

SINGAPORE Health

THE FLAGSHIP PUBLICATION OF THE SINGHEALTH DUKE-NUS ACADEMIC MEDICAL CENTRE

Hitting the jackpot!

Inpatients try out innovative devices and applications initiated by nurses

READ MORE ON PAGE 3

IN FOCUS



Page 9

3D dental plug promotes bone growth for implants

PEOPLE



Page 15

When radiation is a good thing

HEALTHWATCH



Page 18

Less invasive procedure helps COPD patients breathe easier

#GetBackOnYourFeet

Strengthen Joints and Bones with Urah Micellar! Start Exercising Today!
使用优力加强关节和骨骼! 从今天开始做运动吧!



如何从疼痛的循环中解脱
需要特殊的胶束给药技术
从而得到健康与快乐



Product of Singapore



Available at:
* SingHealth & NHG Hospitals

watsons

guardian

unity

OG

Break from The Pain Cycle

Start Happy & Healthy Cycle



Break the pain cycle

URAH MICELLAR GLUCOSAMINE CREAM



Joint Health plus Omega-3

- 8% Glucosamine with Omega 3
- Relieves Joint & Body Aches for Active Living

Sporting Cream plus MSM

8% Glucosamine with MSM

- Relieves Muscle Ache & Soreness
- For Athletes & Sports Lovers



Bone Health plus Omega-3

10% Glucosamine + Bio-Calcium

- Triple Action Dual Target
- Relief, Rebuild & Protect Bone & Cartilage

Multi Award Winner



Urah Hotline:
+65 68446884
For Free Delivery

Counting down to 2021

The history of Singapore General Hospital (SGH) is the history of medicine in Singapore. The first general hospital for British troops was established in Singapore in 1819, but it was only in 1821 that it began serving the general populace — marking the true beginnings of SGH. As the countdown to SGH's bicentennial begins, *Singapore Health* will present snapshots showing changes in medicine and its various disciplines in the past 200 years.

Saving lives through the decades

SGH's emergency services have been at the forefront in saving lives during major crises befalling Singapore over the decades.

by Professor Venkataraman Anantharaman, Professor Lim Swee Han, Associate Professor Mark Leong, Associate Professor Evelyn Wong and Dr Kenneth Tan
Heads of Department of Emergency Medicine, Singapore General Hospital, from 1997 to present

Singapore General Hospital's (SGH) Department of Emergency Medicine began life as the nation's first unit for emergency services in 1948.

Variously known as Casualty Services, Emergency and Outpatient Services, Emergency Unit, and Accident and Emergency or A&E over the years, it only became a full-fledged department in the 1980s, when it moved to its current premises at SGH Block 1. It was around the same time, in 1984, that Emergency Medicine was recognised by the Health Ministry as a medical specialty.

This is despite the important role it has played over the decades in saving lives during mass casualty events — the 1951 and 1964 race riots, the 1978 Spyros tanker explosion, the 1983 cable car disaster, and industrial explosions and fires both at home and in the region.

In the early days, the emergency service was staffed mainly by junior doctors and provided limited investigations, such as basic x-ray. The unit was a place where young doctors went to learn suturing from nurses. Today, the department is staffed by emergency medicine specialists, in tandem with changes in Singapore's demographics and types of emergency.

The needs and types of patients seen by emergency specialists have evolved over the years, with patient attendances increasing from about 64,000 in 1979 to more than 130,000 in 2017. Meanwhile, more elderly patients with complex and chronic conditions, such as cancer, stroke, heart disease and kidney problems, are being treated, partly as people are living longer due to advances in medical care. In 2017, 34 per cent



Photo: SGH

» In the early days, Singapore's only emergency unit was sited at the red-brick *Ang Chu* or Red House, sharing premises with the blood bank. The present department will move to a new building in 2023 (artist's impression in top picture), offering vastly expanded facilities and treatments.

of SGH emergency patients were 65 years and older, compared to 25 per cent in 2007.

Emergency Medicine will mark its next milestone when it moves to a new home in 2023. It will be vastly expanded, taking several floors of the new building, and will be close to the acute medical wards and pharmacy. There are also plans for an intervention suite for emergency coronary angiograms and neurology intervention procedures, which will allow for a quicker response to cardiac and neurological emergencies.

The new emergency facilities will be equipped with a larger and more advanced decontamination station for mass casualties in the event of industrial or terror incidents. As the building will also be connected to the main SGH complex and its full range of diagnostic and interventional facilities, all capabilities at SGH and the national specialty centres on SGH Campus can be activated quickly to mount a concerted response in a national crisis. It will also be linked to the new Outram Community Hospital.

PUBLISHERS



Singapore General Hospital

CO-PUBLISHERS



Changi General Hospital



Sengkang General Hospital



KK Women's and Children's Hospital



National Cancer Centre Singapore



National Dental Centre Singapore



National Heart Centre Singapore



National Neuroscience Institute



Singapore National Eye Centre



SingHealth Community Hospitals



Polyclinics SingHealth

PATIENTS. AT THE HEART OF ALL WE DO.®

CONTENT ADVISOR

Group Chief Communications Officer, SingHealth
Audrey Lau

EDITORIAL TEAM

Lim Mui Khi, Ann Peters, Tina Nambiar, Lydia Ng



Read *Singapore Health* online at www.sgh.com/singaporehealth

PUBLISHING AGENT

ThinkFarm Pte Ltd

Managing Director
Christopher Tay

Editor
Dang Hui Ling

Head, Creative
Sean Lee

Art Director
Lee Lily

Head, Client Relationship
Jessie Kek

For advertising enquiries, please call 6831 1299 or email advertise@thinkfarm.sg

All rights reserved. Copyright by Singapore Health Services Pte Ltd (registration no.: 200002698Z). Opinions expressed in *Singapore Health* are solely those of the writers and are not necessarily endorsed by SGH, SingHealth Group and/or Thinkfarm Pte Ltd (registration no.: 201226362G), and their related companies. They are not responsible or liable in any way for the contents of any of the advertisements, articles, photographs or illustrations contained in this publication. Editorial enquiries should be directed to the Editor, *Singapore Health*, 168 Jalan Bukit Merah, #13-01 Surbana One, Singapore 150168. Tel: +65 6222 3322. Email: editor@sgh.com.sg. Unsolicited material will not be returned unless accompanied by a self-addressed envelope and sufficient return postage. While every reasonable care will be taken by the Editor, no responsibility is assumed for the return of unsolicited material. ALL INFORMATION CORRECT AT TIME OF PRINTING. MCI (P) 056/10/2019. Printed in Singapore by Times Printers Pte Ltd (registration no.: 196700328H).

Game for strength and comfort

Designed to bring fun and convenience to inpatients, innovative healthcare applications initiated by nurses get tested by patients.

by Sol E Solomon

A raft of new devices and applications being piloted at Singapore General Hospital (SGH) promises to deliver more efficient care to patients while freeing nurses from routine and time-consuming tasks. Leveraging on digital technologies, the devices and applications will also help empower patients to be partners in their own health.

The pilot trials are expected to be implemented across other SingHealth institutions over time.

Hitting the jackpot

This fruit machine pays no money when the jackpot is struck. But when three identical images are aligned, the prize is far bigger.

It is a machine that a group of SGH nurses and physiotherapists devised to help inpatients avoid muscle weakening as a result of prolonged bed rest. Patients sit on a hospital chair and pedal away on the exercise stepper, which triggers the jackpot reels to start spinning. When the patient has pedalled

enough times, the reels will show a winning line and — jackpot!

Another game in the same exercise system incorporates both exercise and memory training. When the patient stands up, one of the fruits lights up. Before the light goes off, the patient must press a coloured button corresponding to the colour of that fruit. At higher, more difficult levels of the game, two or three fruits light up.

The game motivates patients to not only stand and sit, but



Photos: Justin Loh

» Patients whose conditions have stabilised and are allowed some exercise can do so with the bedside rehab chair system. Exercise for these patients on prolonged bed rest can help them avoid muscle weakening.

“The nurses started this to empower patients to take charge of their own care even after they're discharged from hospital, with the hope of reducing readmissions.

Ms Tan Sheng Lian
Assistant Nurse Clinician, Singapore General Hospital

also strengthens their memory because they have to focus their attention on the fruit that lights up, said Ms Ang Shin Yuh, Deputy Director of Nursing Quality Research and Transformation, SGH.

With Singapore's ageing population, hospitals are expected to face a greater number of increasingly older patients. “For an older patient, the risk of complications is higher. Even with one or two days of bed rest, their risk of muscle loss or deconditioning is higher. So we wanted to create an environment where they can recover faster, and can do rehabilitative exercises much quicker,” said Ms Ang.

Built with input from the engineering faculty of Singapore University of Technology and Design (SUTD), the system is being piloted at the SGH Internal Medicine Ward. The aim is to recruit 30 patients for the six-month trial.

Digital menus

It's not quite the Ritz, but “room service” at some SGH wards just got a bit easier and quicker.

An application that is downloaded onto an iPad allows patients to ask for beverages, and additional pillows and blankets. That information is conveyed to the nurses, who can then act on the requests immediately. Patients no longer have to ring a bell and wait for a nurse to attend to them before they can put in their request.

More importantly, the MyCare app holds the patients' individual medical and health information during their hospital stay — the tests and procedures they are scheduled for, their results, the readings of their vital signs, information on the medications they are taking, and other educational materials. Having such information lets patients better understand their treatment and

recovery process, helping them to be more involved in their own care.

“The nurses started this to empower patients to take charge of their own care even after they're discharged from hospital, with the hope of reducing readmissions,” said Ms Tan Sheng Lian, Assistant Nurse Clinician, SGH.

The app, which is password-protected, was developed by SingHealth nurses, doctors, allied health professionals, Office for Service Transformation, and IT specialists from the Integrated Health Information Systems.

The MyCare app started as a pilot at two SGH wards but will be rolled out at other SGH wards, as well as Changi General Hospital, KK Women's and Children's Hospital, and the National Heart Centre Singapore by 2021.

