

# SINGAPORE Health

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## Employing technology in rehabilitation

Rehabilitation enhanced by robotic-assisted systems and smart technologies

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For advertising enquiries,  
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# High-tech rehab

Patients can now get better and fitter with the aid of virtual reality, robotic-assisted systems and other smart technologies.

by Eveline Gan

Doing the same set of exercises repeatedly can be tedious and mundane, even for the most motivated fitness enthusiast. For patients who need physical therapy after a stroke, painful injury or debilitating illness, getting them to stay motivated and committed to their rehabilitation programme can be a tough sell.

But what if rehabilitation is carried out in a manner that is interesting, engaging and interactive?

By leveraging novel smart technologies like virtual reality (VR) and gamification, physiotherapists at SingHealth institutions, such as Sengkang General Hospital (SKH), have found new and efficient ways to help patients meet their rehabilitation goals while allowing therapists to monitor their progress and recovery more efficiently.

## New developments

The latest high-technology addition to SKH's outpatient rehabilitation gym is HUR, a brand of senior-friendly smart computerised exercise equipment designed for safe and effective strength and power training.

The majority of patients seen at the outpatient rehabilitation clinic have conditions such as stroke, Parkinson's disease, vestibular issues, as well as cardiac and pulmonary conditions.

Ms Tay Ee Ling, Senior Principal Physiotherapist, SKH, said the new HUR training equipment is helpful and suitable for patients with these conditions.

Unlike most strengthening equipment that are bilaterally designed (involving two sides), the HUR system allows for

Therapists can focus on the patient and treatment in a more precise and targeted way. The use of technology would also result in more consistent training.

Ms Tay Ee Ling

Senior Principal Physiotherapist, Sengkang General Hospital



▶▶▶ Gamification makes rehabilitation activities more fun and interactive, increasing patient interest and participation, which in turn lead to better treatment outcomes.



unilateral (one-sided) limb-strengthening to meet the needs of patient rehabilitation.

“The system also allows physiotherapists to pre-set customised resistance and repetitions for each patient. Patients can access the information on the machine independently to track their progress, reducing the need for assistance or guidance,” Ms Tay added.

There are also VR-enhanced treadmills, such as the Walker View and Zebris Gait Training. Using VR simulations and intelligent feedback, patients navigate obstacles and different terrains while improving their mobility, balance, and fitness levels.

“Technological equipment that incorporate VR and gaming, such as Zebris Gait Training, make otherwise mundane rehabilitation activities like walking fun and interactive, thereby increasing patient interest and participation,” said Ms Felicia Seah, Senior Principal Physiotherapist, SKH.

### Win-win situation

Research has shown that active patient participation and motivation levels influence recovery. In rehabilitation, poor patient participation is linked to longer inpatient rehabilitation stays and poorer outcomes.

That is why patient management has moved from a modality-based approach to an exercise-focused one over time, said Ms Seah.

“For instance, cervical traction and back traction used to be popular treatments for patients with neck and back pain. However, studies show that these modalities are not very effective,” she explained.

“With evidence-based practice, physiotherapists have geared towards treatment that involves more active patient participation, such as strengthening and stretching exercises, while ensuring that patients avoid being in certain postures for prolonged periods of time.”

In addition, Ms Tay said that the use of technology also allows for early, safe and intensive

mobilisation of patients, which may not be feasible when using the traditional rehabilitation approach due to the high manpower demands required.

For example, early gait training is now feasible with the use of robotic-assisted gait training systems, such as the G-EO System, for patients with post-stroke conditions, spinal-related injuries, or other neurological conditions. These patients usually require two to three therapists’ assistance to walk, and technological advancements have made this safe and feasible now, said Ms Seah.

Robotic-assisted gait training is a type of physiotherapy technology that applies the principle of focused, repetitive practice to improve mobility. It typically involves the use of a robotic exoskeleton or an end effector (a tool attached



»»» The new HUR exercise equipment is a senior-friendly computerised machine designed for safe and effective strength and power training.

»»» The G-EO System is a robotic-assisted gait training system for stroke patients, and those with spinal-related injuries and other neurological conditions.





»» The Walker View treadmill uses virtual reality simulations and intelligent feedback to help patients improve their mobility, balance and fitness levels.

to the end of a robotic arm designed to react to stimuli) to help patients train their motor coordination.

Importantly, smart technology is a good add-on to existing rehabilitation techniques, and is beneficial for both patients and therapists — patients are more actively involved and take ownership of their training, while the physical workload of therapists is reduced, enabling them to spend more time engaging with patients and better cater to each individual's needs.

"Therapists can focus on the patient and treatment in a more precise and targeted way. The rehabilitation intensity of the patient is also not limited to the physical constraints of the assisting therapists, which is a concern in traditional rehabilitation. The use of technology would also result in more consistent training," Ms Tay said.

Patient education is another important factor in rehabilitation, as studies show that patients recover better when physiotherapists spend more time with them.

"Knowledge is key. When patients understand their condition better, they learn to manage it more effectively and are more compliant with their exercises," she added.

### The way forward

The SKH team is looking into the use of technology and remote monitoring to support patients at home.

It is currently working on a collaborative research project

with SingHealth institutions, including Singapore General Hospital (SGH) and SingHealth Community Hospitals (SCH), to prevent falls among the elderly.

Called SAFE (Steps to Avoid Falls in Elderly) TRIP, this programme is designed for seniors aged over 60 years, and includes the use of digital interventions, such as remote monitoring via home-based games and video conferencing with physiotherapists.

"Although the trial recruitment from SKH, SGH and SCH is still ongoing and we are awaiting the analyses of outcomes, the preliminary results have been promising so far," said Ms Tay, who is the primary investigator

for the trial at SKH Campus.

Ms Seah said that under professional guidance, remote monitoring programmes would make it more convenient for patients to carry out their exercises at home. "At the same time, it also drives home the message that self-management is the way to go for successful rehabilitation."

"Technology is becoming more prevalent. However, key components in a patient's journey, such as human connection and touch, are still integral parts of physiotherapy, and we, as physiotherapists, will be there to journey with the patients through their recovery," Ms Seah said.



Technological equipment that incorporate VR and gaming, such as Zebris Gait Training, make otherwise mundane rehabilitation activities like walking fun and interactive, thereby increasing patient interest and participation.

**Ms Felicia Seah**  
Senior Principal  
Physiotherapist,  
Sengkang General Hospital



»» Senior Principal Therapist Felicia Seah utilises novel smart equipment to aid in the rehabilitation of her patients.





SGH's Department of Vascular and Interventional Radiology is the first in Asia to receive a prestigious certification for its high standards in interventional oncology procedures.

# Among the best in interventional oncology services

Singapore General Hospital is the first hospital in Asia to achieve the global gold standard for interventional oncology care, a rapidly growing field in cancer treatment.

by Desmond Ng



The accreditation is a recognition of the quality of interventional oncology services that his team has been providing, says Associate Professor Tay Kiang Hiong.

Singapore General Hospital (SGH) has joined an international elite club after its Department of Vascular and Interventional Radiology received accreditation from the International Accreditation System for Interventional Oncology Services (IASIOS).

SGH is the first in Asia and just one of 10 institutions around the world to gain the prestigious certification, which sets a gold standard in safe, effective and transparent patient care in interventional oncology (IO) services. This means the hospital's protocols and treatment outcomes in IO procedures are of the highest international standards.

"Receiving the accreditation is a deep honour for SGH, and acknowledges the high quality of clinical services that we have been providing," said Associate Professor Tay Kiang Hiong, Senior Consultant and Head, Department of Vascular and Interventional Radiology, SGH.

IO is the youngest subspecialty of interventional radiology (IR), itself an important and growing field that uses ultrasound, fluoroscopy and

magnetic resonance imaging (MRI) to diagnose, treat or relieve symptoms of cancer. Like IR, IO is rapidly growing because of its effectiveness and relatively lower risks. SGH performs about 3,500 IO-related procedures a year, or 30 per cent of the hospital's annual interventional radiology procedures.

IO, a targeted cancer treatment, is now considered the fourth pillar of modern cancer care, alongside cancer treatment stalwarts — surgery, chemotherapy and radiotherapy. IO treatments can treat early-stage cancers, and in advanced cases, alleviate cancer-related symptoms, especially cancer pain that does not respond to conventional treatments or painkillers. Indeed, IO plays a large role in palliative care for advanced cancer patients.

In IO, a needle can be directly inserted through the skin into the tumour or into an artery, usually at the groin or wrist. In the latter technique, a very slender tube called a catheter is then manipulated under x-ray guidance all the way into the liver, for instance. "There, a host of things like chemo agents or radioactive particles are delivered to kill the tumour, sparing normal tissues around it," said Prof Tay.

As the incision is so small, the patient experiences less pain, a shorter hospital stay and a faster recovery, compared to someone undergoing open surgery. IO treatments are also relatively painless and can be performed under local anaesthesia or sedation, and not general anaesthesia, which itself represents a risk for patients.

In that regard, IO is a viable option for those who are not able to undergo surgery, such as elderly patients or those with multiple other illnesses.

In early 2018, the IASIOS invited SGH — one of 12 hospitals around the world — to enrol as a pilot centre for accreditation. SGH, which has been offering IO services since the late 1980s, formally enrolled in 2020 and received accreditation in May 2021.

