Great travel snacks

Peanuts, fruits, and even popcorn, are great snacks that offer plenty of nutritional benefits when we are away from the comforts of home.

ON our peanut flight to a family wedding in Oregon, United States, my six-year-old granddaughter chattered, "Guess what my brother (age four) can make in his mouth out of peanuts?"

"What?" I asked.

"Peanut butter." Not a bad snack either way, I thought.

When we landed at our destination, she watched out the window as workers for this particular airline manoeuvred a loading dock with one of its trademark statements on display.

"I can read that sign," she told me proudly. "It says, 'Everybody loves snakes.'"

"Snacks," I corrected her.

Perhaps she was right though. Depending on what we choose, our between-meal treats can be charming.

Or they can poison our nutrition goals, especially when we travel away from our usual habits.

Sure, most of us know the obvious: Avoid fried Oreos at the street fair. Ask for orange juice instead of vodka when you catch the early flight.

Yet, it can still be easy to justify poor food choices when we are out and about.

Peanuts and other nuts are ideal travel snacks. They don't get smashed in our carry-on. They contain protein and valuable fibre that bodies need when we travel. And they provide a healthful dose of essential fat to keep junk food cravings under control.

Popcorn is another good choice. It's a whole grain, meaning we eat the entire seed kernel of the grain which includes the nutrient and antioxidant-rich germ, the fibre-containing bran and the energy-producing endosperm (the fluffy white part).

Yes, we can load down this simple treat with salt, butter and sugar. Or we can choose not to.

Fruit is such an obvious choice that we sometimes forget how special this snack can be. It's a natural source of major vitamins and minerals. It comes in its own compostable package. And it gives us just enough energy and pep to get to the next meal without overindulging.

I was pleasantly surprised to see a beautiful bowl of fresh seasonal fruit served alongside our breakfast order in one airport.

More challenges were ahead, however. My nephew's wedding feast was rich with tasty lean pork, fresh salads and vegetables. Yet I still ate more dessert than I needed.

And I might have had just a tad more wine than the recommended healthful dose for women of 4 to 5 ounces a day. (Blame it on my niece who works for a well-known winery.)

All in all, we didn't get too crazy with food on this trip, my older daughter and I remarked as we headed back to the airport for an early flight home. Then my grandson piped up from the back seat. "Can we have a doughnut for breakfast, Mummie? Auntie Erin said we can have doughnuts every day!"

Always good to get back home. – The Monterey County Herald/Tribune News Service

When on the road, the peanut can be your friend. — TNS

Darned if you do, darned if you don't

Both abstinence in midlife and drinking more than 14 units of alcohol a week were associated with higher risk of dementia. — TNS

GENETICS, head injury and poor nutrition have all been linked to dementia.

Scientists are now adding both heavy drinking and abstaining from alcohol to the list, according to a new report.

Researchers from the French National Institute of Health and Medical Research based in France and the United Kingdom recently conducted a study, published in the *British Medical Journal*, to determine the relationship between midlife alcohol consumption and risk of dementia into early old age.

To do so, they observed more than 9,000 people, aged 35 to 55, taking part in the Whitehall II Study, which is examining the impact of social, behavioural and biological factors on long-term health.

The analysts assessed their alcohol consumption and dependence over the course of several years.

They then collected hospital records to review the number of participants hospitalised for alcohol-related chronic diseases and cases of dementia.

After analysing the results, they found both abstinence in midlife and drinking more than 14 units of alcohol a week were both associated with higher risk of dementia, compared to just drinking one to 14 units weekly.

In fact, they discovered that heavy drinkers who up their consumption by seven units a week may have a 17% increase in dementia risk.

In the UK, 14 units of alcohol weekly is the recommended maximum limit, and a unit is approximately 8 grams of alcohol.

A standard glass of wine is about 2 units of alcohol and a beer is about 1.75 units.

"(Our findings) strengthen the evidence that excessive alcohol consumption is a risk factor for dementia," the authors said in a statement.

"(We) encourage use of lower thresholds of alcohol consumption in guidelines to promote cognitive health at older ages."

They also added their results "should not motivate people who do not drink to start drinking, given the known detrimental effects of alcohol consumption for mortality, neuropsychiatric disorders, cirrhosis of the liver and cancer."

They now hope for more studies that further explore the effects of light to moderate alcohol in relation to the memory loss condition. – The Atlanta Journal-Constitution/Tribune News Service

Offering support through comforting touch

USING the power of touch, more than 100 Caring Hands volunteers provide hand massages to ease stress and provide comfort to patients and caregivers at Mayo Clinic in the United States.

One of Linda Bonow's favourite quotes is, "We can do no great things, only small things with great love."

She is reminded of that saying each time she gives a cancer patient a hand massage as part of the Mayo Clinic programme.

"It can be a long day for patients getting chemotherapy," she says.

"When I go into a patient's room, introduce myself and offer a hand massage, my hope is to provide comfort and ease."

Bonow, who has been a volunteer with Caring Hands for three years, says a big part of the experience is sensing what each patient needs at a particular moment.

"Sometimes they want to visit; other times they may want to be quiet," she says.

"I feel that their care and healing is physical, emotional and spiritual, and try to meet them where they're at."

Caring Hands began in 2006 as a way to help patients relax and ease their stress.

Volunteers offer hand massages in 31 areas on Mayo Clinic's Rochester campus, including Cardiovascular Surgery, the Cancer Education Center, Infusion Therapy, Medical Oncology, Orthopedics, Pediatrics, Radiation Oncology, and the Transplant Center, as well as in areas that provide dialysis and chemotherapy.

The programme also extends to the Intermediate Special Care Nursery, where it serves parents whose infants are patients in the unit.

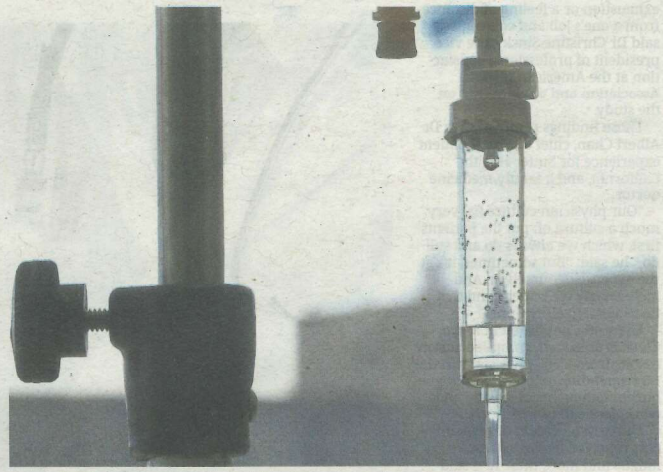
Last year, more than 100 programme volunteers provided a total of 8,824 hand massages. – Mayo Clinic NewsNetwork/Tribune News Service

Caring Hands volunteers provide hand massages to ease stress and provide comfort to patients and caregivers at Mayo Clinic. — TNS

Treating advanced ovarian cancer

About ovarian cancer and the latest treatment options, including targeted therapies.

In Malaysia, ovarian cancer is the fourth commonest cancer in women.



Chemotherapy remains the principal form of treatment before and after surgery for ovarian cancer with the exception of good-prognosis early-stage disease (i.e. stage Ia and Ib, grade 1), in which standard care involves tumour removal surgery followed by observation.

By Dr YONG CHEE MENG

CANCER treatment is challenging. Ovarian cancer treatment is particularly so, because most cases are detected in locally-advanced stages, due to the absence of symptoms in the earlier stages.

Even if present, symptoms are mistaken for non-serious conditions, like digestive problems.

As a result, the disease goes undetected until it progresses further.

Malaysian scenario

In Malaysia, ovarian cancer is the fourth commonest cancer in women with an aged-standardised incidence rate (ASR) of 5.9 per 100,000 population.

It is more common among the Chinese compared to the Malay and Indian populations.

Peak incidence is between the ages of 60 and 65, with more than 50% presenting with advanced disease (Stage 3 and 4), according to the Malaysian Cancer Registry.

A locally-advanced ovarian cancer (stage III cancer) refers to cancer that has spread within the abdominal cavity and its lymph nodes, and along its lining (called the peritoneum) that connects organs to each other, or to abdominal and pelvic walls.

Surgery is the main treatment for locally-advanced ovarian cancer. Surgical management is essential to ovarian cancer diagnosis, staging and treatment.

The ultimate aim is to remove all large tumours within the pelvis and to ensure that no other organs are affected.

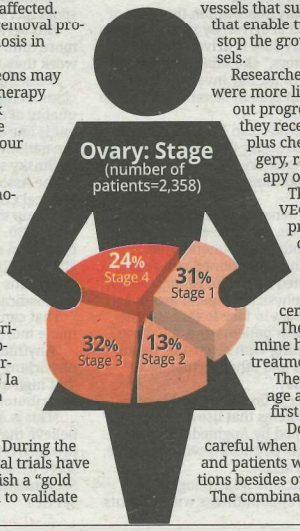
The extent of tumour removal profoundly influences prognosis in ovarian cancer.

In some patients, surgeons may also recommend chemotherapy prior to surgery to shrink tumours and improve the chances of complete tumour removal.

After surgery, patients might also undergo chemotherapy, with the aim of clearing the remaining tumour cells left behind after surgery.

Chemotherapy remains the principal form of treatment before and after surgery for ovarian cancer, with the exception of good-prognosis early-stage disease (i.e. stage Ia and Ib, grade 1), in which standard care involves tumour removal surgery, followed by observation. During the last 40 years, many clinical trials have been conducted to establish a "gold standard" of therapy and to validate the optimal timing and mode of chemotherapy delivery.

Notably, the most significant initial advance in chemotherapy management was the introduction of carboplatin and paclitaxel to the treatment options.



Various challenges

Despite initial response to chemotherapy, locally-advanced ovarian cancer tends to recur over time in around 75% of patients.

Although changes to both chemotherapy schedules and routes of administration are associated with improved survival, it appears that a therapeutic ceiling with these drugs has been reached.

In terms of treatment for ovarian cancer, there has been no significant breakthrough for overall survival in the last 20 years.

Within this time, targeted therapy has undoubtedly revolutionised the therapeutic landscape for ovarian cancer with different mechanism of actions, i.e. anti-angiogenesis inhibition, poly(adenosine diphosphate [ADP]-ribose) polymerases (PARPs) inhibition, targeting cancer-related inflammation, folate antagonist, insulin-signaling inhibition etc. In relation to these targeted therapies, patients may be prescribed an anti-angiogenesis inhibitor, i.e. an anti-vascular endothelial growth factor (VEGF) agent, together with chemotherapy after surgery.

The combination of an anti-VEGF agent and chemotherapy is also used as the main treatment for metastatic ovarian cancer (stage IV cancer).

Anti-VEGF agents disrupt existing blood vessels that supply tumour cells and that enable tumour growth. They also stop the growth of new blood vessels.

Researchers found that patients were more likely to live longer without progression of their cancer if they received an anti-VEGF agent plus chemotherapy after surgery, rather than chemotherapy only.

The combination of anti-VEGF and chemotherapy is prescribed for up to six cycles, after which patients receive anti-VEGF alone for 15 months or until the cancer recurs.

There are factors that determine how doctors prescribe treatment for patients.

These include the patient's age and health status when first diagnosed.

Doctors tend to be more careful when treating older patients and patients with other medical conditions besides ovarian cancer.

The combination of anti-VEGF and chemotherapy, followed by anti-VEGF alone was tested and found to be effective and relatively safe in these patients.

Targeted therapy has changed the treatment of advanced ovarian cancer.

Patients can expect better results with anti-VEGF agents and various other agents compared with previous decades when treatment choices were limited.

Future medical innovations will further improve the chances that patients with advanced ovarian cancer will live longer.

In addition to this, recent data has shown promising results on PARPs inhibition drugs in maintenance treatment for recurrent ovarian cancer in BRCA-mutated patients.

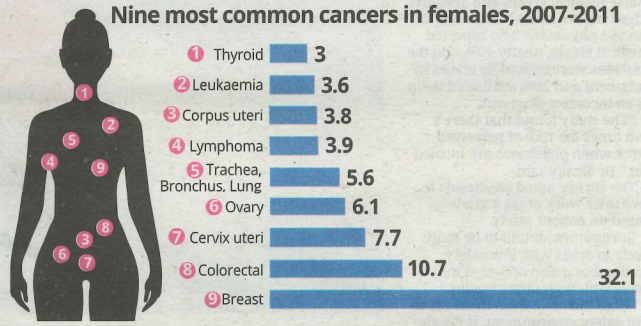
Long term outlook

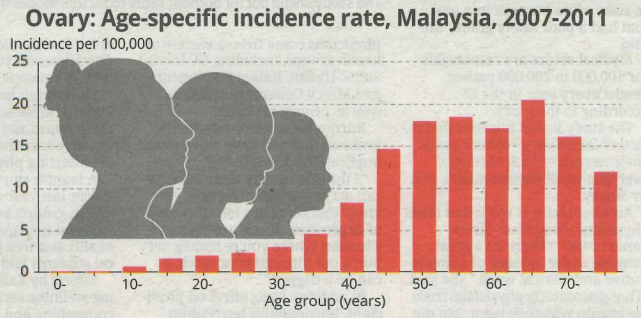
Ovarian cancer management remains a challenge for clinicians. Even though surgery and chemotherapy having been the mainstay of treatment for the last 15 years, there has been only marginal improvement in overall five-year survival.