Continuous monitoring

Patients who have just had surgery need to have their vital signs — heart rate, respiratory rate, temperature, and blood pressure — monitored every couple of hours. As they also need their rest and sleep, it can be a bit of a bother when they are awakened every so often to get these signs measured.

Another innovation that nurses have developed is a wireless wearable biosensor that automatically and continuously



» Ms Tan Sheng Lian, Assistant Nurse Clinician, guiding an inpatient on the features of the MyCare app.

monitors patients' vital signs. The palm-sized, self-adhesive device, which is placed on the patient's chest, also triggers real-time alerts should any of the vital signs go out of the normal range. This allows for a speedy response from the medical team.

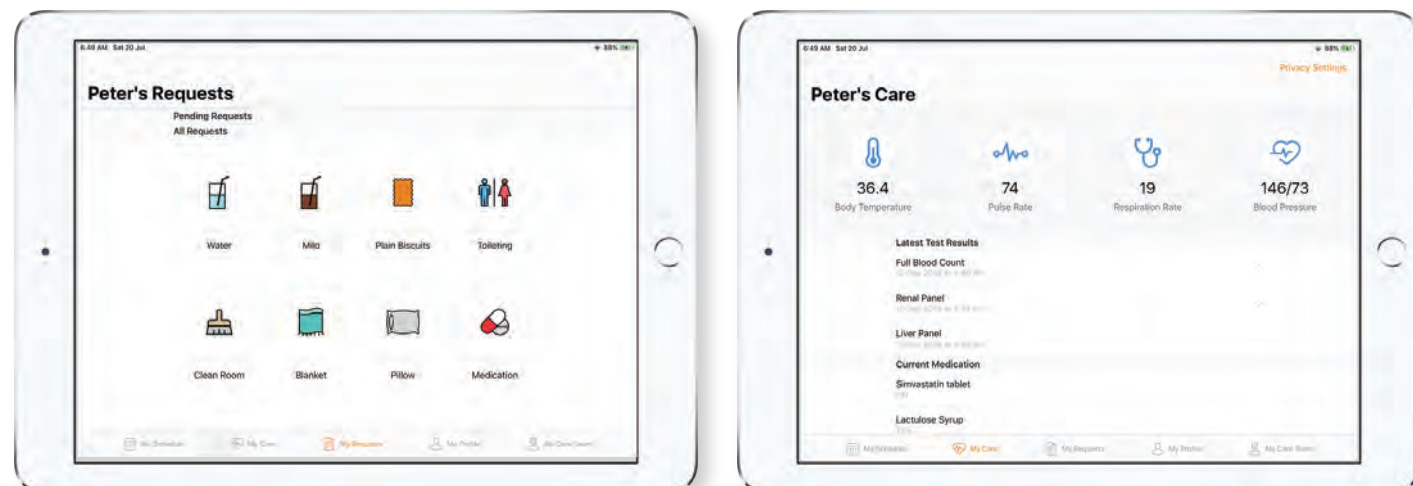
The sensor is mostly used on patients who have had surgery or blood transfusions, or are newly transferred from the intensive care unit. The initial version of this application was piloted in November 2018. Trials on the updated version started in March 2019, and the second

SGH ward in the test started its pilot in July 2019.

Ms Tan added that two other wearable monitoring devices are also being piloted.

One is the oxygen saturation monitoring clip, which is attached to the hand to continuously measure the patient's oxygen saturation.

The other is a blood pressure cuff that checks the patient's blood pressure at pre-set intervals. The patient is not awakened from his sleep, as is often the case now, when nurses need to check his blood pressure.



» Patients' health information is recorded in the app so that they can be more involved in their own care. They can also make requests via the app, instead of waiting for nurses to attend to them.



MDIS
Management Development
Institute of Singapore

"PHENOMENAL!

THIS PROGRAMME UNLOCKS
MY POTENTIAL!"

KESHVARAN
STUDENT

"SO GLAD I GET TO
LEARN SOMETHING THIS
MEANINGFUL"

SITI MASTURA
MDIS GRADUATE (2018)

SCHOOL OF HEALTH AND NURSING

BACHELOR'S PROGRAMME



PARTNERING UNIVERSITY
**EDINBURGH NAPIER
UNIVERSITY**
UNITED KINGDOM



FOR MORE INFORMATION,
VISIT **MDIS.EDU.SG/SHN**

**MDIS-ENU joint scholarships worth \$3,000*
available for the January 2020 intake.**

*T&Cs apply



Management Development
Institute of Singapore
Reg. No. 201001793H
20 May 2018 to 19 May 2022

6247 9111

etc@mdis.edu.sg

www.mdis.edu.sg

Prevent vascular dementia? Yes, you can!

Unlike other forms of dementia, vascular dementia can be prevented by controlling its risk factors early.

by Suki Lor

Most types of dementia cannot be prevented and can only be delayed — but not vascular dementia.

While it has the same symptoms as other forms of dementia, it can be prevented because the major risk factors are within a person's control.

The risk factors include high blood pressure, high cholesterol, and high blood sugar. These conditions damage blood vessels in the body (called the vascular system) by hardening and clogging them. When blood vessels are blocked, mini or silent strokes occur.

"Unlike major strokes, these silent strokes come and go, and have little or no symptoms, so the person is unaware that something has gone wrong," said Associate Professor Nagaendran Kandiah, Senior Consultant, Neurology, National Neuroscience Institute (NNI).

Some symptoms such as vertigo (spinning sensation) may occur intermittently, or there may be recurring numbness in the limbs, or aches and pains. These symptoms can often be brushed aside as tiredness.

But a brain scan will show otherwise. "A series of silent or mini strokes over time could damage the wiring system in the brain, leading to dementia down the road," said Prof Nagaendran.

He added that the chances of preventing dementia are higher if vascular risk factors, such as high blood pressure, are diagnosed and treated early. "It's important to actively control our blood pressure, cholesterol and blood sugar, especially for those who have had silent strokes, to prevent further strokes and keep dementia at bay."

The Asian case

Asians are more prone to blockages of small blood vessels in

the brain than Caucasians, and the condition is prevalent in Singapore.

"This is likely because of high blood pressure — one of the major culprits for blockages of small blood vessels in the brain — and the cause for silent strokes."

"Seven out of 10 dementia patients at NNI have white matter lesions in the brain, which show that they've had silent strokes before. In the West, the proportion is much lower, at 20 to 30 per cent."

Patients who have had silent strokes may start to have executive problems that render them unable to do jobs they had no problems with before.

"It has less to do with memory and more to do with losing their planning ability and executive functions. For example, a housewife may not be able to cook anymore. A patient of mine was a security guard who had to submit reports to the police every month, and he just couldn't do it because his ability to organise was gone," said Prof Nagaendran.

Typically, it is only when they develop such problems, which could arise days or even months after an episode, that they go see a doctor to get an MRI scan.

Smart rehab

There is hope and help. The Temasek Foundation-NNI Stroke Memory Rehabilitation (SMaRT) Programme has helped patients improve their planning abilities and reclaim their quality of life. They are able to move around independently and drive. Some do so well that they even return to work.

"The benefits of this six-week programme have



Photo: Justin Loh

Associate Professor Nagaendran Kandiah said that dementia can be prevented if vascular risk factors, such as high blood pressure, are diagnosed and treated early.

lasted for up to six months," said Prof Nagaendran.

"Once on the road to recovery, they're more likely to recover so they have a higher chance of a good long-term outcome."

NNI is rolling out the programme to selected community partners and aims to reach at least 1,000 patients in the first three years. The institution is also training General Practitioners (GPs) and Polyclinic doctors to focus on vascular risk factors to

prevent dementia.

But the team at NNI wants to take it further and explore if blood-thinning medication such as aspirin, which are prescribed for major strokes, can prevent silent strokes. "If we can repurpose some medication for silent strokes in the setting for dementia, we may be able to prevent vascular dementia."

Meanwhile, research is ongoing to study the link between silent strokes and dementia, and why Asians are more prone to them.

Mild to Moderate
Medical Conditions?

**Your GP
can treat it!**




The **GPFirst Programme** is an initiative by Changi General Hospital (CGH)'s Accident & Emergency Department in partnership with over 200 participating GP clinics in eastern Singapore.

Patients with mild and moderate symptoms are encouraged to visit their GPs first to seek treatment at the GP clinics instead of going to the A&E at CGH.

Should the patient be referred by his or her GP via GPFirst:

- ☒ Accorded higher priority over other non-emergency cases
- ☒ \$50 programme subsidy* for their A&E attendance fee at CGH

For more information, visit www.GPFirst.sg

Like us on Facebook at  [gpfirst.sg](https://www.facebook.com/gpfirst.sg)

*Terms and Conditions apply

GPFIRST
YOUR FAMILY DOCTOR, YOUR FIRST STOP



Photos: Ahmad Iskandar



Colorectal surgeons and other staff demonstrating how colonoscopy is performed at the event to mark the launch of the SPRUCE Fund.

Mr Rizal Saibi underwent colonoscopy for free as part of a special drive.



Spruce up your colon

A new fund to help low- to middle-income patients who need but are unable to afford colonoscopy has been launched.

A change in bowel habits, including an inability to empty his bowels completely at times, raised the red flag for Mr Rizal Saibi two years ago. He felt bloated even after a light meal, while a good night's sleep did little to lift his lethargy.

After finding blood in his stools in May 2019, Mr Rizal sought medical attention at the Singapore General Hospital (SGH), where he was advised to undergo colonoscopy. The procedure is an examination of the rectum and lower bowel to detect colorectal cancer.

A colonoscopy costs about \$1,000 after government subsidies. As Mr Rizal is supporting two children through tertiary education, and his elderly mother-in-law, who has medical

needs, forking out that amount is a tall order.

Furthermore, he is not eligible for MediFund, a safety net for patients who have difficulty paying for their remaining bills after receiving government subsidies and drawing on other means of payment, such as MediSave.

Giving back

To mark SGH's Department of Colorectal Surgery's 30th anniversary last year, it set up the SPRUCE (SGH Preventing Rectal and Colon Cancer through Endoscopy) Fund to help patients like Mr Rizal.

