkedin.com/company/NUHCS



HOLOGRAMS: A GAME-CHANGER FOR HEART SURGERY

The Department of Cardiac, Thoracic and Vascular Surgery (CTVS), National University Heart Centre, Singapore (NUHCS) has successfully conducted Singapore's first holography-guided heart surgery using Microsoft's HoloLens 2 – a pair of mixed reality smart glasses through which surgeons can view a projected three-dimensional (3D) hologram of the patient's heart derived from the patient's Computerised Tomography (CT) scans.

Holographic devices give doctors a different perspective of the patient's anatomy with views from different angles. In cases where patients possess a unique anatomy, holograms can empower and enhance the surgeon's

experience by providing better and clearer visualisation of the body before the complex surgery.

The device further allows the surgeon to manipulate images via hand gestures to move, resize and rotate the visual or even to superimpose the hologram onto the patient's chest during surgery, allowing for better understanding of the challenges before proceeding with the surgery.

Doctors could also potentially use the device to educate and better describe medical conditions to their patients, by giving them a visual of their anatomy and walking them through the recommended procedure.



A/PROF THEODOROS KOFIDIS

MBBS (S'pore), MRCS (Glasgow), MMed (Orth), FRCSEd (Orth)

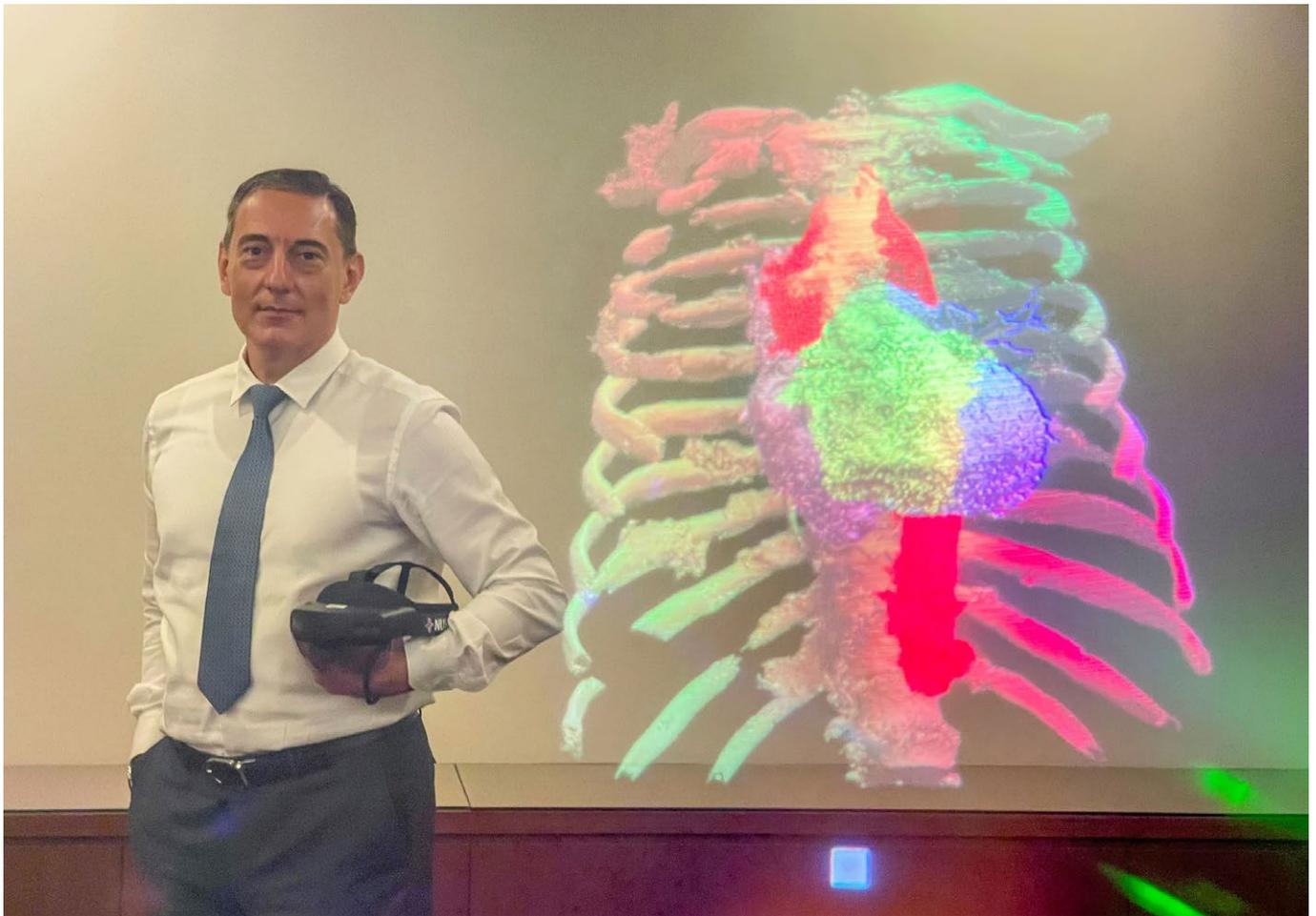
Head & Senior Consultant, Department of Cardiac, Thoracic and Vascular Surgery, National University Heart Centre, Singapore

Sub-specialties:
Adult Cardiac Surgery, Aortic Surgery, Extracorporeal Membrane Oxygenation, Minimally Invasive Cardiac Surgery



The surgical team behind Singapore's first holography-guided heart surgery. From left to right: Dr Gao Yujia, Associate Consultant, NUH, Dr Chang Guohao, Consultant, Department of CTVS, NUHCS, A/Prof Theodoros Kofidis, Head & Senior Consultant, Department of CTVS, NUHCS, Mr Ng Kian Wei, Data Scientist, NUHS, Dr Illas Skaltsiotis, Clinical Fellow, NUHCS.

Credit: NUHCS



A/Prof Theodoros Kofidis, lead of the holography-guided heart surgery team.