Underscoring the growing importance of IR services, this subspecialty became a full department within SGH's Division of Radiological Sciences, and is the first in this field in the country. Separating from its former parent, the Department of Diagnostic Radiology, allows the department to focus its efforts on research and care improvement.



# Future-proofing the healthcare system

Singapore must continually improve its healthcare system to meet the needs of our ageing population and generations to come.

by **Clinical Associate Professor How Choon How**, Head of Division and Senior Consultant, Care & Health Integration, Changi General Hospital, and Director, Primary Care, SingHealth Office of Regional Health



**W**e are blessed with a world-class healthcare system. According to a 2020 report by the Department of Statistics Singapore, we have an average life expectancy of 84 years, which is one of the longest in the world.

Better living environment, nutrition and healthcare advances have prolonged our lifespan, yet this is accompanied by an ageing population, with more people living with chronic diseases from a younger age, as well as the rise of unhealthy lifestyle behaviours or choices.

According to *The Burden of Disease in Singapore* report from 1990 to 2017, the life expectancy of Singaporeans increased by about 10 years, but healthy life expectancy increased by only 7.2 years, to an age of 74.2 years. This means that Singaporeans may live in a state of less-than-desirable health for the last decade of their life.

More can be done to keep Singaporeans healthy in their golden years.

## Coordinated efforts

The importance of promoting a healthy lifestyle by nudging Singaporeans to make necessary

lifestyle changes is paramount. Apart from promoting positive habits, such as maintaining a balanced diet and regular exercise, our regional health system must coordinate efforts to engage the communities around us to improve population health.

Changi General Hospital (CGH) has been actively engaging the communities around us to provide a continuity of care from hospital to home. It collaborates with key community partners to run programmes, such as the Exercise is Medicine Singapore (EIMS), Health Peers and Neighbours for Active Living, Eastern Community Health Outreach (ECHO) programmes, and the Steady Feet Programme – Silver (STEPS).

## Focus on primary care

Family physicians are well placed to build long-term and meaningful relationships with patients; our role is not just to diagnose and manage medical conditions, but also to promote good health among the community.

From my experience as a family physician, we are equipped with general clinical skills to take care of Singaporeans from birth till end of life. Many of us become a family friend to our patients,

These efforts anchor population health within the primary care setting, close to where Singaporeans live and work. The main objective is to bring care right into the heart of our communities, and reduce the reliance on hospitals or polyclinics.

CGH has also been collaborating with healthcare partners to integrate care for the community in the eastern region of Singapore. With the General Practitioner Chronic Care (GPCC) programme, patients with chronic conditions can now receive follow-up care and treatment from GPs, instead of at the hospital. Through this right-siting programme, patients benefit from visiting clinics located closer to their home and have someone familiar with their medical history advising them.

## Digital healthcare

In the next lap, CGH will be focusing on leveraging data, technology and innovation to transform the way healthcare services are delivered.

An example is “Pepper”, a robot that conducts group activities for senior patients, including those with functional decline, dementia or delirium. The speaking robot provides simple instructions and can facilitate activities such as stretching exercises, short dance routines, cognitive stimulation therapy, and reminiscence therapy, thereby enhancing nursing care in a creative and interactive way. Such group activities also enable cognitive stimulation and increased opportunities for patients to engage in physical movement, reducing their risk of physical deconditioning.

Today, healthcare staff are no longer limited to face-to-face monitoring and feedback with patients. Instead, teleconsultations have brought doctors into the comfort of the patients’ homes.

In 2021, CGH was ranked among the top 40 of 250 of the World’s Best Smart Hospitals by *Newsweek*, making us the “smartest” acute hospital in Singapore.

## The road ahead

CGH will continue to work closely with SingHealth Polyclinics, GPs and social service agencies to identify opportunities to improve the long-term health outcomes of our population.

I hope that by building a healthier population and future-proofing our healthcare system, we will create a healthier future not just for myself when I retire, but also for many generations to come.

»» Ensuring continuity of care from hospital to community and home, as well as digital healthcare, will help keep Singaporeans healthy in their golden years, says Dr How Choon How.

taking care of two to three, and sometimes even four generations within their families. During my seven years at Sengkang Polyclinic, I used to take a 40-minute walk to work daily from Punggol to Sengkang. This gives me the opportunity to meet some of my staff and patients, together with their families, in the neighbourhood. Later, I was heartened to know this inspired some of them to walk more!

Three years ago, the Ministry of Health introduced the Primary Care Network. Participating General Practitioner (GP) clinics are supported with a care team of nurses and care coordinators from the public healthcare institutions to work with GPs to improve the coordination of care for people living with chronic diseases.



# Buried treasures

Memories from 25 years ago were unearthed when Singapore General Hospital opened its time capsule buried in 1996.

by Amelia Gin

In 1966, the Singapore General Hospital (SGH) Pharmacy Department produced the Hospital Formulary, a publication listing some 400 drugs approved for use in the hospital. The Formulary helped guide healthcare professionals on what can be prescribed for patients.

Although an important resource, it had its limitations. As new medications and drugs came into use, the Formulary quickly became outdated.

With technology, SGH healthcare professionals today can access an electronic drug data base, e-Pharmacopoeia, via the hospital's intranet. It provides comprehensive and current information on more than 1,600 drugs, and is also

linked to international drug information services such as Lexicomp, UpToDate and Micromedex.

The Pharmacy Department also runs the Drug Information Service for doctors, pharmacists, nurses and other healthcare professionals. Staffed by a full-time pharmacist, the Service handles some 500 enquiries a month, and provides support for activities like drug use evaluation and research.

To encourage patients and the general public to take greater care of their health, and understand their treatments and medications, information on drugs and medical conditions are available on the SGH website as well as the SingHealth HealthBuddy mobile application.

Such information can also help dispel misinformation and disinformation that circulate on social media.

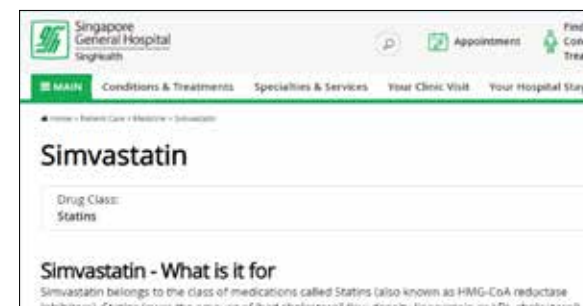
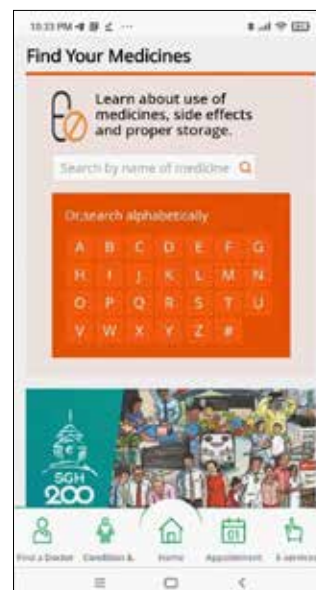
The Hospital Formulary was one of the objects unearthed when SGH opened its time capsule buried in 1996 at the SGH Museum, as part of the hospital's 175th anniversary. The capsule was opened in late 2021 in conjunction with SGH's 200th anniversary celebrations.

The Formulary and other artefacts from the capsule are on display in the SGH Museum's mobile display unit.

A digital time capsule was launched by Singapore President Halimah Yacob on 26 November 2021. It will be opened at the launch of the revamped SGH Campus in about 15 years' time.



President Halimah Yacob launched a new digital time capsule on 26 November 2021. At the ceremony, she was also presented with a cheque for \$1,370,888, which was raised for the President's Challenge 2021 by SGH and other SingHealth institutions. This amount raised was a record high for the SingHealth group. Appearing on stage with President Halimah were (from left) Assoc Prof Ruban Poopalalingam, Chairman, Medical Board, SGH; Dr Koh Poh Koon, Senior Minister of State, Ministry of Health and Ministry of Manpower; Prof Ivy Ng, GCEO, SingHealth; Mr Cheng Wai Keung, Chairman, SingHealth Board; and Dr Gan Wee Hoe, Chairman, SingHealth President's Challenge 2021 Steering Committee.