"The SPRUCE Fund is our department's way of giving back to the community, which we have been serving since 1989," said Associate Professor Emile Tan,

Head and Consultant, Department of Colorectal Surgery, SGH.

"With the support of partners and generous donors, we are able to start helping patients in need. We hope more individuals and companies can be part of this meaningful initiative by contributing generously."

The department aims to raise \$300,000 through the fund to help an estimated 300 patients over the next three years, and heighten awareness of colonoscopy as an important examination, particularly for those aged 50 and above.

Between 2011 and 2015, 9,807 new cases of colorectal cancer were diagnosed, making it the most common cancer in Singapore. Each year, the department performs approximately 10,000 to 12,000 colonoscopies, and treats hundreds of patients with colorectal cancer.

According to the *Gender differences in predictors of colorectal cancer screening uptake: a national cross sectional study based on the health belief model* study published in 2013, 90 per cent of 1,700 Singaporeans agreed that colonoscopy can save lives, and 80 per cent felt that it was too expensive. Only one in four people went for the procedure.

To mark the launch of the SPRUCE Fund, a special colonoscopy drive was held at SGH's Ambulatory Endoscopy Centre on 31 August 2019. That day, 50 patients underwent colonoscopies performed by 10 colorectal surgeons from the department.

Often there are no symptoms in the early stage of colorectal cancer, which can involve the large intestine (colon) or rectum (end of the colon). According to the National Registry of Diseases Office, more than half of patients are diagnosed when the cancer has already reached stage 3 or 4, which reduces effectiveness of treatment and chances of a cure. An average of 780 patients lose their lives to colorectal cancer each year.

Most colorectal cancers develop from polyps or pre-cancerous growths in the large intestine. The faecal immunochemical test (FIT) picks up tiny amounts of blood in the stool, which can suggest polyps or cancers even in patients who do not display symptoms.

A positive FIT test may warrant further investigations and a colonoscopy, the gold standard for colorectal cancer screening. During the procedure, the doctor will attempt to remove any polyps found in the colon and rectum.

Patients with symptoms, such as rectal bleeding or a sudden change in their bowel habits, may be referred directly for colonoscopy without a positive FIT test. Those whose relatives have been diagnosed with colorectal cancer have a bigger likelihood of developing polyps and cancer.





Call an ambulance, not a taxi

Going to hospital in an ambulance may make the difference between recovering well from a stroke, or not.

by Thava Rani

The “time window” in stroke is all-important. That is why experts say, “Call an ambulance, not a taxi.”

Patients should not wait, or worse still, sleep it off till the next day. Neither should they eat and drink to feel better because their muscles are weak, and they may choke.

According to Dr Ravindra Singh Shekhawat, Consultant, Department of Neurology, National Neuroscience Institute (NNI), calling an ambulance allows medics on board to assess the patient and start initial treatment. They can also send vital information in advance to doctors in the hospital.

“We’ll be waiting at the A&E and would’ve already looked at the patient’s medical records, noting risk factors and any contraindications to hyper-acute treatment. Coming by taxi or driving doesn’t help. What’s more, the nurse at the A&E may not be aware of the situation and the patient might be at the back of the queue.”

Dr Ravindra said arriving early means there is a chance that the blood clot can be removed. “If a small blood vessel is involved, there’s a chance of recovery and continued good quality of life. I’ve seen a patient like this who is still okay today, decades later.”

Early treatment can be offered if the patient receives medical attention within 4.5 hours of the onset of symptoms. He may receive a clot buster injection, or

a procedure where a guide wire is inserted via the groin to take out the clot from a major vessel supplying blood to the brain. “Treatment must start quickly. Every minute counts,” he said.

Spotting a stroke

The need for immediate action was the central message of the recent National Stroke Awareness Campaign, organised by the Stroke Services Improvement team and supported by the Ministry of Health.

A stroke can strike anyone at any age and any time. Nearly 8,000 Singaporeans a year suffer from a stroke, and 80 per cent of these can be prevented, according to the Singapore Stroke Registry.

It happens when blood supply to a part of the brain is cut off because a blood vessel is blocked by a clot (an ischaemic stroke), or has ruptured and is bleeding (haemorrhagic stroke). In both, the affected area in the brain becomes deficient of blood supply and dies.

Mini strokes are more difficult to spot as they may have few or no symptoms. In this condition, the blood clot dissolves before causing any tissue damage in the brain.

“The patient may recover spontaneously, but it’s a warning. Once you get it, a major stroke can happen as early as on the same day. One patient had three or four mini strokes, then a major one on the way to hospital,” said Dr Ravindra, adding that mini strokes should be investigated to find the cause, such as

Signs of stroke

• Major stroke:



Face drooping to one side



Slurred or unclear speech



No control of limbs



Severe giddiness



Blurred vision in one eye, or seeing double

• Haemorrhagic stroke:



Thunderclap headache, which becomes intense within a few seconds

Even if there are no other symptoms, patients should call 995 and go immediately to the hospital.

narrowing of blood vessels or an irregular heartbeat.

“These are treatable conditions, and future strokes can be prevented.”

Reduce the risks

The biggest risk of an ischaemic stroke is uncontrolled high blood pressure. People with diabetes and high cholesterol, and those who smoke, may also be at risk. In the elderly, strokes may be caused by heart problems, such as atrial fibrillation (irregular heartbeat) or a clot in the heart that moves to the brain. In haemorrhagic strokes, the risk factors are uncontrolled high blood pressure or an undiagnosed aneurysm (ballooning of the blood vessel in the brain).

“Many risk factors are modifiable and controllable. Quitting smoking, regular exercise, healthy eating, routine screening — these reduce the risk. Blood thinners can help prevent future strokes, but the medication must be taken daily. Miss one day and your risk increases,” he said.



Dr Ravindra Shekhawat said that arriving at the hospital early increases the chance of removing a stroke-causing blood clot and better recovery.



»»» The dental plug, which is 3D-printed and naturally biodegrades, includes a material that promotes bone growth.



»»» The plug is placed into the space left behind after a tooth has been extracted, and acts as a scaffold for bone to grow.



»»» It is left in place until enough bone has grown for an implant to be inserted into the socket.

Photos: Eddie Teo

Faster, cheaper, less painful

A clinical trial is underway to test an improved second-generation 3D dental plug, which helps patients grow their own bone for a dental implant.

by Suki Lor

If it does well, this dental plug will revolutionise the dental implant (replacement tooth) treatment process and cut costs significantly.

The procedure using the dental plug is to preserve bone for dental implants.

The plug is inserted into the socket of an extracted tooth and degrades as the bone grows there. Bone in the socket is essential for a dental implant to be fixed.

The clinical trial is currently recruiting 138 patients and will be completed by 2021. It is conducted by the National Dental Centre Singapore (NDCS) with the Singapore Clinical Research Institute and local medical technology company, Osteopore. The dental plugs, originally developed by engineers from the Nanyang Technological University, will be manufactured by Osteopore.

The newer model

A first-generation plug was tested on 13 patients in 2016 and approved for mass production by the Health Sciences Authority. It uses a material called polycaprolactone, which can be broken down and absorbed by the body over time.

This second-generation plug goes further. In addition to design modifications, it has tricalcium

phosphate added to it, which helps bone grow faster while reducing the time for the plug to degrade. This allows implants to be placed three to six months earlier than before, said Clinical Associate Professor Goh Bee Tin, Director, Research and Education, NDCS, who is leading the trial.

"Polycaprolactone on its own takes about 18 months to degrade, which is a bit too long. With tricalcium phosphate, the degradation time is cut to 12 months. As the plug degrades, natural bone grows in the tooth socket," said Prof Goh.

No need for bone grafts

After a tooth is extracted, if a patient wants a tooth implant, he usually needs to wait about two to three months for bone to grow in the tooth socket. If the bone tissue has shrunk too much, a bone graft may be needed.

For large grafts, bone is surgically taken from the patient's own chin, jaw, skull or hip. If a small graft is needed, animal-derived bone can be used, but this is a costly option and may not be acceptable for religious reasons.

It takes five to 14 days to recover from a bone graft, and patients may suffer complications such as pain, swelling and infection following the surgery. Also, it takes six months for the

graft to heal before an implant can be put in.

Some patients back out of having implants because they were not expecting such invasive surgery, said Prof Goh.

With the plug, the procedure is less painful because patients can avoid the bone graft, since the plug is designed to be inserted into the tooth socket immediately after a tooth extraction.

How the plug works

The plug acts like a scaffold to prevent shrinkage in the jaw bone that supports the tooth, and promotes bone growth so that a dental implant can be inserted.

"Like a building's scaffolding, it forms the foundation for the bone cells to attach to," she said.

Prof Goh said that when the plug becomes available this year, it will be the first such 3D-printed scaffold, which is porous enough to allow blood and bone cells to penetrate through the plug.

The plug also has wider applications beyond dentistry. It has since attracted interest from surgeons in various fields overseas, including Germany, Turkey, Malaysia, the US, and India.

Joining the clinical trial

Patients interested in joining the clinical trial can call 6324 8754/6588 7413 or email to dentalplug@ndcs.com.sg. Candidates can only join the trial if the tooth in question has not yet been extracted.



»»» Associate Professor Goh Bee Tin is spearheading a clinical trial that will revolutionise the dental implant treatment process.

Delicious but deadly

Hepatitis E linked to undercooked pork, pig liver and offal, study finds.

Overcooked pig liver may not taste good, but undercooked liver can be harmful.

According to a study by the Singapore General Hospital (SGH), eating undercooked pig liver heightens the chance of getting hepatitis E infection. Hepatitis E is a virus that infects the liver, and can be dangerous for pregnant women, those with a weak immune system such as transplant patients, and those with a chronic liver disease.

"The safest way of consuming food, including pork, is to cook it thoroughly," said Dr Chan Kwai Peng, senior author of the study, and Senior Consultant, Department of Microbiology, SGH.

Published in peer-reviewed medical journal *Zoonoses and Public Health*, the article revealed that the incidence of hepatitis E in Singapore has been trending upwards — from 1.7 cases in 100,000 residents in 2012 to 4.1 in 2016 (or 1 in 25,000). The hepatitis E-infected individuals tended to be Chinese men aged 55 years and older.

