

ACTIVE SPOTTING AND TREATING GOLDEN YEARS SIGNS OF DECLINE EARLY

HEARTS AT RISK

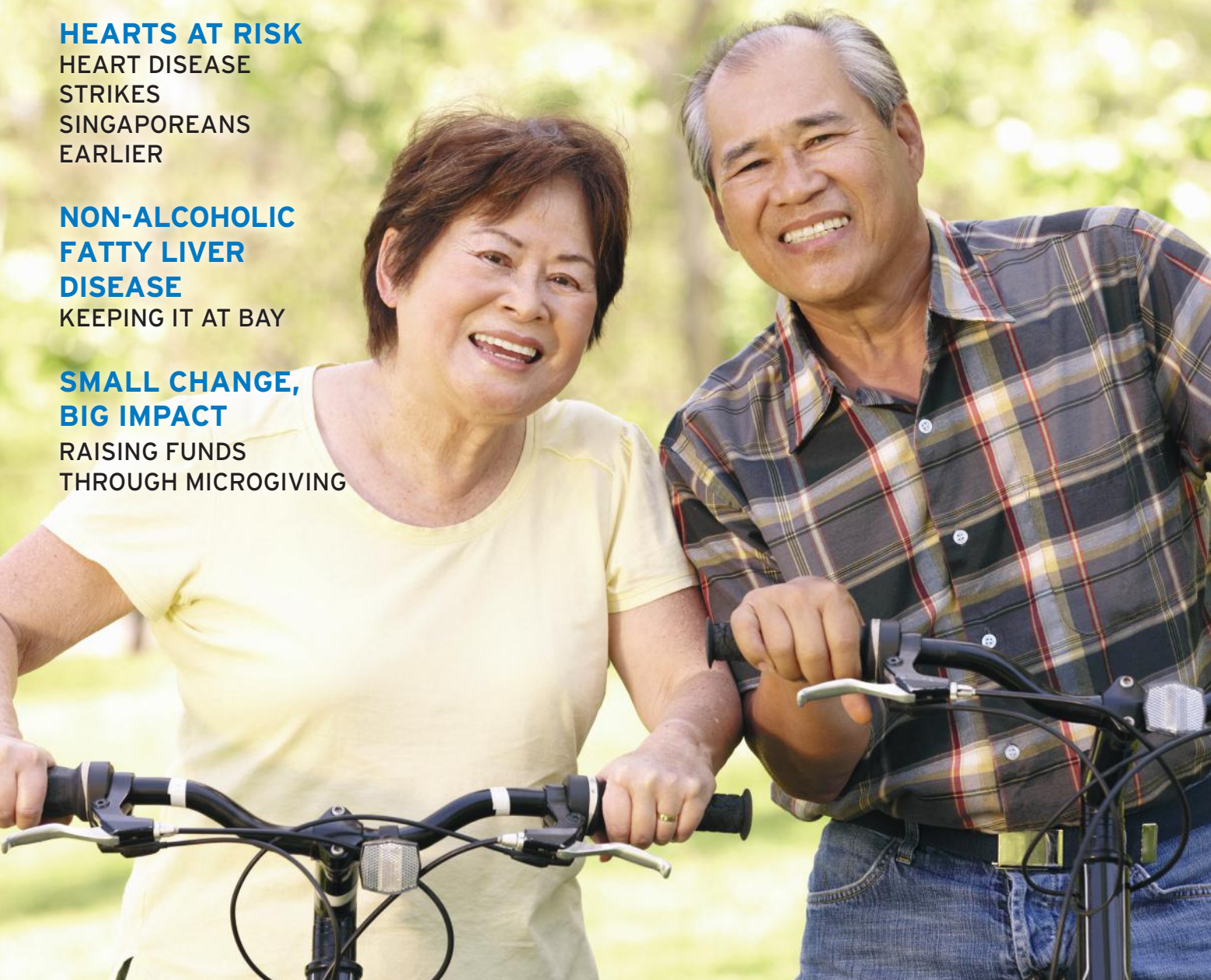
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STRIKES
SINGAPOREANS
EARLIER

NON-ALCOHOLIC FATTY LIVER DISEASE

KEEPING IT AT BAY

SMALL CHANGE, BIG IMPACT

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Inspired by her own experience, Sarah Tan is paying it forward as a caring camp leader for children with diabetes and renal conditions.

Looking at Sarah Tan today, one would never guess that this vibrant 20-year-old underwent a kidney transplant just a few years ago. Sarah is also a four-time captain of the Children's Kidney Centre Camp (CKC Camp), an annual event for children and adolescents with renal conditions and diabetes. The camp is organised by patient volunteers and supported by the team from the Shaw-NKF-NUH Children's Kidney Centre. It allows children to experience the fun of sleepovers and other camp activities. These are experiences that they would otherwise miss out on because of medication and dialysis schedules.

Sarah joined her first CKC Camp when she was 12. Asked what went through her mind when given the green light, Sarah quips, "I was finally going to be away from my parents for three days!"

Taking part in such events was then rather uncharacteristic of Sarah. Firstly, there was her dialysis. "I was unable to participate in games and water activities. It would have been troublesome to keep the site where treatment was done dry and clean."