Although changes to the scheduling and administration of chemotherapy have improved outcomes to a certain degree, there have been no significant advancements, resulting in a number of trials investigating the efficacy of targeted therapies alongside standard treatment regimes.

With recent advances in targeted therapies with anti-angiogenic agents, PARPs inhibitors and epidermal growth factor receptor (EGFR)/human EGFR family targeting, in addition to folate receptor antagonists and insulin growth factor receptor inhibitors showing promising results, it is certainly possible that significant prolongation of survival could be achieved.

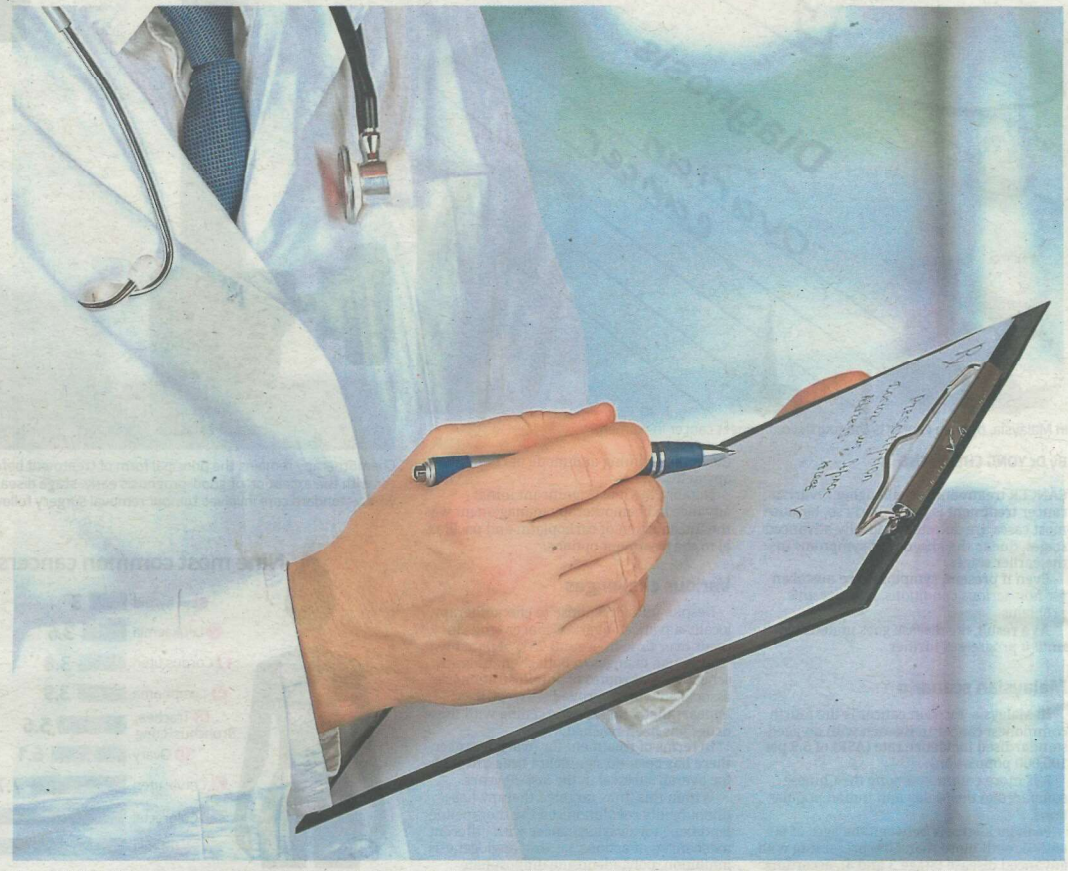
Dr Yong Chee Meng is a consultant gynaecological oncologist and gynaecological oncological surgeon. This article is courtesy of Roche.





Doctors facing fatigue

Major medical errors are associated with high levels of physician burnout, study says.



The study linked doctor burnout rates to factors including a 'chaotic work environment or lack of control over that work environment'. — TNS

PHYSICIANS experience extremely high levels of burnout, and that's contributing to medical errors.

That's the conclusion of a new Mayo Clinic study that found more than half of the physicians in the United States experience burnout, defined as either emotional exhaustion or a feeling of distance from a one's job and colleagues, said Dr Christine Sinsky, the vice president of professional satisfaction at the American Medical Association and a researcher on the study.

Those findings resonate with Dr Albert Chan, chief of digital patient experience for Sutter Health, California, and a family medicine doctor.

"Our physician culture (is) very much a culture of: put the patients first, which we always do and still do," he said. "But sometimes, it's at the expense of ourselves. And increasingly we understand that that's not a healthy thing."

The study, published in *Mayo Clinic Proceedings*, compiled survey results from 6,695 physicians in the US responding to topics like fatigue, burnout, thoughts of suicide and workplace safety.

Thirty-two percent of respondents reported feeling excessive fatigue and more than 10% said they had committed what they considered to be a major medical error in the three months prior to taking the survey.

The physicians who reported major medical errors also acknowledged higher levels of burnout. Of the 663 physicians who reported medical errors, nearly 40% said the mistakes were caused by errors in judgment and 20% attributed them to an incorrect diagnosis.

"The study found that there's two times the rate of perceived error when physicians are burned out," Dr Sinsky said.

The survey asked physicians to give their work areas a grade based on patient safety.

Burnout was found to be more likely in areas with low safety grades, but it also occurred in areas with high safety grades.

"High burnout, even in an excellent safety environment, is nearly as risky as no burnout in a unit that had a poor safety grade," she said.

Medical errors are responsible for 100,000 to 200,000 patient deaths every year in the US, according to the study.

The study linked burnout rate to factors including a "chaotic work environment or lack of control over that work environment", said Dr Sinsky.

Another factor is work that takes physicians away from direct patient care. "(There is) a great increase in the amount of administrative and clerical work," she said. "That disconnects physicians from the reason why they went into the profession in the first place and that's a source of burnout."

Physicians can be slow to seek out personal help, sometimes resorting to self care and end up committing suicide at a rate that exceeds national averages, the study reports.

Dr Peter Yellowlees, a professor of psychiatry and the vice-chair for faculty development in the University of California (UC), Davis, Department of Psychiatry, has researched the suicide issue.

"It's estimated there's something like 400 physicians a year in American suicide – that's the equivalent of two large medical school classes," said Dr Yellowlees, who recently published a book titled *Physician Suicide Cases and Commentary*.

As a practising psychiatrist, he sees physicians as clients. These physicians come from a variety of health groups, including UC Davis, Sutter Health, Kaiser Permanente and Mercy General Hospital, as well as private practice.

Burnout is a minor psychiatric problem that can have more severe implications, he said.

"I think it's pretty clear burnout can act as a trigger," he said. "We know that there are lots of causes of depression. If you are then in a situation where you're feeling very burnt out through your work, it can be a trigger."

In addition to its effect on physicians, burnout also hurts physicians' families and their patients in various ways.

"We know that patients are less adherent to our treatment recommendations when physicians are burned out, physicians show less empathy to their patients when burned out, and physicians are less satisfied with their care," Dr Sinsky said.

"Physicians and other clinicians who are burned out are at higher risk of divorce, diseases such as coronary artery disease, drug and alcohol abuse."

In the 16 years Dr Chan has been in practice, he said he's never experienced burnout. But he's seen the impact on his colleagues.

"At a minimum, we spend 11-plus years to get where we're at and to reach the end of your training, which is really just the beginning of your career, and you wonder if you should continue to be a physician and you're fatigued – that's a concern," he said.

Californian health providers like Sutter and Kaiser are aware of these issues and are actively working to reduce the number of stressors affecting physicians.

A feature story published by Kaiser last year addressed the health group's active and ongoing focus on improving the mental health and well-being of its medical students and staff.

Efforts by Kaiser include providing wellness services like nutrition counselling and teaching students "resilience and coping skills".

In the summer of 2016, Sutter encouraged its providers to engage in acts of gratitude during a two-month campaign aimed at reducing burnout.

And the Sierra Sacramento Valley Medical Society hosts the annual Joy of Medicine summit, which looks to connect local physicians and help them bring joy back into their profession.

Some researchers looking into physician burnout have criticised similar efforts, saying they blame physicians instead of broader issues and employers for burnout.

"It's more nuanced, I think," Dr Yellowlees said. "It's absolutely true that you can't resilience yourself out of burnout. It's undoubtedly the organisational issues that cause burnout and that need changing.

"That's why most groups... are trying to change the organisational culture. And you've got to avoid blaming physicians."

But because physicians tend not to seek out care, it can be important for health systems or organisations to encourage physicians to do so, he said.

Dr Sinsky said she thinks change on a systemic level will yield more long-term results.

"It's my observation that 80% of burnout is driven by system factors and only 20% is driven by individual factors," she said. "We really get more for our investments if we invest in system factors that reduce burnout."

The American Medical Association and Sutter Health are looking into regulatory issues that can add to the administrative load on physicians.

Maintenance of electronic health records is one time-consuming area both groups mentioned.

Dr Chan mentioned research published by *Health Affairs*, which found physicians spend around 3.08 hours in face-to-face interactions with patients and 3.17 hours interacting with electronic health records and other virtual tasks every day.

Sutter is one of several health care systems that use a system developed by Augmedix Inc. that connects physicians with a remote, trained scribe.

Physicians wear Google Glass during appointments with patients and the technology allows the remote scribes, who take notes and provide medics with information, to sit in on the appointment.

Sutter patients are made aware of the remote digital assistant beforehand and there is a 98% patient acceptance rating for the service, used in doctors' offices in areas including Sacramento and the Central Valley, said a Sutter spokesperson.

This service allows providers more time doing the face-to-face work they most enjoy.

Reducing burnout among physicians is important both to ensure quality of care and because burnout is one of the reasons behind the nationwide physician shortage, Dr Sinsky said.

The Association of American Medical Colleges projects a shortage of up to 100,000 doctors by the year 2030. Dr Sinsky referenced data from surveys completed in 2007 and 2014 that predict 2% of physicians are highly likely to leave the medical profession.

That can be reduced if the job is made more fulfilling.

"Anything that gets in the way of physicians being able to provide that high quality care is likely a contributor to burnout," she said.

"This is a solvable problem. I believe that we can work more productively together to begin to solve these problems." – The Sacramento Bee/Tribune News Service

Tell Me About...

Dealing with childhood illnesses

There are many common childhood diseases, both infectious and non-infectious.

Dr Y. L. M

HAND, foot and mouth disease (HFMD) is so prevalent now in Malaysia. Is this only a disease of childhood, or do adults get it too?

HFMD is usually common in childhood, especially in children younger than five years old. But sometimes, it can occur in older children, and even adults.

It is caused by the coxsackievirus and is generally mild.

The main symptoms are sores in your child's mouth, and a rash on the hands and feet.

If you should develop these symptoms, especially in these endemic times, you should seek medical attention immediately, no matter what age you are.

What are the common childhood infections?

The commonest childhood infections are:

- Chickenpox
- Coughs, colds
- Ear infections
- Croup
- Measles
- Mumps

In fact, it is common for a child younger than eight years old to get as many as eight or more colds a year. So, don't be overly concerned that your child seems to be sicker than other children!

My child gets colds quite frequently. I always have to take leave to look after her. She sneezes and coughs a lot, and sometimes, she vomits after a bout of coughing. Should I be taking her to the doctor? It distresses me.

Coughs in children are usually the result of the common cold. It will usually resolve by itself within five to seven days, and is not serious, especially if your child is eating, drinking and breathing normally. You don't even have to bring your child to the doctor if this is so.

However, if your child's cough is very bad and does not resolve itself by seven days, then you should bring him or her to see the doctor.

Coughs like this can be caused by diseases other than the common cold virus, such as croup, whooping cough, childhood asthma, pneumonia, or even by swallowing a foreign object, such as a fishbone or a peanut.