The study findings also suggested that hepatitis E

was increasingly prevalent in the resident population, whereas it had been a disease that was mainly imported from the Indian subcontinent.

The researchers had examined 449 archived serum samples collected between 2014 and 2016, as well as 36 pig liver samples bought from markets. Genotypes (the genetic makeup of cells) obtained from 143 human samples identified the majority to be genotype 3, 21 to be genotype 1, and one to be genotype 4. Furthermore, genotype 3a was found to be the likely cause of indigenous infections in residents, which showed a genetic similarity to the genotype 3a strains detected in pig livers.

This link between the strains in the majority of human samples and those in pig livers consumed by the public suggests a possible food-borne route of hepatitis E infection in Singapore, the research team said.

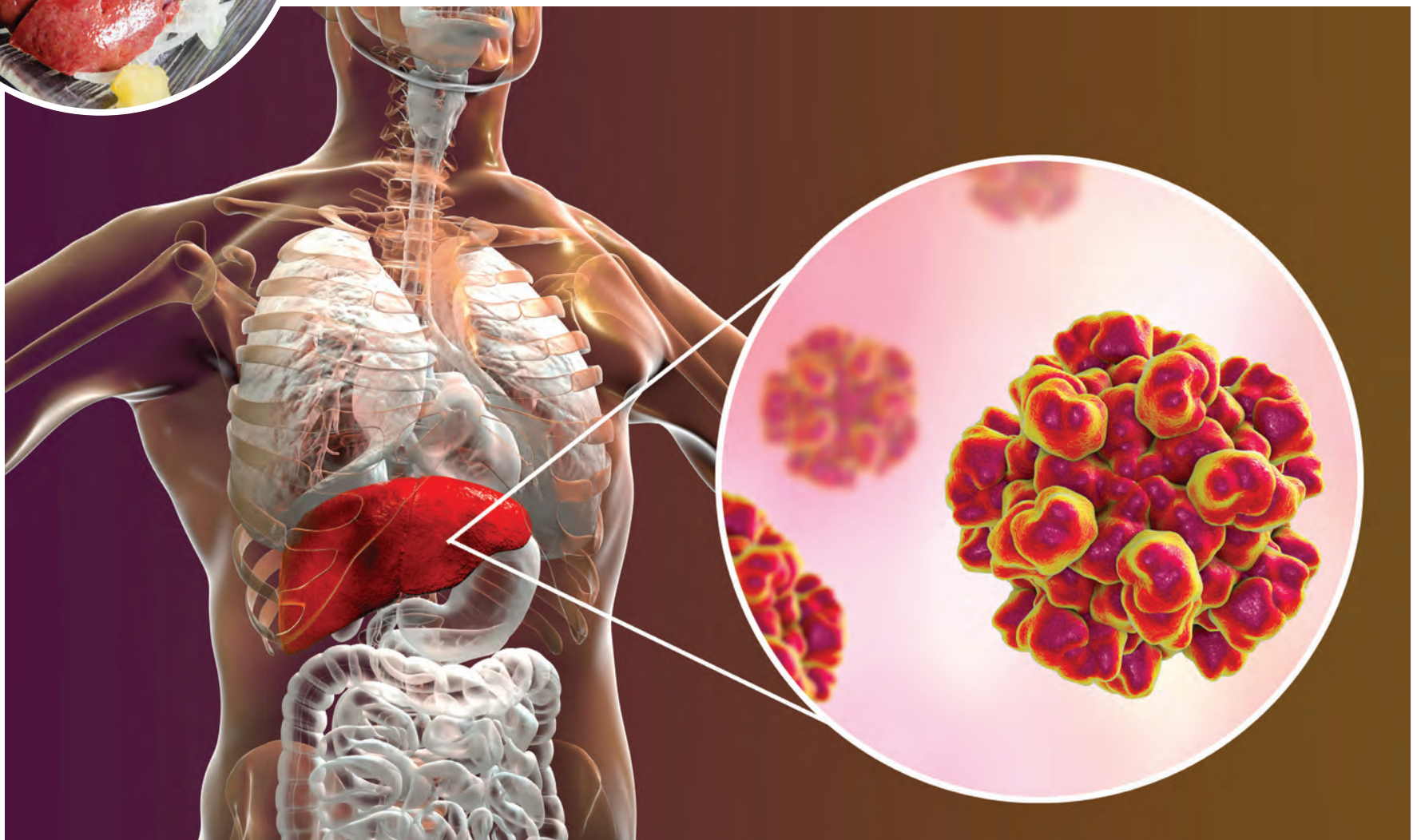
"Although we could not ascertain if pig liver is the main contributor of hepatitis E cases in Singapore, we observed that pig liver can be found in many

local dishes. As most people like it a little undercooked for its texture, this may put them at risk of hepatitis E infection," Dr Chan advised.

The virus is spread through water contaminated by faeces, or eating raw or undercooked meat of infected animals. Animals such as pigs, wild boar and deer are zoonotic reservoirs of hepatitis E and other diseases that can be transmitted to humans. In Europe, the consumption of raw or undercooked pork or pork products is the most common cause of hepatitis E infection. In 2010, Hong Kong's Centre for Food Safety issued a report about eating undercooked pig livers for the same reason.

Most people infected with the virus show no symptoms, and the infection goes away on its own after a few weeks. It usually does not lead to long-term illness or liver damage, but can be serious for some groups of people, as mentioned earlier. When symptoms do show up, they include running a fever, feeling very tired, and becoming nauseated and jaundiced.

◀◀◀ The hepatitis E virus can be spread through eating undercooked meat of infected animals, such as pigs.





»»» These artworks were produced by patients with type 1 diabetes and their carers to depict their struggles and hopes.

Talking diabetes through art

An art installation at Singapore General Hospital puts the spotlight on the struggles of people living with type 1 diabetes.

From the pain of insulin injections to the fear of hyperglycaemia (overly high blood sugar levels) or hypoglycaemia (overly low levels), worry over their baby's

safety during pregnancy, and misunderstanding and judgement of others that they could have prevented their condition — these are some of the feelings that people living with type 1 diabetes

or T1D struggle with everyday.

Unlike the more common type 2 diabetes, which is often associated with obesity and lifestyle, T1D is an autoimmune disease where the immune system attacks the cells in the insulin-making pancreas. It isn't known why this happens. For people with the disease, it means their bodies can't produce the hormone at all. They have to inject themselves with insulin everyday, and they have to be careful with what they

eat and how they exercise.

No Sugarcoating – the Type 1 Diabetes Journey is an art installation at the ArtsExpression Wall at Singapore General Hospital Block 2 Level 1. On 2 November 2019, more than 50 T1D individuals and their carers participated in a workshop to produce pieces of art that reflect their experiences living with the disease, their fears and struggles, and their hopes. The exhibition is on till end of February 2020.



Make tomorrow better with a Curtin University Health Sciences degree.

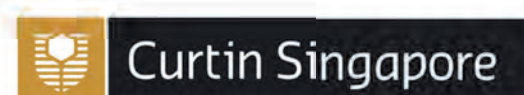
The Curtin University School of Nursing, Midwifery and Paramedicine delivers a range of innovative programs taught by leaders in the health industry. Thought-provoking theory is complemented by life-changing clinical experiences to enhance your nursing career that lies ahead.

Curtin University is ranked in the world's top 100 in the Shanghai Ranking's Global Ranking of Academic Subjects 2019 – Nursing.

Part-time courses available at Curtin Singapore campus:

- **Bachelor of Science (Nursing) Conversion Program for Registered Nurses (Top-up)**
Accredited by the Singapore Nursing Board.
Intake: February and July, Course duration: 23 months
- **Graduate Certificate/Diploma in Wound, Ostomy and Continence Practice**
Intake: February, Course duration: 8/16 months
- **Master of Science (Health Practice) Clinical Leadership Major**
Intake: February and July, Course duration: 28 months

To find out more about the course information, visit us at bit.ly/2A011X1 and contact us at **6593 8000** or info@curtin.edu.sg.



Straight to the point

Getting to different parts of SGH Campus no longer requires looping through a single interconnected network, with three new routes providing direct access.

The new Outram Community Hospital (OCH) may have opened its doors with the completion of the new SingHealth Tower, but the rejuvenation of the SGH Campus is nowhere near the halfway mark. With construction work on other buildings in the healthcare hub still continuing, the Campus is expected to be a hive of activity in years to come.

Buildings coming up on the Campus will house a new National Cancer Centre

Singapore (NCCS), Emergency Medicine, as well as Singapore General Hospital (SGH) and National Dental Centre Singapore (NDCS).

In anticipation of congestion with the old road network, three separate, non-connecting road systems will serve different areas and institutions on the rapidly expanding Campus. This means that motorists heading to different institutions or centres can now get to their destinations more directly.

At the same time, two separate shuttle bus services will serve patients, picking passengers from the two Outram Park station exits for the North-East and East-West lines. They will cut travelling time as one service will stop at the National Heart Centre Singapore (NHCS) and OCH only, while the other service stops at the Diabetes and Metabolism Centre (DMC), Singapore National Eye Centre (SNEC), SGH Specialist Outpatient Clinic (SOC) and NCCS.

However, the way to the SGH Emergency Department remains unchanged. Drivers heading to the SGH Emergency Department should preferably enter SGH Campus via College Road from Jalan Bukit Merah.

