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## SAVING ONE'S SKIN

Living with psoriasis

# NURSING WITH PASSION AND HEART

CGH Chief Nurse Png Gek Kheng receives  
President's Award for Nurses

Celebrate the care and achievements of CGH nurses



ISSUE 4 2022

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MCI (P) 106/12/2021.

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# LEADING WITH PASSION AND HEART



Photo: Ministry of Health

CGH Chief Nurse (Advanced Practice Nurse) Ms Png Gek Kheng receiving the President's Award for Nurses 2022 from President Halimah Yacob.

**P**resident's Award for Nurses 2022 recipient Png Gek Kheng is a zealous learner, listener, strategic planner and passionate practitioner who rose through the ranks to become the Chief Nurse of Changi General Hospital (CGH). Her dedication to evidence-based practices and enduring efforts in advocating the discovery and translation of novel nursing theories to clinical practice have enhanced patient care outcomes and enabled the progression of the nursing profession.

Nurses are the backbone of our healthcare system as they provide care round the clock and best understand the needs and habits of patients. With over 2,500 nurses under her care, Ms Png took on the reins of the CGH nursing leadership in a time of unprecedented challenges — the COVID-19 pandemic. Despite the highly volatile situation, she actively led nursing operations and rallied the team through innumerable recalibrations and reconfigurations to deliver the best possible care to patients while keeping healthcare colleagues safe.

When swab operations and medical posts at the migrant dormitories had to be set up, Ms Png went down to the sites daily to ensure a safe environment for her healthcare colleagues. "With little knowledge of the virus then, the uncertainty and apprehension was very real," recounts Ms Png. "In deploying nursing resources, I prepared them for the possible scenarios they may face and dispelled their doubts as best as I could."

### Innovating healthcare for tomorrow

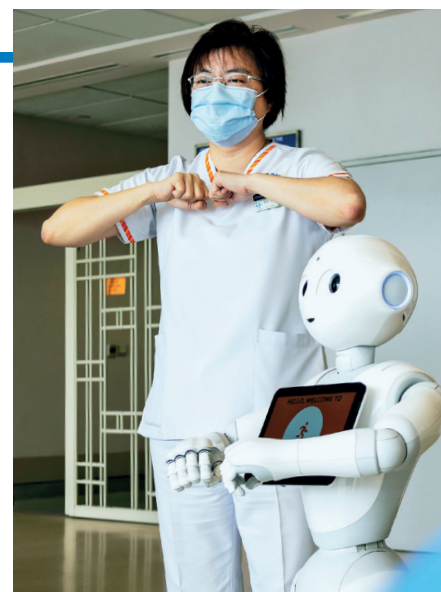
With nearly 30 years of nursing experience, Ms Png, who is an Advanced Practice Nurse (APN), continues in her clinical practice on top of her other duties. Given her passion for geriatric nursing, it is no surprise that she has spearheaded hospital-wide improvement initiatives over the years, including the care of patients with dementia, urinary incontinence and chronic wounds such as pressure injuries, as well as caregiver training and advanced care planning.





**Above:** Ms Png (centre) is dedicated to the progression of the nursing profession.

**Right:** Ms Png with social robot Pepper, conducting interactive group activities for senior patients at CGH.



Training and mentorship are important building blocks in empowering nurses.

To increase awareness and competency in managing pressure injuries, and aid the rehabilitation of patients, Ms Png set up the Pressure Injury Taskforce at CGH 10 years ago. This foresight in addressing the specific needs of the ageing population with increasing chronic diseases, and her dedication in building clinical expertise in wound management culminated in the establishment of the CGH Wound Healing Centre (WHC) in 2021. It is the first-of-its-kind one-stop multi-disciplinary centre that provides early interventions and specialises in outpatient treatment of chronic wounds. As the co-director of the WHC, she plans to work with community hospitals and nursing homes to identify patients with chronic wound symptoms for early detection and treatment.

“Research, innovation and education are imperative in driving evidence-based practices to enhance the way we deliver care,” says Ms Png. To nurture nursing leaders as well as encourage digital transformation and the future-proofing of nursing skills, Ms Png steered the development of a Nursing Innovation Pathway at CGH.

### Enhancing health outcomes of older adults

For its commitment to providing quality geriatric care, including the completion of The Integrated Building (IB) in 2014, CGH has been recognised

by the University of New York as one of the Nurses Improving Care for Healthsystem Elders (NICHE)-affiliated hospitals in Singapore. The NICHE programme recognises achievements in nurse-led improvements in the care of seniors, and aims to enhance nurses’ knowledge and skills to improve the health outcomes of older adults. The IB adopts a sustainable and adaptive multi-disciplinary model that supports senior patients in optimising their function and mobility in a seamless healing and rehabilitation environment, aiding their transition from hospital to home or in the community.

Ms Png and the multi-disciplinary nursing steering committee actively drive initiatives on geriatric care outreach, expanding to CGH’s partner nursing homes in the East as part of the Enhancing Advance Care Planning, Geriatric Care and End of Life Care in the Eastern Region (EAGLECare) programme. The team also advocates for advanced care planning and plays a part as facilitators in enhancing the care of older adults. In addition, Ms Png is involved in establishing the Geriatric Competency Framework by the Ministry of Health.

### Transforming knowledge into strength

Ms Png started out as a junior nurse in the medical ward at the former Toa Payoh Hospital, and continued with her post-basic Nursing education (the equivalent of today’s Post-Diploma) in her first step towards geriatric nursing. As a staff nurse in the geriatric ward of the former Changi Hospital, Ms Png was involved in building nursing competencies and establishing the standards of geriatric care.

Ms Png’s diverse experiences at various clinical attachments guided her as she advanced

in her career. “It dawned on me that to make changes or progress, I must listen first and understand the various perspectives before I can propose any suggestions or offer direction and guidance,” says Ms Png. “This principle has helped me grow significantly in my nursing career.”

In 2003, Ms Png pursued her Bachelor’s degree in Nursing, and later went on to take the APN course, completing her Master of Nursing and further strengthening her clinical knowledge and skills.

### Going the extra mile with compassion and care

Nurses today provide holistic care and treatment, and support the community in keeping well and staying healthy at home. They provide valuable inputs for integrated treatment care and discharge plans, advocate for patients and educate caregivers. “It is not uncommon to come across patients who are upset. At first glance, it may appear that they are throwing a tantrum, but upon deeper conversations with the nurses, it may be traced to issues such as not being able to eat. For example, with a little creativity from our nurses and agreement from patients with cancer of the oesophagus, we introduced minced food for their chewing so they could have a taste of the food they had once loved. This made a big impact on patients’ moods,” explains Ms Png.