Secondly, she was shy by nature so she was naturally hesitant about attending the camp the first time. Fortunately, she was paired with an enthusiastic buddy who would go out of her way to include Sarah in activities. She also encouraged Sarah to open up and observed that Sarah had the potential to captain future camps. This marked a profound transformation in Sarah. "I noticed myself opening up to people more easily, and was able to speak up when I had something to say," she says. "My family saw the positive change in me right after my first camp."

When Sarah was first offered a captain's position, she accepted it

with some hesitation. "I was expected to be more alert and responsible as a leader, as I would have to take care of and look out for my group members while keeping track of the time for medication. However, after the first year of captaining, I was more than willing to take up the position again because of the positive experience."

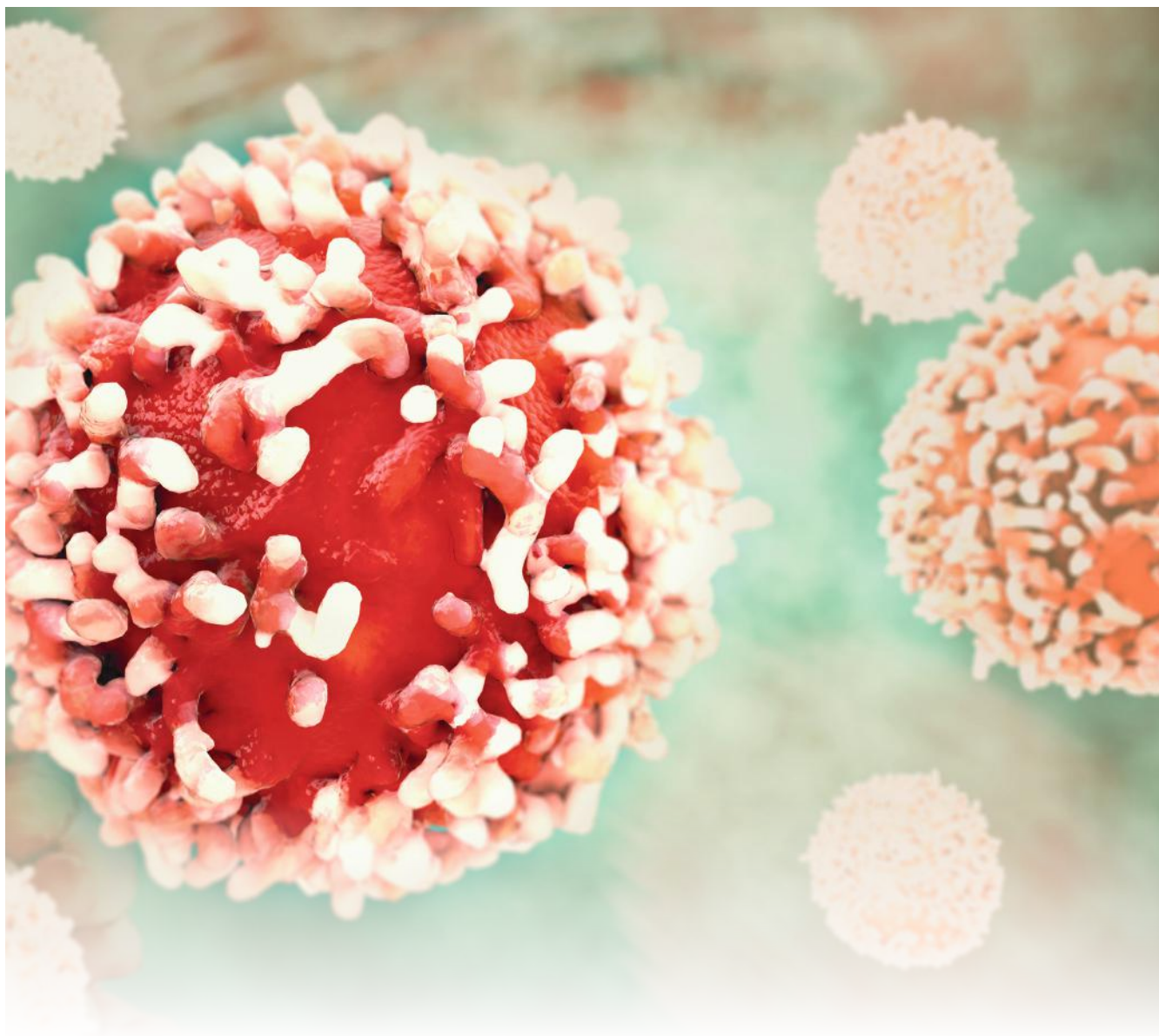
Discovering her leadership abilities helped Sarah realise that she could make a real difference to the children at the CKC Camp – because she shared similar experiences with them.

In the course of being a captain, she has also formed strong bonds with

other captains and NUH staff. "We are all friends and we get all hyped up when camp is nearing," she says.

Sarah feels a strong sense of connection to the children, who are at the heart of this camp. "The experiences I went through are exactly what they are going through now. My own experience enables me to understand and relate to them. I am happy to know that I play a part in making the children feel comfortable, just by being there for them."





ONE EXTRA STEP FOR A **BETTER OUTCOME**

For patients with advanced gastric cancer, this new step in their treatment protocol could hold the key to extending and improving their quality of life.