To see the opening of the 1996 capsule, scan:





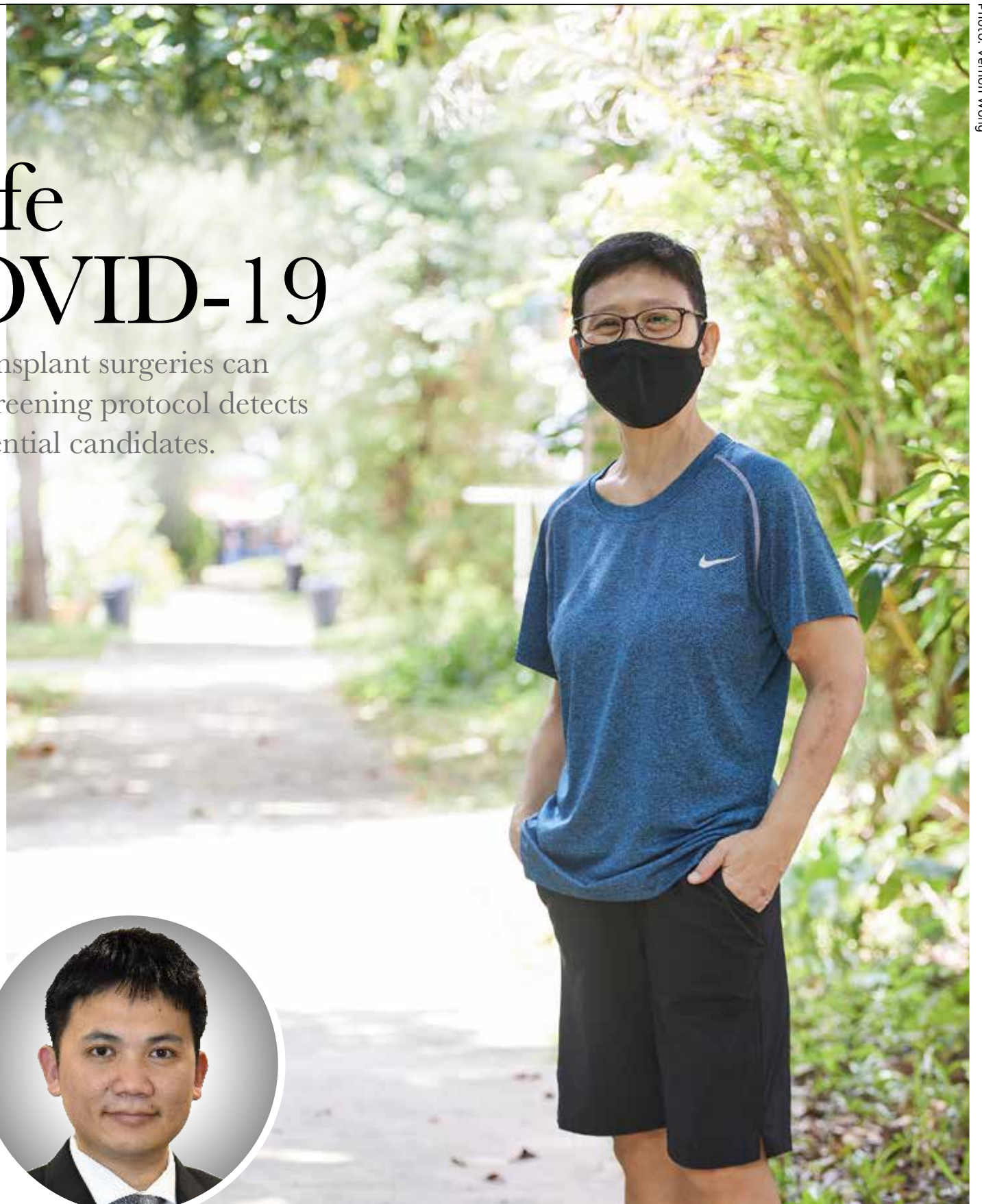
# A new life after COVID-19

To ensure that organ transplant surgeries can proceed safely, a strict screening protocol detects silent COVID-19 in potential candidates.

by Eveline Gan

**A**fter waiting four years for a transplant, kidney failure patient Mdm Alice Ong Bee Ai received a call in April 2020 to rush to Singapore General Hospital (SGH) to receive an organ from a deceased donor.

At the head of the recipient queue, she quickly underwent the usual battery of stringent tests aimed at verifying her suitability and safety — tissue and blood group testing for compatibility with the donor, heart and cancer



» Dr Jasmine Chung (left) and Dr Ho Quan Yao (right) are part of the multidisciplinary team involved in the transplant care for Mdm Alice Ong (main image), the first SGH patient to undergo a kidney transplant after recovering from COVID-19.

screening, viral infections, general fitness and health — for the major operation. At the time, the COVID-19 virus had just started its tour around the world, and COVID-19 tests were included.

Mdm Ong tested positive, dashing her hopes of a new lease of life.

“Having COVID-19 does not exclude a patient from a transplant surgery. But if there is an active infection, we want the patient to recover before going ahead with the transplant,” said Dr Jasmine Chung, Consultant, Department of Infectious Diseases, SGH.

Mdm Ong’s viral and lung infections had to be resolved first. In the meantime, she returned to dialysis while waiting for another

chance of a transplant. This is important, as patients have to take stronger immunosuppressants right after their transplants to prevent rejection of the donor organ.

“When patients go for their transplant, they are given higher dosages of the medication and the degree of immunosuppressant is more intense. Patients are more vulnerable during this period of time. If they have any form of uncontrolled infection — not just COVID-19 — and their immune system is very weak, they may potentially have more serious complications from the infection,” said Dr Ho Quan Yao, Consultant, Department of Renal Medicine, SGH.

Dr Chung and Dr Ho are part

of the multidisciplinary SGH team involved in Mdm Ong’s transplant care. As part of precautionary measures to ensure that transplant surgeries can proceed safely during the pandemic, the SingHealth Duke-NUS Transplant Centre established a rigorous screening protocol to detect cases of silent COVID-19 infection in all transplant candidates.

Testing for COVID-19 is not limited to just the organ transplant recipients. Donors, both living and deceased (certified brain dead), too, undergo COVID-19 testing.

After she recovered, Mdm Ong underwent a transplant in January 2021, becoming the first recovered COVID-19 patient in SGH to receive a life-saving kidney transplant from a deceased donor.

The 52-year old hawker was diagnosed in 2016 with a condition called IgA nephropathy,

which left her with just five per cent of her kidney function. To clear her body waste and balance her fluids, she underwent haemodialysis three times a week before her transplant.

Mdm Ong’s quality of life has improved dramatically after the transplant surgery. She no longer needs to spend long hours on dialysis, and is able to spend more time with her family. While on dialysis, she had to restrict the amount of fluids in her diet. She can now drink more water and consume the soups that she loves.

She has resumed exercise and intends to participate in the activities she used to enjoy, such as running a marathon.

“I feel so blessed to be able to receive a donor kidney. I am thankful to the deceased donor, my doctors and SGH for making me feel like I am not alone,” said Mdm Ong.



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▶▶▶ Ms Heng Ai Ling, who used to visit Japan annually, posing in front of the Yasaka pagoda in Kyoto.

▶▶▶ Ms Heng doing an ultrasound scan for a patient in a photo taken before the pandemic.

before their gall bladder and renal arteries ultrasound scans. From the findings, the department has cut the fasting time from seven hours to five.

Ms Heng also co-authored a study on how the pandemic affected her peers. It led to two initiatives, Braveheart and Peers at Work, for staff to express or share their feelings and thoughts during this pandemic.

"It is like a communications session to voice out areas of concern to the management. At radiography, we also promoted Joy at Work, for staff to send their colleagues handwritten notes of appreciation and support," said Ms Heng.

As a Malaysian, she understands the needs and worries of her fellow foreign colleagues at this time. Her parents used to visit her from Johor frequently, but they have not seen each other since the pandemic started. However, her husband, two sisters and their husbands are here. Coincidentally, they are also healthcare workers in other Singapore hospitals.

Ms Heng is also a keen researcher and sits on her division's serious reportable events committee. Work on the latter is especially time-consuming, she said, as she has to trawl through different statistics to look for trends and causes of incidents. "I usually do these in my own time. I set short-term priorities and do one thing at a time," she added.

She hopes for more opportunities to work with other colleagues within the SingHealth family. "In QI, we work on projects to improve our own department. But other hospitals may be working on similar projects or are already doing a good job in that area, so if we can standardise best practices, that would be good," she said.

To recharge, the Japanophile used to visit the land of the rising sun at least twice every year. With the pandemic, however, she has had to be content with eating her favourite sushi and other Japanese food in Singapore.

"I love the Japanese culture. Their *omotenashi* service standards translate to 'every service is from the bottom of the heart', and this is similar to SingHealth's mission of 'Patients at the Heart of All We Do'," said Ms Heng.

were frequently late for their appointments. So my first project was to create a map with directions so that they were able to locate the centre correctly," said Ms Heng.

Today — and many winning projects later — Ms Heng leads colleagues at the Division of Radiological Sciences in quality innovation (QI), an area that hospital staff are encouraged to take part in to improve protocols and patient safety, and reduce waste. For instance, she is currently working on developing an ultraviolet chamber to disinfect a positioning aid used to keep patients still while undergoing x-ray scans. This would allow more patients to be quickly and safely scanned during the COVID-19 pandemic.

Her interest in this area might have stemmed from a desire "to be at the forefront of using medical equipment to help diagnose patients' conditions". Ms Heng joined SGH's Department of Diagnostic Radiology after getting her Diploma in Radiography from Nanyang Polytechnic in 1998.

"As a radiographer, you learn how to produce images that aid in the diagnosis of a patient. It is especially rewarding when the diagnosis that you helped with leads to proper treatment for the patient," she said.

Ultrasound scans, which Ms Heng specialises in, are important during the pandemic to detect deep vein thrombosis, which is common among COVID-19 patients.