Credit: NUHCS

A/Prof Theodoros Kofidis, Head and Senior Consultant, Department of CTVS, NUHCS, Mr Ng Kian Wei, Data Scientist, National University Health System (NUHS), Dr Illas Skaltsiotis, Clinical Fellow, NUHCS, Dr Chang Guohao, Consultant, Department of CTVS, NUHCS and Dr Gao Yujia, Associate Consultant, National University Hospital (NUH) formed the team that conducted the first holography-guided heart surgery, which was also the world's first holography-guided minimally invasive adult heart operation, in October 2021.

The first patient was a 75-year-old man diagnosed with advanced aortic valve leakage, a condition where the heart's aortic valve does not close tightly, resulting in a backflow of blood. With the patient's heart failing quickly due to dilation, an immediate valve replacement was crucial.

Using HoloLens 2, A/Prof Kofidis was able to project a hologram of the patient's heart onto his chest during the surgery, which assisted A/Prof Kofidis in placing the incisions exactly in the right areas through the space

between the ribs, and in accurately evaluating how deep the cuts needed to be.

Since then, the team has conducted numerous other successful operations which have been described and published in peer-reviewed journals, and recently presented at the International Society for Minimally Invasive Cardiac Surgery conference in June 2022.



SEEING DOUBLE?



DR HAZEL ANNE LIN

MBBS, MMed, FAMS (Ophthalmology)

Consultant,
Department of Ophthalmology,
National University Hospital

Sub-specialties:
Cataract, General Ophthalmology,
Neuro-Ophthalmology

WHAT IS DIPLOPIA?

Diplopia is a symptom where one sees two images of a single object. It can be monocular or binocular. Monocular diplopia is commonly due to refractive errors, or disorders of the cornea or lens, while binocular diplopia results from misalignment of the two eyes. Normally, equal balance and synchronous movement of both eyes allow us to view a single image in various positions of gaze.

When this balance is compromised, binocular fusion is impaired and will cause double vision. Our eye movements are controlled by six extraocular muscles, which are supplied by three cranial nerves that originate in the brainstem. Diseases that affect the brain, peripheral cranial nerves, neuromuscular junction, or extraocular muscles can result in diplopia (Image 1).

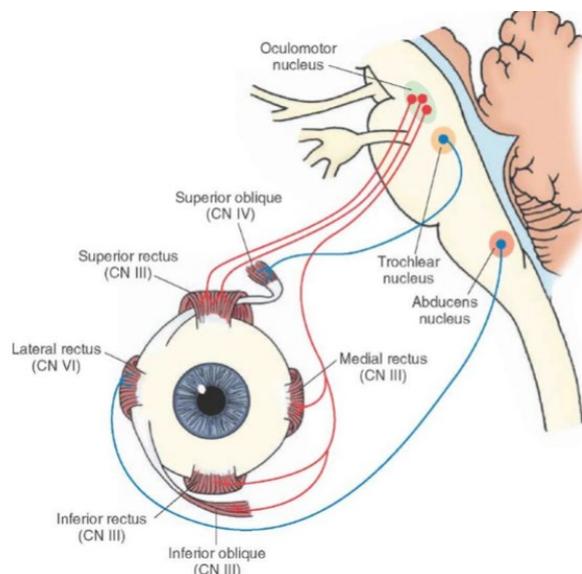


Image 1

Credit: The Cranial Nerves (Organization of the Central Nervous System) Part 4 (what-when-how.com)

IS DIPLOPIA DANGEROUS?

The presence of diplopia can be very debilitating and pose a danger to the individual. Many patients suffer from imbalance, dizziness, and headaches due to the inability to fuse the two images. This puts them at increased risk of falls and other injuries, and can significantly affect their activities of daily living.

As a symptom, diplopia can herald the presence of a life-threatening condition which may require emergency treatment.

For example, intracranial aneurysm (Figure 1a & 1b) and mass lesions in the brain (Figure 2a & 2b) can manifest as acute isolated cranial nerve palsies.

Diplopia can also manifest secondary to underlying systemic diseases. Vascular risk factors such as diabetes, hypertension and hyperlipidaemia are associated with ischaemic cranial neuropathies. Neuromuscular junction disorders such as myasthenia gravis and myopathy associated with thyroid eye disease can present similarly.

Prompt recognition through careful history and examination, followed by rapid escalation to consult a specialist can facilitate appropriate investigation and expedited management.

Occasionally, diplopia is benign, such as in most cases of monocular diplopia and decompensated childhood squints, which is a diagnosis of exclusion. Old photos can be helpful in determining the presence of childhood squints.



Fig 1a: Oculomotor nerve palsy in a patient who presented with sudden onset of headache and diplopia secondary to a ruptured posterior communicating artery aneurysm. There was right sided ptosis and limitation in adduction, elevation, and depression of the right eye.

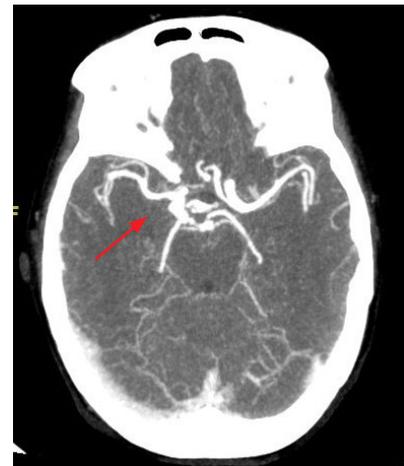


Fig 1b: Posterior communicating artery aneurysm.



Fig 2a: Right abduction deficit from abducens nerve palsy in a young patient with metastatic breast cancer to the brain.