In fact, it could extend their lives by up to a year. That's what the results of a trial – conducted by the National University Cancer Institute, Singapore (NCIS) – on a chemotherapy treatment for advanced gastric cancer seem to suggest.

Targeting the peritoneum

Conventional treatment for gastric cancer depends on the stage of cancer, the location of the tumour, and the patient's age and health. Treatment options range from radiotherapy and chemotherapy, to surgery to remove tumours and affected areas of the stomach. A long-running phase 2 clinical trial by NCIS has been looking at what happens when a step is added to the conventional regimen.

That step involves the introduction of a liquid chemotherapy drug into the peritoneal cavity, where it sits for about an hour before being drained. This cavity is the space within the peritoneum, which is the membrane lining the abdominal cavity and covering most of the abdominal organs.

The aim: to give the drug time to eliminate cancer cells in the cavity, but not for so long that the drug's toxicity is absorbed into the patient's body and harms healthy cells. Because of its large molecular structure, the drug is also less likely to be absorbed by the body.

Why the peritoneum? According to Professor Jimmy So, Head and Senior Consultant with the Division of Surgical Oncology at the NCIS, the peritoneum is the most common site of metastasis from gastric cancer. In fact, of all relapsed gastric cancer cases, about 40% take place in the peritoneum. Relapses here are particularly difficult to treat successfully. The targeted nature of this drug delivery gets around the difficulty of treating this critical area, halting disease progression and relapses, and prolonging life.

Longer, high-quality life

Comparing survival rates, the effectiveness of this extra step is encouraging. Conventional treatment for advanced gastric cancer allows patients to survive between three and 10 months, reveals Prof So. However, 16 out of 22 patients who underwent the NCIS trial survived beyond one year; half of them lived for more than 18 months.

Not only did these patients enjoy longer lives, they were also able to have a relatively good quality of life. More importantly, tumours in six of the trial patients shrank, allowing for surgical removal.

Patients in the trial had a median survival period of 22 months, more than double the most optimistic survival period of 10 months with conventional treatment.

Prof So estimates that the treatment can help one in four gastric cancer patients to manage the disease. In some of the trial patients, cancer cells were wiped out from the

“The response rate is impressive and the evidence is strong. Though there are mild side effects, patients experience better quality of life.”

peritoneum. Although these cells were still present in the stomach, the results show the effectiveness of intraperitoneal chemotherapy in disease control. “The response rate is impressive and the evidence is strong. Though there are mild side effects, patients experience better quality of life,” shares Prof So, summing up the impact and potential of intraperitoneal chemotherapy in a novel multi-modal cancer treatment.

Prepping for intraperitoneal chemotherapy

- Because the drug targets the peritoneal cavity, the procedure is known as intraperitoneal chemotherapy.
- Once the treatment is decided upon, a day surgery will be performed to insert a tube into the peritoneal cavity. The tube will be connected to an access port, which is anchored at the abdominal wall.
- The patient lies down while the chemotherapy liquid is inserted into the abdomen through the access port.
- After one hour, the fluid is removed via the access port, and the patient is allowed to go home.
- The patient will receive intraperitoneal chemotherapy twice within a three-week cycle of treatment for a 24-week period on top of other conventional treatments.



HEARTS AT RISK

Compared with the Dutch, Singaporeans experience coronary artery disease earlier and more severely, but you can reduce your chances of getting it.

Comparative studies on coronary artery disease (CAD) led by the National University Heart Centre, Singapore (NUHCS) and the University Medical Center, Utrecht (UMCU) reveal troubling realities about Singaporeans' heart health.

Key findings

- CAD occurs four to eight years earlier in Singaporeans than in Dutch Caucasians
- CAD risk factors are present in more Singaporeans than Americans and Europeans

- Malay and Indian patients had the earliest onset of CAD and also the most severe despite being younger

Why Singapore rates poorly

Diabetes and dyslipidemia (elevated cholesterol levels) seem to affect Singaporeans more adversely than Dutch Caucasians. Less than 50% of Singaporeans engage in regular physical activities compared with more than 95% of Dutch Caucasians. Singaporeans also smoke more and get less medical treatment of risk factors.

“What’s more worrying is that Singaporean patients had a greater risk of dying after being diagnosed with CAD compared to the Dutch

RISK FACTORS IN PATIENTS FROM NETHERLANDS AND SINGAPORE WITH KNOWN OR SUSPECTED CAD

	White	Chinese	Indian	Malay
Diabetes	20.3%	33.2%	51.5%	52.2%
Hypertension	58.4%	64.2%	61.8%	62.1%
Dyslipidemia	47.7%	70.5%	77.5%	75.4%
Current smoker	21.7%	34.2%	46.4%	39.6%

Source: PLOS ONE July 6, 2015 report on joint comparative study by the National University Hospital and University Medical Center, Utrecht.

Caucasians despite being diagnosed at a younger age,” says Associate Professor Mark Chan, principal investigator of the Singapore team and Senior Consultant at the NUHCS.

Reduce your risk factors

You can lower your chances of getting CAD, hypertension, dyslipidemia and diabetes by adopting a balanced diet, exercising regularly, and not smoking.