For her efforts in improvement projects, Ms Heng was given the opportunity to present at overseas conferences. In Madrid, she presented her research on reducing patients' fasting time

# In pursuit of improvement

Radiographer Heng Ai Ling loves her job that aids diagnosis, and is constantly looking ways to improve her work to make it safer and better for patients.

by Sol E Solomon

**W**hen Singapore General Hospital (SGH) opened an off-site radiography clinic in 2012, Senior Principal Radiographer Heng Ai Ling was put in charge. It was in the Camden Medical Centre, tucked away in a leafy and secluded corner of the Tanglin area.

It was there that Ms Heng developed an interest in improvement projects. "Being a new service centre, the satellite clinic offered many opportunities for improvement. We had patients who did not know how to get to Camden and



I love the Japanese culture. Their *omotenashi* service standards translate to 'every service is from the bottom of the heart', and this is similar to SingHealth's mission of 'Patients at the Heart of All We Do'.

**Ms Heng Ai Ling**  
Senior Principal Radiographer, Division of Radiological Sciences,  
Singapore General Hospital





# Caring for the whole person

Dr Geoffrey Sithamparapillai Samuel is drawn to rehabilitative medicine because it allows him to treat patients holistically.

by Elena Owyong

**A**s a rehabilitation medicine specialist in an acute care hospital, Dr Geoffrey Samuel tends to see patients who are seriously ill. They may have been involved in bad traffic accidents or suffered a debilitating stroke.

Dr Samuel leads a multidisciplinary team to look into these patients' longer-term recovery after their immediate medical needs have been taken care of and their conditions have stabilised. Getting them back on their feet, or at least as much as possible to where they were before, gives Dr Samuel the most satisfaction in his job.

"I want to help as many patients as I can to return to a good quality of life. I want to help them improve in terms of their function," said Dr Samuel, Senior Consultant, Department of Rehabilitation Medicine,

Singapore General Hospital (SGH).

"Rehabilitation is an active process. We set realistic goals for the patient and coordinate with different medical disciplines to help the patient achieve them. We prescribe exercises, and the optimum nutrition and medicine to improve strength and functioning."

One of his more memorable cases involves a 54-year-old patient with a serious lung inflammation. The patient required a ventilator, and was treated in the intensive care unit (ICU) for half a year. After the patient recovered, uncertainties remained over his post-discharge recovery — would he be able to live independently at home?

Surprisingly, some months after, the patient was able to go about his everyday life on his own, such as grocery shopping. His progress exceeded expectations; the patient had been expected to

need at least the use of a portable oxygen concentrator when he went out.

While the medical team — occupational therapists, speech therapists, physiotherapists, music therapists and psychologists — worked on different areas of the patient's recovery, Dr Samuel believes it was the patient's determination that made a difference.

Dr Samuel oversees the patients' rehabilitation and sets realistic rehabilitation goals and troubleshoots issues, such as mood, pain or nutrition. If necessary, referrals to other disciplines are made. As the patients improve, the team plans for their discharge to a rehabilitation facility or back home for further treatment as an outpatient.

Although it can be a challenge to coordinate between multiple team members, it is precisely this holistic approach to treating patients that inspired Dr Samuel in rehabilitation medicine.

"Patients often have multiple interacting medical problems. They may primarily have lung issues but may also have problems with the heart or kidney functions, so all these need to be looked after," he said.

In 2015, Dr Samuel went to Taiwan to specialise in musculoskeletal disorders under the Ministry of Health's Health Manpower Development Plan programme. "In Taiwan, rehabilitation medicine is very well developed, with large departments to look after different aspects of recovery, particularly in stroke rehabilitation," he said.

The country's well-run rehabilitation system, he said, allows patient recovery to continue outside the hospital. Patients with musculoskeletal problems, for instance, can be seen in outpatient clinics.

Treating critically ill patients in the ICU has made Dr Samuel understand the frailty of life. "People who may seem well can suddenly become unwell. It makes me appreciate relationships more, beyond pursuing personal achievements," he said.

Outside his hectic work life, Dr Samuel enjoys gardening at home to de-stress. The father of two grows plants, such as mint and aloe vera, and listens to Mandopop by Jay Chou and Taiwanese band Mayday to relax.



»»» Dr Geoffrey Samuel loves gardening, a hobby that helps him de-stress.

»»» (Right) Dr Samuel examining a patient in a picture taken before the COVID-19 pandemic.



Photos: Dr. Geoffrey Samuel



People who may seem well can suddenly become unwell. It makes me appreciate relationships more, beyond pursuing personal achievements.

Dr Geoffrey Sithamparapillai Samuel  
Senior Consultant, Department of Rehabilitation Medicine,  
Singapore General Hospital



# Donating blood saves lives

In 2020, only 1.78 per cent of the residential population in Singapore had donated blood. However, it is essential for the blood bank to continuously maintain sufficient blood stock to save lives.

Information from **Health Sciences Authority**

## Types of blood donations

### Whole blood donation

Whole blood refers to blood in its complete form, not separated into its various components. It is the most common type of blood donation.

### Apheresis donation

Sometimes, patients need only a specific part of a donor's blood, such as platelets or plasma. These donations are known as apheresis donations. A machine called blood cell separator draws blood from the donor to extract the plasma, platelets or red blood cells. The remaining blood is then returned to the donor. Regular apheresis donations ensure a stable supply of blood products.

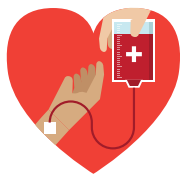
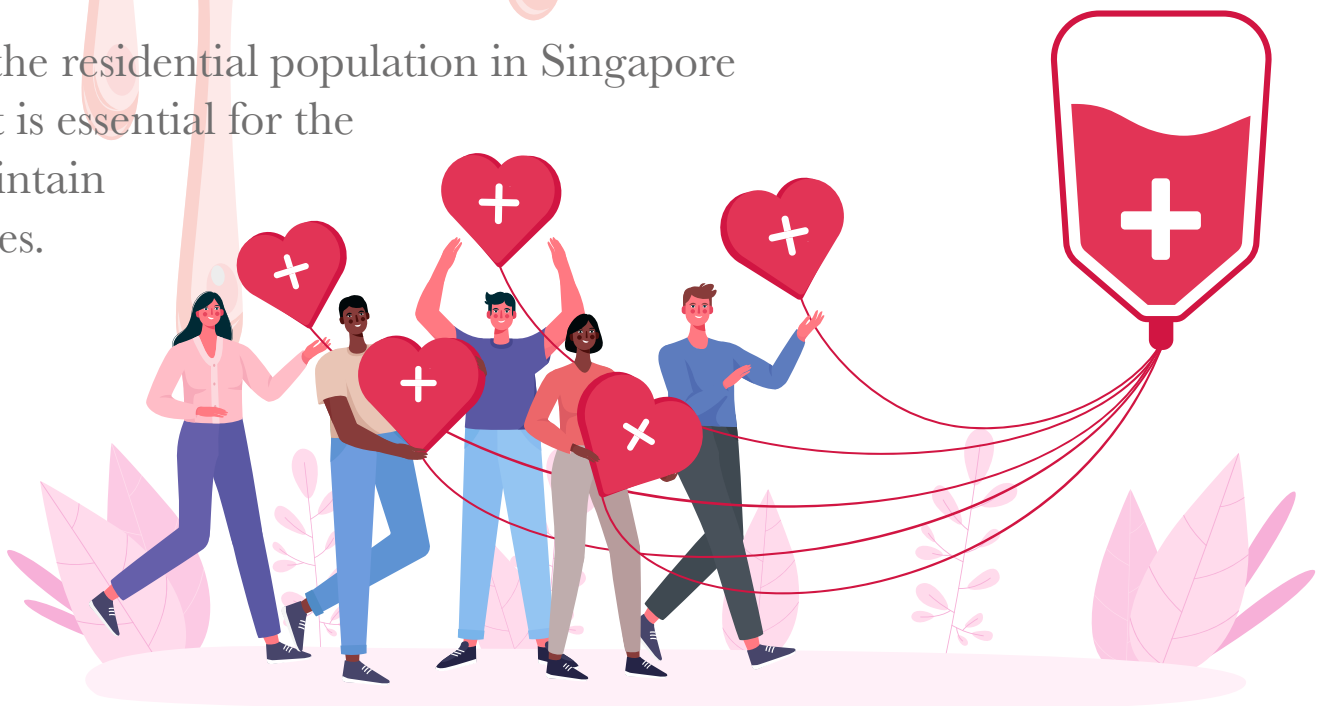
### Autologous donation

Patients scheduled for surgery who may require a blood transfusion can choose to donate blood for their own use during the procedure. This is called an autologous blood transfusion, and is usually recommended for surgery patients with a rare blood type or who require transfusion with rare blood type red cells due to antibodies.

### Blood needs

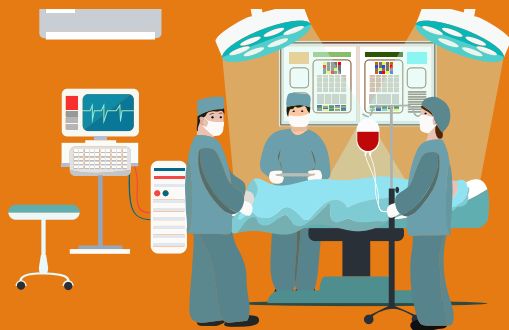
In 2021, 14 units\* of blood are required every hour (325 units every day or 118,750 units in a year) in Singapore. They are largely used for general surgery, general medicine, blood diseases, and accident-and-emergency cases.

