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MAY  
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2017

THE FLAGSHIP PUBLICATION  
OF THE SINGHEALTH DUKE-NUS  
ACADEMIC MEDICAL CENTRE  
MCI (P) 049/05/2016

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## MEET MADAM TEO...

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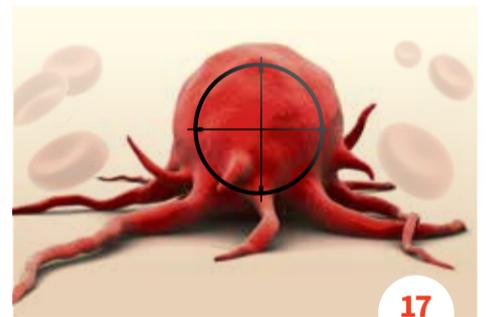
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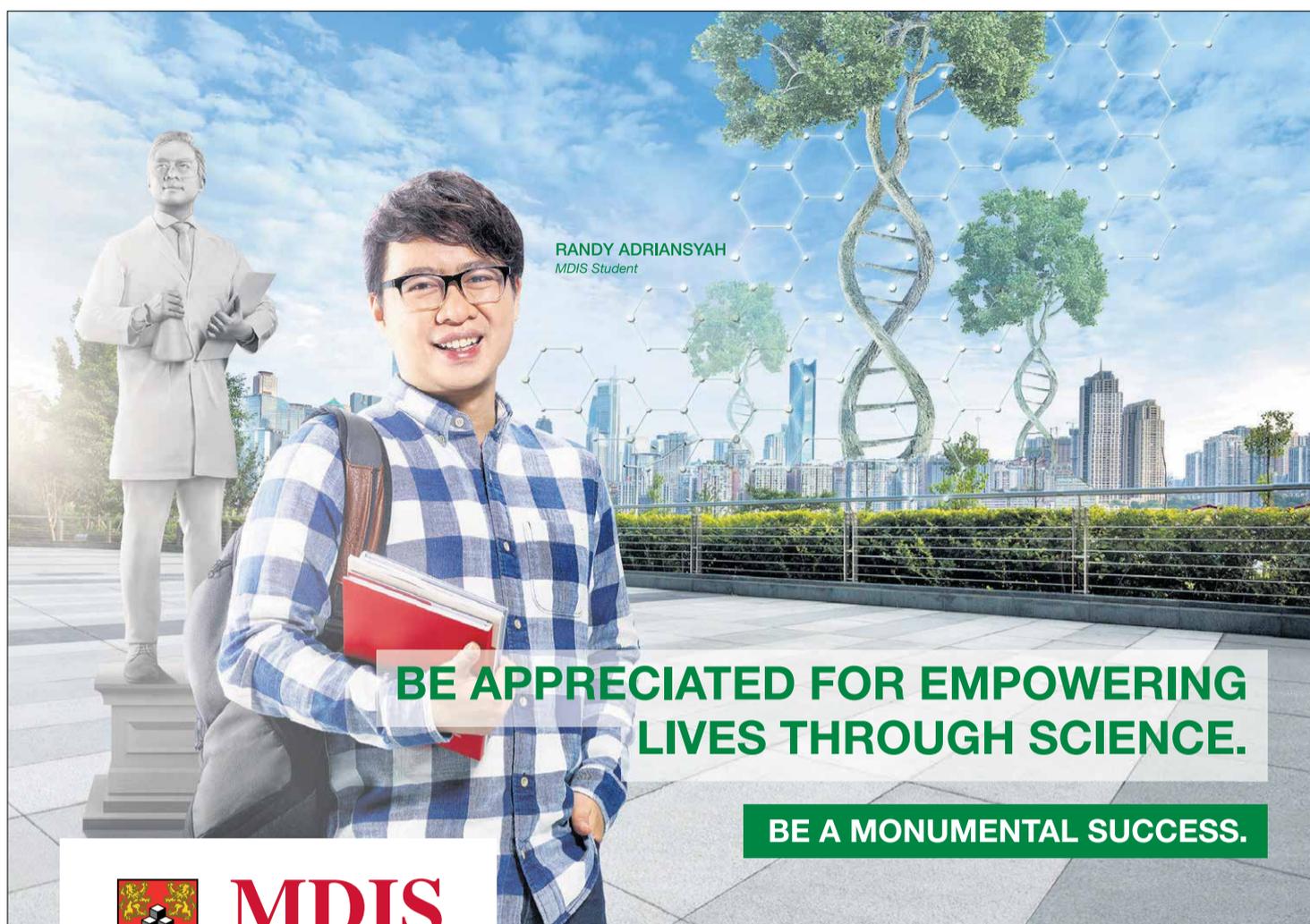
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*Where lifelong learning begins*

**S**HE IS 72, AND SUFFERS FROM DIABETES, high cholesterol, high blood pressure, dry eyes and gout. She is on a pacemaker and has undergone a procedure for inflammation of the bladder. She walks with the help of a cane, and can no longer dance – a once-loved pastime.

She is the sole carer for her husband, who suffers from eye conditions and diabetes. Being the more mobile of the two, she is responsible for not just their

meals but also their medications and clinic appointments.

She is Mdm Teo Gek Hoon and she is the focus of the SingHealth Regional Health System's (RHS) efforts to build a new network of care.

The network brings together and links medical and social care providers in the Singapore General Hospital (SGH) Campus vicinity to offer residents in the community easy access to different types and levels of care. Singapore has a rapidly

ageing society, but in the southern region where SGH is located, there are more elderly residents aged 65 and above. As the numbers of elderly increase faster than the rest of the resident population, demand for health care is expected to grow at a correspondingly faster rate.

"We are pooling expertise and resources with our community partners to ensure people can be cared for adequately in the community, and eventually in the comfort of their

homes," said Professor Fong Kok Yong, Deputy Group Chief Executive Officer (Regional Health and Medical), SingHealth, and Chairman, Medical Board, SGH.

To remain at home and be cared for safely by doctors, nurses and other care providers in the neighbourhood should be an option for everyone, not just those with the means.

Mdm Teo typically sees different doctors in the various SingHealth Group institutions, like SGH's Diabetes and Metabolism Centre for diabetes, the National Heart Centre Singapore for her cardiac-related problems, and the Singapore National Eye Centre for dry eyes. So, she embodies the typical patient passing through the doors of SingHealth institutions.

The needs of the elderly, especially those who live alone, are unique. After they are discharged from an acute hospital for an ailment or surgery, they need to be watched over closely at home. If not, many tend to be re-admitted to hospital shortly after. They fall easily because they are still frail. Or their carer, even if a live-in, has not been sufficiently trained to spot early signs of trouble.

SGH, like many hospitals, offers a post-discharge Transitional Home Care service that monitors such frail patients closely. But the elderly tend to need a prolonged period of care, albeit not necessarily the sort of specialised care that an acute hospital provides.



**WE ARE POOLING EXPERTISE AND RESOURCES WITH OUR COMMUNITY PARTNERS TO ENSURE PEOPLE CAN BE CARED FOR ADEQUATELY IN THE COMMUNITY, AND EVENTUALLY IN THE COMFORT OF THEIR HOMES.**

PROFESSOR FONG KOK YONG, DEPUTY GROUP CEO (REGIONAL HEALTH AND MEDICAL), SINGHEALTH, AND CHAIRMAN, MEDICAL BOARD, SGH

Involving social care agencies and voluntary welfare organisations in eldercare is crucial, because they know the communities they serve well. Indeed, forging formal relationships between the partners to form a care network for the community ensures that "individuals do not fall through the gaps when they transit from one care setting to another", said Ms Peh Kim Choo, Chief of Programmes, Tsao Foundation. The Foundation champions successful ageing, the idea of physical, mental and social well-being in older age. Ms Peh is also Chief Executive Officer, and Director,

# What is best for Mdm Teo?

She is health care's Everyman and what she needs is the question SingHealth seeks to answer as it develops a health and social care network that will give residents and patients in the Outram area easy access to different types and levels of care.



ⓘ Mdm Teo Gek Hoon is the focus of SingHealth RHS' efforts to build a new network of care for the elderly. Involving social care agencies and voluntary welfare organisations in the care set-up is crucial to ensure "individuals do not fall through the gaps as they transit from one care setting to another", said Tsao Foundation's Ms Peh Kim Choo.

> Continued from page 3

### What is best for Mdm Teo?

Hua Mei Centre for Successful Ageing.

In addition to their medical and health care needs, patients also have emotional and social needs, said Ms Esther Lim, Assistant Director, SingHealth RHS. “In a busy hospital setting, we sometimes neglect this fact. We need to take these needs into account when we involve them in their care decisions,” she added.

Neighbourhood general practitioners (GPs) are another key partner in the network. As primary care physicians in their communities, GPs are responsible for their general well-being. Unlike hospital doctors, they are able to spend more time with patients, and can gain intimate knowledge of them and care for them from the proverbial cradle to grave.

Knowing their patients well means that GPs are able to tell when something is amiss and refer them to a specialist when they suspect or diagnose something serious. So GPs are the central figure in this network linking patients and other health care providers.

As the Everyman of health care in Singapore, Mdm Teo’s journey embodies what elderly patients with multiple conditions go through. To watch her story, go to [www.youtube.com/embed/YG2xB0poGo0](http://www.youtube.com/embed/YG2xB0poGo0)

## Linking the care chain

The SingHealth Regional Health System’s efforts to build a new network of care was inspired by Sweden’s successful Esther project, which approached health care from a patient- rather than provider-centered view.

The project by the Jonkoping County Council was focused on an imaginary patient – an elderly woman with complex health needs, called Esther. Central to the project team’s efforts was the question: What is best for Esther?

It was a question that the team repeatedly asked as it sought practical ways to improve patient flow and coordination of care through the complex network of providers, align capacity with demand, and strengthen coordination and communication among providers. The result was a link-up with various care providers – be they hospitals, home or social



care – to offer patients like Esther seamless care.

Jonkoping County, in the south of Sweden, has 34 primary care centres, three acute care hospitals, and a health workforce of 9,500, serving a local population of 350,000 across 11 municipalities.

The project led to significant improvements over three to five

years, including an overall reduction of 20 per cent in hospital admissions, a redeployment of resources to the community, and a 30 per cent reduction in hospital stay duration for heart failure patients. Wait times for referral appointments with specialists, such as neurologists, were also minimised by more than 30 days.



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# Killer bites

Few are vaccinated against rabies when travelling to places like Bali's Monkey Forest, but the risk of being bitten by a rabid animal still exists, study finds. *By Thava Rani*

**A** DOG STANDS with its teeth bared, snarling and foaming at the mouth. Wild dogs may be the popular image of rabies, but cats, bats and monkeys – common in this part of the world – are good candidates for the virus, which causes inflammation of the brain, and wild behaviour in the later stages of the disease.

Indeed, rabies is still endemic in almost all countries in the region. Depending on where they intend to go, travellers may need to protect themselves against rabies. Yet, many don't, according to a study by Singapore General Hospital's (SGH) Department of Infectious Diseases.

"Unfortunately, most travellers do not seek pre-travel advice and therefore may not be aware of the dangers. They don't realise that precautions are still necessary in certain countries," said Dr Limin Wijaya, Senior Consultant, Department of Infectious Diseases,

SGH. The department runs the SGH Travel Clinic.

"This is especially crucial if your travel plans include trekking or visiting rural areas, which might expose you to wildlife," added Dr Wijaya.

The study found that of 37 travellers who visited the Clinic between Dec 2010 and Dec 2013, for treatment for rabies, only two had been vaccinated against the virus. Of the group, 24 had received treatment within 24 hours of exposure; eight, after 24 hours, but within a week of exposure; and five, after a week. The 37 had no signs of rabies, but had been exposed through a bite or scratch, for example. Rabies is transmitted through saliva or bodily fluids.

A rabies infection is almost always fatal once signs of the disease appear. Initial symptoms are vaguely flu-like, such as fever, headache and general weakness. But as the disease progresses,

agitation, confusion and hallucinations can develop. Rabies – an infection of the central nervous system – can also lead to a fear of water and fear of suffocation. Eventually, brain function degenerates to a point where the brain is no longer able to regulate breathing or heartbeat, and the patient dies.

"The initial non-specific symptoms and the behavioural changes that are similar to psychiatric issues make the disease hard to diagnose," said Dr Wijaya.