See your family doctor to check your blood pressure, blood sugar and cholesterol levels. If necessary, start taking medications early to avoid CAD complications later in life.

A/Prof Chan says, “By the time they came to the hospital, the Dutch patients were much more likely to be on medication for their risk factors for CAD than Singaporean patients. As result, they had much less severe CAD on their angiograms despite being older.” An angiogram is an X-ray image of the heart’s arteries.

He continues, “While we did not investigate physical activity in the two studies, it is known from population-based studies that the Dutch are the most active in the world.”

Diet

- Find out about the sugar and total carbohydrate content in foods

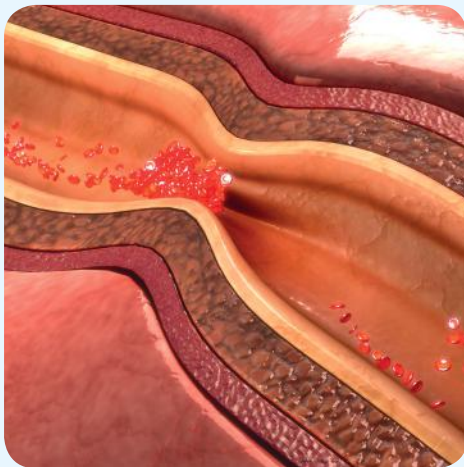
- Switch to high-fibre and low-glycaemic index products
- Substitute ‘bad’ fat (saturated fat in red meat, cholesterol in egg yolk and crustaceans) with ‘good’ fat (unsaturated fat in nuts, avocado, deep sea fish) to reduce your ‘bad’ cholesterol

Exercise

- Aim for about 150 minutes of moderate aerobic exercise a week; take the stairs instead of the lift, and incorporate walks into your routine
- Add resistance exercise on two or more days a week, and perform exercises that involve using the floor, a wall or steps

Smoking

- Quit smoking because the chemicals in tobacco damage the heart and blood vessels and promote atherosclerosis, which is the hardening and narrowing of the arteries
- You will benefit immediately, no matter how long you have had the habit, with the risk of developing CAD dropping significantly after a year of smoke-free living



What is CAD?

Coronary artery disease (CAD) occurs when blood supply to the heart is reduced due to the narrowing and hardening of arteries. This narrowing and hardening is usually due to cholesterol and other materials – collectively known as plaque – depositing on the inner wall of arteries, a process known as atherosclerosis.

CAD, also known as ischaemic heart disease, is the underlying cause of a heart attack that remains the third most common cause of death in Singapore.



NON-ALCOHOLIC FATTY LIVER DISEASE

This condition is on the rise in Singapore, and preventing it can be as simple as watching one's weight.

Excessive and long-term alcohol consumption are risk factors of alcoholic fatty liver disease.

What is less well known is that there is another form of liver disease that can strike anyone – even someone who does not consume alcohol.

Non-Alcoholic Fatty Liver Disease (NAFLD), as its name suggests,

has nothing to do with alcohol consumption, and everything to do with other unhealthy lifestyle habits.

While you may not drink that much or that often, other 'vices' are equal health hazards when it comes to NAFLD. These come in the form of fried chicken wings and cheesy nacho chips, for example.

Risk factors

According to Dr Lee Yin Mei, a Senior Consultant with the Division of Gastroenterology & Hepatology at the NUH, you are susceptible to NAFLD if you have the following risk factors:

- Obesity
- Type 2 diabetes mellitus
- Metabolic syndrome, which includes being pre-diabetic, abdominal obesity, high blood

pressure and high cholesterol

- Dyslipidemia, an abnormal amount of fats in the blood; these fats can include cholesterol and triglycerides

Other factors that could put you at risk of NAFLD include:

- Genetic predisposition
- Taking of certain drugs
- Exposure to certain diseases

On the rise

While NAFLD is more prevalent among middle-aged and elderly people, it can occur at any age. In fact, it is the most common liver disease in children. Thus, the possibility of having a fatty liver and NAFLD should not be dismissed, regardless of age.

Because of the high level of fat in the liver, people with NAFLD risk getting the organ inflamed. This can lead to serious complications such as liver cirrhosis, liver failure, liver cancer and death.

The grim truth is that NAFLD is on the rise in Singapore, especially among the young. According to Dr Lee, this can be inferred from the increase in obesity among Singaporeans, a big risk factor in NAFLD. According to the Health Promotion Board (HPB), the rate of obesity in Singapore rose from 6.9% in 2004 to 10.8% in 2010.

The obesity rates do not bode well for the younger generation, either. Results from a local study showed that the prevalence of overweight and severely overweight school children at the Primary 6 level had increased from 2.2% in 1976 to 15.9% in 2010.

Increasing awareness

"We have started a nurse-driven initiative, where healthy eating advice is given to all overweight patients attending our gastroenterology clinics in the NUH," says Dr Lee. "Those who are obese are referred to dietitians."

Doctors at the NUH also encourage patients to follow the HPB's tool for nutritious meal plans, known as "My Healthy Plate" [see sidebar].

As pre-diabetes and type 2 diabetes mellitus are risk factors in the development of NAFLD, the war on diabetes declared by the MOH in April 2016 is expected to help cut the number of NAFLD cases among the population.

