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MEDICAL CENTRE

IN FOCUS



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Healthy cells left alone in
prostate cancer trial

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ECMO ups pneumonia
survival chances

HEALTHWATCH



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The real cause of back
and neck pain

So, this is what it feels like to be old!

Not a robot but old-age simulated
by an "age suit". It highlights how
the loss of muscle strength makes
the elderly more prone to falls

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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.

The roots of orthopaedic surgery

Staffed by general surgeons in the early days, the discipline is now highly specialised, with surgeons operating in seven areas, such as spine, sports medicine, and musculoskeletal tumours.

by Professor Andrew Tan
Head and Senior Consultant
Department of Orthopaedic Surgery
Singapore General Hospital

The development of orthopaedic surgery in Singapore mirrors closely that of the US and UK. Before World War II (1939-1945) and up to the early 1950s, orthopaedic conditions were managed by general surgeons with an interest in musculoskeletal trauma and fractures. No systematic or structured programmes were available, and equipment and instruments were crude.

It was only in 1951 that the practice was established as a separate clinical entity, and five years later in 1956 that the Department of Orthopaedic Surgery came into being. The first batch of local orthopaedic surgeons were trained in the 1950s, undergoing basic clinical training before proceeding to Britain for a postgraduate degree in the discipline.

In the 1950s, poliomyelitis was rampant, affecting many young children. Orthopaedic surgeons were involved in their rehabilitation, as doctors generally did not want to be involved in treating the disease and others such as tuberculosis, osteomyelitis, septic arthritis, and crippled children. In those days, orthopaedic surgeons also took

charge of chronic ulcers and hand deformities in leprosy. The department started to grow in stature and eminence after the late Professor N Balachandran took over in 1980. He spearheaded several service improvements for people with disabilities, spinal injuries, chronic sickness, and congenital deformities. He was also involved in setting up orthopaedic surgery departments in other hospitals, including Tan Tock Seng Hospital, Alexandra Hospital, and the now-defunct Toa Payoh Hospital, playing a crucial role in improving the practice in Singapore.

Teaching, research

Importantly, Prof Bala placed great emphasis on teaching and training the next generation of specialists so that patients could benefit from better care. That legacy continues today. Not only is SGH's Department of Orthopaedic Surgery the oldest in Singapore, it is today the largest and most established orthopaedic department in the country. It boasts seven orthopaedic subspecialties, including spine, adult reconstruction, sports medicine, trauma, musculoskeletal tumour, foot and ankle, and acute care. Two subspecialties have also been spun off into full departments in recent years — Hand and Reconstructive Microsurgery, and Plastic, Reconstruction and Aesthetic Surgery.

The department is at the

forefront of research and innovative processes, harnessing technology and partnering leading biomedical companies to improve patient care. The department's specialists have been quick to introduce and adopt new technologies in orthopaedics, such as artificial intelligence and 3D printing, scoring many firsts in the country and region. Not surprisingly, the department is recognised as the leading centre for minimally invasive orthopaedic and robotic surgery.

Indeed, given its size as well as the breadth and depth of its clinical services and experience, the department is well placed to lead in using such technology responsibly. Through well-designed clinical pathways and care integration, it is the only orthopaedic department internationally to offer a unique suite of clinically audited presurgery, surgery, and post-surgery care programmes.

A recent initiative is the same-day discharge for some hip replacement patients, which cuts short a typically three-to-four day hospital stay and lowers costs for patients. More of such short-stay procedures are expected to become available, benefitting patients undergoing other orthopaedic procedures. The department sees up to a quarter of Singapore's orthopaedic patients, handles more than 126,000 outpatient visits a year, and performs over 8,000 surgeries annually.



Photo: SGH



Photo: Vernon Wong

»» A mock-up of a spine procedure using an advanced imaging system, known as the O-arm, to guide surgeons.

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»» Dr Samuel Chew (right) putting a young Mr Nigel Chew through the moves in his “age suit”, which makes him feel like a frail old man. The straps stiffen his joints as in arthritis, a device under his feet creates a loss of sensation, and the goggles reduce his vision.

“ If you have very good muscle health, you cannot have weak bones. But if you have strong bones, you could still have very poor muscle health.

Dr Samuel Chew
Adjunct Assistant Professor,
Department of
Geriatric Medicine,
Changi General Hospital

”

While sarcopenia is evident in the frail and old, a surprising finding in the study was that it can also affect healthy seniors, said the study's principal investigator, Dr Samuel Chew, Adjunct Assistant Professor, Department of Geriatric Medicine, CGH.

The study, called Strengthening Health in Elderly through Nutrition, was conducted by CGH, SingHealth Polyclinics, and Abbott to look at the impact of nutrition on the elderly.

Phase 1 of this two-part study looked at 400 healthy people in Singapore aged 65 and older, and found that despite their apparent health, one in five were at risk of low muscle strength. Women fared worse, with 25 per cent of them having low muscle mass compared to 15.5 per cent of men.

More than half the participants did not have enough vitamin D, which is provided by sunlight, and is important for muscle function, immunity, and bone health. The irony is that they live in Singapore, where there is sunshine all year long, so they should have been able to get sufficient vitamin D easily.

The significance of the findings is that the participants were not those usually at risk, such as patients who were elderly, with multiple chronic medical illnesses, or critically ill.

“This was a very unique group of participants. They were

Can you future-proof old age?

Even healthy old people who are independent, eat well, and have no diseases can have low muscle mass, which puts them at risk of falls. But this can often be reversed.

by Suki Lor

Mr Nigel Chew, 27, can usually bound up the stairs two or three steps at a go. But in an “age suit”, he moves like a frail old man.

The suit makes him feel what it is like to be aged.

Some 20kg to 30kg are piled on to simulate loss of muscle strength. Straps stiffen his joints and restrict his movements to show him what arthritis feels like. A device covers the soles of his feet to simulate a loss of sensation in his feet (as in the case of diabetes) so that he can hardly feel the ground he walks on.

Mr Chew, an executive with the Office of Innovation, Changi

General Hospital (CGH), can now seriously empathise with the aged.

But he is lucky to be forewarned a long way in advance, so he can take steps to avoid some of the health problems associated with ageing. One of the main lessons he has learnt is the importance of building and maintaining muscle mass, which essentially means muscle strength.

Why muscle strength?

A recent local study has underlined the importance of having good muscle mass in old age. Low muscle mass (sarcopenia) not only affects overall health, but also makes walking difficult and puts a person at risk of debilitating falls.



Muscle medicine

The “medicine” for low muscle mass is exercise. This is where polyclinics can help patients, said Dr Tan Ngiap Chuan, Adjunct Associate Professor, Director of Research and Family Physician, SingHealth Polyclinics.

“Family physicians can provide guidance on a proper exercise programme, which could include calf-strengthening exercises. We want to standardise the way we measure muscle health, so that we can chart progress,” he said.

One easy way to gauge muscle health is to measure the circumference of the patient’s calves. If it is less than 33cm in men and 32cm in women, it reflects a higher risk of lower muscle mass. Exercise can increase the measurement.

Two simple exercises for muscle health:

- A single leg stand-up test: Sit down and lift one leg off the ground. Then try to stand upright with one leg balancing in the air. Hold the position for 3 seconds.



- Sit-to-stand for calf and thigh muscles: Stand up from an armless chair with your arms folded across your chest, then sit down. Do this 20 times at least twice a day.



mostly healthy, independent people living in the community, who eat normally, and have no illnesses or past history of them,” said Dr Chew.

In Phase 2, which will be completed this year, 800 elderly participants at risk of being malnourished will be placed on oral nutritional supplements. Researchers want to find out how it will affect their nutritional status, and their rates of hospital admission and re-admission.