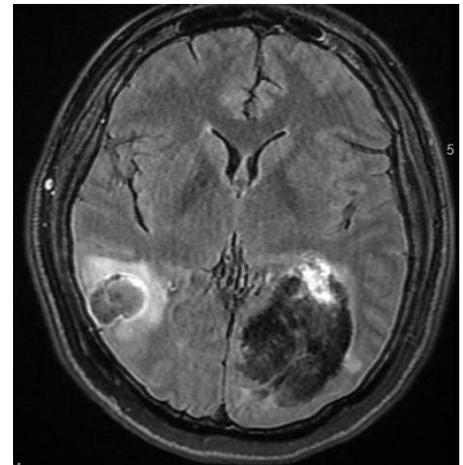


Fig 2b: MRI showing brain metastasis causing raised intracranial pressure resulting in abducens nerve palsy.

Credit: Department of Ophthalmology, NUH



'RED FLAGS'

- Sudden onset of double vision
- Altered consciousness
- Presence of headache, nausea or vomiting
- Associated drooping of eyelids (ptosis)
- Other neurological symptoms e.g., weakness, numbness, swallowing or speech difficulties



WHAT SHOULD A CONSULTING DOCTOR DO?

1. Check to see if diplopia is monocular or binocular.
2. If it is monocular, treat dry eyes with lubricants and refer the patient to an optometrist for spectacle correction. If symptoms persist despite intervention, then escalate the case to an ophthalmologist for further assessment.
3. If it is binocular, refer the patient immediately to a specialist for assessment. While waiting for transfer, prescribe a patch for the poorer-seeing eye to help alleviate diplopia.



TREATMENT OPTIONS

1. Eliminate double vision

- Patching or fogging of one eye or spectacle lens to eliminate diplopia temporarily.
- Fresnel prisms are temporary stickers that can be attached to spectacle lenses to help align the images.
- Prisms can also be incorporated (ground-in prisms) into spectacle lenses.

2. Medical therapy

- Control underlying risk factors such as diabetes, hypertension, and hyperlipidaemia in cases of ischaemic cranial neuropathies.
- In ocular myasthenia gravis, medical therapy with pyridostigmine, steroids and steroid sparing agents is the mainstay treatment. In cases of generalised myasthenia gravis, intravenous immunoglobulin, and plasma exchange is required.
- Active thyroid eye disease is usually treated with topical eye drops to lubricate dry eyes in mild disease, and systemic steroids in moderate to severe cases.



3. Squint surgery

- If the disease is no longer active and the angle of squint remains stable for at least 6 months, strabismus surgery can be considered. This involves tightening or altering the placement of extraocular muscle position on the globe to achieve better balance between the eyes.



TREATING PRESBYLARYNX WITH REHABILITATION AND MEDIALISATION

“ Doctor, my friends often tell me that they cannot hear me well. I have been trying to speak as loudly as I can, to the extent of feeling breathless and exhausted, and yet they are unable to hear me. Is this normal? ”

Some of us may have experienced patients coming into the clinic with this complaint. This is a common symptom of Presbylarynx, a condition in which age-related atrophy of the soft tissues of the larynx results in weak voice and restricted vocal range and stamina. In other words, it is the loss of vocal fold tone and elasticity due to aging which affects voice quality.

Progressive loss of muscle mass and strength, otherwise known as sarcopenia, takes place as we age.

This is a physiological process that occurs in our skeletal muscles, and the muscles in our larynx are not spared.

These muscles enable the adduction (close) and abduction (open) of our vocal cords, which serve important functions. They are vital in regulating our respiration, protect us from aspiration during swallowing, and help us develop a cough reflex in an event of aspiration. Complete adduction of the vocal cords is essential for voice production.



DR KER LIANG

MBBS (S'pore), MRCS (Edin), MMed (ORL)

Consultant, Department of Otolaryngology - Head & Neck Surgery, National University Hospital

Programme Director, Assessment & Shared Care Team (ASCAT)

Sub-specialties: Healthy Ageing Programme (Age Better), Laryngology

In a patient with presbylarynx, there is muscle wasting, resulting in weakness of the vocal cords movement. The vocal cords are still able to adduct and abduct, but there is incomplete closure, leaving a glottic gap. The larger the glottic gap, the more severe the voice and swallowing impairment.

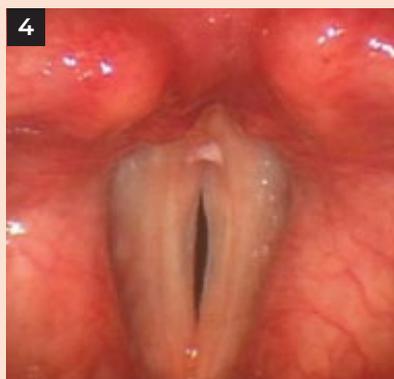
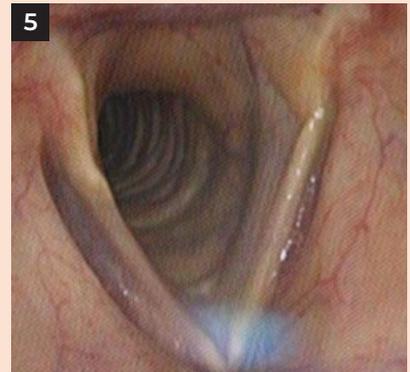
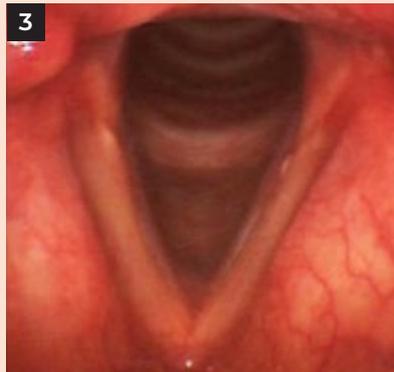
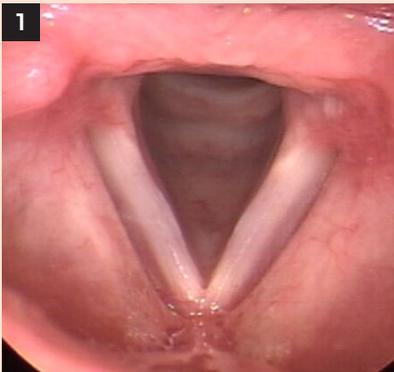
Patients with presbylarynx usually experience the inability to project their voice (weak and soft), feel breathless when they speak and require increased effort for breathing during a conversation.