\*One unit of blood is approximately 500ml of whole blood.

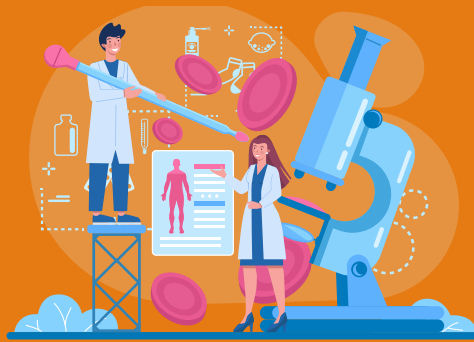


## Use of blood components

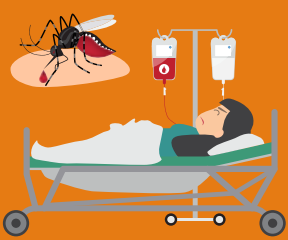
Whole blood is seldom used for transfusions, except in cases of rapid massive blood loss, such as patients undergoing surgery or accident victims.



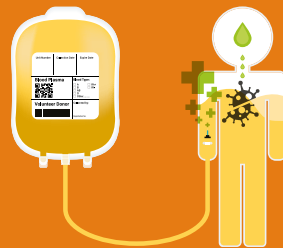
Red blood cells are used for treatment of anaemia and for patients who have suffered loss of red blood cells due to accidents, during surgery or childbirth.



Platelets are used for treatment of dengue fever, leukaemia and for cancer patients.



Plasma helps replace clotting factors that may be depleted in bleeding or infection.



## Who can donate?

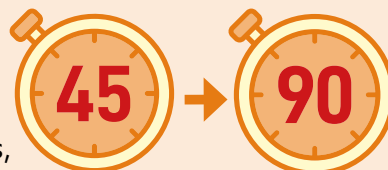
- In good health
- Weigh at least 45kg
- Must not have had any symptoms of infection, such as sore throat, cough, runny nose or diarrhoea, for at least one week; or a fever in the last four weeks
- Should not have taken medication, herbal supplements or traditional herbal remedies for at least three days, or antibiotics for at least one week
- Haemoglobin level of at least 13.0g/dl for males and 12.5g/dl for females



There are new eligibility guidelines for donors who have received a COVID-19 vaccine. Find out more at [www.hsa.gov.sg/blood-donation/covid-19-vaccine](http://www.hsa.gov.sg/blood-donation/covid-19-vaccine).

## Donation process

The entire process takes about 45 minutes for whole blood donation and up to 90 minutes for apheresis donation. Strict hygiene protocols are in place to ensure the safety of donors. The equipment used in blood collection such as needles, swabs, gauze and tubing are new, sterile and discarded after each use.



## Where to donate?

Blood donation can be done at any of the four blood banks islandwide or at mobile drives. Find out more at [www.hsa.gov.sg/blood-donation/where-to-donate](http://www.hsa.gov.sg/blood-donation/where-to-donate).







# Losing weight with meal replacements

Meal replacements should be used in tandem with a healthy lifestyle and professional guidance.

by Eveline Gan

**L**osing weight is not always easy. Some people who want to shed excess kilos quickly have turned to meal replacement products.

Available in the form of shakes, bars or soups, meal replacements are formulated to replace a complete meal but with lower total calorie content. At just 200 to 250 calories on average per serving, meal replacements do work. However, they should not replace meals totally in the quest for a healthier body weight.

"It is important to learn to incorporate healthy behaviours while aiming for weight loss to achieve sustainable results. A meal replacement may help individuals get a head start on the scale, but it is important to work towards building up long-term healthy eating habits," said Ms Tan Ai Shan, Principal Dietitian (Clinical), Dietetics Department, Singapore General Hospital (SGH).

"The road to successful weight loss or maintenance is through making positive lifestyle changes and staying consistent with those changes. Working with a dietitian can help individuals find the

best long-term eating plan."

Low-calorie meal replacements are generally not for children, pregnant or breastfeeding women, and those with severe diseases affecting the liver, kidney or heart. Those with pre-existing medical conditions should check with a doctor or dietitian to assess if a diet, particularly a very low-calorie one, is suitable, and how it can be carried out safely and effectively.

For instance, people with diabetes who are taking insulin or oral glucose-lowering medications may need to have their medication adjusted. Low-calorie diets can increase the risk of hypoglycaemia, or low blood sugar.

"When incorporated as part of a caloric-restricted healthy eating plan, meal replacement products can be a useful weight loss tool," said Ms Tan.

However, some may use them incorrectly — using meal replacements in place of all meals may not provide enough calories, essential nutrients or fibre; while using them in addition to regular meals can lead to weight gain. Some may not be able to tolerate

the lactose or sugar alcohols in the products, which can cause bloating, cramps and diarrhoea.

Taking only replacement products is akin to following a very-low-calorie diet (VLCD). Also known as a semi-starvation or crash diet, a VLCD is a clinically supervised diet plan that provides about 800 calories a day. They are usually used for the extremely obese going for bariatric surgery, or those who need to lose weight very quickly to improve certain medical conditions.

Men need on average 2,200 calories a day, while women need 1,800 calories. This means that a VLCD provides far fewer calories than required by most people to achieve a stable and healthy weight. Following a VLCD, said Ms Tan, requires close medical supervision due to the risk of dehydration, electrolyte abnormalities, and gallstone formation.

Meal replacements generally produce significant and sustainable moderate weight loss over a period of six months. VLCDs, for instance, have been shown to be effective in weight management, with an average weight loss of 1.5 to 2.5kg per week.

"Nevertheless, it is important to note that a VLCD is a short-term solution for weight loss, meant to be followed for a limited time only (up to 12 weeks). Individuals will then need to transition to a maintenance plan that includes healthy eating, exercise, and other lifestyle changes," stressed Ms Tan, adding that such diets can also "take the fun and pleasure out of eating for some people".

When the body goes on an excessively low-calorie diet for some time, it can experience what is known as the yo-yo diet syndrome. When consuming significantly fewer calories, the body starts to regulate the rate at which it burns calories to support the various daily functions.

That slower rate of metabolism remains even when the person returns to normal eating, which can ultimately lead to weight gain. The yo-yo effect occurs because crash dieting prompts the body to store fat at a faster rate once a person starts eating normally. This is the body's defensive instinct of trying to store reserves for future periods of deprivation.



# Making difficult decisions in advance

For individuals who wish to be actively involved in their end-of-life decisions, an Advanced Medical Directive may be useful.

by Annie Tan

**W**ith advancements in medical technology, terminally ill patients have the choice to prolong their life through various medically assisted means. For some, this may come with a compromised quality of life, thereby raising the question of an individual's desire to extend the duration of life.

According to a nationwide study in 2019 by Singapore Management University, 62 per cent of Singaporeans wish to live a full and complete life, without regrets. However, less than four in 10 Singaporeans knew what an Advanced Medical Directive (AMD) is, and less than one per cent signed one.

## Planning ahead

An AMD is a voluntary legal document that enables individuals to inform doctors of their preference for their end-of-life care, in the event they are incapacitated or unable to make these decisions on their own.

An AMD may be made by anyone aged 21 years and above of mentally sound mind as a pre-emptive measure to authorise doctors to let dying take its natural course. It is distinctively different from euthanasia, the deliberate ending of life by unnatural means, which is illegal in Singapore.



»» Every patient is treated according to his expressed wishes and in line with the goals of care, says Dr Lee Yi Lin.

Through the AMD, the individual expresses his wish to decline extraordinary life-sustaining treatment. It can be any medical procedure or measure, which, when administered to a terminally ill patient, will only prolong the process of dying when death is imminent. Examples of extraordinary life-sustaining treatment are cardiopulmonary resuscitation, the use of machines that support breathing, dialysis, blood transfusion, or medications to support blood pressure.

The AMD was legalised in Singapore in 1996 in view of advancements in medical care that enable organ support to extend life — even for terminally ill patients with irreversible conditions. Such terminal illnesses include end-stage heart, lung, liver and kidney diseases, metastatic cancers, and advanced dementia or neurodegenerative diseases.

## Mortality and choices

On average, mortality rates for patients with multi-organ failure admitted to the Intensive Care Unit ranges from 20 to 35 per cent, said Dr Lee Yi Lin, Consultant, Department of Intensive Care Medicine, Sengkang General Hospital. Extraordinary life-sustaining treatment may prolong a patient's life, but it significantly diminishes his or her quality of life.

"Patients may end up requiring long-term dialysis, a tracheostomy (insertion of a breathing tube through the front of the neck), tube feeding, or long-term use of a urinary catheter. They may be unable to speak, lose their functional independence, and become dependent on caregivers for activities of daily living, such as eating and bathing, due to deconditioning from the critical illness," Dr Lee said.

"The treating physician strives to manage every patient according to the latter's expressed wishes and in line with the goals of



care, the aim of which is to uphold patient autonomy and dignity," she explained.

However, if an AMD is not made and the patient loses his decision-making capacity, doctors may initiate these difficult conversations with family members instead. This places the burden and, oftentimes, the guilt of decision making on loved ones in times of grief.