Losing muscle after 65

Given these findings, Dr Chew expects the population at large to have even higher rates of muscle mass loss than the study group. According to Dr Chew, 30 per cent of older people living in the community are at risk of malnutrition, and the risk of losing muscle mass increases exponentially by about 13 per cent yearly after age 65.

He said that there is a correlation between muscle and bone health, and gains to be had by targeting muscle health. “If you have very good muscle health, you cannot have weak bones. But if you have strong bones, you could still have very poor muscle health.

“Muscle health comes from activity to which the bone — a living matrix — responds. The more weight and pressure you put on the bone, the stronger it gets.”

Muscle mass is important not only for mobility. “Muscles also store amino acids needed for normal functioning of the body,

and for recovery from illness, injury, and surgery.

“We need an ample amount of muscle mass. Having just enough may not be truly enough because it can be undermined by an illness, injury, or surgery to the point where a person can no longer walk. When lower-limb strength is absent, a person has a three to six times greater risk of falling than they normally do.”

However, it is often not too late to increase and maintain it. “The muscle mass status is modifiable,” Dr Chew added.

Asian data helps

An important aspect of the study was getting Asian data about elderly nutrition. Professor Teo Eng Kiong, Chairman, Medical Board, CGH, said that such data has been lacking because the majority of previous data was Western-based.

He said that this data can now be used to establish Asian norms on nutritional standards for the Nutrition Health for Elderly Reference Centre at CGH, which aims to be a leader in nutrition health for the Asian elderly.

Dr Low Yen Ling, Director of Nutrition Research and Development at Abbott in the Asia Pacific, noted that the focus of current research is on “promoting better nutrition in elderly people living in the community, so that they can keep healthy, lead active lives, and not end up in the hospital”.

How much protein to eat?

If an elderly person with weak muscles can get up from a sitting to a standing position, he can regain some of the lost strength through resistance training exercises and good nutrition. The latter means eating high-quality protein in appropriate amounts.

However, there is misinformation about protein intake, which leads to some older adults eating too little and avoiding certain proteins without any scientific basis. The recommendation is to consume 1.2g of protein for every 1kg of body weight, which translates to 72g of protein for someone weighing 60kg.

Older adults need to have at least three small meals a day that are rich in protein and energy, and avoid big dinners. This is advisable as smaller meals tend to be better tolerated, said Ms Magdalin Cheong, Deputy Director and Head of Dietetic and Food Services, CGH.

If their diets are balanced, vitamin and mineral supplements would not be necessary. “In the Asian context, for a normal person who’s eating everything, animal protein sources like chicken and fish are the best. For a vegetarian, we have to look at plant sources.”

The latter includes pulses, soy, and bean products, such as kidney beans and chickpeas. For those who can eat dairy products, milk and cheese are good alternatives to help increase protein intake.





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◀◀ Dr Anandakumar Vellasamy explaining how the lateral total ankle replacement surgery works, using the external frame that is fitted around the patient's ankle during surgery to ensure accurate alignment.

New surgery for severe ankle arthritis

A new type of ankle surgery, known as the lateral total ankle replacement surgery, is now available at Sengkang General Hospital.

by Eveline Gan

A 66-year-old engineer with severe ankle arthritis became the first patient in Singapore to receive the new lateral total ankle replacement surgery at Sengkang General Hospital (SKH).

Before surgery, he had debilitating pain from end-stage ankle arthritis. He could not walk without pain, and it affected his work and quality of life.

He went for the surgery only after medication and other conservative measures no longer provided any pain relief for him.

The surgery was done by Dr Anandakumar Vellasamy, Consultant, Department of Orthopaedic Surgery, SKH, who was trained in Switzerland and performed five such surgeries there previously.

Dr Anandakumar said total ankle replacement is a surgical option for patients over the age of 60 who have severe ankle arthritis. It involves replacing the damaged ankle joint with a prosthesis.

Traditionally, the surgery (known as the anterior approach) is done via an incision at the front of the ankle. The diseased portions of the joint are then

removed and replaced with a prosthesis that mimics the functions of a normal ankle. This allows it some range of motion.

With the new method, the surgeon accesses the ankle using a lateral approach, coming in from the outer side of the ankle.

The pros and cons

The lateral approach avoids important blood vessels and nerves at the front of the ankle.

Dr Anandakumar said a unique advantage of visualising the joint from the side is that the surgeon can cut along the joint curvature, removing the diseased portions more accurately while conserving healthy normal bone. As a result, patients have a lower risk of post-surgical complications.

They also have better joint motion. "In recent large-scale studies, patients who underwent the lateral approach have shown a significant increase in the range of joint motion after surgery," he added.

For Dr Anandakumar's patient in SKH, retaining joint motion was important because he needed to move around in his job.

Patients usually resume normal activities six to eight weeks after

surgery, and need to wait six months before engaging in strenuous activities. The ankle prosthesis lasts about 25 to 30 years.

But the new method has its shortcomings, too, said Dr Anandakumar. Compared to the traditional method, the lateral approach takes about an hour longer because an external frame must be fitted around the ankle joint for accurate realignment during surgery.

Also, approaching from the side involves cutting through the fibula bone, the slender calf bone on the lateral or outer side of the lower leg.

"Any surgery has its fair share of advantages and disadvantages. It's a matter of selecting the right surgery for the right patient."

Seek help early

The most common cause of ankle arthritis is usually a neglected ankle fracture or severe sprain, which damages stabilising ligaments there.

"Over time, abnormal biomechanics of the affected joint cause certain areas of the ankle cartilage to degenerate. The lack of ankle stability from the initial injury can cause malalignment of the joint, further stressing the cartilage. This creates a vicious cycle that worsens the degeneration," explained Dr Anandakumar.

About 1 per cent of the population suffers from this degenerative condition, which involves the wear and tear of the cartilage of the tibiotalar (ankle) joint. In severe cases, the ankle joint cartilage may be completely worn down, resulting in severe pain as joint bones grind against each other.

Dr Anandakumar said patients are first encouraged to take conservative pain relief measures, but surgical intervention may be necessary if symptoms cannot be controlled by these measures or medication. Conservative measures may include wearing comfortable shoes with modifications, calf stretching, muscle-strengthening exercises, and maintaining a healthy weight.

There are other alternative surgical methods, including ankle fusion surgery, where the joint is fused, but this method obliterates movement in the joint completely. Dr Anandakumar advises patients considering surgery to speak to their surgeon to get their perspective, as well as convey their expectations of the surgery.

"Don't wait too long to seek an opinion as the longer the disease progresses, the stiffer the joints become, and the more difficult the surgery will be to realign the joint," he said.

Direct intervention

Cryotherapy treatment attacks only cancer cells in the prostate while leaving the rest of the organ intact.

by Sol E Solomon

When prostate cancer is diagnosed, treatment usually involves either radiotherapy or surgical removal of the organ. While effective, these standard treatments can also bring on problems — some long-lasting or even permanent — such as incontinence, impotence, and injury to the rectum and bladder.

To avoid these damaging side effects, a team of Singapore General Hospital (SGH) urologists is studying the use of a treatment known as focal cryotherapy, which essentially targets and freezes the tumour in the prostate at very low temperatures to kill the cancerous cells. The healthy cells around the tumour are then not affected.

"Prostate cancer patients often find themselves in a dilemma after being told of the possible

complications that may arise after treatment. This is why we want to explore a middle-ground treatment that is not so damaging, yet will treat prostate cancer effectively," said Dr Tay Kae Jack, Consultant, Department of Urology, SGH.

"The treatment should not affect patients' quality of life," added Dr Tay, who is leading the study.

Aided by imaging

Between March 2019 and early January 2020, SGH recruited 18 out of a targeted 30 patients with localised prostate cancer to participate in its trial. Their tumours had to be aggressive and less than 1.8cm in diameter. After undergoing the procedure, these patients need to return to the SGH Urology Centre every quarter to complete a quality

of life assessment and prostate-specific antigen (PSA) blood test, followed by a magnetic resonance imaging (MRI) scan and biopsy a year after.