They may complain of throat and neck soreness after conversations, and feel that their voice is hoarse. Some patients complain that their pitch are lowered, and those who sing are unable to hit their usual high notes. Patients with significant presbylarynx report increased incidents of choking during meals, occurring most frequently with fluid intake.

These patients should be seen at the ENT - Head and Neck Surgery Centre, and have to undergo a stroboscopic examination of the larynx. This examination is important as it allows

our specialists to view the vocal cords, and test its movement and function. If the swallowing function is suspected to be impaired, a Functional Endoscopic Examination of Swallowing (FEES) may be performed as well.

Patients with mild presbylarynx are treated conservatively – they are seen by our ENT Speech Therapist and undergo vocal therapy. They are taught a specialised set of laryngeal muscle strengthening exercises, and are usually able to see improvements in their vocal functions after two to three months of rehabilitation.



(1) Normal vocal cord in abducted position.
 (2) Normal vocal cord in adducted position; note that the vocal cords close completely in the midline. There is no glottis gap in a healthy, normal larynx.

(3 and 4) A small glottis gap is seen on abduction. This is small in early/mild Presbylarynx.

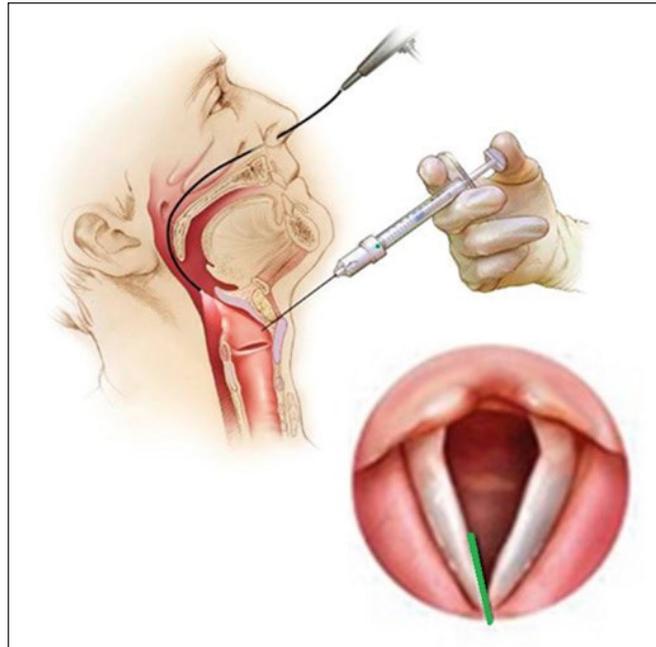
(5 and 6) The vocal cords are severely atrophied. There is a large glottis gap seen on abduction. This patient would suffer more significant voice and swallowing impairments.

Credit: Department of Otolaryngology - Head & Neck Surgery, NUH

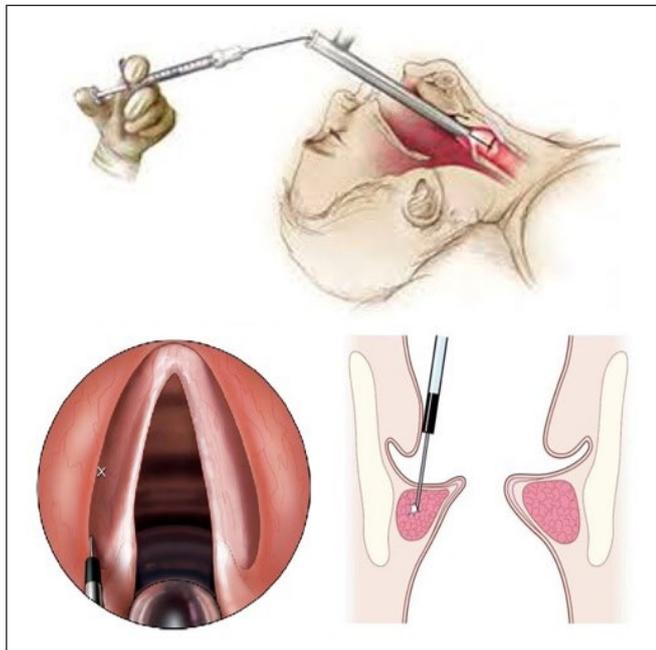
Patients with moderate or severe presbylarynx are advised to undergo medialisation procedure in addition to vocal therapy. Fillers are injected into the larynx to medialise the vocal cords – these fillers allow for better closure of the vocal cords during swallowing and phonation.

This procedure can be performed as an outpatient procedure (Medisave-claimable), or under general anaesthesia if the patient is unable to tolerate the procedure under local anaesthesia.

For more information, visit:
www.nuh.com.sg/ent



Injection medialisation being performed under local anaesthesia at the ENT clinic. The patient's nose and throat is anaesthetised, nasoendoscopy is performed to visualise the vocal cords, and the filler is injected percutaneously.



The patient is placed under general anaesthesia, the vocal cords are visualised via direct laryngoscopy and filler material is injected transorally.

Credit: <https://www.entandaudiologynews.com/media/10637/entmj18-costello.pdf>

GETTING ON TOP OF PAEDIATRIC ASTHMA

Paediatric asthma is not uncommon in Singapore. While the severity of asthma is fortunately much milder in Asia, the prevalence is still quite high. Once diagnosed, there are clear-cut guidelines for its management including Global Initiative against Asthma (GINA) and our own Agency for Care Effectiveness (ACE) for asthma in Singapore.

The most important step lies in making a diagnosis of asthma in a symptomatic child. While this step is relatively easier for children between 6 and 12 years of age, diagnosing asthma in those below 6 years (preschool children) is a challenge.

Paediatric asthma, in general, encompasses many subcategories (phenotypes), all of which have similar symptoms and signs. Here-in lies the art of medicine.