A caregiver who has known Ms Png for four years, Mdm Tang Mei Kuen, shares, “Ms Png was very passionate and proficient in her care for my late mother, who had pressure ulcers due to her illness and immobility. With her deep

“Each day, my passion for nursing motivates me to continue to learn. I hope to continue to inspire and nurture younger generations of nurses to join us, and grow together as we serve in this noble profession.”

knowledge of pressure injuries, Ms Png helped me understand the importance and necessity of caregiver education for the continuity of care. She explained the various stages of these chronic wounds, and demonstrated every step in managing my mother’s chronic wound at home. Through her care, the wound healed after eight months, and until today, Ms Png and I continue to keep in contact.”

Ms Png’s vision is for nurses to be empowered to acquire skills that can benefit patients in a timely manner. Training and mentorship are important building blocks in this journey, as Ms Png continues to work towards bringing about nursing excellence. “Leaders provide support, encouragement and motivation to keep staff morale up. It is important to build trust and respect,” says Ms Png.

CGH Nurse Clinician Wang Ping is one of the nurses Ms Png has mentored. “Ms Png shared her nursing experiences, as well as the challenging cases that she has seen,” she says. “For example, she explained how she successfully treated a severe pressure injury where the deeper tissues were visible, and provided advice on managing such injuries. I also benefitted from Ms Png’s insights on leadership, advice on work-life balance and tips on achieving my career aspirations.”

To unwind, Ms Png listens to opera soundtracks and sings along to music whenever she is driving. “This has also inspired me when I wrote scripts for plays in the past!” With a love for the theatrical arts and acting since young,

Ms Png is quite a thespian herself — having produced and acted in witty and fun skits over the years.



With a love for the theatrical arts, Ms Png (left) has acted in many skits over the years.



Ms Png works with a multi-disciplinary care team at the CGH Wound Healing Centre to provide holistic one-stop care for patients.



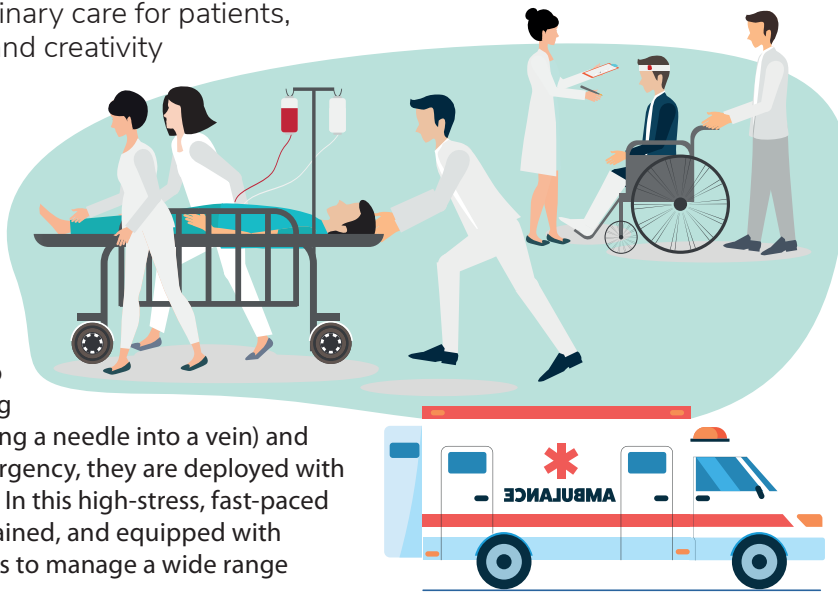
# Nursing you to better health at the CARING GENERAL HOSPITAL

Celebrate their diversity and uniqueness by learning about the multitude of roles our nurses take on at Changi General Hospital (CGH) and in the community.

Nurses are our heroes, having led us to the light at the end of the tunnel through the sheer power of their resilience and dedication during the pandemic. Today's nurses are not only highly-educated and skilled, they have also shown extraordinary care for patients, nimbleness in adapting to fluid situations and creativity in innovating healthcare for tomorrow.

## Accident & Emergency (A&E) Nurse

CGH A&E nurses carry out multiple roles such as triaging, performing resuscitation and critical care procedures, minor surgical procedures and orthopaedic procedures, rendering treatment, and reassessing patients' conditions. They are also proficient in intravenous (IV) cannulation (inserting a tube into a patient's vein), venepuncture (inserting a needle into a vein) and plaster cast application. In the event of a civil emergency, they are deployed with the field medical team to provide emergency care. In this high-stress, fast-paced environment, A&E nurses are adaptable, highly-trained, and equipped with a broad foundation of clinical knowledge and skills to manage a wide range of acute, emergency and critical conditions.



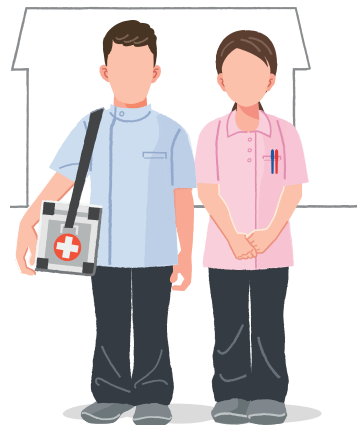
## Code Blue Nurse

Code blue nurses are empowered to administer emergency medicine to save lives. They render immediate care to patients during a 'code blue' — an

emergency situation in the hospital where a patient is in cardiac or respiratory arrest. They are certified in the Basic Cardiac Life Support and Life Support Course for Nurses competencies, and possess strong clinical knowledge and skills as well as critical thinking. They also regularly practise with the doctors and training facilitators, using a high-fidelity (high degree of realism) mannequin in a clinical setting.

## Community Nurse

Community nurses ensure a seamless continuity of care during a patient's transition from hospital to home. Besides minimising hospital readmissions, they play a key role in supporting the health, well-being and care of the community. They are trained in clinical and professional competencies to meet the complex and diverse needs of residents and their caregivers. They form collaborations with community partners to build service capabilities, and foster meaningful relationships with patients, most of whom are seniors. Community nurses provide personalised care during home visits or at Community Nursing Posts through health assessments and coaching, falls and frailty screenings, chronic disease education, post-discharge care and coordination, home visits, caregiver training and home palliative care.



## Correctional Health Nurse

Correctional health nurses are highly specialised in treating medical needs — from medical emergencies and acute illnesses to chronic illnesses — in the prison setting with compassion, respect and objectivity. Besides administering medications, collecting specimens and providing wound care, they observe incarcerated patients for any adverse reactions to treatments and conduct psychiatric screenings where necessary. They stay on top of the latest medical-surgical nursing knowledge and skills, possess good and active listening skills and resilience, and are always prepared for emergencies. Correctional health nurses also work with other healthcare providers, specialists and services to provide follow-ups after the inmate's release.