"However, this is only the tip of the iceberg when it comes to the effort needed to prevent NAFLD," says Dr Lee. She suggests more community efforts and involvement, such as encouraging schools to work with parents and students on healthy eating habits, while encouraging the elderly to enrol in courses on healthy cooking methods.

Dr Lee was involved in a separate survey, which showed that people at higher risk of NAFLD felt that a higher BMI level was acceptable, even though 92.1% of participants agreed that weight loss is a vital strategy to avoid this problem.

While it is imperative that people at risk be more pro-active in protecting their liver, Dr Lee advises against self-supplementation, which can cause existing NAFLD patients to develop drug-induced hepatitis. Instead, prevention of NAFLD and its risk factors should revolve around having a healthy lifestyle – there is no other way around it!

7 tips to lower NAFLD risk

1. Maintain a healthy weight; your body mass index (BMI) should be below 23.
2. Get at least 150 minutes of exercise per week.
3. Consume fewer calories and follow "My Healthy Plate" recommendations (each meal should comprise 50% vegetables and fruit, 25% carbohydrates and 25% protein).
4. Eat out less frequently; try to have at least one home-cooked meal every day.
5. Avoid food and drinks that are high in sugar and saturated fat.
6. Go for regular check-ups to assess your health and screen for NAFLD.
7. Talk to your doctor for advice on achieving a healthier lifestyle.



ACTIVE GOLDEN YEARS

With advancing age comes some physical and memory decline. But these can be prevented, delayed or treated if you spot the signs early and seek medical advice.

Mr Naganathan Vaithinathan is the founding principal of the former Tanjong Katong Secondary Technical School. He learnt English, Tamil and French in school, and since retiring from the civil service in 1971, has taught himself Russian, Spanish, Portuguese and Italian. Using language guides and dictionaries, he tests his comprehension skills by reading novels written in those languages and spends about four hours a day with his books and dictionaries.

Mr Vaithinathan turns 102 this year.

Although the former educator needs some help these days, he continues to exercise by walking around his house thrice a day. He also spends time interacting with family members, including his great-grandchildren.

"Mr Vaithinathan is an inspiration," says his doctor, Associate Professor Reshma Merchant, Head & Senior Consultant with the Division of Geriatric Medicine at the NUH. "He is self-motivated and doing all the right things to stave off conditions such as frailty and sarcopenia which are part of ageing." Learning new languages, adds Prof Merchant, is also known to delay or prevent dementia.

Anorexia of ageing

Frailty and sarcopenia in the elderly can be traced to a phenomenon known as the anorexia of ageing. It occurs when an elderly person experiences a loss of appetite and reduces his food intake to such a point that he is undernourished.

This lack of appetite is commonly brought on by age-related lifestyle changes, medical conditions, and social and environmental factors.

Physical changes in older people that could lead to a smaller appetite include:

- clouding of their sense of taste and smell
- lower sensitivity to a 'hunger' hormone known as ghrelin
- reduced digestive ability
- chronic low-grade inflammation

Other factors that could lead to anorexia of ageing include:

- poor hearing and vision (difficulty in shopping and preparing food)
- ill-fitting dentures
- depression and isolation
- medical conditions that impede swallowing, or lead to higher metabolism and/or poor absorption of nutrients
- medications that affect taste and appetite

What is sarcopenia?

This word is Greek for "poverty of the flesh."

"It is the progressive loss of muscle mass, function, quality and strength driven by the ageing process," explains A/Prof Merchant. She adds that between the ages of 30 and 60 the average adult will gain 0.5kg of weight and lose 0.25kg of muscle yearly, working out to a total gain of 14kg of fat and a loss of 7kg of muscle during this period.

What is frailty?

Frailty, like sarcopenia, is a medical syndrome affecting 5-10% of people aged 70 years and above. A/Prof Merchant highlights five symptoms that define frailty:

- unintended weight loss of 5% or more within 6-12 months
- general feeling of exhaustion three or more days per week



Mr Vaithinathan in consultation with A/Prof Merchant

- muscle weakness
 - slow walking speed
 - low levels of physical activity
- People exhibiting one or two symptoms are classified as pre-frail.

"Frailty is a vicious cycle. If we feel exhausted, we are likely to sit around, which will result in further loss of muscle and strength," she says. "These conditions go hand-in-hand; once a person is identified as frail or sarcopenic, all the above symptoms can be addressed concurrently."

A/Prof Merchant explains that this is important because both can be reversible and there are interventions to delay the onset and progression.

If they are not managed, patients tend to experience more negative health events such as falls, hospitalisations, disability, and even death.

Red flag

Unintended weight loss among people aged 65 years and above is a warning sign of frailty and sarcopenia. Research has found that their risk of death is twice that of elderly people who are not frail. And

because inadequate food intake leads to low energy and reduced physical activity, these senior citizens often have poor muscle mass and strength.

"The risk of disability is about 2 to 5 times higher in older persons with sarcopenia than in those with normal muscle," elaborates A/Prof Merchant. "Local and overseas studies have shown that people with sarcopenia and frailty have more physician visits and fill more prescriptions than individuals with no activity limitations."