Three separate routes

Legend

- Drop-off / pick-up point
- Carpark
- Public bus stop
- MRT station

SGH Emergency, Blks 2/3 & 4, NCCS
Use Jalan Bukit Merah and enter via College Road

SGH Blks 5 and 6/7, Academia, SNEC and DMC
Use Outram Road and enter via College Road

OCH/SingHealth Tower and NHCS
Use Kampong Bahru Road and enter via Hospital Boulevard OR
Use New Bridge Road and enter via Hospital Drive (new)

NDCS, Outram Polyclinic, Blood Bank and HPB
Use Outram Road and enter via Second Hospital Avenue



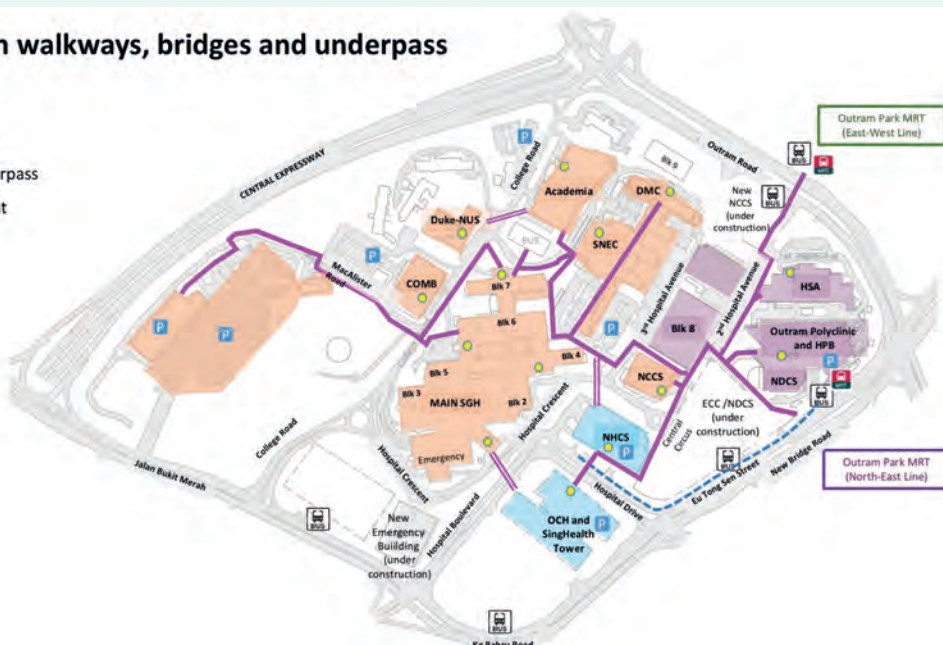
If you are driving...

- You need to take different roads to reach different places directly
- Note that some roads have been closed and new roads created
- OCH has some 1,000 parking lots, which will open in phases
- Rates at the open-air and multi-storey Car Park H are lower than other car parks on Campus

Linked pedestrian walkways, bridges and underpass

Legend

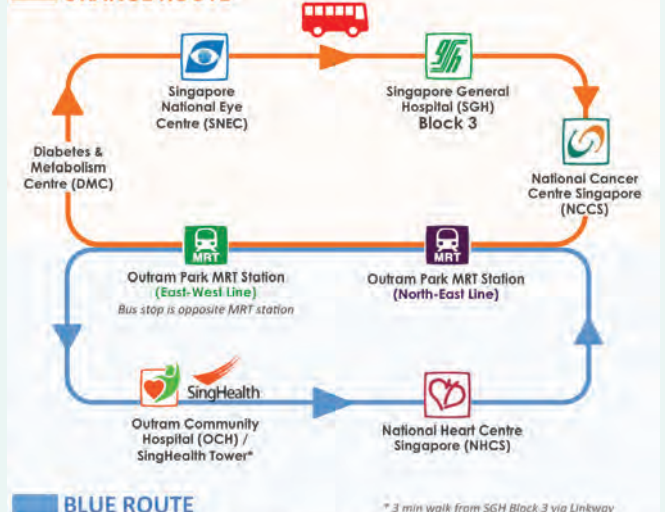
- Pedestrian walkways
- Overhead link or Underpass
- Drop-off / pick-up point
- Carpark
- Public bus stop
- MRT station
- Recommended route from MRT to NHCS and OCH/SingHealth Tower



If you are heading to or from the main SGH hospital complex or car parks...

- Take the sheltered paths, bridges or underpass for pedestrians if you are walking
- Take the free shuttle buses that ply regularly from the MRT station exits or Car Park H at MacAlister Road

ORANGE ROUTE



BLUE ROUTE

OPERATING HOURS
8 am to 7 pm, Monday to Friday | 8 am to 2 pm, Saturday
No service on Sunday and public holidays
Frequency: Approx. 20 minutes

Blue, orange shuttle bus routes

If you are taking the shuttle bus from the MRT station...

- Note that there are two services serving different centres
- All bus stops, frequency and operating hours remain unchanged

Cancer: Facts & Figures

● BREAST

- **MOST COMMON for women**
- **2 TIMES** the risk for those with family history

● LUNG

- **3rd** most common for women and **2nd** for men
- **3 in 10** patients have **never smoked**

● LIVER

- **More than 70%** of Southeast Asian cases caused by Hepatitis B virus (HBV)

● STOMACH

- **DECREASING TREND** in incidence rate in Singapore
- More common in people aged **50-70 YEARS**

● CERVICAL CANCER

- **HUMAN PAPILLOMAVIRUS (HPV)** – the most common cause
- One of the **MOST TREATABLE** women's cancers due to **vaccines** and early detection via **PAP tests**

● OVARIAN

- **2nd most common female genital tract cancer**
- **2/3** of women were aged **55 or older** at time of diagnosis

● SKIN

- **MELANOMA** accounts for **75%** of all skin cancer deaths

● NOSE

- **6 TIMES** more common among Asia-Pacific islanders than other ethnic groups
- **3 in 4** first notice painless lump in the neck

● COLORECTAL

- **MOST COMMON for men and 2nd for women**
- **40%** increased risk in diabetics

● TESTICULAR

- One of the most common in young men aged **20-40 YEARS**
- **15-55 years old men** recommended to do monthly self-examination

● PROSTATE

- **3rd most common for men**
- **90%** found in early stage, resulting in **more effective treatment**

● BLADDER

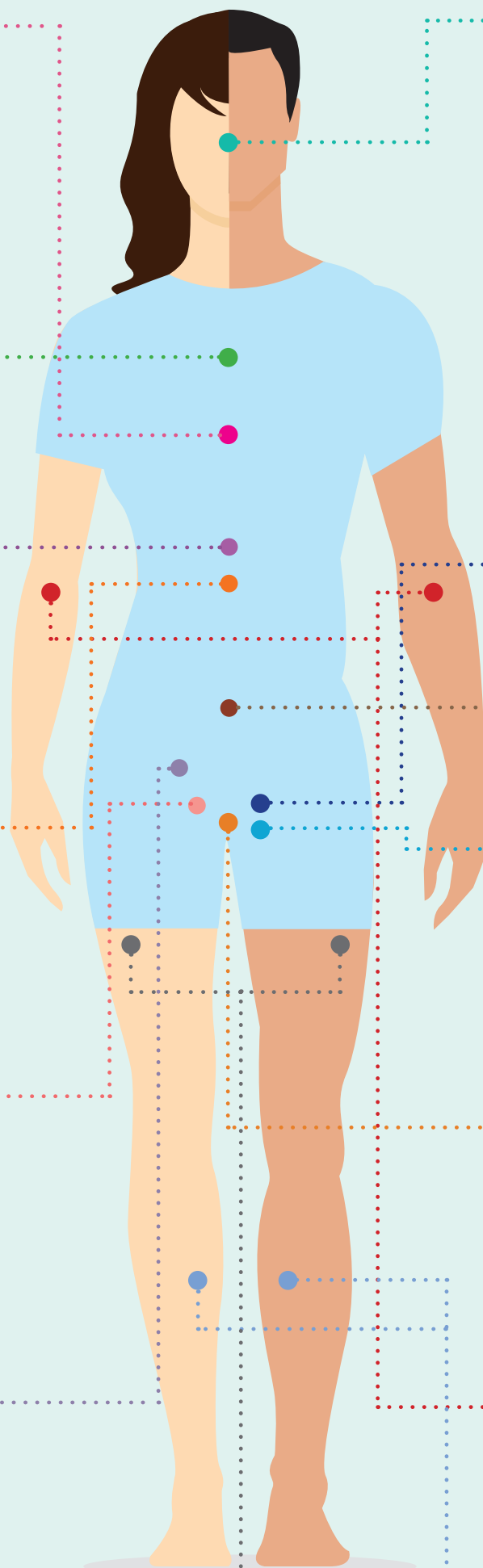
- **4 TIMES** more likely in men than women
- **Non-muscle invasive** cancer rarely spread and **CAN BE CURED**

● BLOOD

- **3 main types** – leukaemia, lymphoma and myeloma
- **80-90% CURE RATE** for childhood leukaemia in Singapore

● SARCOMA

- Can develop **ANYWHERE IN THE BODY** (such as bone, muscle, blood vessels or fat)



Following a “Night Owl” around

As patients sleep, she stays awake, patrolling the darkened ward till morning, keeping watch over them to prevent falls.

by Annie Tan

Past midnight on a Saturday as Singapore slept, Ms Gloria Soh, Assistant Manager, Human Resources, Changi General Hospital (CGH), was struggling to keep her eyes open while on an overnight shift.

As a volunteer “Night Owl” at CGH, she was assigned to a ward of 30 patients, not to deliver patient care, but patrol the ward from 10pm to 8am to ensure that nobody does anything that could result in a fall. She is like a second pair of eyes for the nurses — a lookout scout.

She will alert a nurse if she sees something that may cause a fall. That would be mainly patients getting out of bed unaided to do any number of things — wander around, ask for an extra blanket or a cup of water, go to the toilet, or, in some cases, try to go home.

Staying awake

Of course she does other things, too. On her first patrol, she provided comforting conversation

(in soft tones) to a patient who could not sleep and to another who was just lonely. She had to call the nurse almost hourly for an aged patient who had bladder problems. Another patient with a high risk of falling kept insisting on going home, so the nurses had to wheel his bed nearer to their station for closer supervision.

“I expected things to slow down at night but, surprisingly, patients were quite active. Some had their own domestic helper or caregiver to see them through the night, while many were not as fortunate,” said Ms Soh.

There was one night when she had been walking slowly round and round the ward non-stop. “I was getting very tired. I took small sips of water to refresh myself. Then a ‘code blue’ incident shook me awake — a patient with phlegm blocking his airway was a medical emergency. As the whole Care Team had to attend to the case, I had to be extra vigilant during my lookout session.”