So far, some patients have reported temporary pain and bruising, but no serious complications.

In focal cryotherapy, the aggressiveness, stage, and location of the cancer need to be accurately determined. This is possible with the Mona Lisa, a robotic biopsy system that combines MRI and ultrasound scan, which was developed by SGH's Urology Department and engineers from Nanyang Technological University (NTU).

In the procedure, three to four 15cm needle-like cryoprobes are inserted through the perineum (the area between the anus and

« Dr Tay Kae Jack is leading a study to identify the effectiveness of focal cryotherapy on prostate cancer.

scrotum) into the tumour under ultrasound guidance. Argon gas is then pumped through the cryoprobes to freeze the cancer cells at -40°C . The procedure is performed as a day surgery in an operating theatre and takes about 45 minutes to complete.

New treatment option

Focal cryotherapy has been used to treat cancers of the bone, kidney, cervix, liver, and lung. However, it has not been used to treat prostate cancer in Singapore. It is estimated that 30 to 40 per cent of all prostate cancer patients could benefit from focal cryotherapy. If the results of the study are positive, the hospital could offer it as a treatment option.

Prostate cancer is the third most common cancer among men and the seventh most frequent cause of cancer death in Singapore. In many cases, prostate cancer is slow-growing and may take years to grow to a size large enough to become detectable.

Some prostate cancers, though, can be aggressive, growing quickly out of the prostate and spreading to other parts of the body. However, because of greater public education and awareness, the disease is increasingly being detected at the early stages, when it is usually treatable.

Between 2010 and 2014, prostate cancer occurred in 28.6 out of 100,000 men, but the death rate was 5.6 out of 100,000 men.

« Argon gas is pumped through the cryoprobe to freeze the cancer cells at -40°C .



Photo: Vernon Wong



Rejuvenation of SGH Campus takes shape

When completed, the ECC-NDCS building will bring SingHealth group one step closer to delivering seamless, quality patient care.

Having the future Singapore General Hospital's (SGH) Elective Care Centre (ECC) and National Dental Centre Singapore (NDCS) in the same building was no design accident.

Indeed, the ECC and NDCS will house dedicated facilities and clinical services for elective or scheduled surgical and dental services, taking Singapore Health Services (SingHealth) group one step closer to achieving its long-term vision of consolidating outpatient care, scheduled surgical services, and dental services to meet growing healthcare needs.

For instance, NDCS's proximity to the SGH ECC means greater convenience for patients with complex conditions, such as head and neck cancer requiring maxillofacial prosthetic rehabilitation following surgery.

"When completed in 2026, the building will bring us a step closer to achieving our vision of 'One Campus, One System' to deliver seamless, quality care for our patients," said Professor Ivy Ng, Group CEO, SingHealth. She was speaking at the groundbreaking ceremony of the building in January, which was officiated by Dr Amy Khor, Senior Minister of State, Ministry of Health, and Ministry of the Environment and Water Resources.

Describing SGH and SGH Campus as "a major provider of care" in Singapore's public healthcare system, Dr Khor said: "One of the key objectives of Singapore's healthcare system is to ensure that everyone has access to appropriate care in a timely, cost-effective, and seamless manner. As SGH designs and plans for this new facility, I am heartened that SGH is seizing the opportunity to introduce new ways to organise itself, and innovate to bring better care and value to patients."

She noted that as part of the continual push for improvement, SGH has developed a new care protocol for patients undergoing hip replacement surgery, a common procedure at the hospital. Patients suitable for hip replacement under the new protocol can be discharged within 23 hours, instead of staying in the hospital for an average of four days for such a procedure. A shorter inpatient stay reduces patients' risk of exposure to hospital-acquired infections and costs.

Likewise, the new NDCS will also leverage on new technologies to improve care delivery, such as 3D printing, which allows for more accurate treatment planning and shorter treatment time. For example, patients requiring dentures will benefit from 3D-printed dentures, being faster to fabricate than traditionally made dentures.

Expanding capacity

The future SGH ECC will be a dedicated facility for planned surgeries and procedures for orthopaedic, otolaryngological, and breast-related conditions. Having a separate facility for scheduled procedures means that the main SGH will be able to handle more acute, complex, and emergency procedures. Every year, more than 97,000 surgeries and procedures are performed at SGH. The number is expected to rise with Singapore's ageing population.

Since February 2016, when the SGH Campus Master Plan to enhance facilities and increase capacity for growing healthcare needs was unveiled by Prime Minister Lee Hsien Loong, the Campus has been a hive of activity. Construction has begun on a new National Cancer Centre Singapore (NCCS) and a new Emergency Medicine Building. The Outram Community Hospital was



» (bottom picture: 5th, 6th and 8th from left respectively) Minister of State for Health Dr Amy Khor, SingHealth GCEO Professor Ivy Ng, and SingHealth Chairman Mr Peter Seah looking at a model of the future SGH Campus.

completed and opened its doors to patients in late 2019.

The ECC and NDCS building is being built on the site of the former New Bridge Road bus terminal, next to Outram Park MRT Station, which serves the North-East, East-West, and the upcoming Thomson-East Coast Lines. Following its completion,

phase 2 developments for the new SGH Complex will commence as part of the Master Plan.

When fully completed, the campus will combine the best in facilities and technology, put the patient at the centre, and be integrated with the larger network of community hospitals, and primary and home care providers.

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Photos: Justin Loh

►►► The medical team monitoring the results as the patient is being scanned.

New scan for curable hypertension

Clinical trials are underway on a new scan that can detect the cause of a certain type of hypertension, making it potentially curable.

by Eveline Gan



►►► Patient Mr Lim (centre), who is about to undergo the scan, is flanked by Dr Troy Puar (left) and Associate Professor Roger Foo, NUS Yong Loo Lin School of Medicine and Senior Consultant Cardiologist, National University Heart Centre.

For years, Mr Lim In Chong's abnormally high blood pressure levels kept him on tenterhooks. Diagnosed with hypertension since he was 21 years old, Mr Lim, now 43, has been taking pills for the last two decades to keep his condition in check.

His greatest fear is getting a stroke, and he has every reason to fear this. Hypertension affects one in four adults in Singapore, and accounts for almost half the deaths from cardiovascular disease.

Recently, Mr Lim was given a new scan — the 11C-Metomidate PET/CT — as part of a 25-patient clinical trial conducted by Changi General Hospital (CGH), together with the Clinical Imaging Research Centre (CIRC) at the National University of Singapore's Yong Loo Lin School of Medicine.

The scan, which is only available in the clinical trial, pinned down the cause of his hypertension, paving the way for a potential cure.

Why it's curable

While there is no cure yet for most types of hypertension, Mr Lim's type — primary aldosteronism — is different, because it is possible to cure if the cause can be found.

The condition occurs when tiny benign growths found in one or both adrenal glands (located above the kidneys) produce too much aldosterone, a steroid hormone that regulates blood pressure, said Adjunct Assistant Professor Troy Puar, Consultant Endocrinologist, CGH, who is leading this multicentre trial.

Too much of aldosterone causes salt retention in the body, which drives hypertension. About 5 per cent of people with hypertension have high levels of this hormone.

When the adrenal gland that is overproducing this hormone is removed through surgery, the

associated hypertension may disappear, too.

The source of the excessive aldosterone can be detected using the new scan. This non-invasive scan is done by injecting a radioactive tracer into the patient to light up problem areas. It takes less than an hour to do, emits less radiation than a conventional CT scan, and is able to detect small growths and excessive aldosterone in the adrenals more accurately than the existing test, said Dr Puar.

The existing test, adrenal vein sampling, is done under local anaesthesia by inserting a catheter through a vein from the patient's groin to draw blood samples. Usually, patients have to stay overnight in hospital.