Besides the physical condition of the elderly, "there is ample evidence to suggest that patients identified as frail will benefit from comprehensive geriatric assessment that looks into their medical, physical and psychosocial aspects," she adds.

Screening for frailty

While screening tools for frailty and sarcopenia have been developed, "there is no one gold standard," A/Prof Merchant says. She adds that frailty screening is a step that doctors in Singapore are working on.

At the NUH, plans for simple screening questionnaires are in

progress. Tools have been incorporated into the care provided to identify at-risk elderly, including those with decline in mental state, weight loss, weakness and exhaustion, falls, incontinence, and swallowing dysfunction, says A/Prof Merchant.



Spotting frailty

Here are some signs to look out for in the person that you are looking after:

1. Feels tired most of the time
2. Has difficulty walking up one flight of steps
3. Has difficulty walking more than one block
4. Has lost more than 5% of weight in the last six months
5. Has more than five illnesses

If you notice one or more of these signs, arrange for him/her to see a doctor to check for reversible and treatable factors which could lead to frailty and/or sarcopenia.





Delaying frailty

Mr Vaithinathan is proof, says A/Prof Merchant, that frailty can be delayed by adequate nutrition, physical exercise, mental stimulation and social engagement.

Nutrition

- Older adults must consume more protein than young people to form muscles
- Each meal should contain 30g of protein – the equivalent of four ounces of ground beef/grilled chicken breast or three quarters of a block of firm tofu

Exercise

While even simple brisk walking can make a difference, A/Prof Merchant recommends a combination of resistance and aerobic exercises. “Resistance exercise at least three times a week has been shown to decrease frailty and increase muscle strength,” she explains.

Studies have shown that people over

75 years old with mobility issues saw a major improvement in their condition after combining 30 minutes of brisk walking with other exercises five to six times a week.

Mental stimulation and social engagement

- Maintain ties with family and friends
- Play games – like mahjong – that get people together, and try word games and puzzles like word search, sudoku and crosswords
- Pick up a new language

At the end of the day, prevention is always better than cure. One important yet often neglected aspect is vaccination against common conditions in the elderly such as pneumonia and flu.

If you are above 65 years or have underlying chronic disease like diabetes, ask your doctor about flu and pneumococcal vaccination.

Getting enough protein

Add cheese, hard-boiled eggs, beans, lentils, seeds and nuts such as almonds to main dishes, salads, rice and noodles.

Supplement diet with high-protein bars or yoghurt fruit smoothies.

Supplement jam and butter with peanut butter.

Add powdered milk or protein powder supplement to milk, soup, mashed potatoes or desserts.



COMMON EAR CONDITIONS

A simple guide to understanding, recognising and treating the ones commonly affecting Singaporeans.

Ears and wax

The ears' primary function is for hearing. The outer ear comprises the ear drum and an ear canal that is lined with skin and produces wax.

This wax serves as a protective layer against bacterial and fungal organisms. According to Dr Raymond Ngo, Senior Consultant at the Department of Otolaryngology - Head & Neck Surgery (ENT) at the

NUH, small amounts of earwax form a protective barrier against infection and any damage from moisture.

The skin of the outer ear has a natural growth pattern that starts at the ear drum and grows outwards. With this natural self-cleansing mechanism, there is usually no need for any ear cleaning. "Using metal instruments to clean the ear may occasionally cause ear drum

perforations if inserted too deeply," advises Dr Ngo. In fact, he explains, any trauma to the ear canal via an ear pick or even a fingernail can cause an external ear infection.

Such ear conditions usually come with symptoms ranging from ear blockage and hearing loss to ear discharge and pain. The following are some of the more common ear conditions in Singapore.



Impacted ear wax

If there is a build-up of wax that blocks the outer ear completely, hearing loss and the sensation of blocked ears can occur.

This is most commonly caused by frequent cleaning of the ears with cotton buds. Since ear wax is only produced in the outer part of the external ear, the use of cotton buds may push ear wax deeper into the ear canal, creating a build-up. Olive oil may be used to soften and dissolve hardened ear wax so that it can drain out of the ear, but persistent blockage may require a visit to the doctor for removal.

Outer ear infections

These are most frequently caused by bacteria, and are common in Singapore because of the high humidity. Symptoms include foul-smelling ear discharge and pain. The best way to treat these is to use a combination of steroids and antibiotic ear drops, which can reach the infected area. Oral antibiotics are less effective.

If antibiotic ear drops are ineffective, it could signal a fungal infection. A doctor can easily differentiate between the two: in fungal infections, spores and hyphae can be seen. Spores are reproductive particles released by fungi, while hyphae are tiny parts of certain types of fungus. The discharge tends to have the appearance of 'soft cheese', and needs to be treated with topical antifungal ear drops.

Sometimes, a skin allergy such as eczema can affect the outer ear, which is lined with skin. In this situation, the skin there can become itchy and raw, with a wet discharge. Topical antibiotics may help, but a steroid ointment is a better option, while antihistamines can be used to reduce the itch and allergic reactions.

Dangerous ear infections

Sometimes, infection in the middle ear can spread into the inner ear and brain. This leads to a condition called mastoiditis. Early treatment with antibiotics can stop the progression of the infection, although surgery may sometimes be necessary.