Why she signed up

“Night Owl” was named based on the acronym O.W.L. (Night Observation by Watchers to Lower fall rate Programme). It was started by Ms Lau Soy Soy, Assistant Director, Nursing, CGH. Piloted in October 2017 and launched in October 2018, it supports nurses on night shift with continuous surveillance.

Its main aim is to reduce falls, which were found to increase at night, as serious falls could lead to multiple fractures and extended hospitalisation.

The hospital now has a pool of 40 to 50 “Night Owls” comprising both nursing and non-nursing staff.

Challenges and rewards

Ms Soh found 3am and 5am the most challenging period during her shift. “I would be like a walking zombie. My body clock was telling me to sleep.”



Photo: Eddie Teo

Despite knowing the challenges, she still volunteered, remembering her grandfather, whom she lost to lung cancer when she was a teenager.

“Losing him steered me away from teenage truancy. He really inspired me because although he was very weak from chemotherapy, lost his voice after

surgery, and was suffering, he put on a brave front.

“Watching him struggle, I learned how patients feel. That’s why I wanted to do this. And I can tell you that there’s definitely an intangible sense of satisfaction that you get when you do something meaningful and touch someone’s life.”

The most useful health app for Singaporeans!

HealthBuddy

An all-in-one mobile app that helps you manage clinic visits for yourself, or any of your adult/child dependants.

Manage Appointments
View and choose all available slots.

Clinic Queue Updates
“LIVE” updates on number of patients ahead of you.

Mobile Pay
Avoid the queues and pay anytime, anywhere.

SingHealth Doctors
1,000 internationally qualified SingHealth doctors for your treatment needs.

Plus! The latest Health Tips from your doctors!



Health Buddy is available Free!
Download on the App Store
GET IT ON Google Play

I expected things to slow down at night but, surprisingly, patients were quite active. Some had their own domestic helper or caregiver to see them through the night, while many were not as fortunate

Ms Gloria Soh
Assistant Manager,
Human Resources,
Changi General Hospital

Photo: Vernon Wong



When radiation is a good thing

To radiation oncologist Dr Anuradha Thiagarajan, radiation is a positive, not negative thing.

by Suki Lor

She uses it to treat — and hopefully cure — cancers. Her task is to use the right amount, at the right spot, in the safest way, and for the best results.

“Along with surgery and chemotherapy, radiotherapy is one of the main treatments for cancer,” said Dr Anuradha Thiagarajan, Senior Consultant, Division of Radiation Oncology, National Cancer Centre Singapore (NCCS).

While working with cancer patients can be immensely rewarding, it can also be emotionally draining. Being aware of this and learning resilience strategies for wellness is key.

Dr Anuradha Thiagarajan
Senior Consultant, Division of Radiation Oncology,
National Cancer Centre Singapore

“Like chest x-rays, radiotherapy is painless. You don’t hear or see anything, but the x-ray energies used are much higher. It either reduces the number of cancer cells or eliminates them in the area where it is given.”

As radiation oncology is a clinically focused specialty, she is often in clinics assessing patients with newly diagnosed cancer or previously diagnosed cancer but with new problems that need attention.

She discusses treatment options, including radiation therapy, with patients and caregivers. She counsels them on its benefits and side effects, and tries to dispel their fears.

“Common fears are that it is painful, will make them radioactive, will make them lose their hair, or cause the cancer to spread more quickly. Addressing these concerns early is crucial to ensure patient compliance with treatment.”

If they choose to have radiation therapy, the next step is planning the treatment. “This is becoming increasingly complex, with advancements in radiotherapy delivery. I work with dosimetrists and physicists to generate plans that will maximise the dose to the tumour while minimising the dose to the surrounding tissues.”

Proton and photon beam therapy

Dr Thiagarajan believes that radiotherapy is highly beneficial and cost-effective. “It is used for cure, either alone, in combination with chemotherapy, or as an adjunct to surgery in 40 per cent of cancers.”

She outlined major technological advances in the field over the last few decades. “Intensity-modulated radiation therapy and image guidance have allowed us to treat tumours in challenging locations, such as the head and neck, with high doses while sparing the adjacent critical tissues.”

Also hugely exciting for her is proton beam therapy, which will be available in the coming years at the new NCCS building.

“Protons target cancer cells with precision and with minimal exit dose. This means, for the same radiation dose, the severity of short- and long-term side effects of radiotherapy on the surrounding healthy tissues and organs will be reduced.”

Focus on lung cancer

A specialist in thoracic malignancies, Dr Thiagarajan often sees patients in the advanced stages of the disease.

“A small tumour in the lung often doesn’t produce symptoms, but when they do appear, the

cancer is usually fairly advanced and, invariably, some patients succumb to their illness. That said, the treatment and care landscape for someone diagnosed with lung cancer today is starkly different from that 20 years ago. Lung cancer research has become so advanced that there’s plenty to be hopeful and optimistic about.”

Her husband’s an oncologist, too

Dr Thiagarajan is married to a surgical oncologist, Professor Gopal Iyer, Senior Consultant and Head, Department of Head and Neck Surgery, Division of Surgery & Surgical Oncology, Singapore General Hospital (SGH) and NCCS. Prof Iyer is also the head of NCCS’ Division of Medical Sciences.

They met in 2004. It did not take long for her to realise that he was “kind, funny, clever, a most incredible storyteller... and definitely a keeper”.

Although they both work at NCCS, they try to keep their work and home life separate, and rarely talk about work at the dinner table. “Having two young children, who make sure our attention revolves around them, certainly helps,” she laughed.

At work, their different specialties mean their paths seldom cross. “I’m in my subterranean bunker and he’s in his lab or the operating theatre, but it’s good because you don’t really want to live in each other’s pockets. I do, however, have a strong contextual understanding of his work and stresses, and he of mine. He’s an amazing sounding board and gives the best advice.”

Why she chose this field

Having spent several rotations as a young intern in medical and radiation oncology, she was instinctively drawn to the field, as the opportunities to help patients in meaningful ways were immense. She also credits “phenomenal mentors for being a constant source of inspiration and guidance”.

But she does acknowledge the high burnout rate in oncology.

“While working with cancer patients can be immensely rewarding, it can also be emotionally draining. Being aware of this and learning resilience strategies for wellness is key,” she said.

“I try to ensure that I get enough sleep; I practise mindfulness and have hobbies that have little to do with medicine. I also have a good support system at work but I’m by no means perfect. I’m still a work in progress.”

Sidestepping severe dance injuries



How to prevent common dance injuries from progressing to irreversible damage that restrict mobility.

by Annie Tan

From traditional dance forms to modern genres and fitness routines, more people are embracing dance as a performing art, leisure activity and exercise today.

With the growing popularity of the art form, dance-related injuries are also becoming more widespread. Injuries may seem trivial initially, but not getting foot or ankle sprains or mild injuries seen to can lead to serious problems or complications later.

"Ankle sprains, apart from causing injury to ligaments and tendons, can also cause internal cartilage injury. A severe sprain can also cause fractures, while an unstable ankle (one that is prone to recurrent sprains) can lead to irreversible arthritis in the long run if left untreated," said Dr Kevin Koo, Consultant, Department of Orthopaedic Surgery, Singapore General Hospital (SGH).

The most common reason for people to visit the emergency department, acute ankle sprains account for up to 40 per cent of all sporting injuries in some reports, Dr Koo said. "Of these, 20 to 30 per cent may develop chronic ankle instability, with some studies showing even higher figures."

Indeed, foot and ankle injuries are most common among dancers, in particular ballerinas, locally.

"Over the past three or four years, I have seen a steady 20 to 30 per cent increase in such injuries in my own practice," said Dr Koo.

Constantly adopting the *en pointe* position (standing

on the tip of their toes) can cause posterior impingement or pain at the back of the ankle, as well as *flexor hallucis longus* tendinopathy, which is inflammation or degeneration of the big toe flexor muscle.

Besides traditional ballet, contemporary pole dancing and cheerleading can also lead to injuries, but of a different kind. Dr Koo said these groups have a greater tendency of falling and fracturing their bones. An increasingly popular exercise among older people is Zumba, a vigorous dance form that can aggravate problems relating to wear and tear over the years.

Seek treatment early

Dance injuries can occur at every skill level and age group, said Dr Koo. In young children, they may be the result of an attempt to perfect a technique without proper coaching or progressive training. In seniors, they tend to be due to the lack of proper conditioning before trying out a vigorous routine.

Possibly due to the lack of public awareness, many people dismiss such injuries instead of seeking timely treatment. It is known that many dancers, because of their passion for the art form, will keep on dancing even when they are in pain, Dr Koo said, citing studies from the West.

"By the time they seek treatment, it is no longer a simple ankle sprain — the ankle has become arthritic. We cannot simply repair the ligament; we have to do an ankle replacement or ankle fusion. Such surgeries could have been avoided if they had come in for treatment early," said Dr Koo.

For mild injuries, such as

simple first-time sprains, doctors may simply recommend rest, ice, compression and elevation (commonly referred to as RICE). For more severe or recurrent injuries, a referral to an orthopaedic specialist may be necessary.

To be sure, the majority of dance injuries can be managed with the help of a physiotherapist, who may recommend exercises to strengthen and improve the range of movement and positioning.

Patients who cannot return to normal activity after physiotherapy may have to consider surgery. The latest minimally invasive techniques reduce pain, wound complications, and scarring. In the case of ankle injuries, a keyhole surgery can address cartilage defects, or tighten the ligament and repair it to reduce instability.

Dance injuries may be minimised by engaging a professional coach to learn proper techniques, and access fitness levels and training intensity. Training progressively and knowing one's limits can reduce injuries, too.

"Warm up exercises prepare the body by gradually increasing heart rate and circulation, thus increasing blood flow to the muscles. Keeping the muscles warm will prevent acute injuries, such as muscle strains, and overuse injuries by allowing the body to prepare steadily and safely. Stretching the muscles also prepares them for physical activity," Dr Koo added.