## Protecting patients

Dr Lee emphasised that, regardless whether an AMD exists, it is the practice of every doctor to first ensure that all necessary treatment is provided to patients as long as there is a chance of recovery.

Indeed, the process of executing an AMD is very stringent and is uncommonly invoked in Singapore. To enforce it, three doctors, comprising the patient's treating physician and two medical specialists, must unanimously certify that the patient's condition is considered terminal. If there are any disagreements, a second panel of three doctors will be appointed by the Ministry of Health. If this second panel of doctors is also unable to reach a unanimous decision, the AMD

cannot take effect and the medical team will continue to care for the patient with his or her best interests in mind.

To further protect patients, their AMD status is kept strictly confidential, and healthcare providers are not allowed to enquire, unless the treating physician recognises that the patient is terminally ill and has lost his or her decision-making capacity. Patients may also revoke their AMD at any time, should they change their mind.

## An informed decision

Before creating an AMD, patients should consider the circumstances where they would prefer to die naturally, and — on the contrary — circumstances where they would prefer to have their life extended, even at the cost of losing functional independence.

Dr Lee also encourages individuals to involve their family in end-of-life discussions so that the goals of care are aligned. "Occasionally, when families are unaware of the patient's wishes, there will be conflict and unhappiness, and family members may find it extremely difficult to accept the patient's wishes," she said.





# The itch that won't stop

Eczema can occur in both children and adults, and understanding its causes and triggers is key to effective treatment.

by Thava Rani

**A**voiding seafood is unlikely to prevent eczema or its recurrence. The itchy skin condition is more likely to be triggered by heat, sweat, pet fur, or stress, especially in adult sufferers.

While food like dairy milk, eggs and peanuts may cause eczema, they are more likely to do so in children, and not adults.

"Eczema, or atopic dermatitis, is a chronic skin inflammation that waxes and wanes due to a defective skin barrier and an altered immune system response," said Dr Karen Choo, Consultant, Allergy Unit, and Department of Dermatology, Singapore General Hospital (SGH).

The skin plays an important protective barrier against ultraviolet (UV) radiation, hazardous substances, and moisture loss. It can be impaired because of genetics, environmental allergens, stress, or an overactive immune system, said Dr Uma Alagappan, Consultant, Dermatology Service, KK Women's and Children's Hospital (KKH), and Visiting Consultant, Department of Dermatology, SGH.

In Singapore, about one in five children and one in 10 adults suffer from eczema. Atopic dermatitis can be passed from parent to child, so a child is more likely to develop the condition if one or both parents have it, or if a family member has either allergic rhinitis or asthma.

As children grow, the skin matures and its barrier function improves. Some 80 per cent of children outgrow atopic dermatitis by the time they are eight years old. However, those who develop eczema later or whose symptoms are severe are likely to have persistent eczema, said Dr Uma.

## Mimic symptoms

Eczema, with its itchy red rashes and dry skin, may mimic another skin condition known as contact dermatitis. Contact dermatitis occurs when the skin touches a substance or material that irritates it or causes an allergic reaction, such as detergent, soap, nickel-containing jewellery or personal care products. The rash can occur after a single exposure or after many exposures over the years.

Unlike eczema, part of the treatment for contact dermatitis is to identify the culprit causing the rash and avoid being exposed to it again, said Dr Choo. For instance, a rectangular-shaped rash on the skin is more likely due to contact

## Myths debunked

**MYTH:** Topical steroids will thin the skin, so use them sparingly or only for a flare-up.

**FACT:** Using steroids very sparingly may result in the dose being increased, due to the perception that the eczema has not been responding to the previous prescription. Strong topical steroids may be needed to control the inflammation during a bad flare-up. It is better to use the cream early, when the inflammation can be controlled with lower doses.

**MYTH:** Topical steroids have the same side effects as oral steroids.

**FACT:** Topical creams have fewer severe side effects because they are largely absorbed into the skin, so the side effects, if any, will mostly affect the skin.

**MYTH:** Once topical steroids are used, ever higher doses of steroids will be needed, making the user dependent on them.

**FACT:** It is important to use the appropriate strength of steroids for an adequate time to treat the eczema. If flare-ups are frequent and require increasingly higher doses, consult a dermatologist to rule out other conditions.



dermatitis, if a similar shaped plaster was applied on it before.

Education and lifestyle modifications are the basic treatments for eczema in both children and adults. Emollients and moisturisers are essential for atopic dermatitis, and should be used regularly and liberally, said Dr Choo, adding that generally, the greasier that can be tolerated, the better.

Practising stress-relieving activities like yoga and mindfulness, and good skin care can also help, said Dr Uma.

In mild to moderate eczema, steroid creams may be prescribed to reduce inflammation. Other treatments are calcineurin inhibitor creams and phototherapy. For severe atopic dermatitis, biologics or immune-modulating medication may be used.

Possibly a life-long disease, eczema can disrupt sleep, and with it, work and education. "At SGH and KKH, we work with counsellors from the psychology and social work services departments to offer behavioural therapy to reduce the itch-scratch cycle, and teach distraction and relaxation techniques," said Dr Choo.



»» Dr Karen Choo (left) and Dr Uma Alagappan (right) are part of the SGH Transitional Eczema Service, which helps children with chronic eczema whose condition persists into adulthood.

## Growing into adulthood

Children with chronic eczema are managed at KKH by a multidisciplinary team of dermatologists, dedicated nurses, pharmacists, counsellors from the psychology and social work departments. If their condition persists into adulthood, they are transferred to the SGH Transitional Eczema Service when they turn 18.

The set-up at SGH is similar, and includes dermatologists, a dedicated dermatology nurse, and a psychologist. The team helps patients ease into their new environment.

To further aid this transition, Dr Uma from KKH is part of the chronic eczema team in SGH. The eczema team from both hospitals meet regularly to ensure a smooth handing over of current clinical information, goals, and care needs of adolescent patients.



# Ayam Masak Merah

(4 servings)



Preparation  
time: **15** minutes



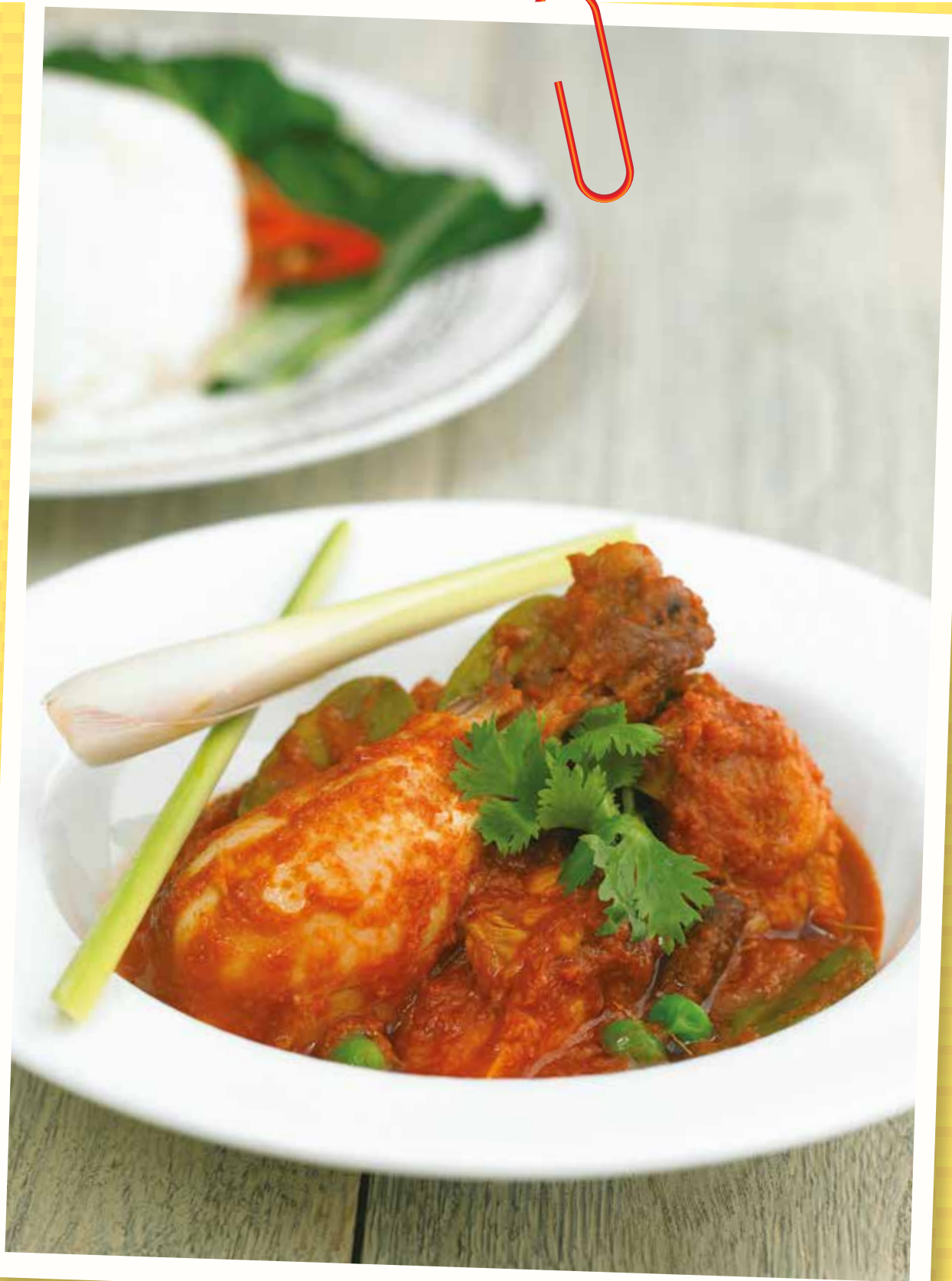
Cooking  
time: **30-40** minutes

## Ingredients

- 800g chicken, cut into pieces and skin removed
- 2 tsp oil
- 1 cinnamon stick, about 5cm long
- 3 cardamoms
- 3 cloves
- 1 star anise
- 1 stalk lemongrass, about 5cm long, bruised
- 1 tsp chilli powder
- $\frac{1}{4}$  tsp turmeric powder
- 1 tsp meat curry powder
- 50g tomato paste
- 30g chilli paste
- 500ml water
- 2 kaffir lime leaves
- $\frac{3}{4}$  tsp salt
- 1 tsp sugar
- 30g frozen green peas