Once diagnosed to have asthma, most children will benefit from three equally important components of management – parental education, environmental control and pharmacological management. General practitioners, family physicians and polyclinic doctors will be able to manage a significant proportion of children with asthma.

Inhaled corticosteroids (ICS) is the cornerstone of the management of long-term asthma in children.



DR MAHESH BABU RAMAMURTHY

MBBS (India), FCPS (Child Health), DNB (Paeds), MD (Paeds), MRCP (UK), Clin. Fellow in Paeds Intensive Care (Glasgow, UK)

Head & Senior Consultant, Division of Paediatric Pulmonary Medicine and Sleep, Department of Paediatrics, Khoo Teck Puat – National University Children's Medical Institute, National University Hospital

Sub-specialties:
Paediatric Pulmonary Medicine and Sleep
(Respiratory Lung Conditions, Snoring Sleep Problems)



DR VISHNAMPETTAI VIVEKANAND

MBBS (India), MD (Paeds)

Clinical Fellow, Division of Paediatric Pulmonary Medicine and Sleep, Department of Paediatrics, Khoo Teck Puat – National University Children's Medical Institute, National University Hospital

IN ADDITION

Any of the ICS available can be used with equal responsiveness. Long acting Beta2 Agonists (LABA) are not used in preschool children and must be used with caution in older children up to 12 years.

The key to controlling asthma symptoms is the proper use of spacer devices, educating parents and emphasising the importance of long-term adherence to inhalers. These children need to be monitored frequently.

A significant proportion of children with asthma will respond well to these management steps. However, a subgroup of them will have uncontrolled asthma in spite of proper management steps.

It is important to identify children with 'red flag' signs and symptoms, who will benefit from early referral to specialists at the Khoo Teck Puat – National University Children's Medical Institute (KTP-NUCMI) at NUH. These include:

- Unclear diagnosis in a symptomatic child
- Poor response to monitored initiation of asthma treatment
- Children who have severe life-threatening attacks requiring ICU stay in the past
- Presence of prominent systemic features (fever, myalgia, weight

loss with poor trajectory on growth charts)

- Chronic moist cough with or without sputum production without wheeze
- Unexplained restrictive spirometry
- Unexpected and unexplained clinical findings (focal auscultatory findings like crackles or wheeze, clubbing, cyanosis, cardiac disease, nasal polyps, severe anaemia, stridor)
- All preschool children with wheeze

PAEDIATRIC ASTHMA SERVICES AT NUH

The Division of Paediatric Pulmonary Medicine and Sleep at KTP-NUCMI provides comprehensive care for children with asthma. The division is run by experienced senior consultants with expertise in the field.

Families and children with asthma will also be able to receive counselling from a dedicated respiratory nurse, including asthma education, counselling on trigger avoidance, proper inhaler technique and spacer use.

We also provide families with a paediatric respiratory hotline (8.30am – 8pm, Mondays to Fridays, except Public Holidays), for parents to reach out to when they have questions about their child's condition.

Facilities at the KTP-NUCMI include a fully-equipped lung function lab with availability of spirometry, impulse oscillometry, exhaled nitric oxide and body plethysmography tests for children with obstructive airway disease.

Provision of computer-generated incentive graphics are also made available to help children give their best during spirometry tests. Most children above 6 years old can perform a good spirometry. For younger children, the lab is equipped with impulse oscillometry (IOS), to enable them to perform tidal breathing. Those as young as 3 years old can perform this test adequately. IOS provides information on increased resistance in the airways of children with asthma and demonstrates post bronchodilator reversibility.

Allergen skin prick testing is also available to demonstrate aeroallergen sensitivity in young children and help predict the response to inhaled corticosteroids. This is especially useful for preschool asthmatics where it is difficult to differentiate the different phenotypes of wheezing.

The "I CAN !" Children's Asthma and Allergy Network by the Division of Paediatric Pulmonary Medicine and Sleep, and the Division of Paediatric Allergy, Immunology and Rheumatology is actively involved in both physician and parent/child education on asthma and allergies. Annual workshops are organised to educate parents about asthma and enable exchange with other parents for support. There are also dedicated physician CMEs on topics and updates related to paediatric asthma and allergies.

For more information, click [here](#) to visit our website.





DR SUSAN LOGAN

MBChB (Aber) MD (commendation)
FRCOG (UK) FFSRH (UK)

Senior Consultant, Division of Reproductive Endocrinology and Infertility, Department of Obstetrics and Gynaecology, National University Hospital

Sub-specialties: Well Programme (Be Better)



DR JUDITH ONG

MBBS (Singapore), MRCOG (UK), M.Med O&G (Singapore), FAMS (O&G)

Associate Consultant, Division of Reproductive Endocrinology and Infertility, Department of Obstetrics and Gynaecology, National University Hospital

Sub-specialties: Obstetrics/
Maternal Fetal Medicine,
Reproductive Endocrinology
Infertility



FEMALE SEXUAL DYSFUNCTION

Female sexual dysfunction (FSD) is common but is infrequently talked about. Studies report that up to 60% of women will experience some form of sexual dysfunction during their lifetime. Sexual function is undeniably an important part of our lives. Lack of treatment is associated with decreased quality of life, poorer mental health, and relationship conflicts.

FSD can be broadly classified into three main categories of disorders: arousal, orgasmic (anorgasmia) and genito-pelvic pain. The Diagnostic and Statistical Manual of Mental Disorders (DSM) defines FSD as any of the above sexual complaints resulting in marked distress or difficulty in interpersonal relationships lasting longer than 6 months. The aspect of distress is important as dysfunction can only be diagnosed if symptoms adversely affect women.

Arousal disorder encompasses a reduction of interest, initiation, or excitement in sexual activity. Anorgasmia is defined as delayed, infrequent, or absent orgasm during sexual activity. Genito-pelvic pain disorder is described as pain during penetration or tightening of pelvic muscles during attempted vaginal penetration.