Although dance is a healthy form of exercise and self-expression, Dr Koo said it is necessary to take proper precautions, as well as seek appropriate medical treatment to prevent more serious and debilitating injuries.

»» Not getting foot or ankle sprains seen to can result in serious complications later, said Dr Kevin Koo.



Photo: Justin Loh



Spices replace salt in this *ayam masala* dish.



Ayam masala and green leafy vegetables are coarsely minced so that less chewing is required.



For patients with greater swallowing difficulties, *ayam masala* and vegetables are finely minced.



Dim sum chicken with broccoli is another nutritionally balanced meal designed by Ms Magdalin Cheong and her team.



Here, *dim sum* chicken with broccoli and also the rice are blended for easy swallowing and attractively presented to boost the appetite.

It's the real thing... modified!

Textured foods can help aged patients, who cannot manage normal meals, get the nutrition they need.

by Annie Tan

Many older people have difficulty eating due to swallowing and other eating-related problems. Besides medical reasons, weight loss, loss of appetite, and dehydration are common reasons they end up in hospital.

"If these problems are prolonged, they may get compromised or severe malnutrition, which can affect their immunity and mobility, and increase their risk of getting infection," said Ms Magdalin Cheong, Deputy Director and Head of Dietetic and Food Services, Changi General Hospital (CGH).

CGH's solution to this has been to modify full-flavoured normal meals so that patients can eat, enjoy them and thrive, regaining their weight, muscle mass and mobility.

Some of its warded patients get these meals, which are minced

finely or coarsely, or blended, and presented attractively.

However, when patients are discharged and later return for follow up visits, they exhibit a nutritional gap, possibly because caregivers were unable to make these meals at home. This prompted the hospital to explore ways of making the meals more widely available.

The end result is that the meals are now commercially produced by local company Health Food Matters as Delisoft Easy Meals, and are available online.

They are based on 14 recipes designed by Ms Cheong and her team, which include local delights such as fish *otah*, minced *ayam kurma* (curry chicken), chestnut chicken patties, nonya chilli fish, and braised ginseng chicken.

"Each meal meets the recommended daily intake and macronutrient needs of patients. We tailor them to ensure they're tasty



The textured foods are the brainchild of Ms Magdalin Cheong, Deputy Director and Head of Dietetic and Food Services, CGH.

and have a consistency that patients can swallow. We also test the food's density, 'flow-ability' and moisture content, and ensure it's safely packaged and stored," she said.

Patented for the Asia Pacific and Australia, the meals are halal, free of preservatives and monosodium glutamate, and affordable. They come frozen, and can be microwaved or steamed before eating.

CGH and several nursing homes now order them from the company, and the hospital even carries a selection for the public. A pilot study by the hospital found that nursing home patients gained more weight, mid-upper arm circumference and arm muscle on this diet than those on regular nursing home meals.

Do it yourself at home

Try your hand at textured meals with these tips

- **To make swallowing easier:** Coarsely mince, finely mince, or blend food after cooking. Soften food by increasing cooking time or use a slow cooker. Avoid very fibrous vegetables, such as celery, which may be hard to mince.
- **To improve taste:** Replace salt and high-sodium sauces with herbs and spices, such as curry powder, chilli powder, garlic, onions, coriander, thyme, basil, spring onions, and pandan leaves. Note that elderly patients tend to prefer stronger-flavoured food due to less sensitive taste buds.
- **To enhance appetite:** Avoid monotonous colours. Use healthy foods such as brown rice, carrots and green leafy vegetables for colour.

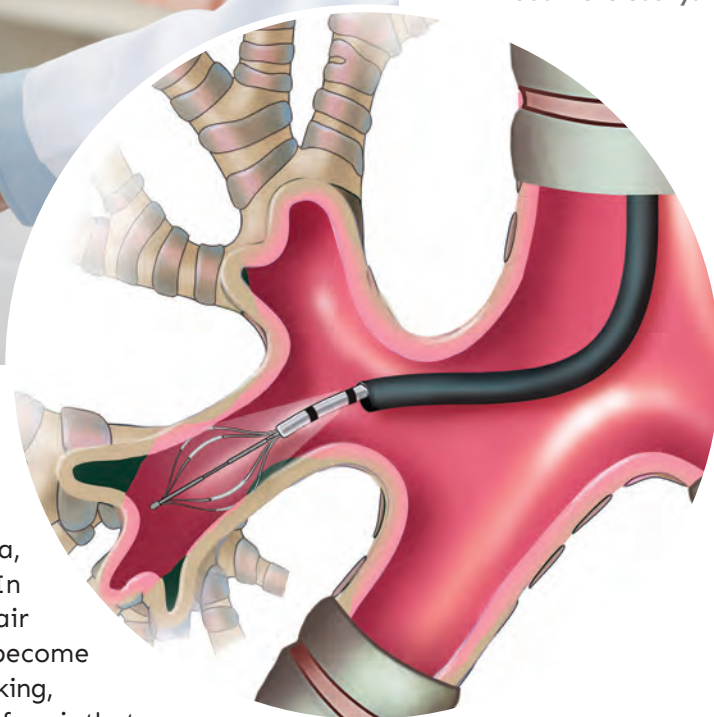
Letting the air out

A new procedure uses vapour to destroy diseased segments of the lungs, reducing breathlessness in patients with severe emphysema.

by Annie Tan



»» Thermal vapour ablation is a less invasive procedure to help COPD patients breathe out more easily.



When lungs have been so badly damaged by heavy smoking that coughing and breathlessness are frequent, medications may not completely relieve these symptoms. This is severe chronic obstructive pulmonary disease (COPD), one of the top 10 causes of death in Singapore.

Surgery to remove the most diseased parts of the lung may be necessary to help patients breathe better. The procedure, known as lung volume reduction surgery, is associated with complications such as air leaks and infections; it is not unusual to require extensive rehabilitation before and after the procedure. The severity of the underlying lung condition makes patients susceptible to these complications.

"Approaches via a bronchoscope offer a less invasive option than surgery, with a safer side-effect profile. Several options have been investigated that target an entire lobe of the lungs," said Dr Anantham Devanand, Senior Consultant, Department of Critical Care and Respiratory Medicine, Singapore General Hospital (SGH).

A new technique now provides similar benefits to bronchoscopic approaches without having to treat an entire lobe of the lungs. "Known as thermal vapour ablation, the approach is very targeted in only treating the most affected segments," Dr Devanand explained, adding that more of the healthy lung is preserved with this method.

Introduced in SGH in 2018 as an add-on option to standard treatment, thermal vapour

ablation is suitable for those suffering from severe emphysema, a type of COPD. In emphysema, the air sacs in the lungs become damaged by smoking, making it difficult for air that was breathed in to be exhaled.

"It's not that these patients can't get air into their lungs. They just can't get it out. Air gets trapped inside the chest, which becomes so full of air that the next breath is hard to get in," said Dr Devanand.

Breathe better

A person with healthy lungs easily breathes in and out 12 to 20 times a minute. But for someone with severe emphysema, taking each successive breath becomes more laborious and distressing. Thermal vapour ablation identifies the most over-inflated parts of the lungs for treatment so that the amount of air trapped in the chest is reduced, helping patients breathe more easily.

In this procedure, a computed tomography (CT) scan is used to map segments of the lungs to be ablated, and to generate a treatment plan. During the procedure, a bronchoscope is first inserted into the lungs to identify the target segment, then a catheter is inserted through the scope, and hot vapour is delivered to ablate targeted areas.

Performed under general anaesthesia, the procedure takes about 30 minutes, and patients can be discharged the same day. Over the following six weeks, the treated segment will gradually undergo destruction and scarring. Steroids, antibiotics and nebulisers are used to treat any lung infections or COPD attacks

that can be expected to occur two to six weeks after the procedure. Patients can have a second vapour ablation if they tolerate the first procedure well.

"The aim of lung volume reduction is about improving symptoms and exercise tolerance," Dr Devanand advised. Unfortunately, he added, the procedure does not cure COPD.

Stringent criteria

This procedure has stringent eligibility criteria for patients. Among other requirements, they must be diagnosed with severe emphysema or have less than 50 per cent lung function, are not on blood thinners, and are no longer smoking.

These patients would first have their medical care optimised at the COPD clinic helmed by SingHealth respiratory specialists Dr Jessica Tan and Dr Tiew Pei Yee. This care includes smoking cessation, vaccinations, pulmonary rehabilitation, and inhaler therapy. One such patient had a lung function of just 26 per cent. Four months after his first successful treatment, he returned for a second ablation.

Thermal vapour ablation is the latest addition to tools for providing comprehensive management for COPD patients; in the most severe cases, it can serve as a bridge to a lung transplant.



»» The new technique will preserve more of the healthy parts of the lung, according to Dr Anantham Devanand.

that... Singapore General Hospital's (SGH) corporate logo is a symbol representing its reputation built over many years of dedicated service? We do not allow the use of our logo in any way or for any purpose without our express or written consent. We take any inappropriate use of our corporate logo seriously.

Recently, a fake invoice bearing the SGH corporate logo was created with the purpose of soliciting money, and was sent to at least one person. It was not clear how the scam was supposed to work. However, when it was brought to SGH's attention, the hospital made a police report as custodian of its reputation.

We advise patients and members of the public to contact the hospital at **6222 3322** or private message SGH on Facebook when in doubt about the authenticity of any document bearing the SGH logo or name.



Singapore General Hospital
SingHealth



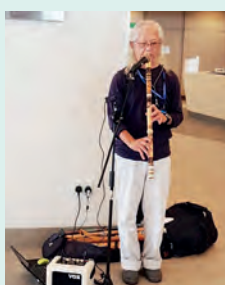
that...

members of the public are welcome to play the pianos at Changi General Hospital (CGH)? Volunteers can also book regular slots in advance via CGH's online booking platform.

Named Sound of Joy, the music volunteer programme aims to bring music and cheer into the hospital grounds. The programme came about when a relative of a CGH staff donated a baby grand piano in 2015. CGH saw it as an opportunity to encourage social cohesion and strengthen community bonds while bringing comfort and joy to patients, visitors and staff alike.