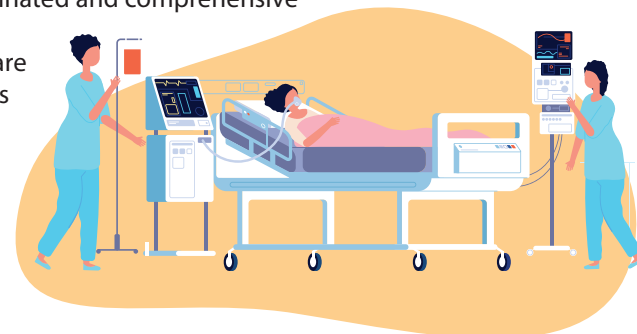
## Inpatient Ward Nurse

Inpatient ward nurses play a pivotal role in providing round-the-clock holistic care. They plan and conduct physical examinations, as well as psychosocial and functional assessments for patients. They identify abnormalities, plan and implement nursing interventions, and evaluate patient outcomes. Besides assisting patients with their personal hygiene and nutritional needs, they assist in pre-operative care preparation and radiology examinations, and deliver post-operative care. Inpatient ward nurses systematically collaborate with multi-disciplinary teams to comprehensively meet the needs of patients and their families. They also engage patients and families in the discharge planning process to ensure the smooth transition of patients from hospital to community, and continue to provide consultative care post-discharge.



## Medical Emergency Team (MET) Nurse

MET nurses provide a rapid response to warded patients who suddenly deteriorate acutely, carry out appropriate interventions, and monitor treatment responses to ensure their safety. They use resuscitative equipment, monitoring and assessment devices in their care work. MET nurses are trained with the vital knowledge, skills and competencies required to handle advanced critical care, have Intensive Care Unit (ICU) experience, and have completed their advanced diploma in critical care nursing. They work closely in a multi-disciplinary team of physicians, other nurses and respiratory therapists to provide well-coordinated and comprehensive care for patients throughout their care journey. MET nurses also collaborate with other CGH teams to enhance and innovate care delivery processes for patient safety.







### Nurse Educator

The impact of care delivered by nurse educators is multiplied through their professional development of other nurses. Nurse educators guide and prepare in-service nurses and students in acquiring competencies in various clinical areas. They develop, implement and evaluate a holistic curriculum to equip nurses with the required knowledge and skills to deliver quality care. They also guide aspiring nurses in developing teaching competencies. With a heart for nurturing the younger generation, nurse educators have clinical competence and experience, clinical teaching skills, as well as good interpersonal and communication skills to advocate best practices and engage learners effectively.

### Nurse Innovator

Nurse innovators explore and develop innovative solutions to existing challenges in healthcare, analyse emerging technologies and concepts with partners, and evaluate their potential for trials in a hospital setting. They also develop and lead plans for piloting and implementing such innovations at CGH. Nurse innovators work on the frontlines, by patients' bedsides or behind the scenes. These experiences provide first-hand insights to aid them in identifying challenges and gaps — which are opportunities to transform care with innovative processes. They also keep abreast of healthcare trends and best practices in innovation, and work closely with internal and external partners to co-create innovations to benefit patients.



### Operating Theatre (OT) Nurse

OT nurses provide care for patients peri-operatively (around the time of the surgery) alongside surgeons, anaesthetists and ancillary support staff. The scrub nurses prepare instruments for the procedure and maintain sterility throughout the surgery. Circulating nurses manage the safety and patient care aspects of the OT. Anaesthesia nurses care for the patients undergoing or recovering from anaesthesia. OT nurses have strong situational awareness — especially of infection control measures and sterility — and anticipate the needs of surgeons and anaesthetists to prevent any delays during surgery. They possess excellent knowledge of human anatomy and physiology, and have extensive technical knowledge. OT nurses team up with other CGH care team members to provide holistic surgical multi-disciplinary care for patients.



Graphics are from various sources and do not constitute a full representation.



### Palliative Care Nurse

As palliative care nurses, compassion and kindness are essential in helping patients and caregivers through the patients' last moments. Palliative care nurses bring comfort to patients and family members as they journey through the end-of-life process. They mainly tend to patients with life-limiting illnesses such as cancer, organ diseases, frailty, stroke, parkinsonisms and dementia. Through the assessment of physical, psychological, social and spiritual needs, they seek to improve the quality of patients' lives and help to relieve suffering. They focus on symptom management, effective culturally-sensitive communications and care of patients as well as their family members by providing grief and bereavement support.

### Tracheostomy nurse

Tracheostomy nurses review patients with tracheostomy tubes in the wards, perform tube changes and coordinate their care plans. They also provide care for complex tracheostomy-ventilated patients by providing intensive caregiver training and coordination with the home ventilation team. This paves the way for patients to spend quality time at home in the safe hands of their caregiver. They have a background in intensive care and work closely with CGH's multi-disciplinary team members to coordinate patients' care plans. These include doctors for directed care, physiotherapists for secretion management and mobility, speech therapists for communication and feeding, occupational therapists for transiting the patient from hospital to home, respiratory therapists for managing patients on ventilators, and medical social workers for patients' discharge planning.



### Trauma Nurse

Trauma nurses care for patients who suffer trauma and are admitted to CGH throughout their hospital stay. In the A&E Department, trauma nurses respond to trauma and civil emergency activations, mini casualty surges, and assist in resuscitation and stabilisation of trauma patients. In inpatient settings, trauma nurses conduct daily ward rounds, and coordinate management plans between the multi-disciplinary care team members to provide holistic care. Teamwork and expertise are vital, and trauma nurses work closely with doctors from the various surgical disciplines, nurses from different specialties and wards, and allied health professionals from multiple fields.



### Specialist Outpatient Clinic (SOC) Nurse

A part of CGH's multi-disciplinary team, SOC nurses work at the 21 specialist clinics or Multi-Speciality Practice clinics at CGH to provide integrated care. They provide specialised care as well as patient education based on individual conditions. Depending on the specialist clinic, SOC nurses can administer outpatient antibiotics therapy, phototherapy (using different wavelengths of ultraviolet light to reduce itch and inflammation of the skin), assessment of geriatric syndromes such as falls, cognition, continence as well as caregiver education. They acquire these skills through on-the-job training and specialised advance education training.



Scan the QR code to read about CGH's nurses in multiple roles.



# WHEN NURSES MAKE A DIFFERENCE

This Nurses' Day, we go behind the scenes to hear the first-hand experiences of six Changi General Hospital (CGH) nurses as they share their joy and pride in the enriching work they do to make lives better.