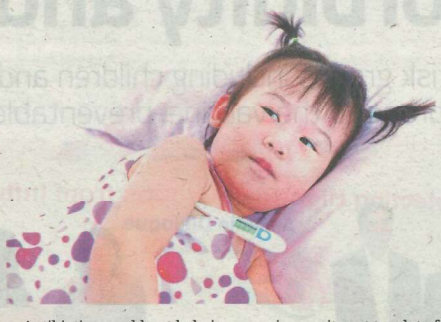
Some of these diseases can be accompanied by high fever, breathlessness, restlessness, tiredness, a cough that is worse at night, or if your child seems very anxious and won't eat/drink/sleep.

If so, take your child to a paediatrician immediately.

And if your child has difficulty breathing, don't wait – take your child to the hospital straightaway.

What about a sore throat? My child doesn't have a cough or runny nose, but he is always getting a sore throat – especially after he eats a lot of chocolates and ice-cream. Does he need antibiotics?

Most childhood sore throats are caused by viruses, including the common cold virus or the flu virus.



It is common for a child younger than eight years old to get as many as eight or more colds a year. — TNS

Antibiotics would not help in these cases.

Sore throat is usually the precursor to a cold. Your child's throat may feel dry and sore for a day or two before the actual sneezing and coughing starts.

Most sore throats clear up on their own after a few days.

However, if the sore throat persists for more than four days, and if your child has a high temperature, it may be due to something more serious, like a bacteria. This might spread further to the lungs, so it's best to take your child to the paediatrician immediately.

Why do children get so many colds compared to teenagers and adults? Mine seems to get a cold every month!

Young children don't have immunity yet to a lot of viruses that are out there in the community. That's why they are easily infected.

As they age, they gradually build up immunity and get fewer colds and coughs.

This is all programmed by your body's immune system, with lymphocytes (specialised white blood cells) that programme themselves to remember the shape of a certain virus once the body has been exposed to it.

So, the next time that same virus appears, the body can mount a very quick and effective response before the virus can even infect you.

Children who go to kindergarten, playgrounds or school, also tend to be exposed to a lot more children, who may come with all kinds of viruses.

Oh no! Is sending my child to kindergarten or school a good thing then, or should I consider home-schooling?

You cannot protect your child in a fortress. Kindergartens and schools are extremely valuable in providing your children not only education, but also interactive play and socialising.

Home-schooled children tend to lack the social aspects of this provision, which is critically important to help your children adapt to the adult world when they grow up.

Remember, in many jobs, EQ is more important than IQ.

Moreover, building up immunity is necessary in a person living in a community.

So, it's good to get mild diseases that cannot be prevented by vaccination, live through them and build up your resistance this way.

Dr YLM graduated as a medical doctor, and has been writing for many years on various subjects such as medicine, health, computers and entertainment. For further information, e-mail starhealth@thestar.com.my.

Influenza increases morbidity and mortality

High-risk groups including children and older persons more prone to the vaccine-preventable disease.

IN the modern world, influenza can spread more easily from one end of the world to the other, with certain individuals being more vulnerable than others to the disease.

It can lead to serious medical complications, particularly for high-risk groups, increasing morbidity and mortality.

Those impacted are mainly children below the age of five, pregnant women, those aged above 65, and those suffering from respiratory diseases like asthma and chronic obstructive pulmonary disease (COPD), as well as chronic illnesses like diabetes and heart disease.

Travellers also fall into the high-risk category, including haj and umrah pilgrims.

In a bid to raise awareness on the impact of influenza, a media dialogue session was held to discuss the prevalence of the disease in the country, how influenza affects high-risk groups, and the preventive role played by vaccination. It was presented by the Malaysian Society of Infectious Diseases and Chemotherapy (MSIDC) and supported by Sanofi Pasteur.

The panel comprised MSIDC president and consultant clinical microbiologist Professor Dr Zamberi Sekawi, consultant paediatrician and neonatologist Datuk Dr Musa Mohd Nordin, consultant geriatrician Prof Dr Tan Maw Pin and senior consultant respiratory physician Associate Prof Dr Pang Yong Kek.

During the panel discussion, Prof Zamberi said, "This disease is generally not taken seriously by Malaysians, particularly those in the high-risk groups. Yet, influenza can and has caused epidemics and pandemics in the past.

"Today, more people are travelling than ever, whether for business, leisure or on pilgrimages.

"Hence, it is important to protect oneself by getting vaccinated against the flu at least two weeks before travelling."

He added: "Muslim pilgrims in particular should get the influenza vaccination. Respiratory tract infection is known to be the most commonly transmitted disease during haj pilgrimages.

"So, why take a chance with a disease that spreads easily in crowds, especially with millions of haj pilgrims gathering in the holy city each year? Vaccination will enable pilgrims to fulfil their pilgrimage with peace of mind where their health is concerned."

Dr Musa emphasised the responsibility parents have to protect their families.

"Young children, as well as pregnant women, are particularly vulnerable to the influenza virus, and the resulting complications can be life-threatening.

"Millions of children fall ill from influenza yearly, with thousands needing to be hospitalised, and some worst-case scenarios resulting in death. There is also a significant chance of the disease spreading from one child to other family members.

"Vaccination can help prevent or limit such cases, thereby benefitting the entire family.

"For parents who are hesitant about vaccinating their children, my advice is to look at the significant advantages of the vaccine and consider its protective role.

"For instance, flu shots given during pregnancies have been shown to successfully protect not only the mother, but also the baby up until several months after birth.

"Ultimately, parents who are unsure must change their mindset if they want to safeguard their children's health."

Posing for a photo at the session are (from left) Prof Tan, Prof Zamberi, University Malaya Medical Centre visiting senior clinical consultant Prof Dr Yasmin Abdul Malik, Dr Musa and Assoc Prof Pang.

Prof Tan highlighted the higher risk levels faced by older persons, many of whom also suffer from chronic illnesses.

"The human immune system weakens with age, and influenza is at its deadliest at the extremes of the age spectrum.

"Chronic diseases in older persons can also contribute significantly to influenza-associated mortality. They are more likely to contract serious secondary complications from the flu, which can exacerbate pre-existing non-communicable diseases.

"As such, an annual flu vaccination is recommended to protect them from the disease and ensure better quality of life."

According to Assoc Prof Pang, "Patients with pre-existing chronic respiratory conditions are also highly susceptible to further complications upon contracting the flu.

"They may also develop secondary lower respiratory tract infections, including pneumonia and other acute respiratory diseases.

"For asthma patients, influenza can lead to further inflammation of the airways and lungs, trigger asthma attacks or cause asthma symptoms to worsen. In the same vein, many COPD patients are usually smokers, and are more prone to respiratory infections.

"While the first recommendation would be to stop smoking, getting vaccinated against influenza should be a priority."

MSIDC also took the opportunity to inaugurate the Malaysian Influenza Working Group (MIWG) at the event, which aims to address pertinent issues both locally, as well as internationally.

The group's priorities span four key areas, namely, surveillance; policy and guidelines; advocacy and education; as well as research.

The core committee members of MIWG consist of experts from various influenza-related disciplines, including medical microbiology, paediatrics, respiratory medicine, infectious diseases, disease surveillance, occupational health and geriatric medicine, with Prof Zamberi as chairman.

He said, "Influenza is both a global and a local problem.

"This is why leading experts all over the world are striving to find ways to curb the disease and mitigate its effects.

"There are medical and scientific bodies that involve themselves in surveillance, research, training and education in hopes of developing effective policies, protocols and practices to prevent and control of influenza.

"Notable leaders in the field include the WHO (World Health Organization), the US Centers for Disease Control and Prevention (CDC), and also specialised groups like the Asia Pacific Alliance for the Control of Influenza (APACI).

"In Malaysia, we are also very concerned about the impact of influenza and recognise the need to be part of the global initiative to combat the disease.

"MIWG will be part of the comprehensive communication and education network of APACI.

"We believe that through these four key areas, MIWG would be able to make an impact on influenza prevention and management through various activities.

"These include research collaborations, establishment of real-time surveillance data, development of policies and guidelines for high-risk groups, and also influenza awareness and education campaigns to encourage vaccine uptake."

He concluded by saying, "Adults can make lifestyle choices that result in better health protection for themselves, their families, and as caregivers, by speaking to their doctors and learning more about vaccination.

"Each of us must take responsibility for our health. Vaccination reduces the impact of disease on society, especially those at high risk, and saves millions of lives each year."

Important dietary requirements

ACCORDING to the "MyBreakfast Study of School Children: Findings, Implications & Solutions" on the nutrition intake of primary school children carried out by the Nutrition Society of Malaysia in 2015, only 29.9% of girls and 41.3% of boys achieved at least 80% of their recommended nutrient intake (RNI) for calcium.

The study also revealed that 25% of children skipped breakfast at least three times a week, and breakfast skippers were 1.34 times more likely to be overweight.

Another 2015 study entitled "Milk Drinking Patterns among Malaysian Urban Children of Different Household Income Status" found that by the time Malaysian children started primary school, their milk-drinking habits declined and the average milk consumption fell to below two servings a day.

This is less than the Malaysian Dietary Guidelines recommendation for a daily intake of between two and three servings (200 ml per serving) for milk and milk products as part of a healthy diet.

This tendency to drink less milk carries over into adulthood, and may result in a lower intake of necessary daily nutrients such as calcium or vitamin D. Studies have shown that in adults, one in two women and up to one in four men suffer from osteoporosis.

Marigold marketing manager Yap Jay Queen said: "The data from these studies are worrying as it indicates both adults and children are not drinking enough milk.

"Adults would benefit from the high vitamin D and calcium content of milk, and children would also benefit from it.

"The lower-than-recommended intake of milk by growing children may affect their growth and development. Milk is a nutrient-rich food, which should form a critical part of a child's diet, and also when the child grows up to adulthood."

In light of this, Marigold recently launched the "Big or Small, Milk for All" campaign in conjunction with World Milk Day.

"We hope that the public will be more aware of the importance of drinking milk to help both adults and children meet their daily nutrient requirement.

"Adults should not miss out on the many nutritional benefits of milk. Children would also be better able to achieve their academic potential with improved attention and concentration in school or during extra classes," she said.

The nationwide roadshow showcased many exciting activities such as art and craft workshops that promoted bonding time in families.

Other activities included colouring contests for children, free health screenings (height, weight and body mass index), and nutrition and dietary counselling for the whole family.

"The purpose behind all these roadshow activities was to make it a fun and educational experience for the entire family.

The many benefits of milk are not limited just for kids, but also adults. In the long run, a daily intake of milk would help everyone enjoy better health," said Yap.

The nationwide 'Big or Small, Milk for All' roadshow showcased many exciting activities, such as art and craft workshops that promoted bonding time in families.

The other stroke

There is a type of stroke that can strike your brain with you being totally unaware of it; however, it puts you at a higher risk for a repeat stroke.

By TAN SHIOW CHIN
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GETTING hit by a stroke can be rather dramatic – half your face suddenly droops, the opposite half of your body becomes weak or paralysed, and you can't seem to speak properly.

There might also be dizziness or confusion, blurring or loss of vision, problems with balance and coordination, difficulty understanding others when they speak, or a sudden severe unexplained headache.

However, not all strokes present so obviously; in fact, some strokes can occur without you ever knowing that they have hit.

Appropriately called silent strokes, these cerebrovascular incidents are usually only discovered by accident when the person goes in for a brain scan for some other reason.

Says Universiti Malaya senior consultant neurologist Professor Dr Tan Kay Sin: "Most of these are incidental findings from MRI (magnetic resonance imaging) or CT (computed tomography) scans, showing a stroke that's not been recognised previously.

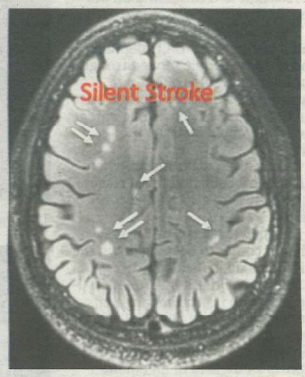
"It can be very small infarcts or it can be (seen as) white matter hyperintensities (also known as leukoaraoisis)."

The Asia Pacific Stroke Organisation president-elect adds: "Usually, these patients have had a scan for some other reason, maybe numbness or they complain that their memory is not so good – symptoms that are unrelated to stroke."

As we age, many of us become increasingly forgetful; however, this might be due to the occurence of silent strokes, the risk of which increases with age. — 123rf.com

Prof Tan says that there are some agents like tocotrienols that can retard the progression of the white matter changes in our brain.

(Right) The arrows in this MRI of the brain point to areas of white matter lesions, indicative of a number of silent strokes.



Strokes are caused by two things: blockage of a blood vessel that supplies part of the brain by a blood clot, and rupture of a blood vessel leading to bleeding in the brain.

Both of these incidents will deprive the part of the brain supplied by that particular blood vessel of vital oxygen and nutrients, ultimately leading to death of the affected brain tissue – also known as an infarct – if not treated urgently.

The symptoms that a stroke patient experiences are dependent on the part of the brain that is affected.