A common misconception is that FSD is not treatable. Etiologies of FSD include gynaecological and non-gynaecological causes. Gynaecological causes include endometriosis, pelvic inflammatory disease, dermatological disorders such as lichen sclerosus or vulvo-vaginal pre-invasive disease and vulvodynia.

The postpartum and menopausal period stages are also important phases of a woman's life where sexual

function can be compromised due to hormonal changes. Non-gynaecological causes of equal importance would be psychological factors, chronic disorders such as diabetes mellitus and medications.

In addition, our local survey has shown that many healthcare professionals face discomfort in managing sexual problems.

The Division of Sexual Health within the National University Hospital's Obstetrics & Gynaecology department runs a relationship counselling clinic where we provide a safe space for discussion and evaluation of women suffering from FSD.

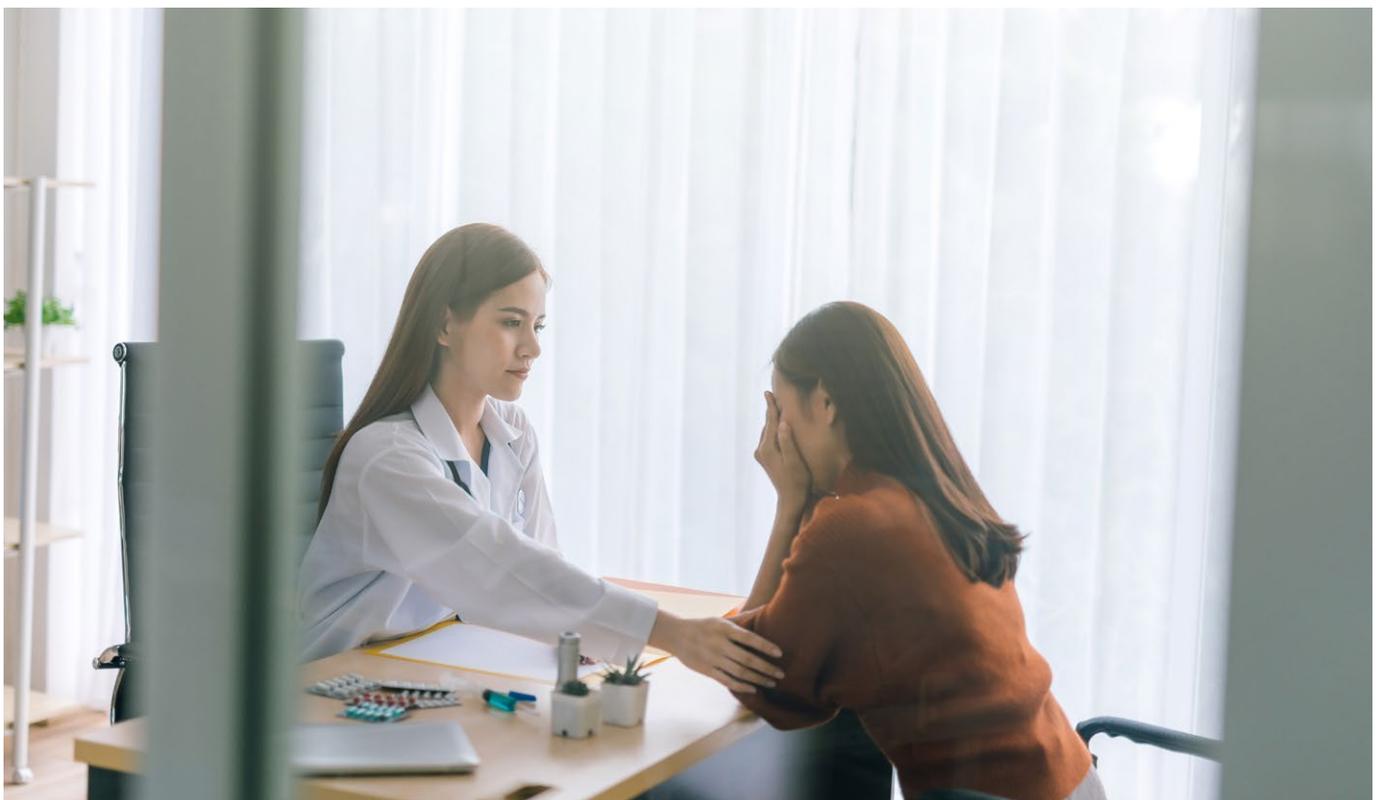
Our gynaecologists are trained with a background in psychosexual counselling, and adopt a