## Building peaks of excellence

Recognising delirium, which is often mistaken as dementia or depression, is challenging. Senior Nurse Clinician and Advanced Practice Nurse **Li Fuyin** started a project in 2017 to enhance delirium recognition and management at CGH. It included initiatives such as mental status checks, the use of purple wrist tags as cognitive impairment identifiers, delirium screening and continuous monitoring, and a multi-component delirium care bundle.

**"I chose nursing because I want to help people and make a difference in their lives."**

A recipient of the SingHealth Alice Lee Institute of Advanced Nursing Scholarship Award and a 2009 Nurses' Merit Award recipient, Ms Li recently graduated with a Doctor of Nursing Practice, equipping her to enhance complex healthcare delivery systems.



Ms Li facilitates interactive group activities with social robot Pepper for senior patients with dementia or delirium, aiding in reducing functional decline.

## Journeying with patients with compassion

Senior Nurse Manager **Wong Yoke Ping** understands first-hand the pain of losing a family member, having lost her mother to cancer when she was just 19 years old. That has helped Ms Wong relate better to patients and family members in her role as one of the pioneer palliative care nurses at CGH. She adopts an integrated and multi-disciplinary approach with compassion to help patients who are at the end of life and their family members maintain their physical, emotional, social and spiritual well-being.

**"I am who I am today because of the guidance from my mentors, and the invaluable learnings I received from my patients through my care for them."**

Ms Wong is a recipient of the Nurses' Merit Award in 2016 and DS Lee Foundation Award for nurses in 2007.



Ms Wong guides family members of patients who are at the end of life in palliative care.

## Bridging the gap

To tackle knowledge gaps on pressure injuries, which affect over 150,000 Singaporeans each year, Nurse Clinician **Ong Ling** and her team spearheaded an innovation project that enhances the learning and sharing of best practices in the prevention and treatment of pressure injuries. Through this initiative, the team aims to strengthen nurses' competencies in managing these chronic wounds and improving patient's outcomes.

**"Wound management is not about managing the 'hole', but managing the patient as a 'whole'."**

The nurse with 23 years of experience is a recipient of the SingHealth Alice Lee Institute of Advanced Nursing Lee Foundation Scholarship Award and Nurses' Merit Award 2019.



Ms Ong treats pressure injuries and wounds.



Ms Chua counsels patients at the CGH Breast Centre.

## Going the extra mile with empathy

When a breast cancer patient refused to accept her diagnosis and stopped turning up for appointments, Nurse Clinician and Advanced Practice Nurse **Sophia Chua** persevered in calling the patient to reach out and build a relationship. Initially unwilling to speak to Ms Chua, the patient gradually became receptive, eventually returning to CGH for cancer treatment.

**"I believe it is important to empathise with my patients as they may not always know the best option for themselves."**

Having been in nursing for 23 years, the 2022 Singapore Health Quality Service Award (STAR Award) and 2009 Nurses' Merit Award winner's interest in nursing was first piqued when she participated in the Red Cross as her school co-curricular activity. Her supportive family and colleagues encourage and motivate her as she counsels breast cancer patients and their families.

## Staying for the fight

Staff Nurse **Martelyze Bautista** made a personal choice to stay in Singapore during the COVID-19 pandemic as she sees it as her home and the safest place to live in. Although her nursing skills and knowledge were put to the test and stretched to the limit, she felt assured by Singapore's healthcare system and resilience.

**"I have always wanted to help people get better. Nursing is not just a profession, it is also about building a connection with people."**

One of the recipients of the inaugural Wee Foundation Nurses' Day Award 2022, Ms Bautista has been a nurse at CGH for over 13 years. She also volunteers as a Singapore Red Cross member and elderly befriender, and distributes food to those in need in her spare time.



Ms Bautista taking parameters and connecting a patient to the bedside monitor during admission.



Ms Imma provides healthcare services to vulnerable elderly in the community.

## Caring for the community

After her parents were involved in a near-death road accident and were cared for by nurses who were extremely caring and approachable, Assistant Nurse Clinician **Imma Harliny Bte Abdul Rahim** knew then that it was her calling to be a nurse so that she could do the same and make an impact on the lives of others.

As a community nurse, she helps the vulnerable seniors in the community age well by providing comprehensive health and geriatric assessment, chronic disease monitoring and health coaching. A recipient of the Wee Foundation Nurses' Day Award 2022, she also empowers patients to monitor their blood pressure through self-checks at vital sign monitoring kiosks at Senior Activity Centres.

**"Nursing has taught me to be kind and considerate. It is a rewarding career that has moulded me to not only be a better nurse but also a better person."**



The gift of care: CGH's leaders went to the various wards around the hospital to bring joy and smiles to the nurses with gifts and hampers.



## A homage to the hard work — and heart work — of nurses at Changi General Hospital.

Below: The champion team of the CGH Outstanding Professionalism in Nursing Award from Ward 16 at the award presentation ceremony, in recognition of their excellent teamwork, exemplary communication skills and professionalism in upholding high standards of nursing practice.



Left: A salute to nurses: Some 300 nurses gathered at the CGH Nurses' Day Celebration for the first time in three years.

Below: Flying the CGH flag high: CGH's Chief Nurse (Advanced Practice Nurse), Ms Png Gek Kheng (centre), was conferred the President's Award for Nurses 2022, the highest accolade in Singapore's nursing profession, for her sustained outstanding performance and contributions to nursing.



Everyday heroes: Talented staff from CGH put up a skit to pay tribute to nurses' daily acts of care and compassion in journeying with patients from hospital to home.



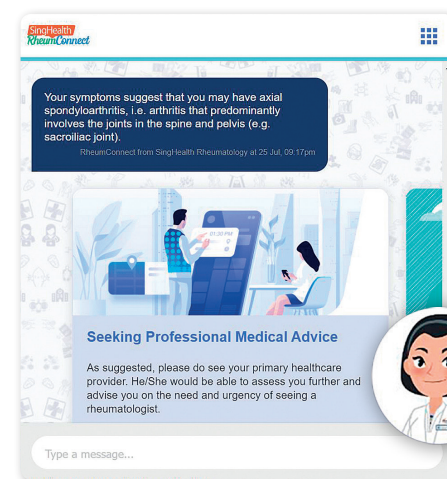
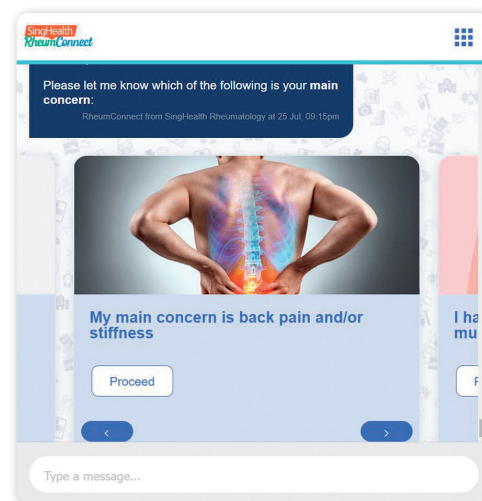
Scan the QR code to check out more photos of the celebrations.