That is why someone who has been bitten, scratched or licked by an unfamiliar animal must immediately wash the affected area with soap and water. He must then head to the nearest clinic or hospital for treatment with doses of the vaccine. If he hasn't been vaccinated, he will be given both the rabies vaccine and immunoglobulin. The immunoglobulin, which is injected into the wound area, provides immediate antibodies until his body is able to respond to the vaccine by actively producing antibodies of its own (which takes seven to 10 days).

Although ignorance may be one reason for not getting vaccinated, the prohibitive cost of the vaccine may be another. The pre-travel shot costs about \$500 – which can be substantially more than a budget air ticket to, say, Cambodia or Bali. Post-infection treatment takes a few more doses. For the infected who have not been vaccinated, the cost of treatment can run into the thousands.

Of the 28 patients in the study who were offered immunoglobulin, eight declined because of the cost – about \$2,000 for a person who weighs 60kg.

But declining carries a risk that patients bear. "As most patients are bitten overseas, there is no way to confirm if the animal is rabid.

"Once symptoms develop, nothing much can be done. So, as long as someone is bitten by an unprovoked animal, whether it is rabid or not, he should seek treatment in the form of post-exposure prophylaxis immediately," said Dr Chua Ying Ying, Consultant, Department of Infectious Diseases, SGH.

The study noted that most of the participants' injuries came from unprovoked (31 of the 38) attacks, and that most were bites or scratches from monkeys (17) or dogs (16). It concluded that with Asians' increased affluence and travel to neighbouring countries, there is a need to heighten awareness of the deadly consequences of rabies exposure, as well as the need for prompt and appropriate treatment.



Adventure travellers should seek pre-travel advice, including the need for vaccinations, said infectious diseases specialists Dr Limin Wijaya (left) and Dr Chua Ying Ying.

## Important facts about rabies

Immunoglobulin is not easily available in most South-east Asian countries. So get vaccinated if you are travelling to a part of the world known to have high levels of rabies and limited medical care.

Schedule a rabies vaccine six weeks before leaving for your holiday, as three doses are needed; the second dose is given seven days after the first, and the third 21-28 days after the first. The vaccination needs to be completed before departure for the body to develop immunity.

The last reported rabies-related death in Singapore was in 2000, when a Caucasian bitten by a dog in another country sought treatment at SGH, but later died.

The World Health Organization (WHO) estimates that more than 15 million people worldwide receive post-bite vaccination. This is estimated to prevent hundreds of thousands of rabies deaths annually.

Rabies is present on all continents with the exception of Antarctica, but more than 95 per cent of human deaths occur in Asia and Africa, according to the WHO.



PHOTOS: 123RF / ALVIN LUM

A bite or scratch from a dog, cat, bat or monkey in the wild should immediately be seen to as it is difficult to know if the animal has rabies.

# Tackling a preventable cancer

Immunotherapy – the new weapon in the arsenal against cervical cancer. By Thava Rani

**D**ECADES AGO, THE TREATMENT for advanced cervical cancer (where abnormal cells in the cervix grow uncontrollably) was radiation.

Then came clinical trials that showed that adding low-dose chemotherapy during radiation therapy (chemoradiation) improved survival outcomes. It became the gold standard worldwide for treating this cancer.

Fast forward to the present, and researchers are now developing the next paradigm for its treatment – incorporating immunotherapy.

The immune system recognises the human papillomavirus (HPV), which causes cervical cancer, as foreign to us, said Dr John Chia Whay Kuang, Visiting Consultant, Department of Medical Oncology, National Cancer Centre Singapore (NCCS).

“Preliminary data from earlier clinical trials indicate that cervical cancer responds to immunotherapy which blocks the cancer.

“Efforts are now underway to incorporate immunotherapy earlier in the treatment of cervical cancer. It’s a nasty disease. Half the patients at stage 3B relapse and succumb to their cancer. Doctors really need to do more to bring the field forward and improve the cure rate,” said Dr Chia.

## The worldwide trial

A worldwide clinical drug trial is now being done to explore the use of a compound, Z-100, in combination with standard chemoradiation therapy for six weeks on stage 3B cervical cancer patients. The Phase 3 trial involves about 500 patients, 20 of whom are

from three centres in Singapore, including NCCS.

“Results from an earlier Z-100 study in Japan, of patients with stage 3B locally advanced cervical cancer, were encouraging. The current study is to validate the earlier results,” said Dr Chia, who is a lead investigator in the Singapore trial.

He said Z-100 helps the immune system recognise and kill cancers. It also helps the body “remember” the cancer, so that if it encounters it again, it will kill it more efficiently.

This immunological “memory” is similar to what the immune system naturally activates against viral infections such as measles. The memory is lifelong, but cancer can subvert the immune system.

Incorporating immunotherapy into standard radiation therapy appears to be highly synergistic, and may overcome many barriers the cancer has against the immune system.

“Developing immunological memory is associated with much better survival because if there are tiny cancer ‘seeds’ elsewhere in the body, outside the field of radiotherapy, the immune system will destroy them. We anticipate that this will translate into improved cure rates.”

## Immunotherapy – the holy grail

Immunotherapy is now a major new wave and the fourth pillar of cancer treatment after surgery, radiation and chemotherapy. It’s already been shown to work better than chemotherapy in selected types of lung, kidney and skin cancers, Dr Chia said.

“There are about 800 immunotherapy clinical trials ongoing worldwide, exploring immunotherapy as a single agent or in combination with other drugs, for every imaginable tumour type. It’s become the holy grail of cancer therapy. The immune system is selective, and it’s always with you. We need to learn how to use it optimally with other cancer therapies, and how to make immunotherapy more potent and work better.”

Cervical cancer is the second most common cancer in Singapore women, with about 200 new cases diagnosed a year. Stage 1 can be managed with surgery or radiation therapy, with about 70 to 80 per cent of women being cured (defined as remaining cancer-free for at least 10 years).

Stage 2B and above are treated with chemoradiotherapy, but survival rates in the advanced stages are more limited, unfortunately.

“Standard treatment paradigms for the disease haven’t changed for the past 20 years. We’re excited to be pushing and developing the field. One thing’s for sure – we need to do better,” Dr Chia said.

## Vaccines can prevent it

Vaccines that can prevent infection by the human papillomavirus (HPV), which causes cervical cancer, have been available locally for several years.

“The vaccines are more than 90 per cent effective, but need to be given before an individual becomes sexually active. Parents can and should do more to bring their children for vaccination. It’s a preventable disease,” said Dr Chia.

The HPV infection is spread by sexual contact. In most cases, an infection is cleared by the immune system, but it sometimes persists and causes genital warts or cervical cancer.

Cervical cancer is also relatively unique among cancers because it can be picked up by a PAP smear while still in a “pre-cancerous” stage. Simple intervention or surgery can then get rid of the lesions, and prevent the cancer from developing.

Symptoms include abnormal bleeding (between periods, after sex or after menopause), pain during sex, or abnormal vaginal discharge. Women with symptoms should have regular PAP smears and consult a doctor to catch the cancer in its early stages.

“Vaccination and screening are highly effective. Every new patient diagnosed represents a failure – of our profession, our knowledge systems, our will and our culture. It is a huge disappointment, because the disease is so preventable,” said Dr Chia.



PHOTOS: IZBIF / THAVA RANI

It is possible to diagnose cervical cancer in the early stages through regular PAP smears and check-ups to look for abnormal symptoms.



Dr John Chia Whay Kuang is the lead investigator of the Singapore end of the worldwide trial. He said preliminary data from earlier clinical trials indicate that cervical cancer responds to immunotherapy which blocks the cancer.

# Why you need to take statins

Cholesterol levels can be kept safely in check if people take their medicines as prescribed. *By Suki Lor*



⤴ A diet rich in meat, eggs, fried food and whole milk dairy products can increase the cholesterol levels in the bloodstream. Control these levels with a healthy lifestyle, a balanced diet and by getting regular exercise.

**P**ATIENTS WHO diligently take their cholesterol medicines – mostly statins – manage to lower their cholesterol levels, according to a study.

This was one of the main conclusions of the study, which was conducted by SingHealth Polyclinics and sponsored by the Singapore Heart Foundation.

In Singapore, nearly two out of 10 adults aged 18 to 69 have high cholesterol – one of the top illnesses seen by polyclinics over the past 10 years.

Equal numbers of Chinese, Malays and Indians took part in the study, which found that while race did not make a difference, diligence in taking medicines did. Those who took their medicines as prescribed achieved their treatment goals, with the following success rates: Chinese – 82 per cent,

Indians – 70 per cent, and Malays – 69 per cent.

“Regardless of ethnicity, high cholesterol can be addressed with the use of medication,” said Dr Tan Ngiap Chuan, Director, Department of Research, SingHealth Polyclinics, who was the lead author of the study’s report.

High cholesterol can be reduced with medication such as statins – the most commonly used drugs to control low density lipoprotein (LDL) cholesterol. They work by blocking an enzyme that produces this “bad” cholesterol in the liver.

High levels of cholesterol – a waxy, fat-like substance that contributes to artery-clogging plaque – raise the risk of vascular diseases such as stroke and

diabetes. A low-fat diet and increased exercise can reduce cholesterol levels. Smoking and a sedentary lifestyle raise one’s risks.

Dr Tan acknowledged that some patients fear taking statins; about 54 per cent of a previous study’s participants believed that using statins long-term can damage the kidneys or liver.

Squashing fears about statins’ potential negative side effects, Dr Tan said that some, such as muscle aches and pains or raised liver enzymes, come few and far between.

Suggestions that statins should be avoided because they are harmful in the long run are exaggerations. Also, doctors regularly monitor patients who are on medication.

“Data shows that most of the

## Advice for those at risk

Those at risk of high cholesterol should stop/avoid smoking and exercise more.

It is important to eat a balanced diet, with home-cooked meals where possible.

People in their 40s should have their cholesterol levels checked.

Get a blood test done earlier if there are other risk factors, such as obesity, a family history of premature death from heart attack, or a smoking habit.

Consider taking medication if diet and exercise do not help control the risk. It is important to have a family doctor who can regularly monitor your condition to check for adverse effects, if any, which are rare.

## Desirable cholesterol levels

Cholesterol in mmol/L (mg/dl)	Average adult without known coronary risk factors	Adult with heart disease/diabetes/ other coronary risk factors
LDL cholesterol	< 3.4 (130)	< 2.6 (100)
HDL (high protein density, or “good”) cholesterol	≥ 1.0 (40)	≥ 1.0 (40)
Total cholesterol	< 5.2 (200)	< 4.1 (160)



⤴ According to Dr Tan, suggestions that statins are harmful in the long run are exaggerations, especially since doctors monitor patients who are on medication.

# When thin isn't in your favour

Leaner diabetics are more likely to die of liver disease, a study has found.

By Sol E Solomon



PHOTOS: 123RF / ALVIN LUM

**D**IABETES IS A DISEASE often associated with obesity and a sedentary lifestyle. A similar connection can be made between obesity and fatty liver disease – damage to the liver from build-up of fatty tissue in the liver when the body is unable to handle excess dietary fat.

Not surprisingly, evidence from research is showing a relation between diabetes and liver disease. But a new study has found greater weight and the risk of dying from liver disease to have less of a connection for people with diabetes.

The Association Between Diabetes Mellitus And Cirrhosis Mortality: The Singapore Chinese Health Study found that among participants with diabetes, those with normal or below-normal BMI (body mass index) had a greater chance of dying from fatty liver disease than those who were overweight.

It noted that among participants who did not have diabetes, the risk of death from fatty liver disease was 1.72 times higher among the overweight when compared to lean participants. That risk increased threefold for patients who were both diabetic and overweight. However, the risk was highest – at 5.5 times – among those who were diabetic, but lean.

The study was led by Professor Koh Woon Puay of Duke-NUS Medical School and the Saw Swee Hock School of Public Health, National University of Singapore, and Dr George Goh, Consultant, Department of Gastroenterology and Hepatology,

Singapore General Hospital (SGH).

The research looked at data from the Singapore Chinese Health Study – a previous study by Prof Koh that had recruited some 63,000 middle-aged and elderly Chinese living in Singapore between 1993 and 1998. Information on each participant's diet, lifestyle, and medical history had been recorded via in-person interviews. Participants in the cohort who later died from liver cirrhosis were identified via the nationwide death registry for the new study. Over an average of 17 years of follow-up, up to the end of 2014, the number of deaths from cirrhosis in the cohort stood at 133.

Although the findings clarified the relationship between diabetes and cirrhosis-related deaths, Dr Goh said that “the underlying reason for a higher risk of fatty liver disease-related death among lean patients with diabetes has not been ascertained”.