## TO BLEND

- 40g onion, chopped
- 20g ginger
- 2 cloves garlic
- 10g *lengkuas* (galangal)
- 2 candlenuts
- 100ml water



## Method

1. Heat oil in a pot over high heat. Add blended ingredients. Fry until fragrant.
2. Add cinnamon stick, cardamoms, cloves, star anise and lemongrass. Fry until fragrant.
3. Add chilli, turmeric and meat curry powders. Fry until fragrant.
4. Add tomato paste and chilli paste. Mix well.
5. Add chicken and stir-fry for 1 min.
6. Add water and kaffir lime leaves. Season with salt and sugar.
7. Bring to a boil, then reduce to low heat and simmer until chicken is tender.
8. Add green peas. Simmer for a few minutes until peas are soft.
9. Remove from heat and serve hot.

## Estimated nutrient content (per serving)

- Energy 200kcal
- Carbohydrate 9g
- Protein 23g
- Fat 9g
- Sodium 557mg
- Cholesterol 70mg



## PUREED DIET FOR PATIENTS WITH SWALLOWING DIFFICULTIES

Take one serving of chicken without bones (approximately 100g), and cut into small pieces. Put into a blender, add 50–60ml of gravy or water, and blend until required consistency (or as directed by your speech therapist).

Adapted from *More than Mash*, a publication by Singapore General Hospital



# Exercise can improve sexual function in women

Worldwide, about 30 to 50 per cent of women of all ages suffer from female sexual dysfunction.

by Suki Lor



**E**xercise can help female sexual dysfunction (FSD), a complex but relatively common condition that requires a holistic treatment approach.

FSD can manifest as difficulty or inability in maintaining arousal or reaching orgasm. Women with genito-pelvic pain or penetration disorder may experience dyspareunia (pain during intercourse) or vaginismus, where muscles of the vagina go into spasms, making sex painful or impossible. For the condition to be classified as a dysfunction, symptoms must cause marked distress or interpersonal difficulties lasting for a period of time.

"As the cause of FSD is typically multifactorial, some patients may wish to consult a multidisciplinary team of medical professionals, including doctors, psychologists, physiotherapists and counsellors, to better assess and treat their condition holistically," said Dr Jean-Jasmin Lee, Consultant, Family Medicine

Service, KK Women's and Children's Hospital (KKH).

## Don't wait to seek help

"In our Asian society, women are generally shy to discuss intimacy issues and they may not know where to seek appropriate help," said Dr Tan Tse Yeun, Senior Consultant, Department of Reproductive Medicine, KKH.

The majority of patients who turn to KKH's Sexual Health Clinic under the KK Women's Health and Wellness Centre tend to seek help only when they have failed to conceive.

"If unresolved, FSD can affect mental and physical health, as well as the relationship and quality of life for both the woman and her partner. It is also a key barrier to conception and procreation," Dr Tan said, urging couples facing such issues to seek help earlier to improve treatment outcomes.

KKH's Sexual Health Clinic has managed an average of 90 new FSD cases annually for the past three years. Most of the

patients are in their 30s with primary vaginismus.

In 2020, the clinic saw 100 new cases of vaginismus, a sharp 60 per cent increase compared to 2017.

"The main reason for the increase in the number of vaginismus cases is due to increased awareness among members of the public and healthcare providers surrounding sexual dysfunction and where to seek help," Dr Tan explained.

## Treatments available

Therapy may involve treatment of the contributing medical conditions, sexual education, emotion regulation, pelvic floor muscle rehabilitation, or relationship counselling.

"Research has shown that pelvic floor muscle training raises blood flow in the arteries leading to the vulvovaginal tissue, improves relaxation capacity, and increases the elasticity of vulvovaginal tissue in menopausal women. This reduces symptoms

like sexual pain, incontinence and vaginal dryness," said Ms Caroline Chua, Senior Principal Physiotherapist, Physiotherapy Department, KKH.

## Benefits of exercise

When it comes to exercise, the physiotherapist's main role is to optimise the physical functions of the patient to promote better sexual function, address the individual's concerns, and customise a suitable exercise programme that will cater to her needs.

"Recommended exercises are aimed at allowing the patient to increase muscular awareness, association and relaxation. Pelvic floor muscle rehabilitation is also part of physiotherapy management to improve sexual health in women. Part of this rehabilitation will involve educating patients to differentiate between tense and relaxed muscles. Devices may be introduced to improve therapy outcome," Ms Chua said.

Regular exercise, such as cardiovascular exercises (jogging, swimming and brisk walking) and relaxation-based exercises (yoga, pilates and stretching exercises), can indirectly enhance sexual satisfaction by improving cardiovascular health and mood. Exercising also improves one's body image and psychological well-being, which impacts libido, sex and intimacy, and can lead to an increase in sexual well-being. Exercise is also beneficial for women who experience sexual difficulty due to the use of anti-depressant medications, or after a hysterectomy (a surgery to remove the womb).

## One-stop centre

The Sexual Health Clinic is housed under the new KK Women's Health and Wellness Centre, which provides a wide spectrum of healthcare services for women at all stages of their lives. It offers comprehensive and confidential sexual health services, as well as women's advocacy services for sexual assault victims.

The centre also includes the Sexually Transmitted Infection Clinic, the Contraceptive Clinic (for the insertion or removal of contraceptive implants), the Multi-Disciplinary Vulval Clinic (to treat complex vulval conditions), and a Menopause Clinic.



» (From left) Dr Tan Tse Yeun, Dr Jean-Jasmin Lee and Ms Caroline Chua are part of the multidisciplinary team that treats patients with female sexual dysfunction at KK Women's and Children's Hospital.



# Q&A

## Recurrent UTIs



**I get urinary tract infections (UTIs) often, sometimes with fever. I am worried, as they seem to take time to clear, even after a course of oral antibiotics. Am I getting resistant to antibiotics? Why do I keep getting UTIs?**

Urinary tract infection, or UTI, is caused by bacteria ascending from the genital area into the urethra and bladder. UTIs are more common in women because their urethra is short, making it much easier for bacteria to enter the urinary tract.

UTIs can be grouped into uncomplicated and complicated UTIs. Uncomplicated UTIs refer to UTIs in healthy patients in the absence of structural or functional abnormalities of the urinary tract. A short three-to-seven-day course of antibiotics will usually resolve simple cases of UTIs.

Harder to treat are those who experience recurrent UTIs, have developed resistant bacterial strains, have an underlying cause, are hospitalised frequently for other medical problems, are exposed to more resistant strains of bacteria or antibiotics, or are immunosuppressed.

For such patients, their doctor may refer them to a urologist for further investigations, including a urine culture to determine the bacteria causing the UTI and the antibiotic it is susceptible to.

If no oral antibiotics are suitable, intravenous antibiotics may be given. The patients may also be asked to undergo a urological evaluation to determine if they have any underlying contributing cause for the UTI, such as urinary stones or voiding dysfunction. They may then require surgery to remove the stones.

Antibiotics are not always needed for women with bacteria in their urine but do not have UTI symptoms. If they are given

multiple courses of antibiotics, they should seek specialist opinion, as a main cause of increased bacterial resistance to antibiotics is over-prescription. Generally, a repeat urine culture to confirm the bacteria have been cleared is unnecessary as long as the patient responds symptomatically.

It is unusual for men to get a UTI. Other than antibiotic treatment, they should be evaluated by a urologist to look for an underlying cause.

**DR VALERIE GAN**

Senior Consultant, Department of Urology, Singapore General Hospital



## Headache triggers



**Can hunger, low blood sugar and bad sleeping postures cause headaches? Can regular head, neck and shoulder massage prevent headaches from occurring?**

Everyone has unique triggers for headache attacks, ranging from lack of sleep and stress to hormones and certain foods. Keeping a record of when headaches occur and your lifestyle habits, such as what you eat, stress levels, sleep patterns, and your menstrual cycle (for women) can help identify possible triggers for headache attacks. Consult a doctor for advice on how a change in lifestyle may help with your condition.