# A One-Stop Resource

Patients, caregivers, and members of the public can now consult **SingHealth RheumConnect**, the newest chatbot by Changi General Hospital (CGH), for information on various autoimmune diseases and arthritis conditions.

Designed to aid our understanding of arthritis and systemic rheumatic diseases, and medications used in the management of these conditions, SingHealth RheumConnect has a symptom-checker for users to check if their symptoms could be a sign of an autoimmune condition, and recognise when to seek professional medical advice. Some of these symptoms can result in severe organ damage or disabilities if not diagnosed early.

"Young people tend to brush aside musculoskeletal symptoms because they feel that arthritis only happens to older adults. Likewise, the elderly are inclined to attribute their symptoms to ageing, which may not always be the case," explains Clinical Assistant Professor Anindita Santosa, Consultant, Department of Rheumatology, CGH, and team lead for the project. "We wanted to provide an interactive platform for people to check if their symptoms are potentially any cause for concern, even while they are on the go."



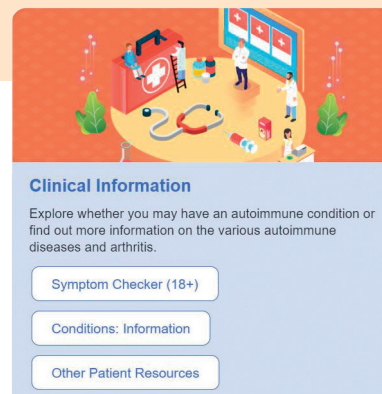
## 3 TIPS TO TAKE NOTE OF:

- Do not ignore symptoms** — especially if they last for more than two weeks and worsen over time! Early diagnosis and treatment are more likely to result in better outcomes.
- Consult your primary healthcare provider for a preliminary assessment.** Your doctor will determine if specialist consultations are necessary.
- Refer to reliable sources of information** such as official healthcare institutions and established patient welfare organisation websites.

## SingHealth RheumConnect covers:



- Gout
- Systemic lupus erythematosus (SLE or Lupus)
- Myositis
- Osteoarthritis
- Psoriatic arthritis
- Rheumatoid arthritis
- Spondyloarthritis
- Systemic Sclerosis
- Vasculitis and more



Scan the QR code to check out SingHealth RheumConnect on the CGH website. SingHealth RheumConnect is expected to be rolled out to other SingHealth institutions by the end of the year.



# GOING BENEATH THE SURFACE

**Myths and misconceptions about psoriasis can result in affected individuals having to live with stigma and an unhealthy social well-being. In conjunction with Psoriasis Awareness Month in August, learn more about this skin condition that affects over 40,000 people in Singapore.**

**T**he skin on her arms and legs was often scaly and red, and the appearance and texture of her nails were badly affected, making them bleed and difficult to cut. There was thick dry skin under her nails, and the cuticle was growing underneath, pushing her nails upwards and outwards.

Ms Florence Nathan, 70, has been living with a condition known as psoriasis for 40 years. Thankfully for her, her family and friends have never treated her any differently all these years

despite her appearance. The sprightly senior believes in living her life well, instead of cooping herself up. Many other psoriasis patients — particularly those whose condition is severe — are prone to feeling embarrassed and even ashamed of their appearance, which in turn, adversely affects their confidence.

Psoriasis presents itself in the form of salmon pink lesions with scaly surfaces, and tends to affect the elbows and knees symmetrically. It can also be found at, and affect, the hairline, trunk of the body and nails. When psoriasis occurs at the nails, pitting, discolouration, thickening of the

Ms Nathan believes that patients with psoriasis can still enjoy and live life to the fullest.

nails and separation of the nail from the nail bed might occur. Psoriatic arthritis can also occur in some patients — about a quarter of patients have joint problems associated with psoriasis, and this may sometimes cause joint deformity if left untreated. Psoriasis has many associated co-occurring conditions, including psoriatic arthritis, cardiovascular diseases, metabolic syndrome, inflammatory bowel disease and depression.

The development of psoriasis is caused by genetic and environmental factors. Many patients have a family history of psoriasis. Environmental causes can include reactions to certain medications, infections and skin trauma, as well as physical, mental and emotional stress. Psoriasis is not infectious and cannot be spread to others.

Psoriasis is commonly seen in adults, but can also occur in children and teenagers. The age of onset of psoriasis has two peaks — one at **16-22** years old, the other at **57-60** years of age.

## Saving one's skin: Identifying and managing psoriasis

"Psoriasis is sometimes mistaken for eczema as both can result in a dry, itchy and scaly rash," says

Clinical Assistant Professor Tan Ki Wei, Chief and Senior Consultant of Changi General Hospital's (CGH) Department of Dermatology. "However, psoriasis usually presents as well-demarcated scaly plaques and may affect the knees and back of the elbows, while eczema is less defined, dry and affects the skin folds."

Fungal infections that affect the skin may sometimes look very similar and additional tests, like skin scraping tests, may need to be done. At CGH, a clinical diagnosis is carried out to determine if the issue is psoriasis. A diagnosis is usually made on the typical appearance and location of the rash, after taking a detailed history and performing a physical examination on the patient.

An estimated **500-700** patients are seen each year at CGH's Department of Dermatology for psoriasis of varying severity. This number is increasing over the years, consistent with worldwide trends.

Presently, there is no permanent cure for psoriasis, but there are treatments that

can help manage the condition. These range from moisturisers, steroid creams and vitamin D analogue creams to oral immune suppressants, biologic drug injections and phototherapy.

Besides taking prescribed medication and applying creams, Ms Nathan has been undergoing phototherapy sessions at CGH to help manage and treat her psoriasis over the years. Also known as light therapy, phototherapy makes use of different wavelengths of ultraviolet light, helping patients' skin produce more vitamin D, which can help reduce itch and inflammation. "Treatment should be individualised and tailored according to a patient's specific condition and its severity. A holistic treatment approach can help enhance the quality of life for patients with psoriasis," says Clin Asst Prof Tan.

Ms Nathan's lesions and scarring have gotten better. "Dr Tan and his team have been patient and very encouraging, and above all, they ensure that I receive the best treatment and that I am comfortable and aware of all the treatments and medication," she shares. After all these years, she has learnt to live confidently with the condition. "Since being diagnosed with psoriasis, I have learnt not to be conscious of the lesions and scars," she adds. "When others ask what they are, I bravely tell them about it, and after that they no longer bring it up. I want to encourage others with psoriasis to not let it stop you from enjoying life and living life to the fullest."