But the adrenal vein sampling test does not always produce conclusive results. "In many centres, up to 50 per cent of procedures are unsuccessful and hence inconclusive. Fortunately, CGH has had a 100 per cent success rate over the last five years," said Dr Puar.

Living with one gland

If only one gland is abnormal, the patient may proceed with surgery to remove the abnormal gland, which would halt the excessive hormone production and potentially cure the hypertension. Surgery is not possible if both glands are affected.

"We offer surgery if only one gland is affected, because the adrenals are necessary for producing cortisol, an important steroid needed for life. With the other adrenal gland remaining, a patient can live a normal life," said Dr Puar.

He added that some patients prefer to take medication for life instead of surgery, but others want surgery when they find that it may cure their hypertension once and for all. However, some may still have hypertension after the surgery because of other contributing factors and would still need medication, but usually at a lower dose.

"Generally, the less medicine the patient takes, the better, as each has its potential risks and side effects," said Dr Puar.

Mr Lim opted for surgery to remove his abnormal adrenal gland. "I've been on medication for more than 20 years, but it was just masking and not fixing the problem. With surgery, I hope my hypertension can be cured. At the very least, I hope to improve my condition and take less medication," he said.

» Dr Sewa Duu Wen sets up the extracorporeal membrane oxygenation (ECMO) machine on a mannequin. ECMO delivers oxygen into the bloodstream without injuring the lungs.



Photos: Vernon Wong

Rescue therapy

When ICU mechanical ventilators are inadequate, respiratory ECMO can temporarily replace the functions of the lungs to oxygenate blood and remove carbon dioxide.

by Annie Tan

Thinking it was just a regular flu bug, Mr Heng Wee Heng, 19, popped a few paracetamol tablets and waited for his symptoms — high fever and cough — to pass. Instead, his illness worsened and, within days, he was admitted to a hospital's intensive care unit (ICU) with severe pneumonia.

At the ICU, Mr Heng was hooked up to a mechanical ventilator machine to help him breathe. But doctors were concerned the intense ventilator support might hurt his lungs, and he was recommended extracorporeal membrane oxygenation (ECMO) therapy, where oxygen is delivered directly into the bloodstream, bypassing the lungs.

Mr Heng was then sent to Singapore General Hospital (SGH), one of two public hospitals offering the treatment.

"ECMO is life support therapy for patients with acute reversible lung disease. If their conditions are still deteriorating even when they are on conventional mechanical ventilator support, they could be at risk of dying of severe lung failure," said Dr Phua Ghee Chee, Senior Consultant and Head, Department of

Respiratory and Critical Care Medicine, SGH.

"ECMO is used as rescue therapy. ECMO is not a cure. It supports patients, and acts as a bridge for the lungs to recover," he added.

Patients like Mr Heng with severe pneumonia or respiratory failure need intensive ventilator support. Pushing oxygenated air at very high pressures into the lungs over an extended period can injure the organ, said Dr Sewa Duu Wen, Senior Consultant, Department of Respiratory and Critical Care Medicine, SGH.

"With ECMO, we are able to reduce the intensity of the mechanical ventilator and give patients a higher chance of surviving the episode," said Dr Sewa, who is also Director of the Medical Intensive Care Unit (MICU) at SGH.

Better survival chances

Nevertheless, ECMO isn't without its risks; and while it can save lives, it isn't for everyone.

Patients have to be carefully selected to make sure that they are able to tolerate ECMO, which has been associated with complications, such as bleeding,

blood clots, stroke, infection, kidney failure, and even death.

The ECMO service at the MICU was introduced in 2009 during the H1N1 pandemic. Since then, the team has been progressively increasing the capability and expertise of the ECMO service.

Two years ago, the service was reorganised and a large multidisciplinary ECMO team is now available round the clock. The team includes ECMO-trained physicians and nurses, cardiothoracic surgeons, perfusionists, respiratory therapists, intensive care pharmacists, physiotherapists, and medical social workers.

According to Dr Phua, before 2018, an average of eight patients underwent ECMO a year, and the survival rate was about 60 per cent. Survival rates are now more than 80 per cent, he said.

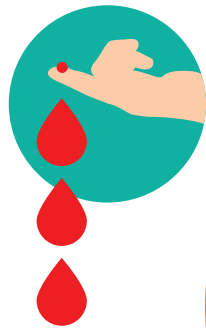
About 50 per cent of patients treated with ECMO at SGH come from other institutions. The youngest person treated at SGH was 16 years old. Patients stay on ECMO for about six days (although they are at the MICU for about two weeks), before being moved to the wards to stay another 25 days or so.

About haemophilia

Haemophilia is a genetic disorder that affects the blood's ability to clot.
It mostly affects boys.

When a cut occurs

Clotting factors in the blood combine with platelets to make the blood sticky and stop bleeding quickly. Haemophiliacs don't have enough clotting factors and will bleed for a longer duration than other people.



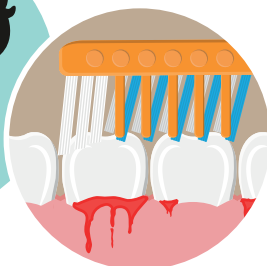
**17
APRIL**
World
Haemophilia
Awareness
Day

SINGAPORE

**MORE THAN 200
PEOPLE ARE
ESTIMATED TO
SUFFER FROM
HAEMOPHILIA.**

Bleeding

- Bleeding that does not stop or continues for an extended period
- Nosebleeds that take a long time to stop
- Bleeding gums
- Skin that bruises easily
- Pain and stiffness around joints (because of bleeding in the spaces of the joints)



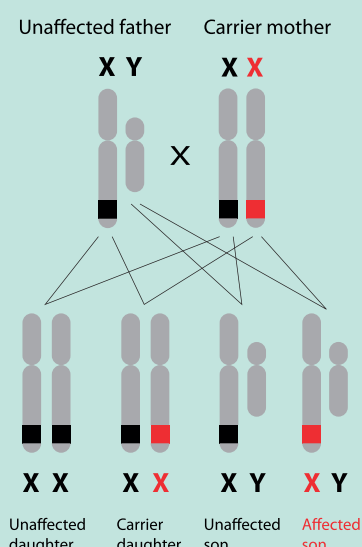
X and Y

Haemophilia usually runs in families, and is caused by a change in a gene (found on the X chromosome) that provides instructions for making the clotting-factor proteins.

Boys get one X and one Y chromosome from their parents, while girls get two X chromosomes. So when boys inherit a faulty X chromosome from their mothers, they may have a disease like haemophilia.

Girls rarely get haemophilia but become carriers if they get a faulty X chromosome.

A third of haemophilia cases are not inherited, but are caused by spontaneous mutation in a gene.



Haemophilia A

Deficiency of
CLOTTING FACTOR 8

1 IN
10,000
MALES



About **1/3** EACH OF PEOPLE
WITH HAEMOPHILIA A have mild,
moderate, and severe forms of the
disorder respectively

Haemophilia B

Deficiency of
CLOTTING FACTOR 9

1 IN
50,000
MALES



*Diagnosis is determined by
measuring factor 8 or 9 in the blood.*

A OR B

**THERE ARE
TWO TYPES OF
HAEMOPHILIA.**

Good practices



- Avoid contact or strenuous sports
- Avoid strenuous sex
- Be careful not to take medicines that affect the blood's ability to clot
- Maintain proper oral hygiene

Upping the factors

While there is no cure, treatment can bring about good quality of life. Prolonged bleeding is treated by increasing the level of factor 8 or 9.