Since its launch, Sound of Joy has been well received, with approximately 35 slots booked monthly by regular volunteers. Besides piano performances, individuals and groups who play other musical instruments have also come forward to volunteer their time and skills.

Those who are keen to join the programme can reserve a slot (in 15-minute, 30-minute or 1-hour intervals) via <https://soundofjoyatrium.simplybook.asia/v2/>.



Q&A

HealthXchange.sg

How much bleeding is too much?



My helper seemed to have lost a lot of blood when she cut her finger while preparing food. She said she was okay but I was quite worried. The bleeding stopped after a while. In any case, should I have sent her to the doctor? What should I do if something like that happens again?

FIRST AID TREATMENT FOR WOUNDS



Some seemingly serious-looking injuries bleed very little, whereas cuts on areas of the body that are more richly supplied with blood vessels, such as the scalp, or cuts that result in injury to bigger blood vessels near the neck, armpits, thigh, back of knee or ankle region, may bleed profusely.

To stop bleeding, wash the wound with water to remove any toxins or dirt. Then, apply pressure on the wound and lift the injured area above the heart level to reduce or stop bleeding as well as avoid swelling of the area.

Seek medical attention if the wound is still bleeding despite prolonged manual compression, or if other symptoms, such as giddiness, chest pain or shortness of breath, occur.

An average person has about five litres of blood. Healthy individuals may start to display signs of excessive blood loss on losing 750ml or 15 per cent of blood, although those with other medical conditions, such as low blood count or a history of heart attack, may show symptoms before losing that amount.

Watch out for signs of excessive blood loss, such as damp, pale skin, shortness of breath, a faster heart rate, overall weakness, faint pulse, dizziness, and purple lips or nails. Heavy bleeding can cause a drop in blood pressure, which then leads to an insufficient blood supply to the organs, resulting in shock. Depending on which organs are affected, there can be loss of consciousness from inadequate blood flow to the brain, blood loss-induced heart attack, or even acute kidney injury.

When dressing a wound, be sure to use a sterile gauze or bandage. Make sure the wound is clean and change the dressing regularly. Get a tetanus injection if the wound is very deep or if you suspect that the puncture wound isn't clean.

DR JOY QUAH

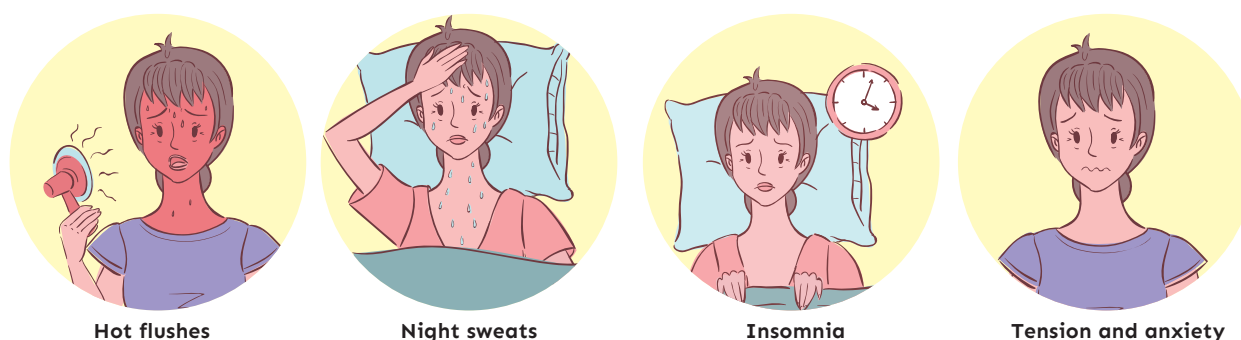
Associate Consultant, Department of Emergency Medicine, Singapore General Hospital

Anxious at menopause



How exactly are the emotional anxieties at menopause different from the usual type of anxieties people have?

MENOPAUSE SYMPTOMS



It is not uncommon for women to experience emotional changes during the perimenopausal period. This is when the menses is changing — becoming lighter or heavier, irregular, or less frequent. This is largely due to hormonal changes, particularly the drop in oestrogen (the "feel-good" hormone), during those years. Women often report prominent physical symptoms, such as hot flashes, night sweats and insomnia, along with palpitations, or tension and anxiety.

In women of other age groups, typical anxieties include excessive and constant worrying thoughts, a state of tension, and accompanying physical symptoms, such as palpitations, breathlessness, giddiness, tremulousness, muscle cramps, and headaches. These can be persistent or episodic — they can come in intense waves as seen in panic disorders, or occur in only specific situations. Hormonal changes are less likely to be a main cause of anxiety but some patients have reported that their anxiety tends to worsen before their menses.

DR HELEN CHEN

Head and Senior Consultant, Department of Psychological Medicine, KK Women's and Children's Hospital

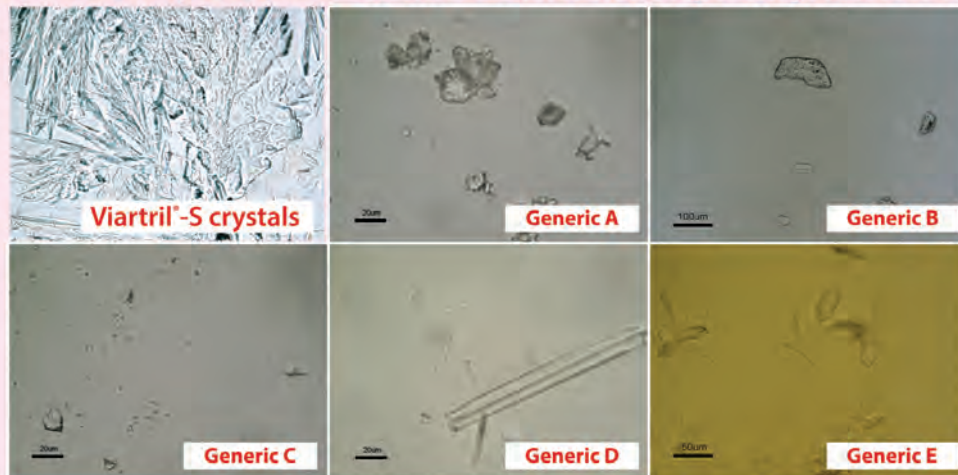
Viartril-S®

The Patented Prescription-Grade Crystalline Glucosamine Sulphate for Joint Health^{1,2}

In Singapore, glucosamine products are sold to public without the need for registration & approval by HSA. This means that even simple checks on purity are not required. So, the safety and efficacy of a brand can only be confirmed by lab & clinical studies.

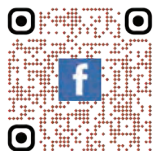


The microscopic structure of Viartril-S is different from generic glucosamine:



1. Dario Gregori et al. JAMA. 2018;320(24):2564-2579. 2. Olivier Bruyère et al. Seminars in Arthritis and Rheumatism 44(2014) 253-263. 3. Bruyère O, Allman RD, Reginster JY. Semin Arthritis Rheum. 2016 Feb;45(4 Suppl):S12-7.

LIKE US ON FACEBOOK!



facebook.com/viartrilsingapore/

Distributor: Pharmline Marketing Pte Ltd
Tel: 6286 0291 Website: www.pharmline.com.sg



The glucosamine brand used in
all successful clinical trials³

GLUCOSAMINE:
Not effective or not the right
BRAND of glucosamine?

Before buying a glucosamine brand,
ask yourself these questions:

1. How many clinical studies have proven that the brand works for painful joint conditions?
2. How many clinical studies have shown that the brand does not work?
3. How many long term, large-scale studies were conducted using the brand to prove its safety for long-term use?

For Viartril-S:

1. There are more than **100** clinical studies and all the studies have proven that Viartril-S works for painful joint condition.
2. No clinical studies have shown that Viartril-S does not work.
3. There are long-term studies using Viartril-S involving over 7000 patients proving its safety for long-term use. These include one 2-year, one 2.5-year & two 3-year studies with an 8-year follow-up study which has also shown that **Viartril-S reduces the risk of Total Knee Replacement surgery by 57%.**

*What about the glucosamine
brand that you are taking?*

There are many brands of ivy leaves products in the market and they are not well regulated. How do you know which brand is effective and safe?

Here are some questions you can ask:

1. Is it clinically proven to be effective?
2. Is it clinically proven to be safe?
3. Is it recognised internationally or sold in just a few countries?
4. Is it reliable, i.e. has it been in the market for many years?

Prospan® has been proven effective and safe in numerous clinical studies with over 65,000 patients¹ comprising infants and adults from 0 to 98 years old. It is a trusted brand internationally for more than 68 years and sold worldwide in more than 100 countries.

What about the brand of ivy leaves product or cough remedy you are taking?

Do you know that not all ivy leaves extracts are the same? There are more than **150** varieties of ivy leaves!



Different sources
of ivy leaves



Different
extraction methods

Yield

= DIFFERENT
Active Components
& Quality of Extract

Only Prospan® special-ivy-extract EA 575®
has been extensively clinically studied.

PROSPAN®



Cough Syrup

Suitable for infants* & adults

“The European Medicines Agency (EMA) supports its use as an expectorant in case of productive cough. It is classified under well-established use.

(This means that there are bibliographic data providing scientific evidence of their effectiveness and safety when used in this way, covering a period of at least 10 years in the EU)².”

- › dissolves mucus
- › relaxes airways
- › relieves cough
- › anti-inflammatory

Special-
Ivy-Extract
EA 575®

- Pleasant taste
- Non-drowsy
- Sugar-free
- Alcohol-free
- No colourings



Like Us on Prospan®
Singapore Facebook!



www.facebook.com/prospansingapore

Distributor: Pharmline Marketing Pte Ltd
Tel: 6286 0291 Website: www.pharmline.com.sg

*Consult your doctor where necessary.

References:

1. Lang C et al. A Valuable Option for the Treatment of Respiratory Diseases... Planta Med 2015; 81: 968-974
2. Assessment report on Hedera helix L., folium, EMA/HMPC/325715/2017