An estimated **100 million** people are affected by psoriasis worldwide.





# DRIVING AUTOMATION IN AND BEYOND HEALTHCARE

**As a smart hospital, Changi General Hospital (CGH) invests in innovation, automation and robotics to complement our care team in clinical care and operations.**

**A**s Temi-Bot, a telepresence robot, approaches a lift lobby, it pauses and allows its fellow robot of another make, Missy-Bot, to exit the lift before entering itself. These robots are able to communicate with one another and synchronise their movements seamlessly by leveraging a technological advancement known as Robotic Middleware for Healthcare (RoMi-H). A world's first, RoMi-H was developed by the Centre for Healthcare Assistive and Robotics Technologies team (CHART) at CGH, in partnership with the Ministry of Health, engineering firm HOPE Technik, Open Source Robotics, Integrated Health Information Systems, and the National Robotics Programme.

The innovative RoMi-H interface enables robots to navigate autonomously in human-rich environments, communicate with one another through common data exchanges, proactively and independently de-conflict their navigation routes with robots of different makes across narrow common pathways, and execute their individual tasks in a coordinated manner. This also



With data exchanges between robots and lifts through the Robotics Middleware for Healthcare standardised by the TR93, robots can navigate autonomously and deconflict their routes with other robots to execute their individual tasks in a coordinated manner.

allows for a universal charging system and fleet management to be developed so that the different robots can be more efficiently managed.

RoMi-H has been successfully test-bedded for deployment at public sector hospitals and at COVID-19 Treatment Facilities to augment operations and care. This has opened up endless possibilities to scale up RoMi-H in settings outside of healthcare. CGH Chief Executive Officer Prof Ng Wai Hoe says, "We are excited that RoMi-H — which first started as a solution for healthcare — can now be integrated with smart infrastructure, potentially accelerating the scaling up of automation and robotics technologies in Singapore and the world."

## ROBOTICS FOR HEALTHCARE

- Autonomous robots can perform tasks at night and at odd hours, allowing humans to perform other needed duties during the day.
- Technology can help supplement processes, making tasks more efficient.
- Robots are generally more consistent at carrying out repetitive tasks than humans, ensuring consistency and precision over time.



Deputy Prime Minister and Coordinating Minister for Economic Policies  
Mr Heng Swee Keat taps on Temi-Bot to activate its 'follow-me' function.

### Rules for robots

To guide robot manufacturers and building owners in deploying multiple robots in smart buildings, and accelerate the take-up of robotics technologies in multi-storey buildings, CGH's CHART and local engineering firm HOPE Technik spearheaded the development of the Technical Reference 93 (TR93) with support from the National Robotics Programme and Enterprise Singapore.

The TR93 sets the standard for the architecture, communications and data exchanges between robots and lifts, and between robots and automated doorways, regardless of the model of the automated door system, lift and robot. These standards allow for the safe, efficient and integrated deployment of robots in healthcare settings and beyond.



### Capitalising on collaborations

To create co-innovation and deployment opportunities to drive discovery, adaptation and adoption of smart city solutions — as well as develop community health and wellness initiatives — CGH and CapitaLand Investment Limited (CLI) signed a Memorandum of Understanding (MOU) in May 2022.

Through this partnership, innovations are expected to overcome common challenges, increase productivity and help the industry, including small and medium-sized enterprises (SME), to grow.

The launch of these cross-industry collaborations was witnessed by Guest-of-Honour Mr Heng Swee Keat, Deputy Prime Minister and Coordinating Minister for Economic Policies, Chairman of the National Research Foundation and Adviser to East Coast Group Representation Constituency (GRC) at Heartbeat @ Bedok. CGH, CLI and KONE are also collaborating to test-bed the integration of multifunctional robots, lifts and building infrastructure with local and international industry players.

**"As a smart and Caring General Hospital, we innovate and collaborate widely within and beyond healthcare to create new value, benefit our communities, and contribute to the nation's efforts in Research, Innovation and Enterprise. These invaluable partnerships enable us to leapfrog healthcare solutions to new ground and open up endless possibilities."**

**Prof Ng Wai Hoe**, Chief Executive Officer, CGH



Prof Ng Wai Hoe, Chief Executive Officer, CGH (second from right); and Mr Aylwin Tan, Chief Customer Solutions Officer, CapitaLand Investment (second from left); together with Advisers to East Coast GRC, Mr Heng Swee Keat, Deputy Prime Minister and Coordinating Minister for Economic Policies (centre); Mr Tan Kiat How, Senior Minister of State, Ministry of Communications and Information & Ministry of National Development (far right); and Ms Jessica Tan, Deputy Speaker of Parliament (far left); at the launch of the cross-industry collaborations to advance the integration of robotics in buildings.



# Thriving and FLOURISHING

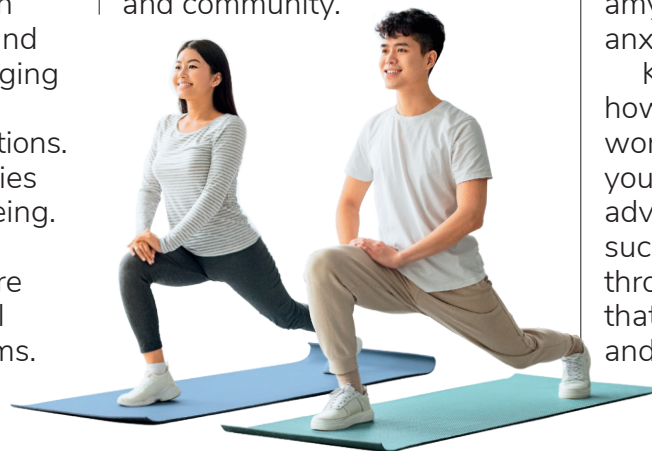
## Strategies to enhance your physical and mental well-being when you are feeling 'empty' on the inside.

It is OK not to be OK. There are times when we feel like we are languishing, depressed, anxious of the future, or simply burnt out. Languishing is the absence of good mental health, with persistent feelings of monotony, loneliness and emptiness. Someone who is languishing may experience poor social or psychological functioning as a result.

In contrast, to flourish means being able to maintain a constant state of good physical and mental health through finding purpose and meaning in your life, engaging in positive interests, and experiencing positive emotions. This involves doing activities that enhance your well-being. People who flourish have better relationships and are less likely to have physical and mental health problems.

Through flourishing, positive emotions experienced such as gratitude and hope can boost health and resilience, and serve as buffers against anxiety and depression.

Changi General Hospital's (CGH) Department of TRaCS shares six strategies to help us flourish. TRaCS aims to develop greater psychological resilience by empowering people through knowledge and skills; thus, promoting a culture of positive mental wellness in the workplace and community.