For obvious strokes, the brain tissue involved is located in the areas of the brain that control speech, movement and/or the senses, thus producing the symptoms that the patient experiences.

For silent strokes, Prof Tan explains: "The best way of thinking about it is as a stroke in a functionally-silent area, which may not have a clear function, or it's a very small stroke in an area that doesn't control speech or motor function."

At risk for stroke

However, just because there aren't any obvious symptoms, doesn't necessarily mean that the person who's had a silent stroke is unaffected.

"They may not complain overtly, but they might have, on further testing, some decline – their walking speed may be reduced; their memory, the processing speed, may be reduced.

"They don't recognise it, but they may not be without any symptoms or signs," says Prof Tan.

They might also find it more difficult to speak fluently, move smoothly or react quickly, and their sense of balance might not be as good as it once was.

If these symptoms sound like what we would think of as a normal part of ageing, you're not far wrong.

According to Prof Tan, age is an important risk factor for silent strokes.

"If you take someone in their 60s and scan them, the incidence of these white matter changes (which are associated with cerebrovascular disease) increases by 0.3% to 1.2% every year.

"And if they are older – if you scan them in their 70s – you'll find that 1.6% to 2.5% of these patients have accumulated silent strokes," he says.

The important thing to note is that anyone who has suffered a stroke, whether obvious or silent, has a greater chance of suffering from another stroke.

"If you have a silent stroke, the chances of having another stroke in the future is higher than a normal person without a silent stroke.

"This is proven in a lot of population studies," he says.

Aside from age and having had a previous stroke or transient ischaemia attack (also known as a mini-stroke), there are a number of other risk factors that predispose a person to stroke. They are:

- High blood pressure or hypertension
- Diabetes
- Smoking
- Being overweight or obese
- High blood cholesterol
- An unhealthy diet
- Being physically inactive
- Carotid artery disease
- Peripheral artery disease
- Atrial fibrillation
- Other heart diseases
- Being female
- Family history of stroke

Lowering risk

While some of these risk factors are preventable or manageable, some are not.

We can't exactly do anything about our age, gender or family history.

However, we can ensure that we manage and control any medical conditions, like high blood pressure, diabetes, high blood cholesterol, artery disease and heart disease, to the best of our ability.

Managing these conditions well will lower our risk of stroke.

We can also try to quit smoking, eat healthily and be more physically active, which will all in turn not only have a positive impact on the medical conditions that predispose to stroke, including overweight and obesity, but also help to lower the risk of stroke in of themselves.

In addition, laboratory and animal studies have shown that tocotrienols, a form of vitamin E, can have a protective effect on the brain.

In fact, a 2014 study published in the journal *Stroke*, showed that participants taking 200mg of mixed tocotrienols twice a day for two years, had no change in the size of their white matter lesions measured at the start of the study, after two years, compared to those taking the placebo, who saw an increase in their white matter lesions.

The randomised and double-blind study, done in Hospital Kepala Batas, Penang, by Universiti Sains Malaysia researchers, involved 121 volunteers aged 35 or above, who all had white matter lesions confirmed by MRI and cardiovascular risk factors like high blood pressure, high blood cholesterol and diabetes.

White matter lesions are considered manifestations of small vessel disease in the brain, representing wear and tear, as well as damage, to brain tissue, as seen upon imaging.

Prof Tan explains that during a stroke, silent or obvious, inflammation occurs and a neurotransmitter called glutamate is released in large quantities.

Glutamate causes cell death; thus, blocking the action of glutamate, which tocotrienols have been shown to do, would reduce cell death in stroke.

This is likely to be what caused the lack of change in the white matter lesions of the participants taking tocotrienols.

Says Prof Tan: "In this trial, it seems to be protective after the diagnosis.

"On top of all the medical attention they are receiving, taking some tocotrienols offers some beneficial effects."

He adds: "We have not fully understood what produces silent stroke, we only know some of it, but a lot of it we don't know.

"And certainly there is some genetic component – some patients may be genetically more predisposed to stroke.

"So if you add additional risk factors – a little bit of hypertension, a little bit of diabetes – your risk develops more rapidly than someone else without these factors."

He stresses that if signs of a silent stroke are found incidentally on a brain scan, the patient needs to be appropriately investigated, their stroke risk factors controlled, and be scanned regularly to ensure that their brain changes do not increase over time.

Passing bugs around

When Hong Kong commuters take the subway, their microbes mix, and spread.

Tthe microbial communities that live in the spaces we build – homes, schools, trains – are a reflection of the people who pass through them. — TNS

The deadly 2003 SARS epidemic had a lasting effect on Hong Kong and the way people move through public spaces. — AFP

HUMANS aren't the only commuters making use of the metro. A new study that examined the microbiome of the Hong Kong subway system found distinct bacterial "fingerprints" in each line during the morning – distinctions that blurred over the course of the afternoon.

The findings, published in the journal *Cell Reports*, are part of a growing body of work that could have implications for a host of efforts, from managing the spread of disease to designing city infrastructure.

The microbiomes within us and around us are critical to understanding human health.

The microbes in our guts aid in digestion; those on our skin may help keep it healthy and balanced.

We pick up microbes from our environment, and we leave many of our own behind, by touch or by breath.

Because of this, the microbial communities that live in the spaces we build – homes, schools, trains – are a reflection of the people who pass through them.

They're also places where humans can spread or pick up pathogens, some more dangerous or resistant to treatment than others.

The deadly 2003 SARS epidemic had a lasting effect on Hong Kong and the way people move through public spaces, said Gianni Panagiotou, a systems biologist at the University of Hong Kong and at the Hans Knoell Institute in Germany.

People often wear masks when they have a cold, and the surfaces in subway cars are cleaned constantly.

But such tactics go only so far when it comes to keeping down the microbe load, he added.

"Despite all these measures, in the (subway) train compartments there is really little personal space, passengers are squashed there," Panagiotou, who designed the *Cell Reports* study, said in an email.

"We are talking about one of the busiest and most dense cities in the world."

Panagiotou was interested in the mixing of microbe populations as well as the spread of pathogens through such a system. But his colleague at the University of IIong Kong, architect Christopher Webster, was interested in how the design of the city might affect its microbial profile.

In either case, Hong Kong's subway system made an ideal testing ground – it is used by about five million people each day and it even has a cross-border rail line that brings in commuters from mainland China.

Researchers have already been examining the microbiomes of different subway systems, including Boston and New York in the United States, as well as Hong Kong.

"These are basically the first genetic maps of cities and high-density human environments," said Christopher Mason, a geneticist at Weill Cornell Medicine, US, who was not involved in the study.

With genetic maps from different cities, researchers can start to understand which antibiotic-resistant markers are common and largely harmless, and which ones are rarer and could potentially become a threat, said Mason, who previously studied the New York subway microbiome.

Typically, however, previous studies have usually tested the surfaces of the train cars themselves, which isn't quite the same thing as knowing which microbes successfully hop from person to another, said Regina Cordy, a microbiologist at Wake Forest University, US, who was not involved in the study.

"What really hasn't quite happened, to as broad of an extent, is looking at how these microbes might really be transmitted to humans," said Cordy, who previously studied the Boston subway microbiome.

For this paper, Panagiotou and his colleagues directly studied the microbes on the skin of passengers, because they wanted to track which microbes were actually picked up from subway surfaces over the course of the day.

The scientists sent volunteers into the train cars of different subway lines for 30-minute intervals, cleaning and sampling their palms before they boarded and testing them again after they stepped off.

The researchers found that the microbial communities were dominated by commensal bacteria – harmless microbes that live on or in the body.

Each subway line seemed to have its own specific microbiome signature during the morning hours, as people left home for work.

For example, the MOS line, which runs along Shing Mun channel, was full of aquatic bacteria – an abundance that wasn't found in the more inland routes.

The WR line, which passes through a mountainous region in the New Territories, had a relatively high abundance of those species that prefer to live around 1,000 metres (about 3,280 feet) in altitude.

"Each line has its own topological characteristics: One is passing close to the sea, others close to the mountain(s); one is underground; others are above the ground," Panagiotou said. "All these differences have an impact on the microbiome found in each line."

The microbiota of the particular people from particular neighbourhoods also contributed to each line's individuality, he added.

But throughout the day, as people moved around, those distinctions in populations began to fall away, he added.

Microbes that might have been largely seen in one region could be found all across the network by the day's end.

"The morning signature is really reflecting the topology of the line," he said.

"But in the evening, after all the people have been moving around in the city, we can see that the microbiome is becoming more similar, due to the tidal effect."

This was especially clear in the am-to-pm spread of antibiotic resistance genes, he said.

That finding alone should not alarm people, he said. The idea behind this work was not to scare people, but to reveal the extent to which humans are exposed to a diverse array of microbes each day – and to show that the way we design our cities "can have a significant impact on the type of bacteria that we will encounter", he said.

As far as they could tell, the metro lines with higher traffic rates did not seem to carry higher health risks, whether in pathogens or in antibiotic resistance genes, he said.

In fact, the overall amount of microbes was surprisingly low for the number of travelers using it each day, the scientists said.

That may be thanks to the anti-microbial nano-silver-titanium dioxide coating applied to surfaces in the subway.

Without that coating, they theorised, the transmission of antibiotic-resistant microbes could potentially have been higher.

"I thought that was very interesting," Cordy said, adding that such anti-microbial materials don't seem to be a common feature of public surfaces in the US. "There are public health implications for that."

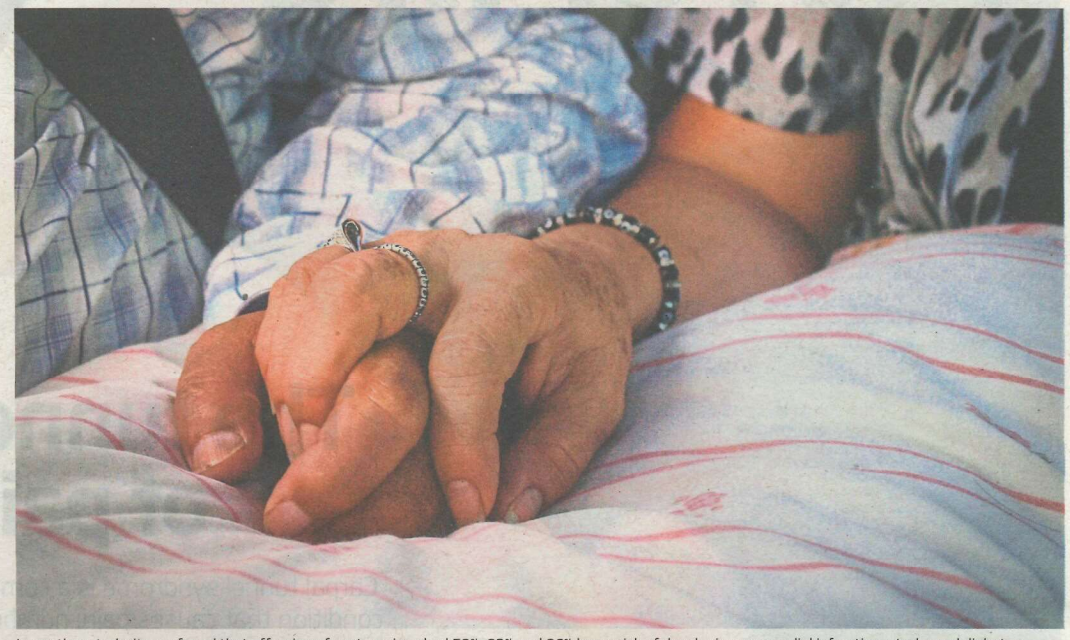
It will take further study to know if these materials are reducing the density of microbes on surfaces, she said. But if they are, then "those types of materials should be further explored" for use in a wide range of transit options, from subways to airplanes, she said.

The results help to fill in our view of the ebb and flow of microbial populations on subway systems, Cordy added, though she said it will take more work to make the connection between the microbes on subway surfaces and the microbes on riders' hands.

"It would have been nice to see paired data from those exact surfaces and the human hand so that we can, at the same time, directly bridge that gap," she said. – Los Angeles Times/Tribune News Service

How old is your mum?

Why your mother's age could be the key to longevity.



In another study, it was found that offspring of centenarians had 78%, 83% and 86% lower risk of developing myocardial infarction, stroke and diabetes respectively, than a similarly aged referent cohort. — TNS

WOMEN whose mothers lived to 90 years have a 25% greater chance to also live that long, compared with those whose mothers didn't, according to a new study led by University of California, San Diego, (UCSD) researchers.

Moreover, the women achieved this extreme longevity while staying healthy. They had no major chronic diseases, such as heart disease, diabetes, cancer, hip fracture or physical limitations.

When both parents survived to 90 years, the advantage jumped to 38%, revealed the study, published in the journal *Age and Ageing*.