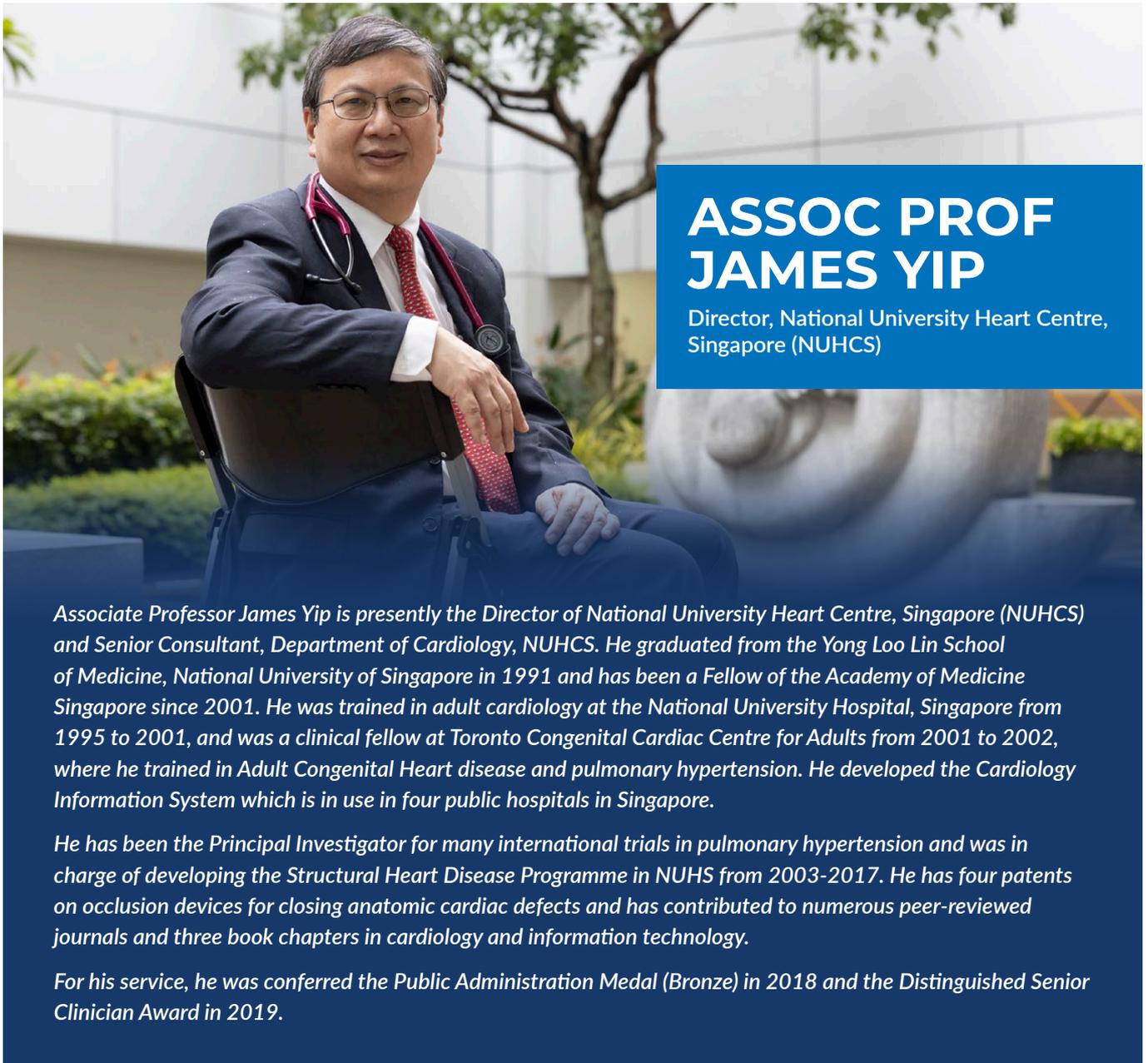
multi-disciplinary approach including counselling and medical therapies with much success for the treatment of FSD to-date.

For more information, please click [here](#).

REFERENCES

1. Kershaw V, Jha S. Female sexual dysfunction. *The Obstetrician & Gynaecologist* 2021; <https://doi.org/10.1111/tog.12778>
2. Huang Z, Choong D, Ganesan P, Logan S. A Survey on the Experience of Singaporean Trainees in Obstetrics/ Gynecology and Family Medicine of Sexual Problems and Views on Training in Sexual Medicine. *Sexual Medicine* 2020. 8. 10.1016/j.esxm.2019.12.001





ASSOC PROF JAMES YIP

Director, National University Heart Centre,
Singapore (NUHCS)

Associate Professor James Yip is presently the Director of National University Heart Centre, Singapore (NUHCS) and Senior Consultant, Department of Cardiology, NUHCS. He graduated from the Yong Loo Lin School of Medicine, National University of Singapore in 1991 and has been a Fellow of the Academy of Medicine Singapore since 2001. He was trained in adult cardiology at the National University Hospital, Singapore from 1995 to 2001, and was a clinical fellow at Toronto Congenital Cardiac Centre for Adults from 2001 to 2002, where he trained in Adult Congenital Heart disease and pulmonary hypertension. He developed the Cardiology Information System which is in use in four public hospitals in Singapore.

He has been the Principal Investigator for many international trials in pulmonary hypertension and was in charge of developing the Structural Heart Disease Programme in NUHS from 2003-2017. He has four patents on occlusion devices for closing anatomic cardiac defects and has contributed to numerous peer-reviewed journals and three book chapters in cardiology and information technology.

For his service, he was conferred the Public Administration Medal (Bronze) in 2018 and the Distinguished Senior Clinician Award in 2019.

I decided to specialise in / practise as a cardiologist because...

In 1995, I signed up to be a medical trainee (now known as 'resident') and was interviewed by Professor Chee Yam Cheng, who was then Senior Consultant and Chairman of Tan Tock Seng Hospital's Medical Board and is now the current Senior Advisor of National Health Group. I had anticipated that he would ask me which specialty I was interested in, and had prepared a convincing answer.

I had my heart set in Cardiology, and was ready to answer any question he would ask on this topic. Upon arriving for my interview, Prof Chee remarked that I was five minutes late

– he was actually five minutes early! I fumbled through the anticipated question and later managed to become a medical trainee. I then thought nothing of my answer for many years.

While rotating through the postings in NUH, renal medicine really resonated with me because of the encouragement I received from Professor Tan Chorh Chuan, then President of National University of Singapore and current Executive Director of MOH Office for Healthcare Transformation.

However, during my Cardiology posting, Dr Tan Seng Hoe, who was a year my senior, was accepted as a Registrar in Nephrology and so this 'door' was closed to me.



Prof James Yip in discussions with Prof Tan Huay Cheem, Senior Advisor of NUHCS, and Dr Mayank Dalakoti, Associate Consultant, NUHCS, at the Coronary Care Unit.

Credit: Prof James Yip

During the same posting in renal medicine, I met the late Emeritus Professor Chia Boon Lock who really impressed me with his electrocardiogram (ECG) reading skills. His department also had the nicest group of young consultants who made me feel really at home and it was then that I seriously considered a career in Cardiology.

However, I had failed in my first attempt for MRCP part 2 in Malaysia – an exam you really needed to pass to join the specialist track. However, Prof Chia encouraged me by saying: “Your classmates have passed their exams and want a job in Cardiology... But we want you! I will keep this vacancy opened for you, if you pass your exams quickly”.