## 1 Know and understand your body, and develop self-awareness

The amygdala is a small almond-shaped structure in the brain. It helps to regulate emotions and encode memories, especially when it comes to those who are more emotional in nature. When you are stressed, the amygdala executes an automatic stress response reaction to fight, flee or freeze. An overactivated amygdala causes excessive anxiety and intense emotions.

Knowing and understanding how your body and mind work under stress can help you manage and cope with adversity. One way to gain such an understanding is through body-based exercises that help to calm the mind and body, which in turn gives

us a sense of safety, and further develops our self-awareness.

React in a way that you can be proud of later. Part of developing self-awareness is our ability to self-regulate and take responsibility for our own actions and choices. While it is perfectly normal to feel emotions such as anger or fear, you can learn to manage them rather than let these emotions overpower you. Be proactive in managing your emotions by practising mindfulness and deep breathing exercises.



## 2 Embrace the power of a pause

Pause between a feeling and an action. This helps us manage our automatic reactions to respond effectively.

### • PAUSE

Stop for a moment and allow space for contemplation

### • NOTICE

If you have been triggered, notice how that shows up for you in the moment

### • REFLECT AND BREATHE

Focus on your breathing and label sensations, thoughts and emotions as you experience them

### • RESPOND

Problem-solve skillfully instead of reacting impulsively

## 3 Give yourself some space

Stepping away from your stressor for a few minutes can provide you with some clarity.

You can do this by:

- Stepping away from the problem for a drink or break
- Listening to calming songs
- Taking five deep breaths
- At the workplace, when unsure about something, inform the other party that you need some time to check



## 4 Try to get some rest

Listen and respond to your needs with these strategies:

- Do some stretching exercises to reduce muscular tension
- Take a power nap to refresh yourself
- Calm your mind by taking five slow breaths
- Acknowledge that making mistakes at times is part of being human
- If you are at work, remind yourself why you are there by looking at pictures of your family or a holiday destination

## 5 Practise self-compassion

Self-compassion is about comforting and caring for yourself when you are going through a difficult time. It sends a message to your brain that you are not under imminent threat. In doing so, accept that we are human and make mistakes from time to time, but despite that, we are doing our best.

Care for yourself as you would care for a friend. An example of a self-care activity is setting aside a self-care day to bring yourself out to do something you enjoy.

Practise mindfulness by taking a break to re-energise yourself. Focus on the present moment instead of dwelling on the past or worrying about the future.

## 6 Fortify your strengths

Find ways and avenues to apply your strengths daily. Some examples include:

### • ZEST

Organise a fun activity for your family, friends or colleagues

### • CREATIVITY

Find new ways to do your daily tasks

### • LOVE OF LEARNING

Share an interesting article with your family, friends or colleagues

### • FORGIVENESS

Consider a mistake you made and forgive yourself for not knowing better in the past

### • KINDNESS

Look out for a family member, friend or colleague in need and offer a listening ear





When Dr Charlene Liew began practising radiology at CGH in 2009, she had opportunities to represent CGH at conferences locally and abroad, both as an educator and researcher. The interactions she enjoyed with top academics at these meetings broadened her perspective and ignited a spark within her to embark on her own innovation and research work at CGH.

The support and funding of CGH in Dr Liew's pursuit of innovation projects enabled her to continue to develop partnerships and seize more opportunities. Soon after, Dr Liew co-founded the AI and Informatics subsection of the Singapore Radiological Society, which facilitates the development of artificial intelligence (AI) in radiology for the benefit of patients and radiologists. "My greatest honour to date, is to have been elected by my colleagues as the Chapter Chairperson for Diagnostic Radiology of the College of Radiologists, Singapore," shares Dr Liew. "As the professional body in charge of advancing the art and science of medicine locally, it is a heavy responsibility to carry on the good work of those who built up the practice of Radiology."



Dr Liew using CAPE, an AI predictive tool.

## Leading AI and DIGITISATION

**Dr Charlene Liew, Deputy Chief Medical Informatics Officer and Senior Consultant at Changi General Hospital's (CGH) Department of Diagnostic Radiology, shares her journey in innovation and how improving technologies are changing the healthcare experience and clinical outcomes.**

### AI as a predictive tool

Dr Liew is part of the CGH team that developed an AI predictive tool that determines the likelihood of whether a patient has mild or severe pneumonia, based on chest X-ray images. Together with the Integrated Health Information System (IHiS) team, they developed the Community Acquired Pneumonia and COVID-19 Artificial Intelligence Predictive Engine (CAPE) within four months.

Being rapidly deployable, the AI tool enables the innovation and development of new responses against the virus, such as the development of vaccines and running of diagnostic tests in a short

span of time. CAPE is also able to predict the likelihood of patients requiring critical care almost instantaneously, alerting medical teams of possible clinical deterioration and prescribing the appropriate interim measures to improve patient outcomes.

Beyond local healthcare settings, CAPE can also potentially be calibrated to identify and predict the severity of respiratory infections globally. This would be crucial during pandemics where there is an increased need for inpatient and critical care support. In areas where healthcare resources may be limited, CAPE can enable prioritisation of healthcare

resources so that patients who are likely to develop severe pneumonia can receive appropriate and timely care, improving outcomes.

### AI and digitisation in medical applications

Digital automation can help relieve doctors from the burden of manual entry of clinical records. Dr Liew highlights that the adoption of electronic medical records (EMR) has been a gradual, ongoing process over the past 10 years. EMR has been a great boon for healthcare systems, providing doctors with access to medical records from all interlinked public healthcare institutions, enabling seamless care for patients, who can then experience smooth transitions from the hospital to community, and from specialist centres to non-specialist centres.

Inevitably, the increasing digitisation of medical records will come with its challenges. Doctors spend more time on digital record entry, which can detract from time spent communicating with patients, although AI-assisted scribe systems which can accurately take down physician notes using voice commands may help alleviate this issue. Furthermore, EMR generates a huge amount of mostly unstructured data. The present challenge is to implement EMR systems which are contextual, searchable and structured, so that this data can be harnessed for population-based research leading to new insights and discovery.

"Most of the changes we experience will increase convenience for patients and caregivers," says Dr Liew. "Some are already in use, such as tele-medicine for general



practitioner (GP) consultations, the booking of appointments on your smartphone, and accessing your medical records online." These help people to spend less time in queues, or shuttling about in hospitals, and make the running of people's lives increasingly efficient. "Big data is poised to be the epidemiologist's and public healthcare doctor's silver bullet, allowing them to predict where the next cluster of flu or dengue fever will erupt so mitigating action can be taken."