If only the father lived to be 90, there was no increase in healthy longevity for the daughter.

These results are probably a combination of genetics, environment and behaviour, said UCSD's Aladdin Shadyab, who led the study. It examined the health records of a racially and ethnically diverse population of more than 20,000 women.

The study used information from the Women's Health Initiative, a large, long-term study on major risk factors for chronic diseases.

It enrolled more than 160,000 post-menopausal American women when it was launched in 1993.

Since only women are tracked in the initiative, the study did not examine men or parental life span effects on sons.

The initiative has yielded a wealth of information about women's health, including the effects of hormone therapy, diet, and supplementation with calcium and vitamin D.

Previous research jibes with the study's findings, including health in the greatly long-lived, the study said.

"In the New England Centenarian Study, offspring of centenarians had 78%, 83% and 86% lower risk of developing myocardial infarction, stroke and diabetes, respectively, than a similarly aged referent cohort," the study said.

A lot of factors go into total life expectancy. This effect of long-lived parents adds an additional calculation.

For a baseline comparison, 34% of all women in the United States aged 65 years old will live to 90, according to the US Social Security Administration. The increase in life expectancy is calculated compared to this base. (Just 22% of men of that age will reach 90.)

In addition, total life expectancy has grown over the decades.

In 1965, just 25% of 65-year-old women lived to 90, and only 10% of the men.

In addition to outside factors such as exercise and diet, researchers in recent years have found some genetic traits that appear more commonly in those who achieve very long lifespans.

"There are specific genes that predict your ability to live longer, which these women likely inherited from their parents," Shadyab said. Researchers don't know, however, why the mother's longevity seems to play a more important role in a daughter's lifespan than the father's.

"Further, the women whose parents lived longer had higher socioeconomic status, meaning that they were more educated with higher income," he said. "And growing up in a high socioeconomic environment predicts your chances of living longer and ageing well."

Those in high-income households tend to have access to better healthcare and education on healthy habits and presumably those influences play a role.

It's possible that the parents who lived to 90 also practised good health habits that they passed along to their daughters.

"More studies are needed to determine how genetic factors interact with behavioural factors like physical activity and socioeconomic status to influence our future ageing outcomes," Shadyab said.

Other studies have looked at health in ageing.

In San Diego, the ongoing Wellderly study tracks men and women who have reached their 80s and beyond, to look for genetic and lifestyle factors that may influence their longevity.

If women want to know how the results apply to them, their present age makes a difference.

Older people have a better chance of great longevity than younger people. That's because some younger people will die prematurely, whether by illness or injury, and never reach old age.

By definition, the elderly have already survived these dangers.

For young women, this means that environmental and behavioural patterns are much more important to attaining extreme longevity than for those who are already older. – The San Diego Union-Tribune/Tribune News Service

Should doctors ask patients about sexual orientation?

ASKING about patients' sexual orientation is not routine, even among medical professionals who specialise in sexual health.

About half of the medical professionals surveyed by John Hopkins Medicine researchers in the United States said they asked patients directly about sexual orientation, according to a study published in *The Journal of Sexual Medicine*, while about 40% said sexual orientation is irrelevant to patients' care.

The survey's co-author, Dr Amin Herati, urology professor at the Johns Hopkins School of Medicine, said that men who mostly have sex with men are at higher risk of some sexually-transmitted infections, so if doctors don't know men are gay, for example, their care might not include that consideration.

The researchers suggested that the 84 medical professionals surveyed were more likely to ask about sexual orientation because all are members of the Sexual Medicine Society of North America.

Asking about a patient's sexual orientation has risks and benefits, said Naomi Goldberg, policy and research director at the Movement Advancement Project, a think tank that works toward equality for LGBT (lesbian, gay, bisexual, transgender) people.

Overall, she said, the benefits of tailoring care toward patients outweighs risks, but the way that someone's orientation is sought is important. "Any time you ask about sexual orientation or gender identity, that's sensitive information that needs to be treated carefully," she said. And that information should be safeguarded, she added.

As far as how to ask, questions regarding sexual orientation could be included on intake forms, she suggested, along with other questions ascertaining age and ethnicity. Boxes could include whether patients think of themselves as lesbian, gay or trans, for example. They could also ask what gender they were assigned at birth and how they identify now.

"If someone currently identifies as a woman and checks 'woman', and may not check 'trans', and if you ask what sex were they assigned at birth and she checks 'male', then a physician might be able to have a discussion" more specifically tailored to her health, for example.

Goldberg pointed out that with more information, for example, a doctor might bring up the possibility of using PrEP, the pill that can reduce the risk of HIV infection.

Also, knowing that LGBT people might be more at risk for depression could help doctors better monitor mental health.

"Those are the kinds of things that might get left out because doctors may make assumptions about their patients," Goldberg said.

She noted that for many people, clinics and community centres that are LGBT-focused are a way to seek care in a safe space, but not everyone has that option.

A report released recently by the US Movement Advancement Project shows that these centres are often understaffed and underfunded, but serve more than 40,000 people each week across the 40 states surveyed.

About half of medical professionals surveyed in the US said they ask patients about their sexual orientation. — TNS

"Going to an LGBTQ (Q for queer) community centre or somewhere like Howard Brown (in Chicago) that's focused on LGBTQ people, that is a really nice option for some people," Goldberg said, adding that those who live elsewhere in the state have fewer options.

"We need to also make sure that the primary care physicians at your local community health clinic or at the local hospital are also aware of the issues." – Chicago Tribune/Tribune News Service

Women's World Datuk Dr Nor Ashikin Mokhtar

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Numb, tingling hands

If you're feeling numbness, tingling or weakness in your hand, consider asking your doctor to check you for carpal tunnel syndrome.

LONG hours of sitting in front of a computer screen at the office is known to be detrimental to blood circulation and our overall health.

There is also another condition many of us may have experienced, but are unaware is a condition that has become increasingly common in the modern workplace.

Known as carpal tunnel syndrome (CTS), it affects our wrist, hands and fingers, causing discomfort and stiffness.

We do not know exactly why CTS starts. The pain or discomfort that you feel in your wrist, the palm of your hand and fingers, particularly in your index finger and thumb, is usually caused by extreme pressure in your wrist and inflammation.

It appears that the more extreme the use of wrists and fingers – such as repetitive manoeuvres and constant use of drills and vibrating hand tools – the greater the likelihood of someone developing CTS.

More likely is that it is brought about by other health conditions, such as hypothyroidism, or an underactive thyroid; menopause; oedema or fluid retention from pregnancy; diabetes; dislocation or fracture of the wrist; an overactive pituitary gland; rheumatoid arthritis; or an overactive pituitary gland.

It appears that the more extreme the use of wrists and fingers – such as repetitive manoeuvres and constant use of drills and vibrating hand tools – the greater the likelihood of someone developing CTS.

Testing and treatment for CTS

Symptoms of CTS include an urge to shake off a feeling of numbness and/or achiness.

The longer you neglect tending to this symptom, the more likely you will lose the use of your hand muscles and will be unable to hold anything with a firm grip.

So, when you feel a recurring discomfort in your hands, there are a few ways to test if you may potentially be afflicted with CTS.

You can tap your wrist gently and see if you have a tingling of numbness in the fingers. You can also stretch your wrist above your head or flex your wrist to see the result.

Self-testing, however, is not a foolproof method. Your next step should be to follow up with a doctor for more conclusive tests, like below:

Tinel's test: The physician lightly strikes the median nerve at the wrist to check for numbness or tingling in any of the fingers.

Phalen's test: A patient bends his wrists by pressing the backs of his hand against one another, to check for numbness or tingling.

Nerve conduction study: Minor shocks are delivered by electrodes attached onto the hands and wrists. The test measures the speed at which the nerves transmit impulses to the muscles.

Electromyography: Electrical activity is revealed on a screen by inserting a fine needle into the muscle, allowing doctors to check for nerve damage.

Blood test: A blood test does not reveal CTS per se, but it will detect other health conditions that may be the underlying cause of CTS symptoms.

Because it may take a while to determine the root cause of CTS in any given individual, you shouldn't delay too long in seeking treatment. If the problem is due to physical stress from your occupation or from an activity in which you use your hands regularly, then lifestyle changes are necessary right away to correct the problem.

In treating CTS, physical therapy is the first course of action that will likely be prescribed. Stretching is a key part in the beginning of therapy, followed by resistance-type exercises.

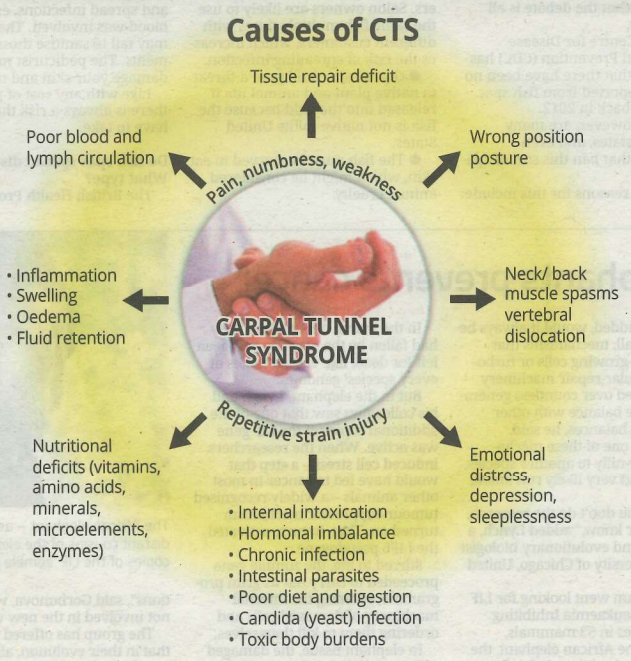
During the day, when you are at work, a cold compress and a wrist brace will help to ease the discomfort.

Apart from manual therapy, the use of deep friction tools may also be used to reduce pressure from your wrists and hands.

Other methods include postural workups, ultrasound and electrical stimulation, and kinesiotaping techniques.

Your joints and muscles will require periodic rest throughout the time that you undergo therapy for CTS.

This can be facilitated by wrist splints or braces, which reduces movement, to allow your joints and muscles to rest properly.



Usually, this is applied at night, but in some cases, you may be advised to wear it all day.

There may be cases where your doctor may recommend drugs like painkillers and even botox injections, which have been known to improve CTS.

There is also potential, as a study published in the *Journal of Clinical Rehabilitation* suggests, that yoga, laser, ultrasound and NSAIDs (non-steroidal anti-inflammatory drugs) may help quell CTS.

One particularly effective drug is a corticosteroid injection, applied directly to the carpal tunnel, to lower inflammation.

You may feel an increase in pain right after, but it should subside in a few days.

Follow-up doses may be administered if you find the symptoms returning.

With corticosteroids, however, long-term use is discouraged, as there are side effects, like the risk of infections, thinning of bone mass, suppressed adrenal hormone production, a spike in blood sugar levels, and even cataracts.

Surgery is usually the last option, after all others have been exhausted. Carpal tunnel decompression surgery is an outpatient procedure with no nights spent in the hospital.

The carpal ligament, which is the roof of the carpal ligament, is cut in surgery to lower pressure on the median nerve.

Success rates have been high, with the Cleveland Clinic reporting that 90% of CTS surgeries have solved the condition for its patients.

Can CTS be prevented?

In some cases, CTS may be prevented, although the body of research has yet to substantiate the effectiveness of various massages, hand movement exercises, and even yoga.

There is the benefit of improving dexterity by incorporating those activities into your daily routine, especially if your work primarily involves the use of your hands.

If the position of your work space is awkward, causing any strain on your hands from long-term use, reposition your desk setting to reduce unnatural wrist positions.

Other measures should include:

- Avoiding prolonged flexing and extending of the wrists.
- Keeping your wrists straight when possible.
- Keeping your hands at a comfortable temperature, as the cold can cause your hands to tense.
- Preventing unnecessary strain on the wrist and hands, and not bending it in any unnatural manner.
- Taking frequent breaks from prolonged hand-related movements.
- Avoiding tensing and gripping things too hard for long periods of time.
- Treating or controlling other health conditions that may be causing CTS symptoms if you have them.

Datuk Dr Nor Ashikin Mokhtar is a consultant obstetrician and gynaecologist. For further information, visit www.primanora.com.

Tell Me About...

Dr Y. L. M

Something fishy going on?

Fish pedicures involve people dipping their feet in water filled with small fish called *Garra rufa*, but could this pose health risks?

The *Garra rufa* removes dead skin on the outer layer of the skin. — AP

I HAVE recently read a lot of articles about fish pedicures. What are they?

You might have seen a lot of fish pedicure centres in Malaysia. They are not like your regular nail salon pedicure, in which a pedicurist washes and scrapes off the dead skin of your feet and around your nails with instruments.