Information provided by

Associate Professor Tien Sim Leng

Director, Haemophilia Centre

Senior Consultant, Department of Haematology, Singapore General Hospital (SGH), and SingHealth Duke-NUS Blood Cancer Centre

Head, Blood Bank and Cytogenetics, Department of Clinical Pathology and Molecular Pathology

Ms Yeam Shin Yen

Nurse Clinician, Blood Bank Laboratory, SGH

Getting a good night's sleep

It's most rewarding for this sleep technologist when her patients enjoy better quality of life because they can sleep well.

by Sol E Solomon



Photo: Vernon Wong

Sleep Technologist Ms Jade Tay truly understands what some of her patients go through.

Ms Tay works two nights every week as part of her job at Singapore General Hospital's (SGH) Sleep Disorders Unit, putting her at risk of developing the kind of problems that her patients go through: poor or interrupted sleep.

While she does experience some of these issues, she employs some of the "tricks" that she teaches patients to help her adjust. Before the day of her night shift, she goes to bed later and wakes up later. She also tries to nap before going to work to get enough rest before pulling

her 12-hour night shift. Working out at the gym also helps her sleep better.

"After working in this field for so many years, I'm used to it," said Ms Tay.

Indeed, when she holidays in a different time zone, she doesn't have much of a jet lag. "It just feels like a night shift."

While some may shun shift work, especially long night ones, it was the night work and flexibility that drew Ms Tay to her job. Fresh out of school in 2013, Ms Tay, who graduated with a Diploma in Biotechnology from Temasek Polytechnic, saw the SGH ad, and the rest is history.

Working two 12-hour nights, then a sleep day, followed by

two regular days allows her to spend time with her parents, with whom she lives. She has older married siblings.

At the time, she had little understanding of sleep disorders, but has grown passionate about the subject over the years. Today, she has learnt enough to train others — not just colleagues interested in the science, but also healthcare professionals from other countries in the region.

Into the night

The Sleep team, of which Ms Tay is a member, comprises psychologists, psychiatrists, neurologists, otorhinolaryngologists and respiratory specialists, as well as other sleep technologists. She conducts sleep studies or sleep tests that monitor patients while they sleep. The tests track the different stages of sleep that patients go through to determine if and why patients are not sleeping well.

"On the night shift, I have to set up the sleep test sensors — all 24 of them — on patients. I then check that they are working well before recording starts," said Ms Tay.

During the night, she makes sure the sensors stay on and are working properly. She helps patients take them off if they need to use the toilet, and puts them on again after.

Although she would be alerted if something is amiss, she spends a good part of the night looking at a computer screen to make sure the test is going well. Two or three technologists work the night shift, which means they can take turns to rest. On her day shifts, Ms Tay analyses the sleep data collected and guides patients on using their devices correctly.

The most common conditions seen at the unit are sleep apnoea (interrupted breathing during sleep) and insomnia. For those with sleep apnoea, a device known as continuous positive airway pressure (CPAP) needs to be used during sleep. Ms Tay makes sure that patients get a well-fitting mask and that they understand how it is used.

Because of poor sleep, her patients tend to be short-tempered. But when they tell her they have had the best sleep in a long time following treatment — as did one patient — that is her best reward. "It means the treatment was effective," Ms Tay said.

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Social dance and love of the pancreas

Dr Damien Tan found his twin loves — his wife and work on the pancreas — through his can-do and open attitude to life.

by Thava Rani



Photo: Vernon Wong

Dr Damien Tan believes in living life to the fullest. In that sense, he's open to whatever life has to offer.

Still, it's a surprise that one of the things that Dr Tan tried while living at his university hostel was social dancing. It is not something that many men — in particular, adventurous ones like Dr Tan, who are keen on deep-sea diving and mountain trekking — would try. But thanks to his can-do and open disposition, he met his wife at the dance class.

That attitude also led to Dr Tan specialising in the pancreas — a specialty that he would devote his life's work to. Years back, when he

was planning to further his medical education overseas in a subspecialty, he was asked if he would consider training in performing pancreatic endoscope procedures, an uncommon area of speciality.

"By my nature, I said 'sure'. I trained at two top centres abroad, and I saw nothing but pancreas patients because the scopes for pancreas were all advanced cases," said Dr Tan, Senior Consultant, Department of Gastroenterology and Hepatology, Singapore General Hospital (SGH).

"Pancreatic cancers are not common but highly deadly — one of the worst cancers to have," said Dr Tan, noting that only about 5 per cent of pancreatic

cancer patients survive beyond five years after treatment.

"When I came back, I started doing a lot of research to improve the early detection of pancreatic cancer. Research is what really drives me because I know, if I want to make a difference, the science is important. I can do a biopsy; I can put in a stent; but I need to do research so that I can help patients survive beyond that threshold."

Just as he has put aside his more daring streak now that he has a family, which includes two young sons, Dr Tan also has had to balance his time between research and his work as the recently appointed Medical Director of SGH's Endoscopy Centre, which includes the Ambulatory Endoscopic Centre (AEC), and Inpatient and Lung Endoscopy Centre (ILEC).

Set up more than three years ago, the AEC is where patients can have their gastrointestinal tract assessed via scopes for possible cancers or other conditions. It is also one of the biggest in Singapore, seeing over 30,000 patients a year.

Ensuring smooth workflow within the Centre takes up much of his time. He also chips in by performing a number of these procedures. "There are five or six of us here, who are trained in advanced endoscopy, allowing us to handle the more

complex, higher-risk procedures.

But 90 per cent of the cases are the regular bread-and-butter kind, so we help out wherever needed," he said.

Dr Tan is also Director for Advanced Endoscopy Fellowships for his department, and has a hand in training doctors from different parts of the world, such as the Philippines, Pakistan, and Bahrain.

Despite his heavy responsibilities, he sets aside time for his family.

"I like spending time with [my two young sons]. We enjoy playing soccer, swimming, or doing outdoor stuff. Holidays with the family are great. We like Hokkaido in particular — the good food and simply chilling out," he added.

Thankful that his wife supports and understands his work commitments, he is equally appreciative that he has not had to miss any birthdays or important family moments yet.

"It's truly a privilege to be doing what I do. I see people at their most vulnerable moments, and every word I say or every touch I give can make a difference. Knowing that helps, especially at times when I need to drive back [to hospital] at 3am to help a bleeding patient. The smile from a patient or a grateful relative really keeps me going," Dr Tan said.

I can do a biopsy; I can put in a stent; but I need to do research so that I can help patients survive beyond that threshold.

Dr Damien Tan
Senior Consultant, Department of Gastroenterology and Hepatology, Singapore General Hospital



Cancers that can hit the young

Diagnosed with cancer in the prime of their lives, adolescents and young adults face challenges not commonly seen in other patient groups.

by Eveline Gan

One of the hardest challenges for young people with cancer is coming face-to-face with their own mortality. The diagnosis, coming at a time when they are full of energy and dreams, can floor them.

"The diagnosis and treatment affect their emotional well-being, social life, and sense of identity, and it derails their future plans," said Dr Eileen Poon, Consultant, Division of Medical Oncology, National Cancer Centre Singapore (NCCS), who has handled many of these cases and is passionate about helping these patients.

"Even those who survive the cancer may face fears of a second cancer due to treatment-related complications or genetic predisposition. Other issues include challenges of reintegrating back into society after treatment, fertility problems, and long-term follow-ups, with some lasting five to 10 years."

On the rise

In Singapore, Adolescent and Young Adult cancers refer to cancers that affect people aged 16 to 39 years old. There are no official local statistics on the prevalence here, but Dr Poon believes such cancers are on the rise.

She said in the last four to five years, NCCS has seen an average of 350 to 450 new cases each year, translating to more than

1,000 new patients in the last five years. Worldwide, about 1 million cases are diagnosed each year, according to the World Health Organization.

Dr Poon said that in the 16- to 24-year-old age group, lymphomas, sarcomas, certain types of brain tumours, and germ cell tumours (including testicular cancer) feature more prominently. In the 25- to 39-year-old group, cancers resembling those in the older adult population, such as breast, colon, lung, and head and neck cancers have become more common.