Still, the findings have important implications, with the incidence of type 2 diabetes – which is linked to obesity and a sedentary lifestyle – increasing at an alarming rate in Singapore and elsewhere in Asia, where people have relatively low body weights.

For this reason, patients with diabetes should be screened for liver disease in addition to other known complications, said Dr Goh. “This may be even more [important] in lean diabetic patients as the risk is paradoxically highest in this group,” he added.

Liver disease, like cirrhosis, or



## PATIENTS WITH DIABETES SHOULD BE SCREENED FOR LIVER DISEASE IN ADDITION TO OTHER KNOWN COMPLICATIONS.

DR GEORGE GOH, CONSULTANT, DEPARTMENT OF GASTROENTEROLOGY AND HEPATOLOGY, SINGAPORE GENERAL HOSPITAL.

hardening and scarring of the organ, usually has no signs or symptoms until it is advanced – when treatment options get limited. And liver ailments are usually not included in the bundle of screening tests for diabetes management.

In Asian populations, chronic hepatitis B or C infection is the main risk factor for severe liver disease. But the number of cirrhosis deaths from viral causes is expected to decline because of vaccination against hepatitis B infection and effective treatment for viral hepatitis B and C. On the other hand, fatty liver disease is increasing in both Western and Asian populations as an important cause of chronic liver disease and consequently cirrhosis death.

A paper on the study's findings was published in the February 2017 print issue of *Liver International*, which publishes high quality original research in hepatology.

## What is non-alcoholic fatty liver disease?

Non-alcoholic fatty liver disease, commonly referred to as NAFLD, refers to a range of conditions caused by a build-up of fat in the liver (more than 5 per cent), that are not due to alcohol consumption.

The liver stores excess calories as fat for future use, such as in times of starvation. But when there is no opportunity for this extra energy to be used up (because of excessive eating), the fat is accumulated. Overweight people who have metabolic syndrome – a combination of several diseases such as type 2 diabetes, obesity, hypertension and high cholesterol – and don't metabolise their fat properly also tend to accumulate fat in their liver.

The early stages of fat accumulation in the liver, or steatosis, are relatively harmless, but 40-60 per cent of patients could see their condition advance to the more serious non-alcoholic steatohepatitis (NASH), in which the liver becomes inflamed and scarred. Of this group, 10-25 per cent could eventually have cirrhosis, in which the liver becomes severely scarred and hardened. The damage is permanent and can lead to liver failure and cancer.

Fatty liver has few symptoms until the advanced stages, when cirrhosis has occurred, and is mostly discovered through an abnormal blood test result or an abnormal ultrasound scan finding. If signs of the disease are present, they are usually general and vague, like tiredness, nausea, and discomfort over the right upper abdomen.

Increasingly, NAFLD is being found to affect people who are not overweight or obese.



Prof Koh Woon Puay (left) and Dr George Goh's study found the risk of liver disease to be paradoxically highest among lean diabetics.

# A different approach

New hip replacement surgery avoids cutting into major muscles, making recovery faster and less painful. *By Desmond Ng*

**F**OR PATIENTS APPREHENSIVE about undergoing total hip replacement surgery, a new technique now promises a faster post-surgery recovery, a shorter hospital stay, and less pain.

Traditionally, hip replacement surgery is performed using a method known as the posterior approach. In this technique, the surgeon cuts through the skin and muscle of the buttocks to get to the hip joint.

With the new direct anterior technique, however, the surgeon cuts through skin at the front of the upper thigh but not the major muscles, nerves and blood vessels. This is possible because of the body's natural anatomy, and the surgeon merely spreads the muscles apart to get to the hip joint.

"In the traditional approach, the surgeon always has to cut the muscles. But in the direct anterior approach, the muscles are spared," said Dr Pang Hee Nee, Consultant, Department of Orthopaedic Surgery, Singapore General Hospital (SGH).

This muscle-sparing technique has a number of advantages, Dr Pang said. With the patient lying on his back, x-rays can be done easily and accurately. This makes putting in the implant more accurate, and a better fitted implant lasts

longer and poses less risk of dislocation. And because the muscles and tissues aren't cut, they don't have to be stitched back after surgery. So, recovery is faster and patients feel less pain.

Indeed, a comparison of 25 hip replacements done at SGH using the new technique with another 25 under the traditional posterior approach found that the first group experienced less pain (0.6 on average versus 2.1 on the pain score), a shorter hospital stay (2.1 days versus 4.8 days), and took less than a day after surgery to begin walking (0.8 days versus 1.3 days).



**THIS MUSCLE-SPARING TECHNIQUE HAS A NUMBER OF ADVANTAGES. BECAUSE THE MUSCLES AND TISSUES AREN'T CUT, THEY DON'T HAVE TO BE STITCHED BACK AFTER SURGERY. SO, RECOVERY IS FASTER AND PATIENTS FEEL LESS PAIN.**

DR PANG HEE NEE, CONSULTANT, DEPARTMENT OF ORTHOPAEDIC SURGERY, SGH

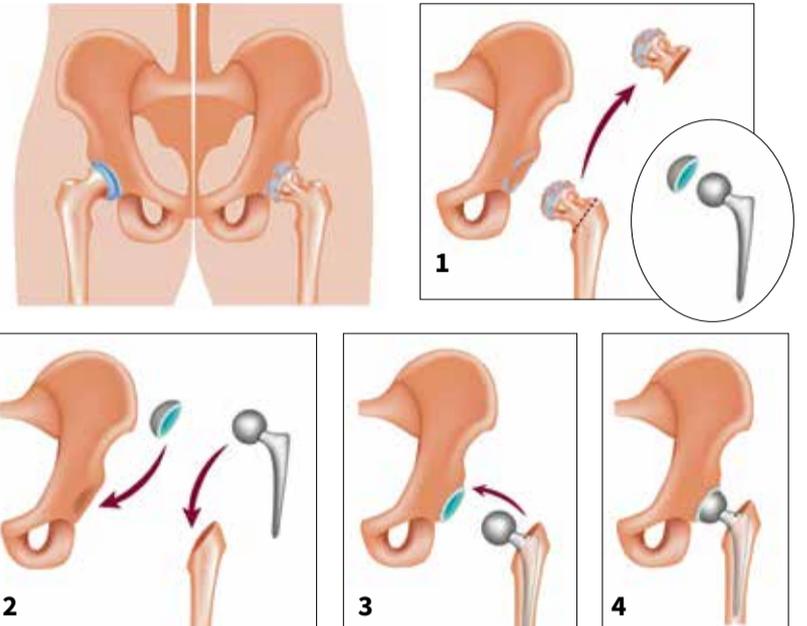
Patients who underwent the traditional method had to use walking aids and avoid activities like squatting and crossing their legs for up to six weeks post-surgery. But the other group could walk normally within two weeks.

In studies done overseas, patients were also found to have significant improvements at six weeks, six months and one year after surgery, said Dr Pang.

Almost anyone who needs a hip replacement can opt for the anterior approach. The few cases deemed unsuitable for this procedure would be those who have had their hip joint replaced before, suffer from infected implants, or have severe deformities in the thigh bone, said Dr Pang.

In the United States, between 20 and

## Hip replacement surgery



PHOTOS: I33RF / ALVIN LIM

➤ The hip is a ball-and-socket joint. Muscles, cartilage and ligaments surrounding the joint allow it to move smoothly and painlessly. When the cartilage or cushion between the joint breaks down because of osteoarthritis, for instance, an artificial joint can be inserted in a hip replacement procedure.

## Early treatment helps stop osteoarthritis from worsening

The most common cause of a damaged hip joint is osteoarthritis, with up to 40 per cent of the adult population afflicted with the condition. But not every one needs hip surgery.

Early stage joint damage is treated with medication – mainly painkillers – and physiotherapy, said Dr Pang Hee Nee, Consultant, Department of Orthopaedic Surgery, Singapore General Hospital (SGH). Although this won't cure the condition, it can help stop it from worsening.

"Older patients generally delay seeking treatment," said Dr Pang, adding that early treatment can help restore their quality of life earlier and at a younger age.

Surgery is offered only when medication and physiotherapy

don't help, or if the damage to the joint is so advanced that it is causing severe pain and is interfering with everyday tasks or a good night's sleep.

Osteoarthritis is a common ailment and occurs when the cartilage covering the ball and socket joint has been worn away. The condition affects people past the age of 50, and is not often seen in those under 40. It is known to affect women slightly more than men.

Each year, SGH sees about 500 hip osteoarthritis patients, and performs about 300 total hip replacements. And age is no barrier to a hip replacement, either; one patient safely underwent the procedure at age 78, said Dr Pang.



➤ For years, Mr Tiang Ko Kang (left, with Dr Pang Hee Nee) had problems with his knees and hips, suffering severe pain even when walking. Physiotherapy helped him to an extent, but he decided to undergo hip replacement surgery in 2015 for a more permanent solution.

30 per cent of surgeons now perform hip surgery using this method, up from around 5 per cent five years ago, Dr Pang said.

Although it is gaining in popularity, the technique is technically demanding. In addition to rigorous training, surgeons have to perform around 40 cases to be able to do this operation well.

The risks facing surgeons who are not well trained in this approach include fracturing a patient's thigh bone, blood loss from a longer procedure, and joint

dislocation. Otherwise, the risks are minimal; some patients report some numbness which eventually goes away.

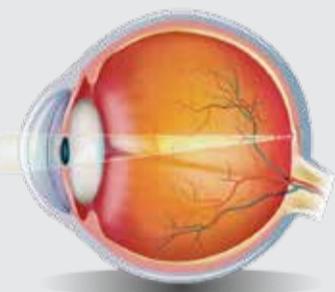
Dr Pang is one of the few surgeons in Singapore trained in the direct anterior approach in total hip replacement, having spent a year learning the technique in Canada, with shorter visiting fellowships in Japan and the US. Dr Pang has run workshops for his counterparts in SGH and the region who are keen to pick up the technique.

# Go play outdoors!

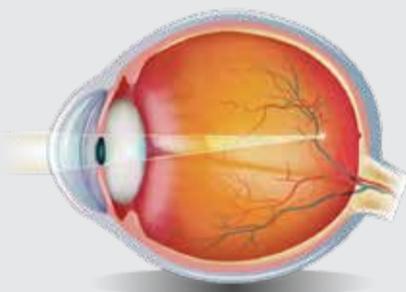
Getting young children to play outdoors for a few hours a day can help prevent or delay the onset of myopia. *By Suki Lor*



NORMAL EYE



MYOPIC EYE



PHOTOS: 123RF / ALVIN LUM

Prof Saw advises children, including those already with myopia, to spend some time outdoors everyday. This can reduce their risk of developing high myopia in later years, which can lead in adulthood to pathological myopia – elongation of the eyeball (above) – and other conditions that can cause irreversible blindness.

IF PROFESSOR SAW SEANG MEI had her way, all pre- and primary school children would be sent to play outdoors for two to three hours a day. Why? Because it's been found that sunlight can stave off myopia.

Playing outdoors can help prevent or delay the onset of myopia, said Prof Saw, who is Head, Myopia Research Group, Singapore Eye Research Institute (SERI), and Professor of Epidemiology, Saw Swee Hock School of Public Health, National University of Singapore (NUS).

Spending time outdoors also reduces children's risk of developing high myopia (500 degrees or more) in later years, she said. High myopia in adults can lead to

pathological myopia, in which the eyeball elongates, and other conditions such as myopic macular degeneration, cataract, and glaucoma, all of which can cause irreversible blindness.

Prof Saw said bright outdoor light keeps myopia at bay by stimulating the release of dopamine in the retina, which prevents elongation of the eye. On a clear, sunny day, outdoor light levels are much higher than in a well-lit room, and a glass classroom with sunlight streaming in from all sides has been developed to test and evaluate this in Guangzhou, China.

So, she advises children, including those already with myopia, to spend some time outdoors every day. "But

protect yourself by wearing sunscreen, a wide-brimmed hat and wrap-around sunglasses, and by drinking water. In Singapore it's best to go out early in the morning or later in the evening because it's too hot between 10am and 4pm."

Prof Saw led the Singapore Cohort Study Of The Risk Factors For Myopia, conducted by SERI and NUS, which studied 1,979 seven- to nine-year-olds between 1999 and 2001, and tracked them until 2007.

"In the majority of studies, a person is only tested once, but we examined each person every year for eight years, and could then predict what would happen to them in the future. We looked at a wide variety of risk factors for myopia, but the most important was the amount of time a child spends outside," said Prof Saw.