A fish pedicure is also known as a fish spa. Here, the fish involved are the Middle Eastern and Turkish freshwater fish called *Garra rufa*. They are also called "doctor fish". These fish have no teeth.

Since the beginning of this century, the *Garra rufa* have been used in spa treatments for psoriasis patients. Psoriasis is a disease where the patient has flaky skin.

In this treatment, the patient immerses himself in a bathtub of these fish, and allow the fish to feed on their upper skin layer to help peel it off.

The fish spa does not cure psoriasis as there is no cure for it. However, it does alleviate symptoms.

This fish has also been used for patients with eczema.

Since then, spas for people without skin problems have latched onto this treatment. But their safety is still being widely debated.

Wait. A fish spa involves the fish actually eating my skin? Isn't that like what a piranha does?

Not at all. Piranhas are flesh-eating fish that nibble deeper than just the surface of your skin.

The *Garra rufa* removes dead skin on top of your stratum corneum, or the outer layer of your skin. This is similar to what a traditional pedicurist does – removing dead skin with a foot file or a scrubber.

Only, the fish does this in a far more efficient and comprehensive manner. Traditional pedicurists tend to concentrate more on the area around your nails, and perhaps the calluses on your soles, but tend to neglect other areas.

The fish will bite every part of your submerged feet. The word "bite" is very subjective as well, because these fish have no teeth.

A fish spa is not painful either. I, for one, find the sensation very pleasant – once you get over the slight ticklishness of it.

Yes, but are fish spas safe?

That is what the debate is all about now.

The US Centre for Disease Control and Prevention (CDC) has published that there have been no illnesses reported from fish spas, but that is back in 2012.

There, however, are many American states, and even Canadian, that ban this sort of spa treatment.

Some of reasons for this include:

- The fish pedicure tubs cannot be sufficiently cleaned between customers.
- The fish cannot be "disinfected" or "sanitised' between customers. Salon owners are likely to use the same fish multiple times with different customers, which increases the risk of spreading infection.
- *Garra rufa* could pose a threat to native plant and animal life if released into the wild because the fish is not native to the United States.
- The fish must be starved to eat skin, which might be considered animal cruelty.

But please note that even traditional pedicures and manicures have issues about safety sometimes.

The pedicurist may use the same instruments between customers and spread infections, especially if blood was involved. The pedicurist may fail to sanitise those instruments. The pedicurist may also damage your skin and nail bed.

Like with any sort of procedure, there is always a risk that you have to take.

Do fish spas spread diseases? What type?

The British Health Protection Agency recently published that fish spa pedicures could spread diseases such as HIV and Hepatitis C, and that patients with a weak immune system, such as those having diabetes or psoriasis, are particularly vulnerable.

They however conceded that the risk is extremely low, but could not be completely excluded.

The reasons for the possible disease spread are exactly what has been warned by the US CDC – the fact that many salons do not change the water between customers because it is not financially viable or easily possible.

So if a customer who has HIV and Hepatitis C (which are blood borne diseases) bleeds into the water, there is a risk for this to be passed – especially if the next user has a cut or open wound for the viruses to seep into.

Note that the same infections can be transmitted if the pedicurist does not sterilise his instruments between one user and another.

The Health Protection Agency has recommended that the water be changed between customers.

Dr YLM graduated as a medical doctor, and has been writing for many years on various subjects such as medicine, health, computers and entertainment. For further information, e-mail starhealth@thestar.com.my.

'Zombie gene' in elephants prevents cancer

By MELISSA HEALY

MAYBE it's the elephant's genes that never forget.

In addition to having great memories, elephants are known for having a very low incidence of cancer.

In what might seem a wild mash-up of the *SyFy* channel and *National Geographic*, new research has uncovered a surprising factor that protects elephants against the dread disease: a gene that had gone dormant in their mammalian ancestors, but got turned back on as their evolving bodies grew ever bigger. Scientists call it a "zombie gene" – cue the chilling music here – "a reanimated pseudogene that kills cells when expressed".

The zombie gene is not just a curiosity.

Along with elephants, several kinds of whales, as well as bats and the naked mole rat, share enviably minuscule rates of cancer.

Biologists suspect that each of those species has evolved a different strategy to ward off malignancies, and they want to understand them all. In time, they might find ways to approximate those strategies in humans and drive down our vulnerability to cancer.

"That's not easy," said Vincent J. Lynch, who led the research published in the journal *Cell Reports*.

Nor, he added, would it always be safe. After all, mechanisms that thwart fast-growing cells or turbocharge cellular-repair machinery have evolved over countless generations in fine balance with other checks and balances, he said.

Transfer one of these mechanisms willy-nilly to another species, and it would very likely run amok, he said.

"But if you don't do the research, you'll never know," added Lynch, a geneticist and evolutionary biologist at the University of Chicago, United States.

So his team went looking for LIF (short for Leukaemia Inhibiting Factor) genes in 53 mammals, including the African elephant, the bowhead and minke whales, bats and naked mole rats.

In most species, they found a single active LIF gene. But in the modern African elephant – as well as in the manatee and the rock hyrax, both distant cousins of the elephant – they found between seven and 11 additional copies of the LIF gene, called pseudogenes.

In every species but the elephant, these LIF genes and their extra duplicates were inactive: That is, they didn't turn on or off to produce proteins. If they had been active in the past, their function had been phased out.

In the march of evolution, they had fallen by the wayside and been left for dead, like vast stretches of every species' genomes.

But in the elephant, Lynch and his colleagues saw that one of the additional copies of the LIF gene was active. When the researchers induced cell stress – a step that would have led to cancer in most other animals – a widely recognised tumour-suppressor mechanism turned on. That, in turn, activated the LIF6 pseudogene.

Stirred to life, the zombie gene proceeded to carry out its grim programme, entering the internal machinery of damaged cells and ordering them to kill themselves.

In elephant tissue, the damaged cells turned themselves inside-out, and cancer was thwarted before it could gain any momentum.

And when the researchers suppressed the action of the LIF6 "zombie gene", they found that stressed cells were more likely to form tumours in elephant tissue.

"It's a fascinating study," said molecular and cell biologist Vera Gorbunova of the University of Rochester in New York, who has studied the mechanisms by which naked mole rats thwart cancerous cells.

The collective research of Lynch's group "also raises intriguing questions", said Gorbunova, who was not involved in the new work.

The African elephant – as well as the manatee and the rock hyrax, both distant cousins of the elephant – have between seven and 11 additional copies of the LIF 'zombie gene'. — Reuters

The group has offered evidence that in their evolution, all complex creatures have made trade-offs, such as taking on genes (including anti-cancer genes) that increase their life span, but reduce their reproductive prowess, or vice versa.

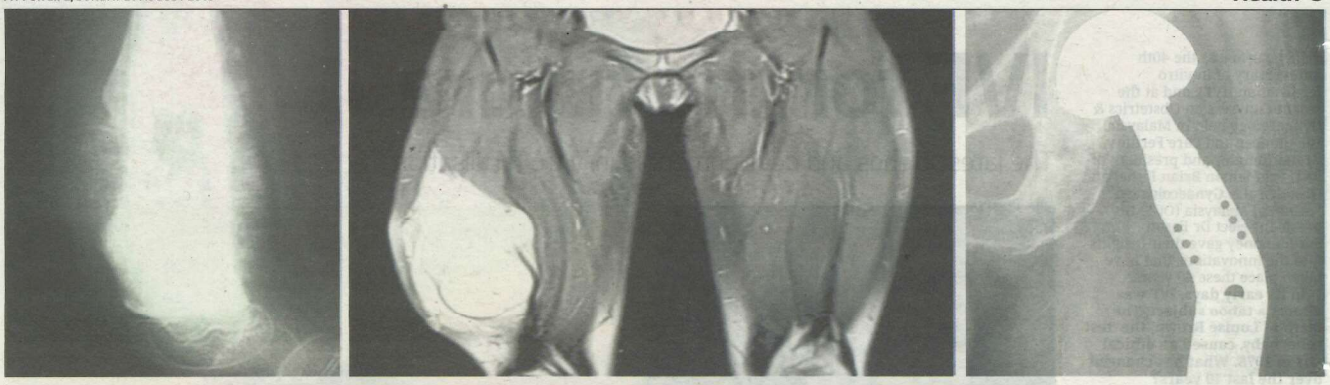
The reanimation of the LIF6 gene may be one way in which elephants have countered what would seem to be a growing threat as they evolved to become bigger, said Lynch.

How? Biological reasoning would suggest that bigger animals would have a greater propensity than very small ones to develop cancer – mainly because they are made up of more cells. Theoretically, the more cells there are, the higher the odds that one or more will go rogue and seed a tumour.

That is true within species: big dogs (and tall humans) are more likely to develop cancer than smaller members of their species. But strangely, very large species are not, in general, more likely to develop cancer than are small species – an observation made by epidemiologist Richard Peto that has come to be known as Peto's Paradox.

In part, "elephants and their extinct relatives (proboscideans) may have resolved Peto's Paradox" by giving LIF6 new life as a killer of would-be cancer cells, wrote Lynch and his colleagues.

Apparently, not all zombies are to be feared. – Los Angeles Times/Tribune News Service



(From left) An x-ray of an osteosarcoma of the femur; an MRI of a soft tissue sarcoma of the thigh; and an x-ray of a megaprosthesis replacing the femur after it has been removed due to giant cell tumour of the bone. — Dr Chye Ping Ching

TREATING BONE TUMOURS

There is a medical sub-speciality known as orthopaedic oncology that specialises in treating bone tumours.

A PATIENT once nearly cost Dr Chye Ping Ching her life. The Chicago-trained senior consultant orthopaedic oncology surgeon was in the middle of operating on the young patient when her appendix burst – a medical emergency.

However, there was no one else near enough that was qualified to continue with the surgery, which was to remove a rare bone tumour and replace the diseased bone.

So, she soldiered on through the hours-long surgery, exiting the operating theatre once she was done, only to promptly enter another one as a patient to remove her ruptured appendix.

It was months before she recovered enough from this life-threatening condition.

And with only a handful of orthopaedic oncology surgeons in the country, her services are certainly needed.

Says Dr Chye: "In the early days, patients with musculoskeletal tumours were treated by general surgeons and general orthopaedic surgeons. Virtually everyone with sarcoma succumbed to the disease and surgery was almost always an amputation.

"It is not until the 1980s that orthopaedic oncology emerged as a subspecialty in orthopaedic surgery across Europe and America. In Malaysia, its development has been a slow one since the 1990s."

It is estimated that there are currently about 250 orthopaedic oncology surgeons in the world.

"The small number of these sub-specialists is not surprising, considering that this discipline is notoriously demanding in terms of commitment, knowledge, surgical skills, attention to the finest of details, concentration, stamina, and mental and physical fitness of the surgeons. This has made orthopaedic oncology a challenging subspecialty to master and practice," says the Malaysian Orthopaedic Association president-elect.

According to Dr Chye, orthopaedic oncology surgeons aim to cure where possible and palliate where necessary. — SHAARI CHEMAT/The Star

Types of tumours

Dr Chye, one of the pioneering orthopaedic oncology surgeons in the country and one of the very few female ones in the world, explains that there are more than 200 types of tumours in the musculoskeletal system alone.

"Orthopaedic oncology surgeons treat tumours of soft tissue, bone and cartilage origins, and also tumour-like lesions that affect the musculoskeletal system," she says.

"Muscle, fat, skin, ligaments, tendons, fascia, blood vessels, nerves are all soft tissue. And there are hundreds of these soft tissue tumours.

"Bone tumours are mainly from bone cells or cartilage."

She adds that these musculoskeletal tumours can either be benign (non-cancerous) or malignant (cancerous). "And there are also some benign tumours that behave like they are malignant," she says.

Examples of common malignant bone tumours are osteosarcoma; Ewing's sarcoma, which affects mostly children and young adults; and chondrosarcoma and multiple myeloma, which are both more common in older people.

Common malignant soft tissue tumours include liposarcoma, synovial sarcoma, malignant peripheral nerve sheath tumour and squamous cell carcinoma.

Common benign bone tumours are osteochondroma, osteoid osteoma, giant cell tumour and fibrous dysplasia, while common benign soft tissue tumours are lipoma, haemangioma, neurofibroma, fibromatosis and schwannoma.

However, there are many more metastatic bone diseases from cancers of the breast, prostate, thyroid and kidney (secondary tumours) than primary tumours that originate in the bone itself.

"Bone is a common place for cancer to spread to, especially in advanced stages," says Dr Chye.

Better survival

Fortunately, having bone cancer, even a metastatic one, does not spell immediate doom nowadays.

As Dr Chye explains: "Oncology treatment has advanced tremendously in the past decade with amazing improvement in various diagnostic and imaging methods, drugs, chemotherapy, radiotherapy, treatment protocols, surgical techniques, designs and precision of surgical instruments, biomaterials, implants and prostheses.