No clear cause

But what causes it? Several factors are at play, including environmental and lifestyle factors, such as smoking, obesity, and stress.

Dr Poon said many patients do not have a strong family history of cancer, although some may have inherited defective genes, which make them susceptible to getting cancer young. For many of them, it may simply be due to "the luck of the draw".

"All of us are born with a set of genes, some of which may be more prone to mutation. As a result, cancer may develop. But with the current scientific technology, we cannot exactly pinpoint how and when this happens."

Early detection helps

She said better diagnostics have helped early detection, but everyone has a role to play in this.

"For example, sarcomas or bone cancers tend to be more common in 16- to 20-year-olds. So if a young person has persistent knee pain, he should get x-rays done to ensure it is not bone cancer."

While there is no single red flag to look out for, persistent symptoms that last for more than a week should be looked into more carefully. Depending on the cancer type, symptoms may include weight loss, swollen lymph nodes, pain, changes in bowel habits, or swelling of the testes.

"The main take-home message is that when young patients have complaints about a persistent symptom, they should not be easily dismissed," said Dr Poon.

While early detection is important, those diagnosed in the later stages should not give up hope. "These cancers may be aggressive but are not necessarily a death sentence. In certain types, such as lymphoma and osteosarcoma, some patients diagnosed at the advanced stages may still achieve long-term survival," she said.



» Persistent symptoms in young people should not be easily dismissed, said Dr Eileen Poon.

The NCCS Adolescent and Young Adults Oncology Support Group was set up in 2017 to offer psychosocial support to patients during and after treatment. It is open to patients and survivors in Asia aged 16 to 39. For more information on the support group, email to aya.cancer@nccs.com.sg.

Shrimp Paste Chicken

(4 servings)

Ingredients

- 450g chicken drumlets (remove skin)
- 1/2 egg
- 30g shrimp paste
- 2 tsp sugar
- 1 tsp oyster sauce
- 1 1/2 tsp tapioca flour
- 1 1/2 tsp oil
- pinch of red colouring powder
- oil for deep-frying

Method

- 1 Marinate chicken with all ingredients for at least 1 hour.
- 2 Deep-fry chicken until golden brown.
- 3 Serve hot.

Estimated nutrient content (per serving)

- Energy 186kcal
- Carbohydrate 8g
- Protein 16g
- Fat 10g
- Sodium 450mg
- Cholesterol 55mg



CHEF'S TIP

This dish uses shrimp paste, which is typically sold in jars. Do not confuse this with dried shrimp paste or *belachan* that is made from small shrimps.



HEALTH TIP

Balance a deep-fried dish with low-calorie dishes for other meals of the day. Low-calorie dishes are usually prepared using lean cuts of meat or a cooking process that requires minimal oil or fat, such as steaming, grilling, boiling, roasting and baking.



Adapted from *Where is the Fat? Cookbook*, a publication by Singapore General Hospital



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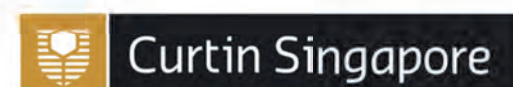
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Don't blame it all on posture

Bad posture is not always what causes neck and back pain.

It could be weak muscles. Here are some exercises to reverse that.

by Annie Tan

Worldwide, eight in 10 people suffer back pain regularly, and five in 10 neck pain. Most assume bad posture is the cause.

"It's not true," said Dr Bernice Liu, Principal Physiotherapist, Sengkang General Hospital (SKH).

"Studies show that people who have all types of posture, including good posture, suffer neck and back pain. The most common reason is because their muscles are simply not strong enough to carry them through the day."

About 80 to 90 per cent of Dr Liu's patients have a sedentary

lifestyle. Besides lacking strength, many of them tend to remain in the same position for extended periods, causing tension to build up.

"Due to technological advancements, most people shop online, go out less often, and do not exercise. So their muscles do not get stimulated," she said.

The simple solution is to start moving, so that joints get less stiff and muscles get stronger.

"People who stand or walk a lot at work may think they are already exercising, but exercise needs to be structured and repetitive, and hit a certain intensity for the cardiovascular

system or musculoskeletal system to get stronger."

Dr Liu recommended at least 150 minutes of moderate exercise weekly. She suggested starting slow, and gradually increasing the intensity and duration of the workout. Desk-bound workers should also do simple stretches every two hours to release any tension.

"Chronic backaches and neck aches become a real concern if they make people fear moving, making them weaker and/or stiffer, and creating a vicious cycle."

Here are some exercises demonstrated by Dr Liu:

Stretching exercises

Repeat these exercises 10 times, holding each position for three to five seconds.



Forward Bend

Sit on a chair, bend forward, and reach as far as you can towards your feet. Allow your head and neck to follow through with the movement. Take a deep breath before coming back up. This stretches your back muscles to reduce stiffness and tightness.



Back Bend

Sit with your back rested against a chair with a low backrest. Place your hands behind your head to support your neck. Then lean backwards, open up your arms, and take a deep breath before coming back to your original position. This relieves tension in the back, especially if you have been working in a hunched position for a long time.



Bow and Arrow

Imagine that you are using a bow and arrow. Put your right hand forwards and your left hand backwards, both as far as you can. Keep your chest uplifted and your gaze ahead. Repeat the action on the other side of your body. This helps with movement in your shoulders and upper back.

Strengthening exercises

Do three to five sets of these exercises, with eight to 12 repetitions in each set.



Seated Squats

Stand in front of a chair with your feet shoulder-width apart, and place your hands on your waist. Sit down and stand up again to strengthen the thigh and buttock muscles. To increase the difficulty, do not sit fully, but simply touch the chair and stand up.



Shrug

Lift your shoulder towards your ears. Then, slowly lower them and return to the starting position. For additional strength training, do this with a water bottle in each hand.



Wall Push-Ups

Stand facing a wall with your feet hip-width apart, and place your palms shoulder-width apart on it. Slowly bend your elbows and lower your upper body towards the wall. Maintain your head and neck position as you lower yourself to the wall. Then, push yourself up until your arms are straight again. This helps strengthen your arms, shoulders, and chest.

Photos: Justin Loh

WHEN TO GET A PHYSIOTHERAPY REFERRAL

Seek medical treatment if your neck or back pain is accompanied by any of the following:

- Sudden loss of bladder and/or bowel control
- Sudden onset of gait disturbances
- A recent trauma
- Autoimmune conditions
- Recent unexplained weight loss or a history of cancer
- Fever or chills
- Neck pain accompanied by upper limb pain, or backache accompanied by lower limb pain.

»» (Left to right): Dr Tricia Kuo, Dr Cherylin Fu, Associate Professor Emile Tan, and patient Mr Leong.

Photos: Justin Loh



No more wet pants

Sacral neuromodulation gives patients enhanced quality of life and restores their independence.

Mr Leong used to dread going out. He suffered from urinary incontinence, which meant he was unable to reach the toilet in time when he felt the urge to urinate. He often wet himself as a result. But after undergoing a procedure known as sacral neuromodulation, he is happily free of that problem.

He had sought treatment for another issue — he often woke up in the night needing to go to the toilet, but wasn't able to pee.

He had a urinary retention problem, which meant that although his bladder was full, he was not able to empty it due to a dysfunction in the muscles that control urination.

Tests later found that he also suffered from urge incontinence due to an overactive bladder.

"I didn't feel the need to pee. But when that sensation came, it was too late to get to the bathroom," said Mr Leong.

"When my friends asked me to join them at the coffee shop,

I declined because I didn't want to walk around with wet pants."

Now, his life has been transformed. "I'm very happy because there's no more leakage, and no more incontinence problem."