The study found that 69.1 per cent of participants aged 11 to 18 had myopia; 12.6 per cent had high myopia. It also found that the best way to predict whether a child would develop high myopia is to look at when he or she first became short-sighted.

"The earlier a child develops myopia, the more likely he may develop high myopia in later life, because there is more time for the myopia to progress, until about 20 to 25 years of age when the condition stabilises."

According to the study, the mean age at which Singaporean children start having myopia is eight and a half. For every year earlier than this, the final degree increases by 100. Progression is also highest in the first three years after the onset of myopia, so the earlier treatment starts, the better.

Prof Saw said that myopic children should see an eye care professional so that their progression rates can be monitored and treatment can be considered. Their time spent on near work such as reading and writing, using the computer, or playing handheld games should be moderated. They should also take frequent breaks.

Prof Saw also said that for those who developed it at an early age, the most effective way to slow the progression of myopia is atropine eye drops. But this is recommended on a case-by-case basis.

As a child grows up, myopia progresses at a slower pace, and treatment can then include special daily disposable contact lenses. There are ongoing clinical trials in many countries, including Singapore, to test their safety and efficacy.

## The myopia epidemic

Myopia has reached epidemic proportions globally, and in urban areas of Asia, including Singapore, Taiwan, Hong Kong, Japan, South Korea and China, "it's a huge health problem", said Professor Saw Seang Mei, Head, Myopia Research Group, Singapore Eye Research Institute (SERI).

"In the past 20 years, rates in young people living in urban areas in Asia have risen to very high levels," she said.

Singapore's rates are among the highest in the world, she added. About 82 per cent of young adult males have myopia, with 15 per cent having high myopia. Contrast this with the myopia rate of 26-36 per cent and high myopia rate of 3-4 per cent in the 40-80 age bracket.

Prof Saw warns of a possible myopia epidemic in Singapore by 2050, as the current younger generation grows older and the population ages. She said that it is estimated that five million of the country's projected six million people will be myopic, and that 900,000 of these will have high myopia.



Prof Saw said that myopic children should see an eye care professional so that their progression rates can be monitored.

# Testing the waters

Oxygen-rich water is being clinically tested to see if it can help people with type 2 diabetes. *By Anita Yee*

**C**HANGI GENERAL HOSPITAL (CGH) is conducting two rigorous human clinical trials to establish the effectiveness of Hyflux's oxygen-rich ELO Water and ELO Gel on diabetes control and diabetic foot ulcers.

Developed in Hungary in 2003, ELO ("elo" means "live" or "living" in Hungarian) Water was recently found to retard human cancerous tumours in mice, in a trial conducted in 2016 by Australia's Monash University.

The CGH trials are the first human trials involving type 2 diabetics\* and are being led by Dr Joan Khoo, Senior Consultant and Chief, Endocrinology, CGH.

Hyflux, which invested in the Hungarian technology, used its in-house research and technical expertise to scale up production of ELO Water in Singapore with consistent quality in 2016.

## Three- and six-month trials

One trial will study whether patients with diabetes can better control their blood sugar levels by drinking ELO Water in addition to their ongoing lifestyle adjustments and medical treatments.

In this six-month double-blind, randomised, controlled trial, participating diabetics will be given 1.5 litres of water a day to drink. Neither they nor the researchers will know who is drinking ELO Water or a placebo.

CGH will recruit trial participants with type 2 diabetes aged 21 to 70 via its clinics.

The other trial assesses how effective it is to bathe diabetic foot and ankle ulcers with ELO Water or apply ELO Gel to them. This three-month randomised, controlled pilot study involves 30 participants.

Diabetic foot and ankle ulcers are complications of diabetes. Gangrene and infections from a non-healing ulcer can lead to amputation for patients.

Dr Lee Chien Earn, Chief Executive Officer, CGH, said the collaboration reflects the hospital's commitment to innovation in health care. "Hyflux

has come to us with an interesting hypothesis based on animal studies that could help our patients with diabetes. We have embarked on this research collaboration to test this hypothesis in a robust scientific way," he said.

Hyflux is committing \$2.5 million to the trials. "If the trials are successful, it will ultimately improve the quality of life for diabetic patients," said Ms Olivia Lum, Executive Chairman and Group CEO, Hyflux.

*\*Nearly 13 per cent of 20- to 79-year-olds in Singapore are diabetic; 90 per cent of them have type 2 diabetes.*

## Why oxygen is important for cells

Oxygen is important in the energy economics of a cell. Cells need high levels of energy for many functions, including repair and regeneration, said Dr Choy Mei Yee, Director of Clinical and Biomedical Research at ELO Water Pte Ltd, a Hyflux Group company.

She explained that cells contain mitochondria (power generators), which convert glucose to adenosine triphosphate (ATP) – the energy of the cell.

Without oxygen, cells can only generate two ATPs from one glucose molecule. But when oxygen is available to the cells, the mitochondria can produce 32 ATPs from one glucose molecule. This demonstrates the important role oxygen plays in efficient energy production.



PHOTO: IZBF

Oxygen-rich ELO Water was developed in Hungary in 2003. It is being tested in clinical trials here to establish its effectiveness on diabetes control, and diabetic foot and ankle ulcers.

How can I better care for my loved one?

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# Are health insurance riders essential?

Riders are attractive when designed to reduce or eliminate out-of-pocket expenses. *By Annie Tan*



↑ Apart from covering deductibles and co-payments, riders offer a variety of other add-on incentives such as hospital stay allowances and daily cash benefits for families of patients who are sole breadwinners.

A HEALTH CARE INSURANCE RIDER can help take the sting out of large medical bills, allowing policyholders to pay next to nothing or nothing for their treatments.

This is because hospitalisation plans typically don't cover a full medical bill. The insured has to pay a portion of the bill, such as a deductible (the threshold at which the insurance company will start to reimburse the insured for treatments) and a co-payment (the percentage of the rest of the bill that the insured pays).

For example, if the bill is \$10,000, the deductible amount is \$3,000, and the co-insurance percentage is 10 per cent, the insured will have to pay the first \$3,000, plus 10 per cent of the remaining \$7,000 before insurance kicks in. In other words, he pays \$3,700 and the

insurance company pays \$6,300.

Hospital bills for major ailments and critical illnesses can run into the hundreds of thousands, so even with insurance, patients can end up forking out daunting five-figure sums. But having an insurance rider that covers the deductible and co-payment – either partly or totally – he may then pay little or no out-of-pocket expenses.

Having a rider is particularly pertinent amid concerns of mounting health care costs, but some argue it inadvertently drives up health care costs, leading to a vicious circle of overconsumption of treatments and rising premiums.

Riders may encourage the so-called “buffet syndrome” in which the insured goes overboard on medical treatments. Since patients do not feel the pinch of co-sharing the bill, they are more likely

to opt for unnecessary or non-essential treatments, or over-consume medical services. And health care professionals may be tempted to over-treat or over-charge patients.

Indeed, a task force set up by the Life Insurance Association of Singapore, the Ministry of Health, and the Monetary Authority of Singapore found that patients with full coverage racked up bills that were 20-25 per cent higher than that of their co-paying counterparts. This pushes health care and insurance premiums up for everyone in the longer term.

That said, from a consumer's perspective, it is advantageous to invest in a rider. A policyholder need not worry if he wants to be attended to by more experienced specialists, to stay in a single room, or be warded at a private hospital.

Riders don't cover just deductibles and co-payments. Some are designed for the insured to add on other needs. For instance, some riders pay an allowance for every day that the insured has to stay in hospital, to help make up for lost income for family breadwinners and the self-employed. Another bonus: choosing to stay in an A, B1, B2 or C ward in a restructured instead of a private hospital may allow the insured to enjoy a daily hospital incentive of between \$75 and \$300.

Insurance usually offers coverage for standard hospital treatments, and not alternative medicines or treatments. But premium riders such as PruShield Extra (Prudential), AXA General Care, AIA Max Essential, and Aviva's

MyHealthPlus will reimburse the insured for post-hospitalisation care, and even traditional Chinese medicine (TCM) treatments.

Some other riders, like AXA Home and Great Eastern's Total Health Plus, even cover home visits by doctors, nurses and physiotherapists, and so are useful for patients with long-term illnesses such as stroke, cancer or dementia.

To encourage speedy recovery, some insurance companies provide get-well incentives. NTUC Income's Daily Cash Rider includes a get-well benefit upon discharge, Great Eastern's Total Health includes a lump sum payment of \$500 for health supplements or fitness classes, and AIA offers a discount on its Max Essential premiums for participation in their wellness programme to encourage a culture of holistic wellness and reduce burgeoning health care costs.

While all these add-ons can be very persuasive, many may not be absolutely necessary. Bear in mind that Medisave savings cannot be used to pay for riders, and that rider premiums tend to increase with age. A rider may cost a person \$30 per month, or \$360 a year, in his 20s, and escalate to \$150 a month (\$1,800 a year) in his 60s – when he is likely to be retired and have to mind his finances more carefully.

Many insurance companies tier their riders and price them based on the benefits they offer, so consider investing in the “lite” or “basic” versions if long-term affordability is a concern.

## Examples of riders offered by some insurers

Concerns	Options	Riders
<b>Budget limitations</b>	“Lite” riders pay a percentage of the deductible or co-insurance, and provide a daily hospital incentive for staying in a cheaper ward.	<ul style="list-style-type: none"> <li>• PruShield Extra Lite</li> <li>• NTUC Income's Assist Rider</li> </ul>
<b>No-frills coverage preferred</b>	“Basic” riders cover 100 per cent of the deductible and co-insurance, and provide a daily hospital incentive for staying in a cheaper ward.	<ul style="list-style-type: none"> <li>• AXA Basic Care</li> <li>• NTUC Income's Plus Rider</li> </ul>
<b>Focus on healing and holistic wellness</b>	Premium riders cover 100 per cent of the deductible and co-insurance, post-hospital follow-up costs, and include TCM. Some also include complementary treatments such as podiatric, chiropractic or osteopathic treatment.	<ul style="list-style-type: none"> <li>• PruShield Extra</li> <li>• AIA Max Essential</li> <li>• Aviva's MyHealthPlus</li> </ul>
<b>Long-term illness</b>	Some riders cover home visits by doctors, nurses and physiotherapists, for patients with long-term illnesses such as cancer, stroke or dementia.	<ul style="list-style-type: none"> <li>• Great Eastern's Total Health Plus</li> <li>• AXA Home Care</li> </ul>
<b>Parents or breadwinners</b>	Some riders provide daily cash benefits for each day you are hospitalised, or coverage for the insured's child(ren) as well.	<ul style="list-style-type: none"> <li>• NTUC Income's Daily Cash Rider</li> <li>• NTUC Income's Child Illness Rider</li> </ul>

For more information and updates of the various Integrated Shield Plans (IPs), visit [www.moh.gov.sg](http://www.moh.gov.sg) and the IPs' home pages.

## Eat carbs during and after workouts

It is known that exercise has myriad long-term benefits – weight control, keeping blood pressure in check, boosting both circulation and metabolism, and more. But it has also been proven that high-intensity workouts can lead to overexertion and affect the immune system adversely. This can result in physiological and biochemical changes in the body. A new research on recovery strategies by the Institute of Health and Biomedical Innovation at Australia's Queensland University of Technology indicates that eating carbs at intervals during or immediately after strenuous exercise – bananas are one easy option – counters this temporary immunodepression and helps speed the body's rate of recovery. So, if you are an exercise junkie, give those carb-free diets a rest.

Source: *Journal of Applied Physiology*



## Eat well to sleep well

Probiotics are helpful bacteria that keep our gut healthy. They are present naturally in some fermented foods like yogurt and commonly prescribed as dietary supplements for digestive problems. Prebiotics, on the other hand are just gaining recognition. A study by a team at the University of Colorado Boulder in the United States has found that a diet rich in prebiotics can help us cope with stressful events and harmonise the sleep-wake cycle. Prebiotics are non-digestible food components that promote the growth of beneficial microorganisms in the human gut. It was found that when these microbes digest the prebiotic fibre in foods like onions, leeks, chicory and other vegetables, they simultaneously release by-products that prompt the brain to induce the positive effects. So, why argue when all it takes is getting some healthy fibre-rich vegetables into our diet?