"All these have led to better clinical outcome, survival and quality of life for the patients."

Surgeons now target limb salvage, rather than amputation, and preserving the function of the affected limb, without compromising overall survival, is now the norm.

For example, the five-year survival rate for non-metastatic osteosarcoma and Ewing's sarcoma can be as good as 70%, if all treatment is performed successfully without delays and complications.

"People have the wrong impression that when the disease spreads to the bone, death is imminent. Instead, many patients are able to survive for a good period of time, even with disease in the bone.

"And for the lucky ones – those with a single metastasis to the bone – it can often be excised and (the affected area) reconstructed. With good chemoresponse, extended survival is possible while preserving the integrity and functions of the musculoskeletal system."

However, according to Dr Chye, many orthopaedic surgeons still fix a pathological fracture in metastatic bone disease like a normal fracture. "The moment a nail is inserted into the bone in such cases, the whole bone will be contaminated by the cancer cells – the limb becomes unsalvageable," she says.

Sadly, she has seen too many cases where the fixation of the fracture has failed while the patient is still very much alive.

"The patient will become bed-ridden and nursing care difficult. This is a terrible way to die." she says.

Dr Chye also notes that many pathological fractures, especially in the elderly, are from undiagnosed primary cancers, which can be challenging to locate.

"I've been teaching the post-graduates, don't rush to fix a pathological fracture – investigate thoroughly and find out what is the underlying pathology, extent of the disease, quality of the bone and soft tissues, and surgical options before fixing it. And make sure the fixation will outlive the patient!

"Tumour surgeries must be done right the first time. The clock is ticking for the patients and there may not be a second chance," she says.

Special skills

There are usually two parts in orthopaedic oncology surgeries: excision and reconstruction.

Says Dr Chye: "Meticulous planning is vital to ensure there is no room for error.

"All instruments needed for surgery, possible difficulties and complications, and ways to overcome them must be thoroughly thought of prior to surgery.

"We always aim to achieve a wide surgical margin for thorough clearance of the tumour. A marginal or intralesional margin will have higher risks of tumour recurrence and poorer prognosis.

"It is important that surgery is done correctly by a trained surgeon the first time. A repeat surgery will definitely result in more extensive loss of tissue and function."

She notes that often, soft tissue and bone need to be reconstructed after removing the tumour.

"The choice for soft tissue reconstruction depends on the size and tissue composition of the defect.

"For a large defect, a regional or free flap is required to cover it, and even for restoration of motor and sensory functions.

"As for bone defects, we can use an allograft, which is from deceased donors, or an autograft (the patient's own bone).

"We frequently use megaprostheses (mostly made of titanium alloys), which are modular and readily available. Occasionally custom-made prostheses are needed (especially expandable ones for the growing child)," she says.

"We rely on x-rays, CT (computed tomography) scans, MRI (magnetic resonance imaging), PET (positron emission tomography) scans and radionuclide scans to gather information regarding the extent and effects of the tumour on the bone and soft tissues, for staging of the disease, and monitoring.

"It is important to know the exact diagnosis because different tumours have different clinical behaviours, aggressiveness, metastatic tendencies and responsiveness to treatment.

"Biopsy of the tumour is an important step in the management. Although seemingly easy, its execution requires thorough understanding of the local anatomy, tumour composition and extent, and future surgical approaches, and must be done by the surgeon who is going to perform the definitive surgery.

"A poorly-performed biopsy might not yield appropriate tumour tissue for histopathological examination and might cause the limb to become unsalvageable."

"Before the surgery, we must study the MRI images in detail. We will convert the 2D images into 3D ones in our head in order to execute the surgery," Dr Chye explains, adding that continuous assessment and decision-making are important during surgery.

"It is definitely not as simple as just cutting the tumour out. Surgeries are usually long and complicated," she says. "A four-hour surgery is a short one for us. Eight to 12 hours is very common. Some multidisciplinary cases last a whole day and night. My longest surgery so far lasted 36 hours."

She adds: "Tumour surgery is team work, there is no way the surgeon can work alone. The team communicates with each other all the time. The tumour surgeon, pathologist, radiologist, anaesthetist, plastic surgeon, oncologist, physician, physiotherapist and nurses work hand in hand to achieve the best possible clinical outcome for the patients."

In addition, facilities like blood banks and a good intensive care unit (ICU) are necessary. Because of this, orthopaedic oncology surgeries can only be performed in large tertiary hospitals complete with the above-mentioned services.

"Patients often delay coming to hospital until the disease is advanced, please seek treatment early from the right doctors and hospitals." Dr Chye advises.

This article is courtesy of Sunway Medical Centre.

IVF for the future

The latest trends and development in in-vitro fertilisation.

THIS year marks the 40th anniversary of in-vitro fertilisation (IVF), and at the recent Congress on Obstetrics & Gynaecology held in Malaysia, IVF pioneer and Care Fertility Group founder and president of R&D Prof Simon Brian Fishel and Obstetrical & Gynaecological Society of Malaysia (OGSM) president-elect Dr Eeson Sinthamoney gave their insights into the innovations that have taken place these 40 years.

In its early days, IVF was almost a taboo subject. The birth of Louise Brown, the 'test tube' baby, caused an ethical stir in 1978. What has changed over the last 40 years?

Prof Fischel: Technology has changed beyond recognition.

When we first started, the technology was very primitive, and patients had to stay in the hospital for up to 10 days. Now, it's a simple out-patient procedure.

Previously, we used to collect the woman's eggs via surgery by laparoscopy. Today, the procedure is much less invasive, and we do it using ultrasound techniques.

The art of embryology has also progressed significantly.

We didn't have incubators then. And the days of test tubes in glass jars stored in a warming cabinet are a thing of the past.

Now, not only do we have sophisticated, time lapse incubators, but advances in technology also enable us to leave the embryos for five days without even touching them while allowing the embryologist to witness the progress every 10 minutes via their smartphone, tablet or computer. This allows us to learn more about how human embryos evolve during the first five days after fertilisation.

Not only is IVF helping infertile couples, but today we have also introduced genetics into the field.

If you are a fertile couple, but either of you have a genetic condition that may affect your offspring, technology can now remove that genetic disorder from the embryo.

The breakthrough lies in the fact that the genetic disorder will not be passed on to the child and will have been eradicated from the family's life.

So, if you have a genetic condition that has been running in the family, IVF can stop it in its tracks. One of the most magnificent things about IVF is that it redefines family life.

In many Western countries like the United Kingdom, as well as Japan, we have enormous problems with declining birth rates. The UK has a birth rate of 1.7/1.8. To replace the population, the figure must stand at 2.4.

This dilemma has been compounded by women who are now getting older before they think of starting a family. Women are now not considering having a family until they are 33 or 34 years of age. With this development, couples are ultimately having less children, if any at all.

So, society is experiencing a decline in birth rate, and yet, we are getting older and living longer, so who is going to fund the ageing population?

I believe we need to embrace IVF. Anyone who wants to bring a child lovingly into this world should be encouraged to do so and that is why we are moving into another domain where we offer to preserve fertility.

To achieve this, we need to empower both men and women.

A lot of people don't recognise that men also have a biological clock. This issue is not that men can't have children at a later age, but rather there is an increased risk the child will suffer from health conditions ranging from autism to leukaemia.

We should implement national programmes to preserve eggs and sperm while people are young.

It is no longer a passing comment that a couple should have children while they are young; with couples having children later in life, it creates significant challenges.

So, fertility preservation is becoming important and the only country that is recognising its significance is probably Japan.

As for corporate entities, Facebook and Apple are paying their female staff to freeze their eggs. Our organisation is actually designing a new programme to preserve eggs. The birth of Louise Brown has truly opened a new era.

Louise Brown, who in 1978 became the world's first baby to be born following successful IVF, speaks during a press conference at the Science Museum in London at an event in July to mark 40 years since her pioneering birth. — Photos: AFP

How have people's attitude changed over the years?

Prof Fishel: Attitudes are affected by society and the world in which you grow up. If I talk about where I come from, working in the field of IVF was an uphill struggle for many years.

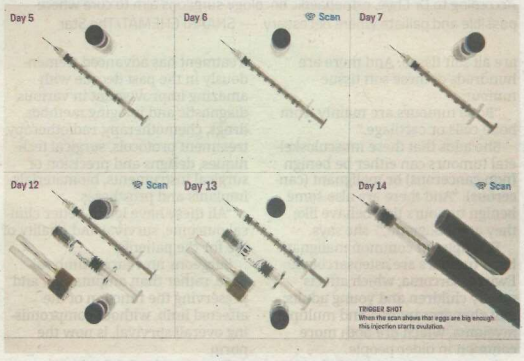
At the time, many said we were going too far, we were doing too much and were too progressive.

Yet, as time passed the issues disappeared and resulted in beauty, joy and happiness.

IVF has become mainstream in some parts of the world.

Dr Eeson: IVF is accepted as mainstream.

One of the biggest constraints in Malaysia is cost because there are many patients who require IVF, but are unable to afford it.



Some of the equipment required for one cycle of IVF are seen on display as part of an exhibition 'IVF: 6 Million Babies Later' at the Science Museum in London.

There is an element of support from the government, but it is limited. Otherwise, it is very mainstream.

There are regulations in Malaysia that provide some guidelines as to what you can or cannot do as an IVF practitioner.

The current guidelines are not new and they are very brief.

There are new guidelines in the pipeline, and I suspect they will be framed according to the needs and aspirations of the local community. However, surrogacy will not be permitted.

Our best guess is that currently, there are about 5,000 IVF cycles in Malaysia each year.

Is there a role that artificial intelligence (AI) can play in IVF?

Prof Fishel: We know that only 35% of embryos will result in babies. We can use AI to determine which embryos have chances of conception.

The second approach will be clinical. AI will help us become objective about the way we manage clinical data.

What is the future of IVF in Malaysia?

Dr Eeson: Firstly, there are many IVF centres in Malaysia, but not all offer the same facilities.

The standard concept of embryo implantation during an IVF procedure does not guarantee fertilisation. The belief is that more of the embryos produced are genetically abnormal.

Due to this, a lot of time and effort devoted over the last few years has been focussed on embryo selection, which enables the identification and selection of the best embryos and put them up front and centre.

Many centres can conduct IVF procedures, but may not be able to conduct embryo selection.

From a realistic point of view, we are still very far behind in Malaysia, so at this stage, we are not looking at cutting-edge technology, but rather at moving to the next level, which is to get the labs up to speed and to provide better quality of care for their patients.

We can better use AI to look at the data we have in hand and make informed intelligent decisions.

The third facet would be to have ethical discussions: What are our beliefs? What are we happy to do and not to do? For now, we do not have that.

OGSM can play an advocacy role, but the initiative should be led by the Health Ministry.

My expectation is that the regulations should provide a framework and take all the stakeholders into consideration so that it will be robust.

Prof Fishel: It is crucial that any government doesn't look at IVF as something small.

Governments naturally care how much an IVF procedure costs. However, they often look at IVF with a short-term view.

If you apply IVF in a long-term context, the benefits are huge.

IVF can tackle declining populations, and we can use IVF procedures to reduce the healthcare costs of addressing genetic disorders.

IVF can truly have long-term economic and healthcare benefits that will help any nation.

Two Fit Revathi Murugappan
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Accidents at the gym

Form is crucial when performing exercises, with or without equipment.

MY former editor once told me she fell off the treadmill on her first gym visit.

Too embarrassed to ask the trainer how to use the equipment, she hopped on, pressed some buttons and took off like a roller coaster. Unable to keep up with the speed, she got dizzy and not knowing how to stop, she jumped off, fell, and badly bruised her knees and elbows.

Sadly, no trainer came to her rescue and that ended her short stint at the gym.

Visions of bandits jumping off a moving express train flashed in front of my eyes.

Because she has a tendency to poke fun at herself, we laughed over the incident and I insensitively quipped, "But boss, it's just like a conveyer belt. Didn't you see the red button that says S-T-O-P?"

"What button? Where's the button? I could only see the room spinning," came her innocent reply.