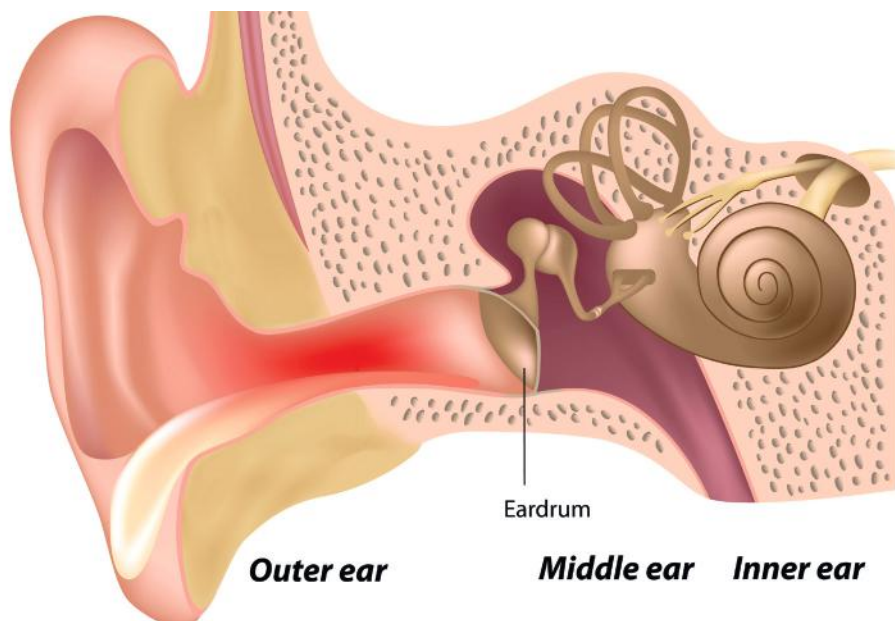
In elderly diabetic patients, the infection can spread to the skull base and cause a bone infection that becomes difficult to cure. Long-term antibiotics are needed to control the pain and discharge, and the disease recurs frequently.

Cancer of the ear

Skin cancers can affect the external ear. They tend to occur in elderly males, with symptoms like deep-seated ear pain with bloody ear discharge. Initially, it may look like a simple external ear infection, but if the symptoms do not improve with topical antibiotics, a biopsy must be done. If diagnosed early before the cancer has spread, surgery provides a high chance of recovery.

Pay attention

It is important to know that persistent ear discharge should always be referred to an ENT specialist. Certain ear infections can have serious complications and lead to facial paralysis, dizziness, hearing loss and brain infections.



SMALL CHANGE, **BIG IMPACT**



A novel fundraising method called microgiving allows you to do good while indulging in one of Singapore's favourite pastimes: dining out.

Round Up Lah!, a joint microgiving initiative with the Timbre Group, aims to get patrons at Timbre outlets to round up their bills to the nearest \$10. The difference between the actual expense and the rounded-up amount will go toward supporting

financially needy patients from the NUH's Department of Paediatrics. Everyone at the dining table can conveniently chip in to do a good deed without burning a hole in their pockets. With the Timbre Group matching all donations dollar for

dollar, the campaign aims to raise \$100,000.

The campaign runs until 31 March 2017. For more information, visit <https://tinyurl.com/rounduplah>



TRANSFORMING BEDSIDE CARE

Since 2011, nurses from the NUH have rolled out initiatives to enhance efficiency and improve patient care.

They range from overhauling workflow processes and minimising paperwork to reorganising supplies so that tasks can be carried out more efficiently. These mean that nurses get more face-to-face time with patients.

Here's one example.

Transforming Care At The Bedside (TCAB) has been able to shorten administration processes and redesign the workspace to be more efficient. It has been able to do so by digging right down to details, such as counting how many steps a nurse has to walk in order to prepare a dose of antibiotics for one patient.

TCAB was sparked in 2010, when the NUH received patient feedback that the quality of care could be better. Nurses then were spending only about 30% of their time on direct patient care activities.

"Higher direct patient care time has been associated with improvements in clinical outcomes and reductions in nurses' turnover," says Ms Ng Sow Chun, the NUH's Deputy Director of Nursing (Nursing Quality). "A basic tenet of TCAB is that frontline staff can recognise the need for change, and identify and test innovations that will improve work processes."

For instance, before TCAB, nurses took 84 steps to prepare antibiotics because syringes were not stored

where the medication was prepared. Since everything is now within easy reach, that number is practically zero. Another area that was streamlined was paperwork. For example, the patient admission form that nurses had to fill went from 20 to seven pages.

TCAB has also freed up 1.5 hours for each nurse per shift, and they now spend more time directly caring

for patients. This helps them build stronger relationships with their charges.

Stressing that TCAB is a continuous journey of improvement, Ms Ng hopes to take it one step further by deploying technology, such as a monitoring system or device that alerts nurses if a high-risk patient attempts to get out of bed.

"Higher direct patient care time has been associated with improvements in clinical outcomes."





DRINKING AWAY **GESTATIONAL DIABETES**

A specially formulated drink is now being tested for its potential to prevent gestational diabetes and improve public health for generations to come.