Source: *Frontiers in Behavioral Neuroscience*

## Lace your cups of joe with cocoa

If you rely on coffee or caffeine to keep you awake, you're probably also familiar with its effects: caffeine may boost alertness and reaction time, but it also increases anxiety and irritability. Researchers from the University of Georgia in the United States have found that adding cocoa – chocolate – to coffee reduces the latter's anxiety-producing effects. Funded by Hershey's, the study tested four different concoctions on a group of volunteers: plain brewed cocoa, cocoa with caffeine, caffeine without cocoa and a placebo with neither. The group was then put through various exercises to test their focus, speed of comprehension, and alertness. Overall, mixing cocoa with caffeine seemed to enhance cognitive skills, mood, attention and understanding. So, next time, you might want to try a mocha latte in place of your usual kopi-o (long black).

Source: *BMC Nutrition*



## Omega-3s against the haze

Air pollution is inevitable in cities, and our seasonal haze problem makes it worse. Most dangerous are the tiny PM2.5 (atmospheric particulate matter) particles that can penetrate the lung barrier and accumulate in multiple organs, causing pulmonary and systemic inflammation. New research by a team at the Massachusetts General Hospital (part of the Harvard Medical School) has revealed that consuming plenty of omega-3 fatty acids can help mitigate the ill-effects of particulate exposure – they were found to be able to both treat, and prevent, the side effects. There's no better reason to eat plenty of fish, fortified eggs, whole grains and nuts, spinach, watercress, and flax and hemp seed oils.

Source: *ScienceDirect and WebMD*

### EVENT CALENDAR

#### World Thalassaemia Day\* & Blood Donation Drive

**DATE:** May 9, Tuesday

**TIME:** 10am–4pm

**VENUE:** KK Women's and Children's Hospital (KKH), Auditorium Foyer (Training Centre), Level 1, Women's Tower

**FEE:** Free

This free public event is being organised by KKH's National Thalassaemia Registry to promote awareness about the disease and how others can help. To make a blood donation, please bring along your NRIC (passport for non-Singaporeans) or Donation Card.

For more details, log on to [www.hsa.gov.sg](http://www.hsa.gov.sg) or [www.donorweb.org](http://www.donorweb.org) or call 6394 1863.

\*Thalassaemia screening will be done for the first 100 participants only. Terms and conditions apply.

#### Toddler Feeding Workshop

**DATE:** May 13, Saturday

**TIME:** 10am–12pm

(pre-registration starts at 9.45am)

**VENUE:** KKH Patient Education Centre, Room 1

**FEE:** \$10 - KK Junior Club (KKJC) members

\$15 - Non-KKJC members

**REGISTRATION:** Closes once capacity is reached. Call 6394-1268 (Monday-Friday, 10am-5pm) for more details or to register. Log on to [www.kkh.com.sg/events](http://www.kkh.com.sg/events) to download the registration form

Feeding your child can be enjoyable if he enjoys the meals and snacks you prepare for him. However, it can be stressful if he is picky or refuses the food you offer him. This workshop will help parents who are worried about whether their child is eating enough for his growth and development, and offer advice on how to encourage acceptance of different tastes and textures.

#### NNI Brain Awareness 2017

**DATE:** May 20-21, Saturday-Sunday

**TIME:** 9am–5pm

**VENUE:** Our Tampines Hub, Tampines Avenue 4, Block 51

**FEE:** Free

Organised by the National Neuroscience Institute (NNI), this public awareness event will enable visitors to learn more about stroke and other neurological conditions, such as dementia and brain tumours, through a weekend of activities. These include a health carnival, talks by specialists, and memory screenings. For more details, log on to [www.nni.com.sg](http://www.nni.com.sg).

Visit [www.singhealth.com.sg/events](http://www.singhealth.com.sg/events) or the websites of respective institutions for any changes, more information and other listings.



# Let them live!

When a psychologist says you're doing too much for a loved one and it's time to stop, you might just want to listen. *By Suki Lor*

**A** SA PSYCHOLOGIST, Ms Eveline Silva has noticed that many dementia patients here are not allowed to do things they're able (and possibly willing) to do themselves.

And this, she laments, is because Asian societies tend to be overprotective of their aged loved ones.

"Caregivers prevent these patients from doing even simple things. This only disempowers them and makes them feel like invalids," said Ms Silva, Senior Psychologist, Neurology Department, National Neuroscience Institute (NNI).

She said while family support is important, the patient's own frame of mind is just as vital. "They should be encouraged to lead as active a life as possible."

Using the analogy of an untrodden

pathway which gets hidden by lack of use and overgrowth, she said, "You have to walk the pathway to maintain it. It's the same with the brain, which has many pathways connected to each other. Staying active improves this connectivity."

So, Ms Silva tells families to "let go and let them".

"As far as possible, let your loved ones do things for themselves. Let them make their own drinks, choose their own clothes, feed themselves. Let them live... as long as they stay safe."

## Helping them remember

In her work at NNI, Ms Silva focuses on re-igniting patients' old passions, which may have dimmed, and creating new neural pathways in their brains.

She helps neurologists make diagnoses

by presenting her assessments of patients after a battery of tests, including the neuropsychology test which shows whether a patient's brain can do what it's supposed to do.

"We push them. We ask them questions regarding numbers and language, to find the threshold of what they know and don't know."

She also does individual counselling, which is customised to each patient's interests and background, and group rehabilitation, which offers patients scope for socialising.

One programme inspired by a Finnish intervention study and adapted for local use, and dubbed "Oh Yes", helps patients understand the theory and practice of memory. A similar programme dubbed "Oh Wow" helps patients relive old memories with music, images and conversation.

"We play old favourites like *Rasa Sayang* and Teresa Teng's songs. We show pictures of old Katong, and nostalgic items such as their dating photos, and ask them to talk about them. We also have them dancing the *joget* (a traditional Malay dance) and teaching each other ballroom dancing.

"We've seen a lot of them transform. They became more animated and alive as they share experiences. As long as they're talking, they're thinking. We also encourage them to teach: for example,

they can teach family members to cook, or to play 'dum' (checkers)."

The smiles and occasional hugs she gets from her patients in return confirm that this is her true calling.

## Better than banking

Her entry into psychology coincided with the birth of her son. She had quit her job in an investment bank to accompany her husband on an overseas posting, during which she had lots of time to focus on the boy.

"I had nothing to do except spend time with him. I was forming theories about his behaviour and trying to fathom his thoughts. I was wondering what made him tick and how to have a happy baby."

Ms Silva read books on psychology and raising children, and when he was ready for childcare, she read up on childhood education.

When the family returned to Singapore, she decided to do a degree in psychology, and after graduating, went to work in the private sector.

When her son (an only child) was on his way to study at University College London, she decided to sign up to specialise in paediatric neuropsychology at the same university (partly also to be with him). Her husband too applied to further his studies there.

"All three of us got places there. Of course my son was upset," Ms Silva said.

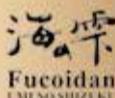
But after she had completed just two modules, NNI offered her a job. It was too good to pass up, so she headed back to Singapore to work at its memory clinic with dementia patients.

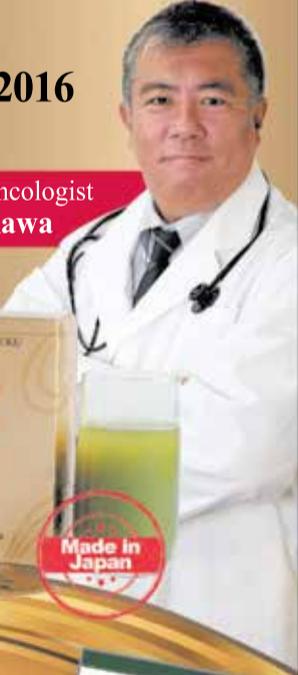
Her son heaved a sigh of relief and she's never looked back.

"I matched my professional development with stages of my child's development. But now I'm able to attend to a more mature cohort, thanks to the exposure I have at NNI," she said.

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PHOTO: ALVIN LIM

➤ In her work Ms Eveline Silva focuses on re-igniting patients' old passions which may have dimmed, and creating new neural pathways in their brains.

# Taking the long view

After five years in medical school and six more years of specialist training, how many doctors will arm themselves with yet another qualification – in business administration, of all things? Here's one who did. *By Suki Lor*

**W**HAT EXACTLY DOES A DOCTOR do with an extra qualification in business administration?

Lots, according to glaucoma specialist Dr Desmond Quek, Consultant, Singapore National Eye Centre (SNEC).

He got himself an INSEAD EMBA (Executive Master of Business Administration), because a niche area of interest for him is improving efficiency in the workplace. And by doing so, he aims to enhance patient care.

"There's a dearth of clinicians trained in administration. It's important to have leaders who intimately know the needs of doctors and the challenges they face, so that they can propose better ways of doing things," he said.

He believes he can contribute more in administration than in research and education, although he still does both now, in addition to clinical work.

He also fits in some administrative work. As SNEC's Director of Medical Informatics, Dr Quek helped oversee the design and implementation of the electronic medical records and is now analysing data from it. "We want to use it to see how we can improve the way we run our clinics and treat patients."

## Why ophthalmology?

After graduating in 2001, he was rotating specialities trying to decide which to choose, when a stint as an anaesthetist at the now Changi General Hospital did the trick.

During a surgical procedure, the then head of ophthalmology, Dr Aliza Jap, invited him to look down a microscope. He did and was mesmerised by what he saw.

"It was amazing to see in 3D how complex and intricate a small organ like the eye was. I owe my interest in the eye and career to Dr Aliza Jap," said Dr Quek.

He also credits his grandmother who looked after him on weekdays when he was young while his parents worked. "I am who I am today because of her," he said.

A strict disciplinarian, she set high standards for him. She also encouraged him to give his best and to excel academically, so over time it became natural for him to want to continue to do well.

His mother was a big influence



**I'M A FIRM BELIEVER IN WORKING SMART AND HAVING AN EFFICIENT SYSTEM. THIS LETS YOU DO A LOT MORE IN THE SAME AMOUNT OF TIME.**

DR DESMOND QUEK, CONSULTANT, SNEC

too. He would, on some Saturdays, accompany her to the polyclinic where she was a nurse. But, neither she nor his father ever pushed him to do medicine. "They just wanted me to do whatever would make me happy. And for as long as I can remember, I wanted to be a doctor."

## Work-life balance

His parents got their wish. Ophthalmology offers him both medical and surgical aspects, as well as work-life balance, with fewer emergencies than some other specialities.

He sees more than 100 patients a day, and is happiest when they can see clearly, like after a successful cataract operation. "It's really gratifying when you can make a difference," he said.

Dr Quek tries to avoid running his clinics overtime where possible. "I'm a firm believer in working smart and having an efficient system. This lets you do a lot more in the same amount of time."

This lets him hit the gym, meet friends for dinner, and travel. "I want to explore as much of the world as possible before I grow too old to do so," he said.

Dr Quek sees the need to train competent eye doctors now, to meet future demand from Singapore's ageing population. That is the main reason he teaches.

"We also need new, more effective ways of treating diseases like glaucoma, and of stemming the brain drain of doctors from public to private practice.

"Administratively we should ensure that everything is more efficient so that we can cope with the increasing number of patients."

Clearly, given the limited resources, that EMBA will be put to good use.



PHOTO: ALVIN LIM

Dr Desmond Quek fell in love with ophthalmology during a stint at Changi General Hospital in 2001 and has not looked back since. The speciality not only offers him medical and surgical aspects, but good work-life balance too.

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Ms LT Lin

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For more information, go to the page on policies on and issues concerning organ transplants at [www.moh.gov.sg](http://www.moh.gov.sg), or call NOTU at 6321-4390.

Ms Koh Xiu Xian  
Senior Transplant Coordinator  
National Organ Transplant Unit  
Ministry of Health

## Repeating myself

I suffer from multiple conditions that need to be treated at Singapore General Hospital (SGH), the National Heart Centre and the National Eye Centre. I had follow-up visits and tests at all three institutions recently. The tests went smoothly, but what surprised me was that at all the stops I made, including the last at the SGH pharmacy, I was asked for my personal details again and again. Shouldn't SGH already have my full information, and why must I be bothered with the same questions repeatedly?

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To guard against such occurrences, our staff will err on the side of caution and ask for a patient's particulars to confirm his identity at each juncture, be it within SGH or at our sister institutions. Typically, our staff will ask for information such as the patient's name and his NRIC number.

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**T**ARGETED THERAPY does not beat about the bush. It aims straight for the centre of the problem.

Coupled with clinical trials, in which promising new drugs are used, this therapy is offering new hope for significantly prolonged survival.

The average survival of a lung cancer patient with no treatment is six to eight months, and up to a year with regular chemotherapy. With targeted therapy, his survival can be even up to three years.