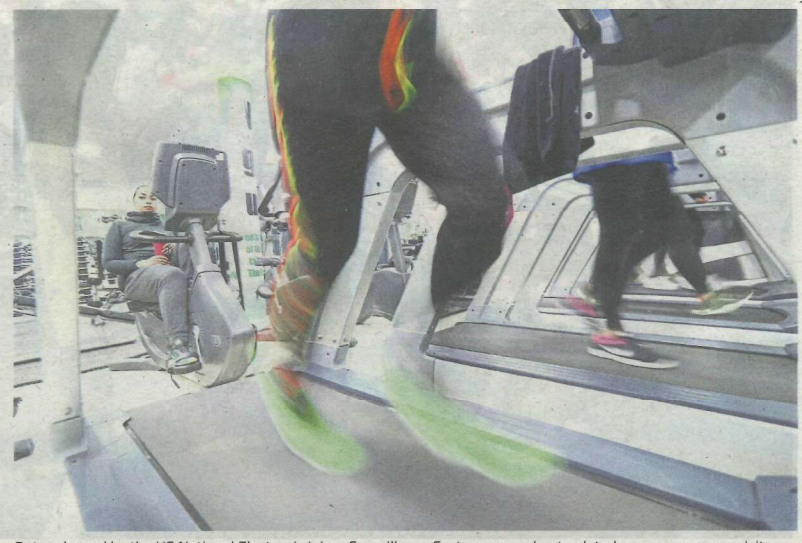
That was when I realised many gym newcomers don't know how to use gym equipment or perform exercises correctly, and sustain injuries in the process.

According to a 2013 study from the University of Arkansas, every day, there are more than 10,000 people treated in emergency rooms across the United States for injuries stemming from sports, recreation and exercise. There is also a rate of 3.1 injuries for every 1,000 hours spent doing CrossFit training.

In another 2015 Australian study published in *Injury Epidemiology*, resistance/weight training injuries accounted for more than half of the presentations.

Those who engage in such activities with incorrect technique are more vulnerable to both overexertion injuries and crush injuries, because incorrect technique can cause them to lose strength and subsequently, drop the weights.

Due to the nature of the activity and the equipment used, any injuries sustained during resistance/weight training activities would likely be acute and traumatic.



Data released by the US National Electronic Injury Surveillance System on workout-related emergency room visits from 2016 found that treadmills topped the list of gym equipment most likely to result in injury. — Reuters

Often, I hear people narrate their horror stories by mentioning they felt "something pop" or "something go limp", or something was strained or sprained.

The portal *www.ellipticalreviews.com* analysed data released by the US National Electronic Injury Surveillance System on workout-related emergency room visits from 2016. They found treadmills topped the list of gym equipment most likely to result in injury (my former boss fell into this category), with running causing more than one in three gym-related hospital trips.

Among the common complaints were shin splints, stress fractures and runner's knee. Unsurprisingly, all were likely to be a result of the person pushing themselves too hard or not warming up properly.

Injuries due to awkward landings or twisting motions may be difficult to prevent so gyms should encourage proper footwear to ensure it provides appropriate support and educate users to improve their technique.

Don't be put off by the statistics, though. You can take steps to minimise the risk of injury while you work out.

One of the ways to avoid an injury is to make sure you're doing the exercises correctly. Exercises such as overhead presses, squats, push-ups, etc, require a certain amount of technical skills, which we aren't born with.

When in doubt, ask the trainer for help.

The trend nowadays is to look for solutions on YouTube. While there are good videos out there, the majority of newbies are not attuned enough with their bodies to follow instructions and observe safety, especially when it comes to doing squats and lunges.

Isn't it better to invest in a trainer just to learn the basics? Plus, if you've constantly been doing the exercises wrongly, it's harder to retrain the body once you allow the muscles to form a memory.

Eliminating a memory, just like the ones in your mind, is not easy.

Poor posture during the day and while on your gadgets also weaken the musculoskeletal structure and put you at a higher risk of injury when doing resistance training.

The other mistake is to do too much too quickly, in both reps and weights. If you're a weekend warrior and you unleash all your accumulated weekday stressors by pushing yourself hard for two days, something's going to give.

I can't tell you how many clients and students I have that fall into this category. It also reveals a lot about their impatient personalities.

When I show varying levels of difficulty to cater to different stages of fitness, these "quick gainers" will insist on doing the more challenging routines. Irrespective of gender, they absolutely refuse to set their ego aside.

Overexerting yourself can put you at risk of injury and some exercises are more likely to cause more damage than others.

Gyms and trainers owe a duty of care to all members to keep them relatively safe from accidents and foreseeable injuries.

Revathi Murugappan is a certified fitness trainer who tries to battle gravity and continues to dance to express herself artistically and nourish her soul.

Crawling for fitness and flexibility

By NICOLE TSONG

IN the midst of working on a lizard crawl, a complicated series of movements that involves balance, core and shoulder strength, I remembered that the ground – more specifically, gravity – is the best free training tool you have.

I was at Judkins Park in the Central District of Washington, United States, with local trainer Kyle Long to learn more about crawling. Yes: on hands and knees.

Crawling is a foundational movement for all sports, Long says, and any athlete can benefit.

Working with your hands and feet on the ground helps you isolate different body parts for better body awareness, teaches you to engage your core and presents plenty of challenges.

We did a few wrist warm-ups, then Long had me stand straight to focus on core engagement and form.

After a plank hold and some rhomboid pushups to work my shoulder mobility and strength, we started with an inchworm. From a plank, I walked my feet forward in tiny steps to my hands, bending my knees as needed to get to a forward fold, then went back to a plank. It was a good warm-up, and I soon felt the intensity in my shoulders.

After the inchworms, we worked on hands and knees on a bear crawl. Long told me to dig into my toes, and keep my hips level, as I moved forward with opposite hand and opposite knee. He increased the challenge by putting a half-full water bottle on my lower back. If it rolled off or the water sloshed, it meant my pelvis wasn't level.

I moved slowly, and heard sloshing. I tried harder, and still there was sloshing. (Try it at home; you'll see.) You can add reversing, or switching to moving your right hand and foot at the same time, then left. All the variations require coordination and concentration.

Next, I straightened my arms and legs for an inverted V bear crawl to walk forward and back, head down, core engaged. Long added variations, including bending my elbows as I crawled (hard), and moving sideways, crossing ankles and wrists (very hard).

Throughout, he reminded me to breathe.

I was ready for beginner lizard. Long demonstrated first, placing his right hand and left foot on the ground, and bending his other foot toward his lower back, his left hand floating by his side.

He reached his free hand forward to the ground, shifted forward and twisted, bent his free leg into his chest in a side plank variation, then put his foot down in front of his knee. He bent his lower foot this time, picked up his right hand, reached forward and returned to the starting position.

My brain went into overdrive; it looked like the game Twister, without any colourful dots for help.

My turn.

It was easier than it looked, with Long cuing me forward. It was also fun, pushing my body far more than the previous crawls.

But of course, there was more. He showed me how to work a one-arm-style push up into the lizard, which I could barely execute. I asked whether this was advanced lizard.

No.

No? He showed me advanced lizard, hovering a few inches off the ground while moving forward with the same movements. I made one attempt, lost all bearings, then decided I would work on mastering beginner lizard first.

Any of the crawls can be used as a warm-up, or as a daily exercise to strengthen core and improve body awareness. After an hour of crawling, I had gotten a full workout.

After years of building strength, I have learned the little things often can make the biggest difference. – The Seattle Times/Tribune News Service

Crawls can be used as a warm-up, or as a daily exercise to strengthen core and improve body awareness. — TNS

Let children just play

Experts are saying that a wonder drug can help children grow happily and healthily, for free. What is this wonder drug? Play.

By MELISSA HEALY

IMAGINE a drug that could enhance a child's creativity, critical thinking and resilience. Imagine that this drug were simple to make, safe to take, and could be had for free.

In the United States, leading paediatricians say this miracle compound exists. In a new clinical report, they are urging doctors to prescribe it liberally to the children in their care.

What is this wonder drug? Play.

"This may seem old-fashioned, but there are skills to be learned when kids aren't told what to do," said Dr Michael Yogman, a Harvard Medical School paediatrician who led the drafting of the call to arms.

Whether it's rough-and-tumble physical play, outdoor play, or social or pretend play, kids derive important lessons from the chance to make things up as they go, he said.

The advice, issued recently by the American Academy of Pediatrics (AAP), may come as a shock to some parents. After spending years fretting over which toys to buy, which apps to download and which skill-building programmes to send their kids to after school, letting them simply play – or better yet, playing with them – could seem like a step backward.

The paediatricians insist that it's not. The academy's guidance does not include specific recommendations for the dosing of play.

Instead, it asks doctors to advise parents that before their babies turn two, play is essential to healthy development.

It also advocates for the restoration of play in schools.

"Play is not frivolous," the academy's report declares. It nurtures children's ingenuity, cooperation and problem-solving skills – all of which are critical for a 21st-century workforce. It lays the neural groundwork that helps us "pursue goals and ignore distractions".

When parents engage in play with their children, it deepens relationships and builds a bulwark against the toxic effects of all kinds of stress, including poverty, the academy says.

In the paediatricians' view, essentially every life skill that's valued in adults can be built up with play.

"Collaboration, negotiation, conflict resolution, self-advocacy, decision-making, a sense of agency, creativity, leadership and increased physical activity are just some of the skills and benefits children gain through play," they wrote.

The paediatricians' appeal comes as children are being squeezed by escalating academic demands at school, the relentless encroachment of digital media, and parents who either load up their schedules with organised activities or who are themselves too busy or stressed to play.

The trends have been a long time coming. Between 1981 and 1997, detailed time-use studies showed that the time children spent at play declined by 25%.

In the US, since the adoption of sweeping education reforms in 2001, public schools have steadily increased the amount of time devoted to preparing for standardised tests.

The focus on academic "skills and drills" has cut deeply into recess and other time for free play.

By 2009, a study of Los Angeles kindergarten classrooms found that five-year-olds were so burdened with academic requirements that they were down to an average of just 19 minutes per day of "choice time", when they were permitted to play freely with blocks, toys or other children.

Play nurtures children's ingenuity, cooperation and problem-solving skills. — Reuters

Whether it's rough-and-tumble physical play, outdoor play, or social or pretend play, kids derive important lessons from the chance to make things up as they go. — AFP

One in four Los Angeles teachers reported there was no time at all for "free play".

Increased academic pressures have left 30% of US kindergarten classes without any recess.

Such findings prompted the AAP to issue a policy statement in 2013 on the "crucial role of recess in school".

Paediatricians aren't the only ones who have noticed.

In a report titled "Crisis in the Kindergarten", a consortium of educators, health professionals and child advocates called the loss of play in early childhood "a tragedy, both for the children themselves and for our nation and world".

Kids in play-based kindergartens "end up equally good or better at reading and other intellectual skills, and they are more likely to become well-adjusted healthy people", the Alliance for Childhood said in 2009.

Indeed, new research demonstrates why playing with blocks might have been time better spent, Dr Yogman said.

The trial assessed the effectiveness of an early mathematics intervention aimed at preschoolers. The results showed almost no gains in math achievement.

Another playtime thief: the growing proportion of kids' time spent in front of screens and digital devices, even among preschoolers.

Last year, Common Sense Media reported that children up through age eight spent an average of two hours and 19 minutes in front of screens each day, including an average of 42 minutes a day for those under two.

This escalation of digital use comes with rising risks of obesity, sleep deprivation, and cognitive, language and social-emotional delays, the AAP warned in 2016.

Dr Yogman acknowledged that many digital games and screen-based activities can nurture some of the same areas that kids get through free play: problem-solving, spatial skills and persistence.

But in young kids especially, they are often crowding out games of make-believe, not to mention face-to-face time with peers and parents, he said.

"I respect that parents have busy lives and it's easy to hand a child an iPhone," he said. "But there's a cost to that. For young children, it's much too passive. And kids really learn better when they're actively engaged and have to really discover things."

The decline of play is a special hazard for the roughly one in five children in the US who live in poverty. These 14 million children most urgently need to develop the resilience that is nurtured with play.

Instead, Dr Yogman said, they are disproportionately affected by some of the trends that are making play scarce: academic pressures at schools that need to improve test scores, outside play areas that are limited or unsafe, and parents who lack the time or energy to share in playtime.

"We're not the only species that plays," said Temple University psychologist Kathy Hirsh-Pasek. "Dogs, cats, monkeys, whales, and even octopuses, play, and when you have something that prevalent in the animal kingdom, it probably has a purpose."

Dr Yogman also worries about the pressures that squeeze playtime for more affluent kids.

"The notion that as parents, we need to schedule every minute of their time is not doing them a great service," he said.

Even well-meaning parents may be "robbing them of the opportunity to have that joy of discovery and curiosity – the opportunity to find things out on their own".

Play may not be a hard sell to kids. But University of California, Los Angeles, paediatrician Dr Carlos Lerner acknowledged that the paediatricians' new prescription may meet with scepticism from parents, who are anxious for advice on how to give their kids a leg up in the world.

They should welcome the simplicity of the message, he said.

"It's liberating to be able to offer them this advice: that you spending time with your child and letting him play is one of the most valuable things you can do," he said.

"It doesn't have to involve spending a lot of money or time, or joining a parenting group. It's something we can offer that's achievable. They just don't recognise it right now as particularly valuable." – Los Angeles Times/Tribune News Service