In the war against diabetes, Singapore recruits the very young for the battle, even before they are conceived! Indeed, doctors are looking to prevent the development of gestational diabetes even before women get pregnant.

Gestational diabetes is a temporary form of diabetes that occurs during pregnancy. However, it has long-term implications. Pregnant women with gestational diabetes have a higher risk of developing type 2 diabetes after pregnancy, while their babies are at risk of developing obesity and

are four to five times more likely to have type 2 diabetes later in life.

Preventing gestational diabetes is thus critical in the overall war against diabetes, now and in the future.

Stopping diabetes with a drink

Supporting this strategy is an ongoing study known as NiPPeR (Nutritional Intervention Preconception and During Pregnancy to Maintain Healthy Glucose Levels and Offspring Health). The study has enrolled more than 1,000 international participants from Singapore, Auckland, New Zealand and Southampton, United Kingdom.

At the local level, the NiPPeR study is being conducted by researchers from the National University Health System, of which the NUH is a part, and the Agency for Science, Technology and Research.

The study aims to investigate the potential and effectiveness of a specially formulated nutritional drink that could prevent the development of gestational diabetes in mothers and improve the long-term health of babies.

The secret of this special drink lies in one of its ingredients, a compound

called myo-inositol. Naturally found in vegetables and beans, it is linked to the improvement of sugar metabolism and insulin sensitivity, two challenges faced by diabetics.

Because their bodies neither produce sufficient insulin nor use insulin effectively, diabetics have trouble converting glucose into energy and cannot lower their blood glucose levels. It is hoped that the myo-inositol in the drink will help those intending to conceive but who are at risk of gestational diabetes to maintain healthy levels of blood glucose, vitamins and minerals throughout pregnancy.

Promise of a healthier generation

Researchers here expect results in 2020, and positive results will bode well for the health of future populations. Without gestational diabetes, there will be a correspondingly lower risk of babies growing up to be obese or diabetic.

"It is truly an exciting prospect if this innovative supplement taken by women could improve glucose metabolism during pregnancy and lead to the 'programming' of better metabolic health in the next generation," says Associate Professor Chan Shiao-Yng, a consultant with the Department of Obstetrics and Gynaecology in

the NUH, and a co-investigator of the study. "It could significantly lessen the rising trend of diabetes in our nation."

The success of this nutritional formula will also inform doctors of its potential as a form of pre-pregnancy and pregnancy nutritional supplement. New or improved recommendations on prenatal care and nutrition could pave the way for doctors and parents to give the next generation of babies the best possible start in life.

As of end-2016, over 500 women in Singapore had signed up for the study. Enrolment will remain open until the local target of 600 is reached. To date, 15 Singapore babies have been born under the auspices of this study. Ms Wong Xue Yun, 29, joined before giving birth to her second child, Jasper, in July 2015. "I believe the greatest gift I can give my children is to raise them up healthily," she says. "I hope my participation in the study can help future mothers avoid gestational diabetes and lower the risk of their children becoming obese."

For more information, visit www.nipperstudy.com or contact the research team at 1800 764 7737 or nipper@nuhs.edu.sg

A rising trend

- Singapore has one of the highest rates of gestational diabetes in the world.
- One in five pregnant women here is diagnosed with gestational diabetes.
- About 2.8% of local women in their 30s are already diabetic.
- Before pregnancy, an estimated 13.9% are already pre-diabetic, a precursor to developing type 2 diabetes and gestational diabetes.

WONG CHUI YING

SENIOR DIETITIAN

Many would assume that, as a senior dietitian, Wong Chui Ying works mainly with the obese to help them lose weight. "Weight loss is actually a very small portion of what I do," she clarifies. Chui Ying, who has been with the NUH for nine years, specialises in paediatric and renal nutrition. "I see mostly patients who have kidney disease, and children who have feeding issues or are failing to thrive," she says.

Why a career as a dietitian?

I have always had a passion for food and how it changes the way we live. I love helping and teaching others about nutrition and leading a healthy lifestyle.

What is the difference between a dietitian and a nutritionist?

The terms are not interchangeable. While a dietitian and a nutritionist both aim to assist a person reach optimal health through food and nutrition, only a dietitian is qualified to provide medical nutrition therapy. This is the use of dietary intervention to prevent or treat health conditions such as diabetes and renal failure. It involves a detailed assessment of the patient's medical, dietary and psychosocial history.

Why is nutrition important for paediatric patients?

Meeting the nutritional needs of a child's developing brain and body enables him to reach his full potential. Also, many childhood-specific diseases rely on nutritional intervention as an integral part of symptom or disease management. At the same time, the intervention has to provide adequate nutrition for normal development.

Do you have any occasional indulgences like the rest of us?

I always encourage a healthy, balanced diet, consisting of adequate carbohydrates and protein, lower total and saturated fats, and more fibre, with different kinds of vegetables, fruits and wholegrains. Like everyone else, I have cravings – chocolate is my comfort food, and I have it whenever I feel stressed!

Share a memorable incident.

My first premature patient was tiny and had to be tube-fed. He improved with time and is now consuming food like a normal toddler. It's really amazing seeing a tiny baby catch up on his development with nutritional advice given. He's now a boy who can walk and run by himself!