Targeted therapy uses drugs that target cancer cells' specific and unique features (mutations), while causing only minimal damage to normal cells. Regular chemotherapy, by contrast, targets fast-dividing cells in general.

Dr Ravindran Kanesvaran, Consultant, Division of Medical Oncology, National Cancer Centre Singapore (NCCS), explained: "Cancer cells divide so rapidly that chemotherapy drugs are quite effective in targeting them. Unfortunately, normal cells that are fast-dividing, like hair cells and those in the mouth and digestive tract, also get affected."

That is why patients on chemotherapy experience side effects such as hair loss, sore mouth and nausea.

### Buying patients some time

Targeted therapy drugs only hit a cancer's unique mutation, which is the factor causing its cells to grow and spread. The mutation may involve defects in the cells' growth signals, their survival strategies to avoid cell death, or even their blood supply (see box).

By blocking or switching off these defects or developments, a cancer can be brought under control, and the patient given an extended lease of life.

"Patients may not be cured, but targeted therapy buys them a substantial amount

of time. And there are relatively less side effects compared to chemotherapy because healthy cells are largely untouched.

"The medication is usually taken orally, so a patient's daily life isn't disrupted, and overall, he enjoys better quality of life," said Dr Ravindran.

Targeted therapy can be used when the mutation in a cancer has been identified. For example, the HER2 mutation – a defect in the growth proteins in breast cells – is seen in about a quarter of breast cancer patients. It can be treated quite successfully by a targeted therapy drug, trastuzumab.

But not all patients with the same type of cancer have cancer cells that exhibit the same mutations. The Cancer Genome Atlas (TCGA) – a large international group – has analysed more than 20 tumour types to date, and found different mutations in each of these tumours.

### Next step – clinical trials

Sometimes, although a mutation is identified, a suitable drug may not be available yet. This is where the numerous ongoing active clinical trials play an

important role, offering hope for prolonged survival. There are about 120 to 150 trials ongoing in Singapore alone.

When a patient is diagnosed with a cancer, a biopsy of the tumour is done and sent to the lab for analysis. If the cells don't have a mutation that can be targeted, regular chemotherapy is the treatment of choice.

"If a patient has a mutation, we will suggest targeted therapy if it's available. If not, we'll offer the patient a clinical trial. Many of these trials are in their final phases, meaning the safety of the new drugs has already been proven," said Dr Ravindran.

And as long as the tumour continues to shrink, the same targeted treatment can be continued. However, in some cases, after about two to three years, the cancer cells evolve and find alternative mutations with which to drive the cancer.

"Potentially, if there are drugs that can treat the new mutation, the patient can continue on for years, just like someone with diabetes or other chronic diseases," said Dr Ravindran.

# Hitting cancer where it hurts

Targeted therapy aims for the bullseye in treating cancers – the mutations that drive them. *By Thava Rani*

## How targeted therapy works

### By blocking growth signals

Cell surfaces have proteins that, like antennae, receive signals that prompt the cells to grow and divide. But cancer cells with too many of these proteins can pick up too many growth signals, and end up growing and multiplying uncontrollably. Targeted therapy drugs block growth signals from reaching the cancer cells.

Some of these drugs are trastuzumab (breast cancer), gefitinib (lung cancer), imatinib (leukaemia and gastrointestinal cancers), and cetuximab (bowel cancer, and cancers of the head and neck).

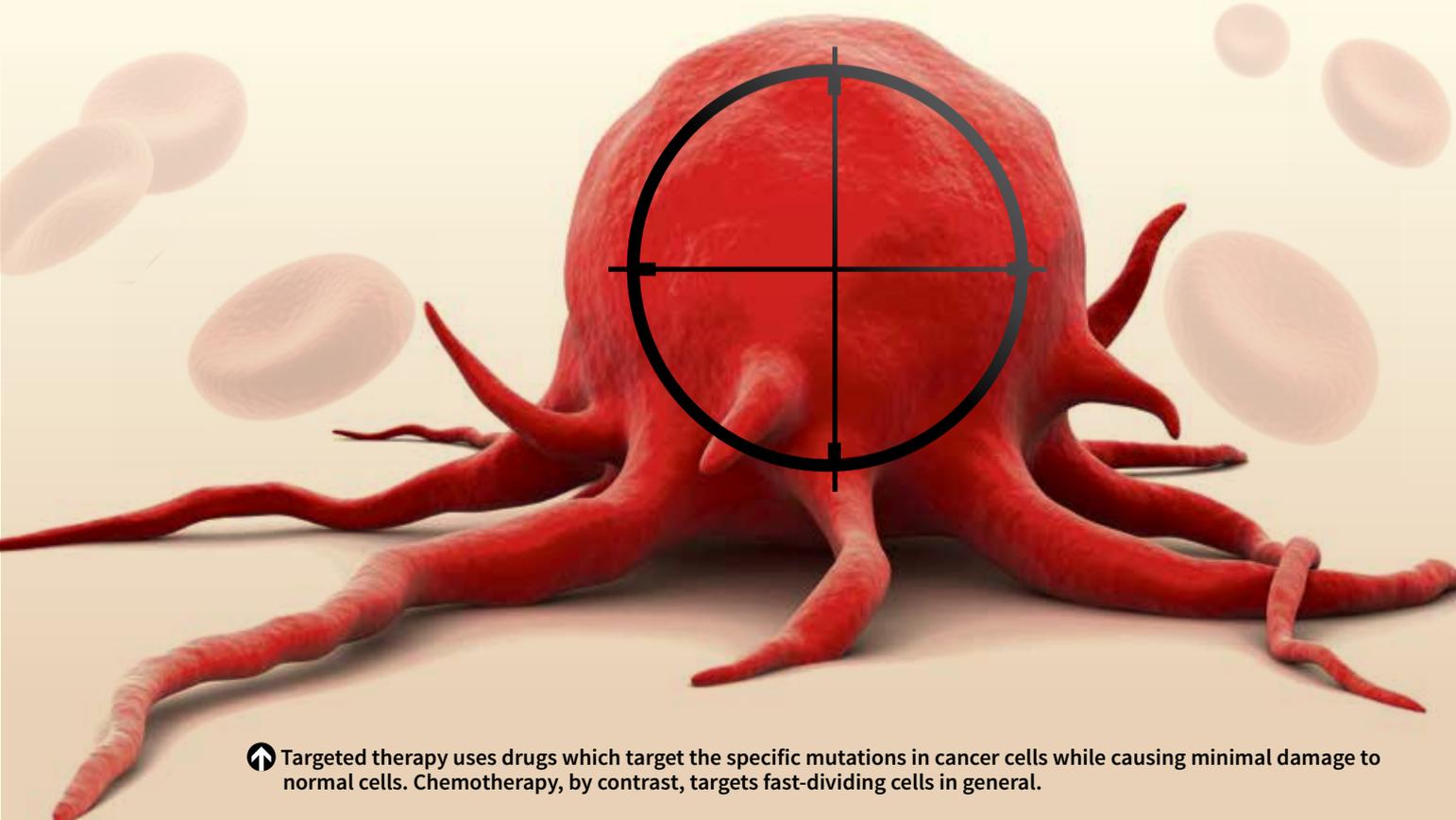
### By blocking blood supply

New blood vessels are constantly forming in the body, to heal wounds and repair damaged tissues. But this also creates new, very small blood vessels that give a tumour its own blood supply, allowing it to grow rapidly. Targeted therapy drugs can block the growth of these blood vessels.

Some of the drugs in this category are bevacizumab (bowel, kidney and lung cancers), sorafenib (kidney and liver cancers), and sunitinib (kidney and stomach cancers).

### By causing cell death

Damaged cells in the body die naturally. But cancer cells develop ways to avoid natural death. Targeted therapy drugs disrupt the cancer cells' various survival techniques. One such drug is bortezomib (multiple myeloma).



Targeted therapy uses drugs which target the specific mutations in cancer cells while causing minimal damage to normal cells. Chemotherapy, by contrast, targets fast-dividing cells in general.

# Get physical

Exercise is an important part of Parkinson's disease treatment. *By Desmond Ng*

IT HAS NO KNOWN CAUSE, and it doesn't have a cure. Its symptoms, the most common of which is trembling or shaking of the hands, worsen markedly as the disease progresses. And in its later stages, Parkinson's disease patients with joint and flexibility problems will have difficulty carrying out everyday activities without help.

While medication can help control the symptoms, exercise plays a crucial role in improving flexibility, balance and strength. Patients who exercise feel better physically and mentally, and their quality of life improves.

"We encourage patients to exercise and undergo physiotherapy at the early stage of the disease. While exercise won't reverse the disease, it will help patients have a better sense of control of their body," said Dr Lim Ee Wei, Associate Consultant, Department of Neurology (SGH Campus), National Neuroscience Institute.

Growing evidence from studies overseas also suggests that exercise

slows the progression of the disease. The symptoms also appear to develop more slowly in people who were active before diagnosis of the disease, said Dr Dawn Tan, Senior Principal Physiotherapist, Singapore General Hospital (SGH).

"Patients who led a sedentary lifestyle



**WE ENCOURAGE PATIENTS TO EXERCISE AT THE EARLY STAGE OF THE DISEASE. WHILE IT WON'T REVERSE THE DISEASE, IT WILL HELP PATIENTS HAVE A BETTER SENSE OF CONTROL OF THEIR BODY.**

DR LIM EE WEI, ASSOCIATE CONSULTANT,  
DEPARTMENT OF NEUROLOGY (SGH CAMPUS),  
NATIONAL NEUROSCIENCE INSTITUTE

tended to succumb to complications faster," she said, noting that they were also likely to have more serious symptoms like stooping, tightness, weakness and poor balance earlier than those who were active.

In the early stage, any exercise that boosts cardiovascular health, and strength, flexibility and balance, can and should be done, Dr Tan said. At this stage, patients might already experience some tremors, slowness of movement, muscle stiffness, and joint pain. So doing a lot of exercises, or even just brisk walking or raising one's arms, is important in "getting patients to open up and fight gravity", she said.

As the disease advances, its symptoms become more pronounced. "[Patients] get tightness in the calves and hamstrings, the chest, and the front of the hips, which makes them more and more hunched," Dr Tan said.

Patients may walk more slowly, with their steps getting smaller and smaller until they are only shuffling. They may also experience what is known as freezing, where they feel as if their feet are glued to the floor. When those symptoms appear, their carers or therapists can look to aids such as a walking stick with a light, or floor markers, to point patients to the next

step to take, or music to provide a rhythm for a regular walking pace.

Many patients also have swallowing and speech difficulties, and so might require the services of an occupational and/or speech therapist.

Parkinson's disease is caused by a loss of nerve cells in the part of the brain called the substantia nigra which results in a reduction in a chemical called dopamine in the brain. Dopamine plays a key role in regulating movement.

"What causes the death of these cells? People believe that there are multiple causes such as environmental, genetic and oxidative stress. We can't find a definite cause, but what is known is that age is a risk factor," Dr Lim said.

In Singapore, Parkinson's affects three in every 1,000 people over the age of 50 – usually between 50 and 60. It can also hit younger people, but early onset of the disease is rare, she added.



📍 In Singapore, Parkinson's affects three in every 1,000 people over the age of 50. It can also hit younger people, but early onset of the disease is rare, said Dr Lim.



📍 Fellow Parkinson's disease sufferers Michael J Fox (right) and the late Muhammad Ali were champions of the cause to spread awareness of the disease and find a cure through aggressive funding of research.

## Caring for a patient with Parkinson's disease

Carers have a heavy burden when their Parkinson's disease patients reach the later stages of the disease. By then, these patients are unlikely to be able to walk or even stand, and will also have problems speaking.

Frustration abounds on both sides. The patient struggles to communicate but his slow, slurred speech will be hard to understand. The carer's role is more important than ever at this time.

Besides the physical problems that come with the disease, patients are also often afflicted by anxiety and mood changes. They may become unmotivated, but a carer shouldn't think his patient is being lazy, or feel unappreciated, said Ms Chew Jing Si, Senior Staff Nurse, Singapore General Hospital (SGH).

Learning from other carers is one way to understand patients better, she said, adding that community resources such as the Parkinson Society Singapore and SGH's Parkinson's Support Group exist to

help carers and their patients.

The hospital also conducts free support group sessions, which are held once every month. Ms Chew said: "This facilitates interaction between patients with the same needs. Sometimes, talks are held at these sessions, and our nurses are also around to help [carers and patients] with medication and [any other] questions [they may have]."