With that encouragement, I flew to Edinburgh three months later, passed that exam and clinched the job. Looking back on my first interview with Prof Chee, I realised I had given an answer without really believing in it then, but later decided Cardiology was for me because Prof Chia believed in me. I have not looked back since.

One little-known fact about the heart is...

Have you ever wondered how many heartbeats we have in a lifetime?

If you take an average of 80 beats per minute, your heart beats about 4,800 times per hour. That’s 115,200 times per day.

Over the course of a year, your heart would beat about 42,048,000 times! If you live to be 80 years old, your heart would have beaten approximately 3,363,840,000 times! That’s over three billion heartbeats! It is a fantastic muscle that keeps us alive with every beat.

A common misconception debunked...

I am so proud of my team who helped debunk the myth that COVID-19 vaccinations cause more inflammation of the heart (or myopericarditis) than normal seasonal influenza vaccinations.

At the height of the world’s COVID-19 vaccination drive, most individuals would have had to contend with this difficult decision, with very strong opinions advocated on both sides of the social media divide.

Asst Prof Kollengode Ramanathan and A/Prof Graeme Maclaren, both cardiovascular intensivists at NUHCS, proved that there was no significant difference between the incidence of myopericarditis following COVID-19 vaccination, at 18 cases per million doses, and other vaccinations, at 56 cases per million doses.

We hope that this world-impacting research has made some difference in the confidence of the general public in making a decision as to whether to vaccinate or not.

You can read more [here](#).

What is the most rewarding aspect about being a cardiologist/doctor?

It is very hard to describe one's most rewarding experience without also remembering the most painful one in your clinical career. These are the experiences that define what you go on to do in life.

One of the high points in my career was helping women with heart disease go through pregnancy and become mothers. This might seem very basic, but for women who suffer from pulmonary hypertension (a rare and deadly disease of the lung arteries), they may face the risk of death in 50% of cases.

When I was a young specialist, I met a 22-year-old patient who suffered from this terrible condition. She turned up for a review very late in her pregnancy and there was very little we could do for her. Her heart was failing, but we successfully delivered her baby via Caesarean section.

She passed on two days later and never got to see her child. That episode left a deep and lasting impact on me as a doctor. Following that, I spent one and a half years training in Canada in 2001 to not only further my training in congenital heart disease, but also to look into the field of pulmonary hypertension, which was new at that time.

In 2004, another young patient with pulmonary hypertension came to me late in pregnancy – it was like déjà vu. She had been seeing a doctor regularly for her antenatal checkups but was not diagnosed as having heart problems prior to this. She was severely breathless and her oxygen levels were very low due to a hole in her heart.

I admitted her to the Coronary Care Unit and started her on a special inhaled medication called nitric oxide to relax the blood vessels in the lungs and also Viagra, a medication which up to that point in time was used to treat male impotence. I had learnt in Canada that Viagra had great potential to treat this condition.

My patient had gone into labour prematurely a day after admission and we did not have the time to bring her to the delivery suite. This was the first ever birth in the intensive

care unit (ICU), where all other patients were recovering from heart attacks. Amid the beeping noises of the ICU's monitors, you could hear the cries of a newborn baby girl to the amazement of everyone.

My patient stayed in ICU for another week but she made good recovery with the new medications we had given her. When she finally saw her baby after a week, she was in tears of joy as were the many staff who had taken care of her.

What do you find more / most challenging among all your current roles?

My twitter profile says "IT and Cardiac Nerd". I spent 15 years as Chief Medical Informatics Officer of NUH, then later the NUHS cluster. This was a tough balancing act between my clinical career and my information technology (IT) responsibilities. IT moves when you make a decision as computer systems do.

In my current role as Centre Director of NUHCS, I spend more time with people and mentoring them. This is a longer process but more challenging and rewarding at the same time.

What do you do in your free time when you are not taking care of patients?

I tinker with smart home gadgets, bake bread and tend to my air plant collection. I try to have long walks with my wife daily as this really helps us to communicate.

What are the three most important things to you in your life?

My faith. My family. My passion for the work God has given me.



Primary Care Engagement (PCE)

At National University Hospital (NUH), we recognise the pivotal role general practitioners (GPs) and family physicians play in general healthcare provided within the community. As such, we believe that through closer partnerships, we can deliver more personalised, comprehensive, and efficient medical care for our mutual patients.

Primary Care Engagement Department aims to facilitate collaboration among GPs, family physicians and our specialists. As a central coordinating point, we support patient referrals and organise continuing medical education (CME) events. Through building these important platforms of shared care and communication, we hope that our patients will be the greatest beneficiaries.

Continuing Medical Education (CME) Events

At NUH, we strive to advance health by integrating excellent clinical care, education and research. As part of our mission, we are committed to providing regular CME events for GPs and family physicians. These events aim to provide the latest and relevant practical clinical updates towards patient care.

Organised jointly by Primary Care Engagement Department and the various clinical departments within NUH, our specialists will present different topics in their own areas of specialties during these symposiums.

We would love to hear your feedback on MEDICO. Please contact us at:

Primary Care Engagement Department

Email: pcce@nuhs.edu.sg

For GP referral appointments, please contact us at:

Tel: +65 6772 2000

Fax: +65 6777 8065

Email: gp@nuhs.edu.sg

For more information on our CME events, please visit: www.nuh.com.sg



A Publication of NUH Primary Care Engagement Department
Advisor: A/Prof Goh Lee Gan

The information in this publication is meant purely for educational purposes and may not be used as a substitute for medical diagnosis or treatment. You should seek the advice of your doctor or a qualified healthcare provider before starting any treatment or if you have any questions related to your health, physical fitness or medical condition(s). Information is correct at time of publishing and subject to changes without prior notice.

Copyright (2022). National University Hospital, Singapore All rights reserved. No part of this publication may be reproduced without permission in writing from National University Hospital.

Co. Reg. No. 198500843R