In better control

Sacral neuromodulation involves implanting a small pacemaker-like device into the sacral area, which is at the end of the spine. The device sends electrical impulses to stimulate the nerves located in the lower back, just above the sacral area. The specific sacral nerves involved are the third and fourth, which regulate bladder and bowel activity. The intensity and frequency of the pulses can be modified by both the physician and the patient through an external programmable device.

Although it is little known and isn't offered widely in this region, sacral neuromodulation is a well-established procedure in the West, having been introduced some 20 years ago to treat urinary incontinence. The procedure benefits specific types of urinary incontinence, such as overactive bladder or urge incontinence, and patients whose faecal incontinence is due to anal sphincter muscle weakness or defect, pelvic nerve injury, or weakness.

Patients whose condition isn't helped by medication and who aren't keen on surgery can be offered this option. After they are evaluated and have met certain criteria, patients go through a short trial phase. If the device is found to be effective, they can have the device permanently implanted, said Dr Tricia Kuo, Consultant, Department of

»» The small scar at the end of Mr Leong's spine, now barely visible, is where a pacemaker was implanted to stimulate nerves in that area.



Urology, Singapore General Hospital (SGH).

At SGH, the procedure has been available since 2010, but it was only in recent years that it has gained interest among patients. Since 2015, eight patients have had the device implanted permanently — five for urological conditions and three for faecal incontinence.

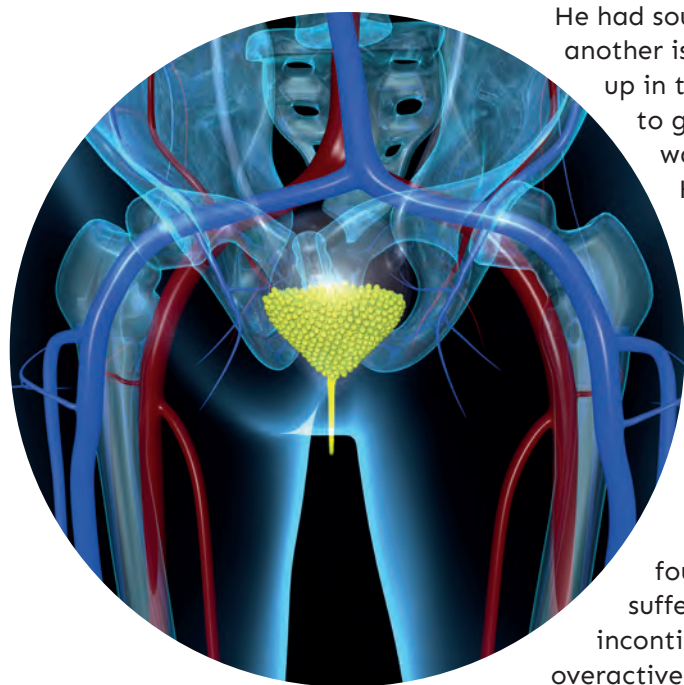
According to Dr Cherylin Fu, Senior Consultant, Department of Colorectal Surgery, SGH, patients under the trial phase have to record the number of incontinent incidents, such as soiled underwear or leakages. The data are compared with that before they went on the trial, and the device is considered effective if patients get at least a 50 per cent reduction in the number of incidents.

"Patients can be very effectively treated, with up to 76 per cent reduction in their overactive symptoms, and faecal incontinence symptoms reduced by at least half in 70 to 80 per cent of patients," said Dr Fu.

In Singapore, 10 to 40 per cent of the population is estimated to suffer from some form of urinary incontinence, and 4.7 per cent from faecal incontinence.

Although the number of patients who have undergone the procedure at SGH may be relatively small, "sacral neuromodulation has made significant difference in the quality of life for patients, restoring function and independence," said Associate Professor Emile Tan, Head, Department of Colorectal Surgery, and Director of the Gastrointestinal Function Unit, SGH.

Mr Leong, for one, has been able to get better sleep than before. Compared to having to wake up every one to two hours previously, he is now able to sleep for about five hours at a stretch.



Can supplements help my eyes?



After a very long day, my eyes sometimes feel tired. Sometimes there's pain, and once or twice, there was a sudden instance of lights. Is eye pressure building up and affecting the retina? If so, what are the early and late-stage symptoms? I often take supplements. Do I need those with more ingredients for eye health?



It is very common for our eyes to feel tired after a long day, particularly if we have been doing a lot of reading or computer work. This is due to eye strain and dryness in the eyes.

Dry eyes occur after reading or doing near work for a prolonged period of time, as we often forget to blink when we are concentrating during those tasks. This can cause discomfort, eye redness, and a sense of pressure in the eyes, but can be resolved by using lubricating eye drops regularly.

Seeing flashing lights in your vision can be due to the degeneration of the vitreous jelly at the back of your eyeball. This degeneration is normal with age, and is not associated with elevated pressure in the eyeball. However, if this is the first time you are seeing flashing lights, I advise you to have an eye examination. Oral supplements are usually not necessary if you have a balanced diet.

DR CHAN CHOI MUN

Senior Consultant, Medical Retina Department, Singapore National Eye Centre

Healthier way to enjoy bubble tea



I love bubble milk tea but I'm worried about putting on weight. How many calories are there in a regular bubble tea? If I ask for less sugar, would that help?

A regular bubble milk tea with tapioca pearls contains more than 300 calories. The sugar or calorie content of the bubble tea does not come solely from the sugar in the beverage, but also the toppings, milk, creamer, or cream added. Cream, for instance, contains at least 30 per cent fat, so the higher the cream content in the drink, the more calories the drink will contain.

According to the Health Promotion Board, no more than 10 per cent of a person's dietary energy should come from added sugars. If bubble tea is taken with all the sugar and toppings offered, your weight may increase from the extra calories. A regular bubble milk tea with sugar and cream can also lead to elevated blood sugar levels in individuals with diabetes.

Bubble tea will have fewer calories when "less sugar" or "no sugar" is asked for. In addition, bubble teas with no toppings will also have fewer calories. Tea, whether it is green, black or red, and with no added sugar, milk or other toppings, is approximately 0kcal.

Besides asking for less sugar, toppings, milk, cream or creamer, replace pearls with lower-calorie options, such as *aiyu* jelly and aloe vera.

MS PEH HUI YEE

Senior Dietitian, Department of Dietetics, Singapore General Hospital



At what age can my child get braces?



When can a child wear braces? Are the risks greater for wearing braces during childhood as opposed to wearing it during later years? What are the benefits of wearing braces at a young age? Does it mean shorter wearing time?

There are three types of braces that are used for different purposes and ages: fixed appliance (metal or ceramic braces that are attached on the teeth and linked together by orthodontic wires), growth-modification appliance (face mask or twin block), and removable appliance (bite plate).

The earliest age for your child to start wearing braces will depend on the condition that needs treatment. It is best to get an evaluation from an orthodontist.

Common repercussions of braces treatment include tooth decay and gum disease. It is difficult to compare the risks associated with wearing braces during childhood versus adulthood, as the severity of these conditions depends on a person's susceptibility. Maintaining good oral hygiene during the course of the treatment will prevent undesirable side effects.

Early braces treatment can help correct the following:

- The eruption of permanent teeth that may be stuck in the jaw (alveolar) bone
- The growth direction of upper or lower jaws for patients with jaw growth disharmony
- Poor bite, and prevent future or further damage to permanent teeth
- Bad habits, such as thumb or digit sucking

If problems are corrected during the earlier stages, further treatment may be shorter and simpler.

DR SONG YI LIN

Associate Consultant, Department of Orthodontics, National Dental Centre Singapore



Back pain after a sneeze



Is it possible to hurt my back when I sneeze? I felt pain in the back the other day after sneezing. Should I have gone to see a doctor?

Back problems caused by sneezing are fairly common. At SGH, we see around 10 to 20 patients a week who complain of back pain or shooting pain in the lower limb after sneezing or while stifling a sneeze. These patients are usually between 20 and 50 years of age.