At SGH's monthly support group meetings, nurses and therapists are on hand to discuss medication and the problems faced in caring for patients. Sometimes a guest speaker might talk about coping strategies, or there would be lessons on dance as a form of therapy, said Dr Tan. The sessions usually begin with exercises that are done with the patients' caregivers.

Besides SGH, other SingHealth hospitals also have multidisciplinary teams to help Parkinson's disease patients and their carers.

Ms Shaminian Balakrishnan, Physiotherapist, SGH, demonstrates some exercises which patients with Parkinson's can do twice daily to improve mobility. \*



Sit upright on the edge of a chair. Straighten one leg, keeping the heel on the ground. Bend from the hip, keeping the back and knee straight, and touch the toes. Hold for 30 seconds. Repeat on the left. Do five sets.

Stand with feet slightly apart. Raise both hands, with thumbs pointing up, reaching as high as possible. Hold for 10 seconds. Repeat 15 times.



Sit up straight. Place hands at side of head with all digits facing back. Stretch elbows apart and as far back as possible. Hold for 10 seconds. Repeat five times.



Stand up straight, and hold a stick horizontally in front of you. Without bending the elbows or moving the legs, turn 90 degrees to one side, then the other. Repeat 15 times.



Stand in front of a low step. Keeping weight supported on left leg, lift right foot onto the step, holding on to a firm support if necessary. Repeat on the other side. Do 10 sets.



\*SGH and SingHealth videos on exercises and other tips for Parkinson's disease patients are available on Youtube.

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**U**NLIKE THE METAPHORICAL big heart, having an actual enlarged heart may not be such good news. Although it's not a disease in itself, it could point to an underlying heart problem.

An enlarged heart is sometimes only discovered during a routine x-ray. Up until then the patient may not have experienced any symptoms. This is why most of the time, people who have it are not even aware they do.

"When it's discovered, we will usually investigate further to identify the root cause," said Dr Tang Hak Chiaw, Senior Consultant, Department of Cardiology, National Heart Centre Singapore (NHCS).

### What causes the swell?

The heart enlarges for various reasons. The most common cause is coronary artery disease, in which cholesterol buildup narrows the arteries which supply blood to the heart. When this happens, the person is at a higher risk of

having a heart attack, which can damage the heart muscle and weaken its function. In addition, insufficient blood supply to the heart muscle itself also weakens it.

A weakened heart muscle means the heart is unable to pump the full volume of blood to the rest of the body. It tries to make up for this by becoming bigger.

"A large proportion of heart failure patients have enlarged hearts. They come to us with breathlessness, chest pain, leg swelling or abdominal bloating, which are typical symptoms of heart failure. Further tests reveal an enlarged heart," said Dr Tang.

He said enlargement is a compensatory mechanism of the body. "Theoretically, a larger heart pumps better, but beyond a certain stage, the heart will fail."

Left untreated, patients may have to live with symptoms of heart failure – being always breathless, on long-term medication, and frequently hospitalised for water retention.

Infections, genetic diseases, alcohol or drug abuse, and chemotherapy can damage the heart muscle, too.

Other causes of heart weakening are conditions that make the heart overwork, such as uncontrolled high blood pressure, leaky or malfunctioning heart valves, and thyroid disease.

### Treating the root cause

Dr Tang said that the best way to manage an enlarged heart is to treat the underlying disease.

Patients with coronary artery disease may be put on medication or have a stent put in, to open up their narrowed arteries. Medication can also lower uncontrolled high blood pressure. But whether a heart reverts to its original size after treatment depends on how much damage it has already sustained.

Sometimes, total reversal of the enlargement is possible. "For example, a leaky valve can be fixed by surgery.



Dr Tang Hak Chiaw said that the best way to manage an enlarged heart is to treat the underlying disease.

We will usually monitor the heart's size and beyond a certain size, we will advise surgery to fix the leakage. If intervention occurs at the correct time, the enlarged heart can be totally reversed," said Dr Tang.

However, not all underlying causes can be treated. Nothing much can be done if the heart muscle is severely damaged due to genetic diseases or a heart attack. In such cases, patients are given medication to prevent further enlargement. If that fails, a heart transplant may be needed.

### Prevention is best

Dr Tang said that patients can play a part too. "If [a patient] has high blood pressure, he needs to keep it in check by taking his medication regularly and according to the prescribed dosage. If not, his heart will weaken and he may end up with heart failure."

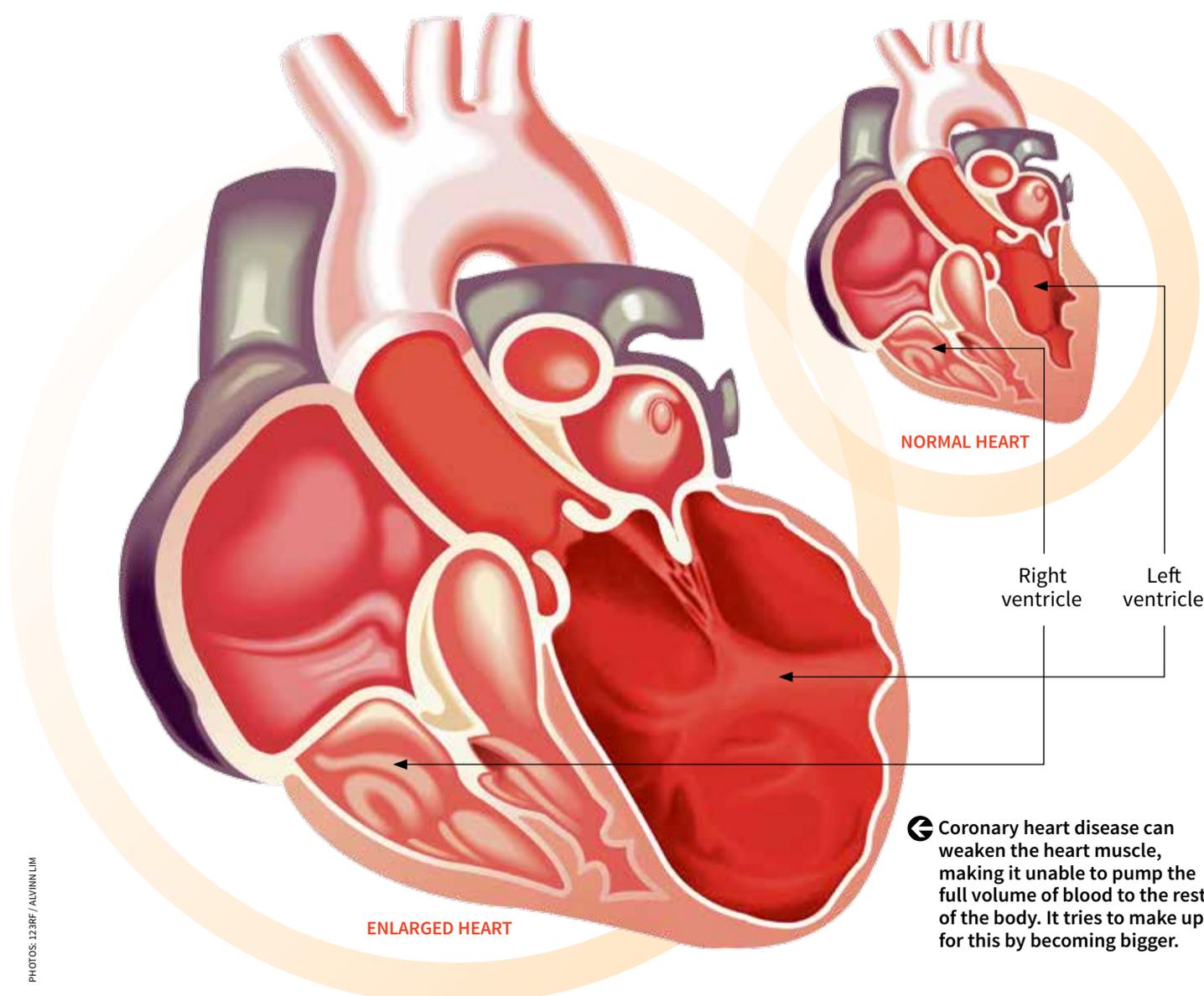
He encourages patients to maintain a healthy lifestyle with a well-balanced diet and regular exercise. Those with risk factors such as a family history of coronary artery disease should get themselves screened, so that it can be caught before it leads to heart failure.

Having an enlarged heart is not always a cause for concern though. For instance, the heart of an avid runner or cyclist works harder to pump more blood, and hence, oxygen, to the rest of the body.

"At rest, the heart pumps about four to five litres of blood in a minute. But when running or cycling it can go up to 20-30 litres a minute. So, in a person who does this fairly regularly, the heart adapts by becoming larger to manage this capacity. This is entirely reversible in most of these athletes' hearts," said Dr Tang.

# A "big" heart is not always a good thing

Having an enlarged heart may have serious consequences. By Thava Rani



NHCS is currently doing a real-time study of exercise using cardiovascular magnetic resonance to accurately diagnose whether an enlarged heart is due to a person's active lifestyle or underlying heart conditions. It is looking for healthy volunteers for stage 1 of the study (stage 2 will come later, and will involve patients with heart conditions). Healthy volunteers who wish to take part in stage 1 can call 8131 8488 or email [mrribike@nhcs.com.sg](mailto:mrribike@nhcs.com.sg) for more information.

# Know your greens

Salads need not be a toss-up between health and taste. *By Annie Tan*

**S**ALADS are largely misunderstood. On the one hand, self-confessed carnivores scoff at them as being tasteless and reserved for those who are on a diet to lose weight. On the other, some zealous health enthusiasts wolf them down indiscriminately under the mistaken assumption that all salads are healthy.

Ms Thian Ai Ling, Dietitian, Dietetics Department, Singapore General Hospital (SGH), addresses some common misconceptions about salads.

People tend to turn to salads when they want to lose weight or to follow a more healthy diet. "However, people tend to forget that overconsumption of salads that contain mostly vegetables, with little protein and carbohydrates, is not a diet balanced in nutrients," said Ms Thian.

They may also use lots of dressings in their salads – another common mistake, she added. "Excessive use of salad dressings may result in the consumption of more fat/oil and salt (sodium) than intended," she said.

To prepare a more balanced salad, Ms Thian suggested incorporating all food

groups using the My Healthy Plate guide developed by the Singapore Health Promotion Board. "It helps you portion the right amounts of carbohydrates (including wholegrain items), proteins, fruits and vegetables. Remember also to limit oils/fat, choose healthier oils/fats, and limit salt intake," she said.

Ms Thian debunked another common misconception that eating salads is an expensive affair as one may need to shop at speciality grocers. In fact, it is possible to whip up a nutritious and healthy salad by shopping at the supermarket. "You can find the basic ingredients and more in the supermarket," Ms Thian said. Inexpensive items such as chicken, eggs, beans, carrots, spinach, cucumbers, cabbages, vermicelli, rice, corn and potatoes can be added," she said.

*Adapted from an article in LighterNotes, an SGH staff newsletter.*

## Toss some goodness

Need a little inspiration? Here are two salad recipes that SGH staff submitted to the hospital's Hearty, Healthy Salad Competition last year. The competition was held in conjunction with the SGH Active Day celebrations.

### No-fuss weeknight dinner for two

Claudia Yeo



Rich with omega-3 fatty acids from avocado and tuna, this salad is good for the brain, heart and skin.

#### Ingredients

• Mini romaine lettuce	300g
• Avocado	1
• Cherry tomatoes	10
• Tuna chunks in sunflower oil	1 can (150g)
• Whole corn kernels (ready cooked)	100g
• Ground black pepper	Big pinch
• White sesame seeds, toasted	5g

#### Method

- Wash and roughly cut up mini romaine lettuce.
- De-seed avocado and cut into cubes.
- Halve tomato cherries lengthwise.
- Drain tuna, reserving oil for dressing. Add corn kernels and tuna to vegetables and avocado.
- Season with reserved sunflower oil and plenty of ground pepper.
- Serve sprinkled with toasted sesame seeds.

### Spinach couscous salad

Clement Lin



The mix of protein- and fibre-rich couscous and spinach makes this a healthy salad.

#### Ingredients

• Chicken stock	1 cup
• Couscous	1 cup
• Red onion	1
• White vinegar	
• Yellow capsicum	1
• Kidney beans	1 can
• Pomegranate seeds	½ cup
• Baby spinach	1 pkt
• Five spice tofu	1 pkt
• Balsamic vinegar	
• Olive oil	
• Feta cheese	¼ block

#### Method

- Add 1 cup hot chicken stock to 1 cup couscous. Leave covered for 5-10mins.
- Cut red onion into thin slices. Soak in white vinegar.
- Slice yellow capsicum into small cubes. Rinse kidney beans.
- Assemble all the above in a bowl.
- Add pomegranate seeds, baby spinach and tofu slices.
- Drizzle with balsamic vinegar and olive oil to taste.
- Crumble feta cheese and sprinkle on salad.