### Looking ahead

Dr Liew believes that the next wave of change will be in the sphere of clinical medicine. "These will include early warning systems for discharged patients at risk of readmission, inpatients at risk of acute injuries or life-threatening reactions to infections such as sepsis, and those at risk of falls," she explains. These systems will positively impact lives, saving thousands and millions of quality-adjusted-life-years worldwide.

Eventually, digital transformation and artificial intelligence will transform the whole of healthcare and bring in new models of care, some of which are currently being developed. In the realm of imaging, cardiovascular risk may be detected through routine images taken for other purposes. Screening for cancer and neurodegenerative conditions in our bodies can be partially automated and may be as commonplace as sending our cars for an annual inspection. "We may be told at a young age which diets to adhere to and avoid; and at a ripe old age, which symptoms to be aware of and what personalised medicines to take," says Dr Liew. "In this picture of the future, we should be prepared to live much longer, healthier lives."

Medicine has always been, and will continue to be, a 'high-touch' profession. "Digital automation will allow doctors to be at our patients' bedsides where we are needed most," says Dr Liew. "Eventually, digitisation and AI will transform healthcare and introduce new models of care."



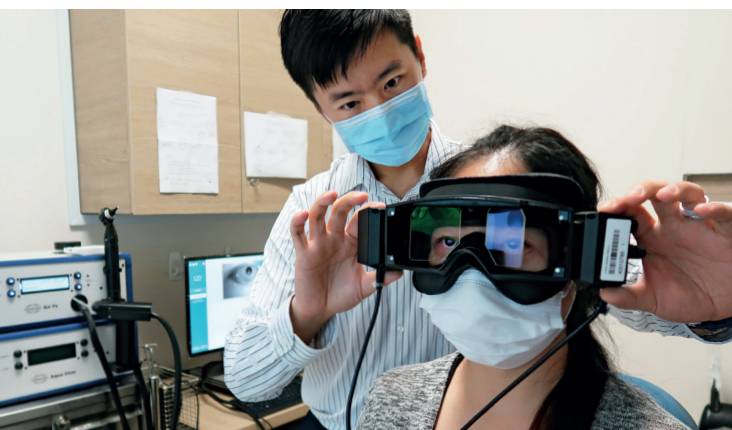
"My chosen specialty, Radiology, is right at the forefront of this technological change, with more than 70 per cent of our work taking place in the digital space. Much like other industries which have undergone disruption, we were the proverbial canary in the coalmine — among the first to be impacted significantly."





# Steadying the Spin

**Experiencing bouts of lightheadedness, and unsteadiness but with no apparent cause? Here are some objective facts on chronic subjective dizziness (CSD).**



Dr Kenneth Chua carrying out a caloric test to identify the cause of dizziness.

## MAKING HEADWAY IN MANAGING CSD

**The Changi General Hospital (CGH) Dizziness Counselling Clinic was established to provide care for these patients.**

CGH performs approximately 350 to 400 videonystagmography (VNG) procedures on patients with dizziness at its Ear-Nose-Throat (ENT) clinic each year to investigate their causes. VNG is a test that measures a type of involuntary eye movement called nystagmus. Nystagmus causes one's eyes to move from side to side or up and down, or both. This happens when the brain receives conflicting messages from the eyes and the balance system in the inner ear. These conflicting messages can cause dizziness.

Approximately 70% of the patients who undergo VNG laboratory tests have unremarkable results where nothing abnormal is found, and their dizziness symptoms may be a function of health anxiety. While these patients

do not require medical treatment, medication and physical therapy, the debilitating dizziness may still affect their quality of life.

To help this group of patients, a team of CGH Audiologists set up the Dizziness Counselling Clinic in October 2020 to manage their symptoms. A combination of evidence-based therapeutic intervention and counselling is applied, as anxiety often occurs together with dizziness in patients. Exercises include habituation techniques, where patients are exposed repeatedly to provocative movements in a controlled manner, as well as self-holding exercises, where patients are taught to hold themselves in a certain way with deep breathing to calm themselves down.

"We aim to cognitively restructure the patients' thoughts about dizziness through extensive evidence-based counselling

and education," says Dr Chua. "We then use elements of basic cognitive behaviour therapy, which includes deep diaphragmatic breathing and progressive muscle relaxation. Some of these patients see vestibular physiotherapists as well to work on strengthening the vestibular system or overall balance retraining."

More than 650 patients have benefited from this service and experienced significant improvements — such as a reduction in their dizziness handicap scores (DHI) post-intervention, reflecting a positive change in the emotional, functional and physical issues that were caused by dizziness.



Scan the QR code to find out more about the CGH ENT / Dizziness Counselling Clinic.

### What constitutes dizziness?

Dizziness is an umbrella term that can include many different types of sensations such as light-headedness, faintness, wooziness, being unsteady or off-balance, CSD and vertigo. Not to be confused with CSD, vertigo refers specifically to a particular "spinning of your surroundings" sensation, where one feels that things are moving around you even though the objects are stationary. CSD is characterised by a feeling of floating or like their heads are "swimming".

Some individuals have been found to have CSD or the perception of dizziness — mostly an internal sense of space and motion discomfort that lasts longer than three months. Changi General Hospital (CGH) Senior Audiologist Dr Kenneth Chua gets our heads around this condition.

### What causes CSD?

CSD is the result of a combination of psychological and physical factors. The exact causes of CSD are currently unknown. In some cases, the medical issues causing the dizziness are not identifiable, but patients tend to have some history of underlying vestibular (inner ear) issues — such as dizziness and imbalance. In CSD that develops later, these symptoms would have already resolved, but patients may still experience non-specific dizziness. People who are more anxious about their health and have past vestibular illness are also more prone to developing it. Stress and sensory overload may also increase the likelihood of patients feeling giddy.

### How is CSD managed?

Take dizziness seriously and consult a medical professional when in doubt. There may not always be an explanation for your dizziness, but it can help to adopt a different perspective by focusing on the management of your symptoms. This includes engaging in appropriate therapy and exercise, which can help to reduce symptom severity, and also making lifestyle or dietary modifications. Identify and reduce stressors that can worsen dizziness, or engage in wellness activities that involve mindfulness and meditation, such as yoga and tai chi.

## RESEARCH INNOVATION EDUCATION

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Our healthcare professionals lead in clinical research, innovation and education; to drive new discoveries, improve outcomes, and uncover new knowledge to transform healthcare now, and for the future health of patients everywhere in the world.





# *Nursing you to Better Health*

Being a nurse is a calling to care. Our nurses look after patients in the hospital, and journey with them and their caregivers through recovery, bringing care and comfort from hospital to home and community.

Our nurses are advocates, counsellors, educators, innovators, researchers, cheerleaders and warriors – working with courage and compassion, and celebrating the moments when our patients get well and go home. Nurses are the human touch and the care in healthcare.



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