The first thing to do is to rest. A warm towel or heat pack placed over the back for 15 minutes can bring about relief. If the pain is bearable, do some light stretching. If the pain is severe, seek treatment from a general practitioner (GP) early. The GP will examine you for nerve compression symptoms, and after which he may refer you to an orthopaedic surgeon.

Often, pain that lasts for more than six weeks may warrant a magnetic resonance imaging (MRI) scan to find out the extent of the injury.



Older people may be more prone to suffer sneeze-related back pain as they may already suffer from disc desiccation or degeneration. Degenerated discs are not as strong in withstanding sudden changes in pressure, and this can lead to disc damage or a slipped disc.

The intervertebral disc bears the most impact when we sneeze. One should refrain from bending forward when sneezing. Bending forward adds pressure to the spinal discs. Sneezing also builds up to 3.5 times of the disc pressure when one is lying down. Thus, bending forward while sneezing adds several times the force on the disc, which increases the risk of injury.

DR REUBEN SOH

Senior Consultant, Department of Orthopaedic Surgery, Singapore General Hospital

DID YOU KNOW...

... **that** if you have any sleep-related symptoms, such as loud snoring, apnoea episodes and/or excessive daytime sleepiness, you can be diagnosed and treated when you visit the Lung Clinic – Changi Sleep Assisted & Ventilation Centre at Changi General Hospital (CGH)?

The Centre saves patients crucial inter-referral time by combining the expertise of a diverse group of specialists to provide diagnostic, intervention, and treatment services for numerous common and complex sleep conditions.

To diagnose obstructive sleep apnoea, a sleep physician will arrange for a diagnostic sleep study to be performed at the CGH Sleep Laboratory, which is accredited by the Australasian Sleep Association and National Association of Testing Authorities, Australia.

The Sleep Lab conducts both day and night studies, running more than 900 a year. Parameters, such as brain waves, eye, chin and leg movements, body position, airflow and respiratory efforts, oxygen levels, as well as snoring are monitored throughout the night. The sleep technologist analyses the raw data, and the sleep physician creates a report that helps diagnose the patient's condition.

Designed to simulate the home environment and keep patients comfortable, there are six rooms, each with en-suite toilets and television. There are also infrared synchronised cameras that work in the dark to capture the patients' sleep positions and behaviour without disturbing them.

... **that** patients can be conscious when undergoing some procedures if they were given sedation, and not general anaesthesia?

In sedation, medications are administered either orally or intravenously to produce a state of calm and relaxation. Patients are not totally unconscious and may still be aware of their surroundings. Sedation is given for minor procedures; like anaesthesia, it is aimed at reducing discomfort. At Singapore General Hospital (SGH), for instance, outpatient diagnostic endoscopic procedures are routinely performed under sedation, not general anaesthesia.

General anaesthesia, on the other hand, is usually given to patients undergoing invasive surgical procedures. Patients become completely unconscious, and will not feel pain or discomfort. Both sedation, especially if excessive, and general anaesthesia can bring on side effects and complications.



Toddler Feeding Workshop

Date: 21 Mar (Sat)

Time: 10am-12pm

Venue: Patient Education Centre Room 1, Women's Tower Level 1, KK Women's and Children's Hospital (KKH)

Fee: KK Parenting Club: \$10 per member/non-KK Parenting Club: \$15 per participant

Registration and enquiries:

Call 6394 1268 (Mon-Fri, 10am-4pm) or email to PEC@kkh.com.sg

Join us for an informative session with our Dietitians and Speech and Language Therapists, as they share strategies for stress-free mealtimes.

When Food is Medicine: Eating Disorders Treatment and Recovery

Date: 21 Mar (Sat)

Time: 9.30am-12.30pm

Venue: Learning Space, Block 6 Level 1, Singapore General Hospital

Registration and information:

Visit <https://www.sgh.com.sg/about-us/calendar-of-events> or <http://sghed2020.eventbrite.sg>

Find out about eating disorders at this public forum, where speakers include SGH psychiatrists, art therapist, occupational therapist, dietitian, and mental health nurse. The week starting 2 March 2020 is Eating Disorders Awareness Week.

Colorectal Cancer Awareness Month Public Forum

Date: 28 Mar (Sat)

Time: 10am-12.15pm

Venue: Peter & Mary Fu Auditorium, Level 4, National Cancer Centre Singapore, 11 Hospital Crescent, Singapore 169610

Registration: Call 6225 5655 (Mon-Fri, 8.30am-5.30pm)

Conducted in English, this forum will cover treatment options for colorectal cancer and dietary tips.

Speech, Language and Literacy Workshop

Date: 18 Apr (Sat)

Time: 10am-12pm

Venue: Patient Education Centre Room 1, Women's Tower Level 1, KKH

Fee: KK Parenting Club: \$10 per member/non-KK Parenting Club: \$15 per participant

Registration and enquiries: Call 6394 1268 (Mon-Fri, 10am-4pm) or email to PEC@kkh.com.sg

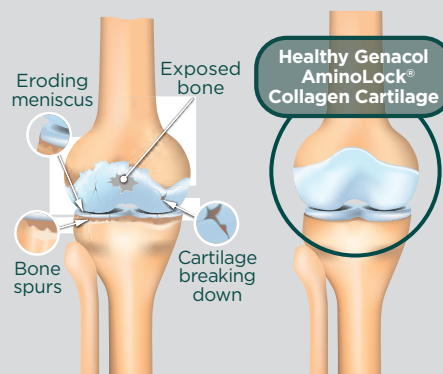
Pick up useful tips from our Speech Therapist on how you can support and nurture your child's language and literacy skills. This workshop will cover information on speech, language, and literacy development between the ages of 1 and 4.



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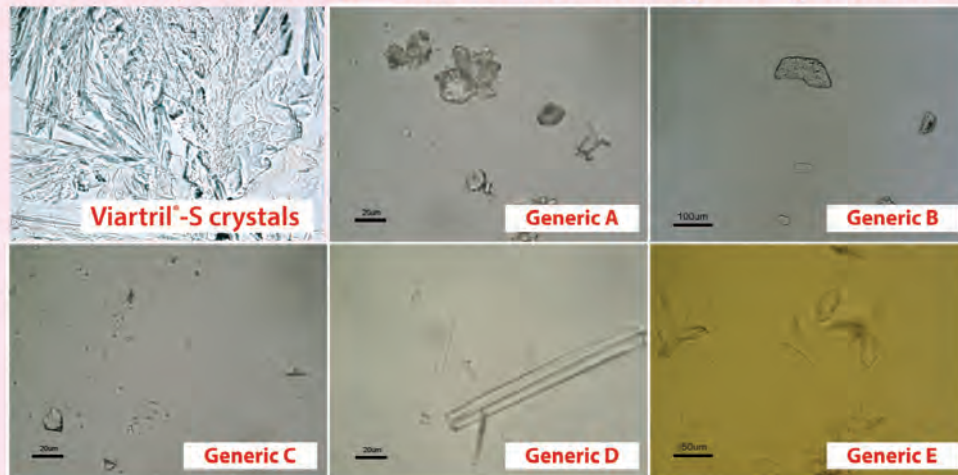
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The Patented Prescription-Grade Crystalline Glucosamine Sulphate for Joint Health^{1,2}

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 Viartiril-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, Altman RD, Reginster JY. Semin Arthritis Rheum. 2016 Feb;45(4 Suppl):S12-7.

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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 Viartiril-S:

1. There are more than **100** clinical studies and all the studies have proven that Viartiril-S works for painful joint condition.
2. No clinical studies have shown that Viartiril-S does not work.
3. There are long-term studies using Viartiril-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 **Viartiril-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!



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

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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

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Ivy-Extract
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- Non-drowsy
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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