➤ The Health Promotion Board's "I Quit 28-Day Countdown" programme helps individuals quit smoking. Smokers choose their own start date and receive daily SMS tips for 28 days to help them stop the habit.

**S**MOKING CAN AFFECT men's sperm, reduce fertility, and increase the risks of birth defects and miscarriage. Smoking can make it harder for a woman to become pregnant, and can affect her baby's health both before and after birth. Smokers are at greater risk of diseases that affect the heart and blood vessels. In fact, smoking harms nearly every organ of the body and overall health.

Yet, smokers still made up over 13 per cent of Singapore residents in 2013. According to a fact sheet put out by the Health Promotion Board in May 2015, 18 per cent of residents were smokers in 1992. The figure started to fall after that but continued to hover between 13 and 15 per cent.

Why do smokers resist quitting? It's tough to kick the habit – the craving for nicotine has been likened to addiction to hard drugs like heroin and cocaine. Also, many people continue smoking because they have bought into popular myths about the habit.

**Myth: Quitting won't help me because I have smoked for many years.**

**Fact:** The sooner you quit, the sooner your health can improve. Within 20 minutes of your last cigarette, your blood pressure and heartbeat start to normalise. Within two to five years, your risk of having a stroke could fall to about that of a non-smoker. In 10 years, your risk of lung cancer is cut by half. At the same time, stopping smoking protects the health of your family. Breathing in second-hand smoke increases the risk of lung cancer, heart disease and stroke, as well as respiratory diseases like asthma and bronchitis.

# Quit now!

Any time is a good time to stop smoking, and the sooner you quit, the better for your health and that of the people around you. *By Sol E Solomon*

**Myth: Smoking a few cigarettes a day is no big deal.**

**Fact:** There is no safe number of cigarettes smoked. Each cigarette contains 4,000 chemicals and poisons, 40 of which cause cancer. Consuming three to five daily can lead to cardiovascular diseases and trigger sudden heart attacks and death.

**Myth: Smoking is relaxing and improves the mood.**

**Fact:** Each cigarette contains one milligram of nicotine. When you smoke a cigarette, nicotine-rich blood reaches the brain in seven to 10 seconds, stimulating the nervous system and hormones (mainly dopamine which produces feelings of pleasure and reward). Smoking also increases the heart rate and causes the arteries to narrow, raising the risk of lung and heart disease.

**Myth: "Hand-rolled" cigarettes are safer options.**

**Fact:** Many smokers believe "roll-your-own" cigarettes are less harmful than manufactured ones. But studies have found the levels of chemicals and toxic

molecules in urine samples of smokers of both factory-made and "handmade" cigarettes to be the same.

**Myth: If I stop smoking, I will gain weight.**

**Fact:** Some smokers gain about 10–20kg when they quit. After quitting, many people regain their sense of taste and smell, which improves their appetites. Smoking can suppress the appetite, and also speeds up metabolism. After quitting, a healthy diet including more vegetables and low-calorie food is important. Regular exercise is also helpful to avoid weight gain.

**Myth: "Light" cigarettes are less harmful.**

**Fact:** "Light" cigarettes are as harmful as "regular" ones because these terms have no standard definitions. Some tobacco companies use them to refer to the taste or flavour of their cigarettes rather than nicotine content. As for cigarettes with ventilated filters to help reduce the amount of inhaled tar and nicotine, smokers often unconsciously compensate for the lower levels by inhaling more deeply or by smoking more sticks.

## Help is at hand

Nicotine is highly addictive, and quitting takes strong determination. Few people are able to stop smoking on their own, and a programme that addresses various aspects of the habit is necessary for a smoker to quit successfully.

At Singapore General Hospital (SGH), three pharmacists help run a Smoking Cessation Service for both patients and non-patients. Smokers interested in the quit smoking programme can approach any pharmacist at the SGH Pharmacy (Block 4, Level 1). They can also call the SGH appointments line at 6321-4377 to make an appointment.

The Health Promotion Board and community pharmacies also provide information and help in stopping smoking.

For more information on the Health Promotion Board's I Quit programme, call the QuitLine at 1800-438-2000 or visit [www.healthhub.sg/programmes/88/IQuit](http://www.healthhub.sg/programmes/88/IQuit).

## Craving cookies while pregnant



**I am four months pregnant and have strong cravings for sweet cookies, especially chocolate chip cookies. I've been eating them daily after breakfast and lunch. Sometimes, I can even finish one pack in a day. I'm worried about becoming a diabetic by the time I have my baby. Do I need to tell my doctor about these cravings? Is there any type of food I can eat that would reduce these cravings?**

Food cravings are a well-known feature of pregnancy symptoms. There is no definite answer as to why pregnant women crave certain foods. Nonetheless, explanations such as hormonal changes and temporary nutritional deficiencies have been put forward by researchers trying to find the key to pregnancy cravings.

It is possible to have food cravings and still provide adequate nutrients to your baby. Giving in too much or too often to your cravings for high calorie foods (in your case chocolate chip cookies) may translate into excessive weight gain. Excessive weight gain increases the chances of gestational diabetes and unhealthy blood pressure levels.

Women need to consume only about 340 extra calories per day in the second trimester and 452 extra calories per day in the third trimester compared to their usual intake before pregnancy. One regular-sized chocolate chip cookie contains approximately 88 calories (equivalent to one slice of bread) and 4g of fat. So if eaten in excess, they can contribute to excessive weight gain.

### Some strategies to handle pregnancy cravings:

- Eat a balanced diet that includes whole grains, lean sources of proteins, vegetables, fruits and low fat dairy on a daily basis. When your diet is balanced, a small portion of not-so-healthy food will not affect your overall nutritional status.
- Eat regular meals to avoid drops in blood sugar that could trigger food cravings. Taking three main meals and two to three in-between snacks may help.
- If the urge to eat chocolate chip cookies is ruling your life, try taking your mind off food by going for a walk or calling a friend.
- Limit yourself to one cookie a day, instead of having a whole packet.
- If you cannot control your food cravings and are gaining excessive amounts of weight, you may want to inform your doctor so that he can monitor/test you for gestational diabetes. The key is to make sure that you are having a healthy balanced diet first, and then working in those extras!

**Ms Nehal Kamdar, Senior Dietitian, Department of Nutrition and Dietetics, KK Women's and Children's Hospital**

PHOTOS: 123RF

## CONTEST

TEST YOUR MEMORY



**Answer these simple questions to stand a chance to win a Russell Hobbs Kitchen Collection Toaster\* worth \$49.90 (five sets in total to be won).**

### QUESTIONS

- **What should one do before setting out for an adventure holiday?**
- **How many litres of blood per minute does the heart pump when at rest?**

Send your answers with your name, age, gender, address and telephone number to: **Email** editor@sgh.com.sg (or)

**Post** The Editor, Singapore Health, Singapore General Hospital, Communications Department, #13-01 Surbana One, Blk 168, Jalan Bukit Merah, Singapore 15016.

**Deadline** May 15, 2017

Winners will be notified via phone or email. Incomplete or multiple entries will not be considered.

\* Sponsored by Massmark International Pte Ltd. [www.massmark.com.sg](http://www.massmark.com.sg)

### WINNERS OF CONTEST 43

1. Lee Pei Yee
2. Lim Ser Yen
3. Irene Lum Lee Bin
4. Marina Dewi
5. Soh Lian Heng

## I am too young to have knee pain

**I started to sense some discomfort in my knee the day after running. I don't run a lot, perhaps once every few weeks. I'm in my 20s so I don't understand why I should feel pain. In addition, I find it uncomfortable to kneel on the floor unless I use a thick towel, and my knees also make a cracking sound when I squat.**

It is not unusual for young women to experience pain behind the kneecap (patello-femoral pain). They feel pain in the anterior or front part of the knee, which worsens when squatting, bending and climbing the stairs. Often a cracking sound or a grating sensation may accompany the pain. For some, the pain isn't evident during exercise, but after a work-out, a deep ache or fatigue may set in. For others, the pain is sharp, causing the knee to buckle.

The kneecap normally moves within the groove of the femoral trochlea, which is at the end of the thigh bone. Knee cap pain occurs when the knee cap is not tracking normally. It rotates to the outside as the knee flexes, creating pressure which over time causes cartilage injury and pain.



Kneecap pain can be prevented. If recognised early, physiotherapy can help balance the abnormal tracking by strengthening the vastus medialis oblique muscles which run down the inner side of the thigh, and stretching the iliotibial (a band of tissue running down from the hip to just below the knee).

Other factors like alignment of the leg, pattern of running, and strengthening of the gluteal (buttock) muscles also play a part. Surgery may be needed if the cartilage injuries cause pain or if there is arthritis.

Kneecap pain is more common among those who exercise infrequently or irregularly. Before exercise, it is important to stretch and warm up. Muscle strengthening or gym work should be incorporated as part of one's exercise regime.

If there is also pain when kneeling, it may be due to bursitis or inflammation of the tissues in front of the kneecap. An ice pack or anti-inflammatory gels can be applied to ease the pain, but it is advisable to see an orthopaedic specialist for the pain.

**Associate Professor Denny Lie Tjiauw Tjoen, Senior Consultant, Department of Orthopaedic Surgery, and Sports Medicine Service, Singapore General Hospital**

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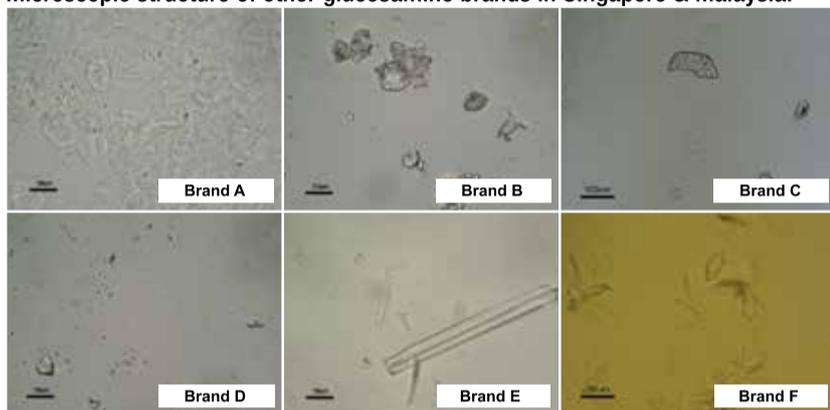
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<sup>^</sup>O. Bruyère, Roy D. Altman, J.Y. Reginster, Arthritis & Rheumatism, 2016, 45(4): S12–S17

<sup>^</sup>O. Bruyère et al. Semin Arthritis Rheum. 2014 Dec; 44(3): 253–63

## Microscopic structure of other glucosamine brands in Singapore & Malaysia:



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\* O. Bruyère et al., Osteoarthritis and Cartilage (2008) 16, 254–260



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## Consumers to exercise caution when buying glucosamine

In Singapore, glucosamine is widely available as health / nutrition supplement and is not subject to even simple checks on purity.

**Not all glucosamine brands are effective!  
In fact, many are not up to standard.**

### Glucosamine can be sold without registration or approval

In Singapore, glucosamine can be imported and sold without a licence. They are not subject to pre-market approval by the Health Sciences Authority (HSA). This means that glucosamine products need not be approved before sale. They are also not assessed for their effectiveness by HSA. The responsibility in ensuring the safety and quality rests with the importer, manufacturer, distributor and seller. (information extracted from HSA website)

There were cases announced by HSA, in which dishonest manufacturers produce health supplements with undeclared or unlabelled potent medicinal ingredients. Taking such products can be extremely harmful and can lead to serious health problems.

In the US and Canada, the content of various glucosamine and/or chondroitin products were analysed by the University of Maryland and the Alberta University respectively. It was found that the actual amount of active ingredients in most tested products vary from their label claims, ranging from 0% - 115% in the US and 41% - 108% in Canada.

### Recommendation by international researchers

Claims can easily be made without proper validation through clinical studies.

This is why many researchers have recommended that "Prior to obtaining any supplement containing chondroitin sulfate or glucosamine, the consumer should become informed about the manufacturer and the product."

The American Arthritis Foundation advised that "When a supplement has been studied with good results, find out which brand was used in the study, and buy that."

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