There is currently no robust scientific evidence to prove that head and neck massages can help minimise headache occurrences. However, avoidance of triggers, staying hydrated, eating meals on time, exercising, and avoiding stressors are all simple lifestyle measures that can help mitigate headache attacks.

**DR ZHAO YI JING**

Consultant, Department of Neurology, National Neuroscience Institute

## Soft-tissue sarcomas



**What are sarcomas, and are there many different types? Are there major types that I need to be aware of? Do they spread quickly to other parts of the body? Can it be cured?**

Soft tissue tumours arise from soft tissues such as muscles, nerves, blood vessels, and fat, and may involve any area of the body. While not all soft tissue tumours are malignant (cancerous), when the term 'sarcoma' is used, it implies that the tumour is malignant.

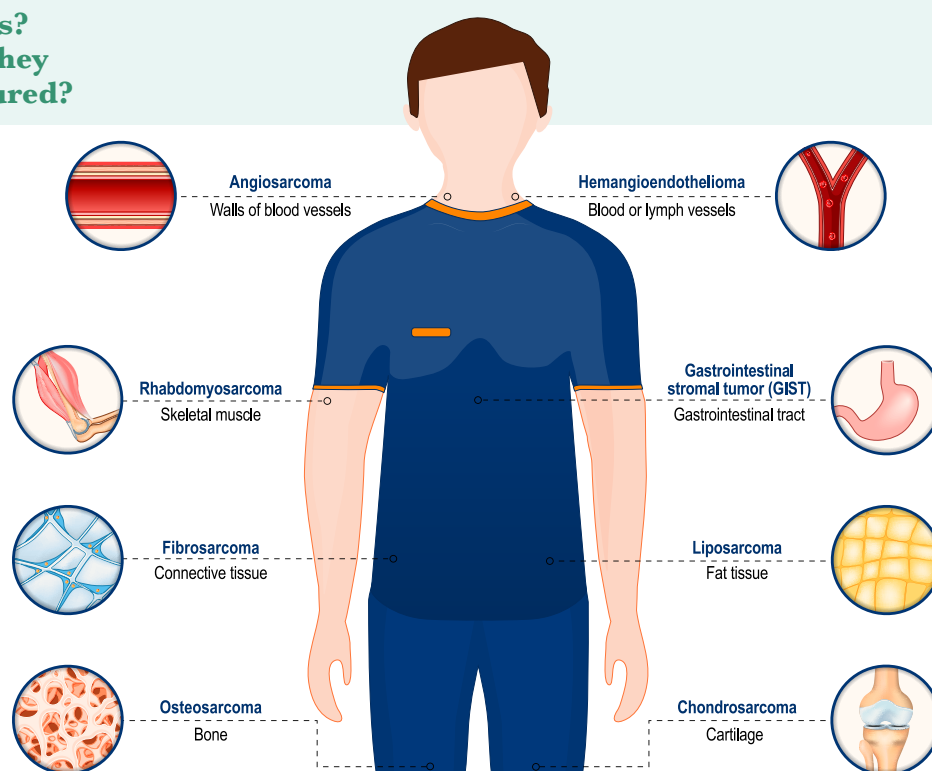
There are more than 80 types of soft tissue sarcoma or sarcoma-like growths; a biopsy is required to determine what subtype it belongs to. If you have an enlarging lump (especially 5cm or larger), it would be good to see a doctor. This is especially so if the lump feels deep-seated, starts to become painful, or has recurred after a previous surgery.

If the tumour does spread to other parts of the body, the most commonly affected area is the lungs. However, other sites — such as lymph nodes, soft tissues, bone, liver, brain and even skin — are possible. Localised tumours — even locally advanced ones — are potentially curable.

Surgery is generally the main curative therapy if the tumour can be removed completely. Radiotherapy and chemotherapy or other newer systemic therapies may be recommended as additional therapies.

**DR LOOI WEN SHEN**

Consultant, Department of Radiation Oncology, National Cancer Centre Singapore





## DID YOU KNOW...

... **that** research has shown one needs at least 20 teeth to achieve good oral function — the ability to speak, chew and swallow food well?

Unfortunately, only nine per cent of the population aged 80 and above in Singapore have at least 20 teeth left. Among those aged 60 and above, 30 per cent had no teeth.

The National Dental Centre Singapore (NDCS) launched the Oral Health Movement (OHM) 8020, a two-year pilot programme aimed at screening at least 500 Singaporeans aged 40 and above for oral frailty, or the decline of good oral function, while educating the public on the importance of maintaining good oral health.

Launched in March 2021, the OHM 8020 programme includes community screening, intervention and review. Participants who have been screened and identified as orally pre-frail were then invited to participate in an oral frailty prevention programme, or referred to dentists and speech therapists for appropriate follow-ups.



... **that** the Singapore General Hospital (SGH) Facebook page does not just contain stories about the hospital and its staff?

Visitors to SGH can find the most up-to-date visitor policy information, such as the number of visitors allowed in the wards (including the intensive care and maternity units) and the tests needed to enter the hospital, on the Facebook page. These are pinned to the top of the page for about a week.

Public educational webinars on health conditions as well as job openings are also posted on the SGH Facebook page. Additionally, it serves as a channel for people to provide feedback and communicate with the hospital.

Visitors to SGH can find more detailed information on SGH's website ([www.sgh.com.sg](http://www.sgh.com.sg)). The COVID-19 section provides information on the virus and the Antigen Rapid Test (ART), parking availability, and other useful tips.

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# For Cough: Prospan® Bring Joy back into Your Life



**3** **Relieves cough**

**3** **Relaxes airways**

**3** **Relieves cough**

**For Adults**

**PROSPAN FORTE**



**For Children & Adults**

**PROSPAN**



• Alcohol-free • Sugar-free • No coloring dyes  
 • No preservatives • No lactose

\*Contains natural plant extracts from the Prospan® plant  
 (Urtica dioica) and is suitable for vegetarians

Pharmacia Foundation Marketing Pte Ltd  
Tel: 6733 2241

**The #1 phyto-cough suppressant medicine worldwide!**  
 (The #1 phyto-cough suppressant medicine worldwide!)



## **GLUCOSAMINE** Not addictive or not for sale **WITHOUT a prescription!**

When you have osteoarthritis (OA),  
 the joints don't work right.

1. How many other drugs have you taken for OA? Most are just painkillers that don't work.
2. How many times have you had to stop taking your OA medicine because of side effects?
3. How many times have you had to stop taking your OA medicine because of stomach problems?

### **For Viatril-S:**

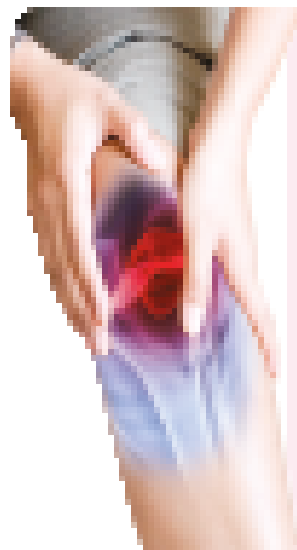
1. There is no other drug that can help you with OA as well as Viatril-S.
2. Viatril-S is the only drug that can help you with OA without the side effects of other drugs.
3. Viatril-S is the only drug that can help you with OA without the side effects of other drugs.
4. There are no other drugs that can help you with OA as well as Viatril-S.

**Now you can get Viatril-S  
 without a prescription!**

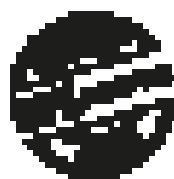
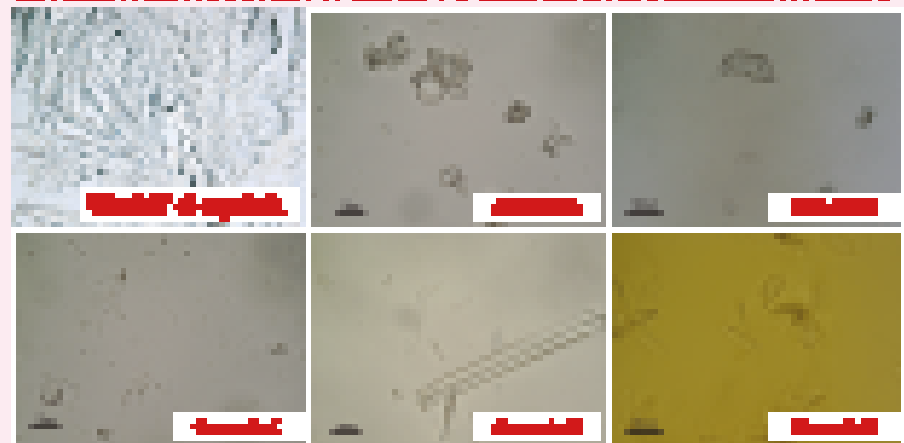
## **Viatril-S**

The Prospan® Foundation-Grade-Capsules Glucosamine Hydrochloride Joint Health!

In Singapore, glucosamine products are sold in public without the need for a prescription & covered by GPs. However, their quality varies greatly in terms of purity, safety and effectiveness. It is only our Viatril-S that is covered by the GPs.



### **Microscopic views of Viatril-S capsules and their contents**



**The glucosamine used in  
 all successful clinical trials!**

