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Heart Rate Boosters
How aerobic exercises can help you improve your heart health
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Preventive cardiac health screening is an effective and affordable way of identifying hidden cardiac disease risks.

Raffles Healthy Heart Screening is suitable for individuals who want a baseline assessment of their heart health, or those who are concerned with or have a family history of heart disease or sudden cardiac death.

Screen early and take action to avoid heart problems.

More than 1,500 people die from sudden cardiac deaths every year in Singapore.

Most of such deaths occur as a result of coronary heart disease. The risk can be higher during vigorous exercise, especially among individuals who are usually sedentary.

Screen for your cardiac risks and learn from your heart specialist how to manage them for your own safety and to maintain a healthy life.

Heart disease can be prevented by adopting a healthy lifestyle and managing risk factors before complications arise.

This package combines an in-depth cardiac assessment with a general health screening. It is suitable for individuals with one or more cardiac risk factors, such as smoking, high cholesterol, high blood pressure and diabetes. It is also useful for individuals above the age of 45 for men and 55 for women who have experienced episodes of chest discomfort or exercise intolerance.

* All prices are inclusive of GST.
* Items in package are non-refundable if declined.
* Screenings are strictly by appointment only.
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Dear Readers,

In this issue of HealthNews, we would like to discuss a topic that is very close to our heart. Heart disease is a leading cause of death not only in the United States and Europe, but also in Singapore. Everyday, 15 people in Singapore die from cardiovascular disease (heart attack and stroke).

In 2010, 31.9% of deaths in Singapore were due to cardiovascular disease (CVD) (i.e one in three deaths are due to heart disease or stroke). The World Health Organization predicts that by 2030, 23.6 million people worldwide will die from CVD.

The heart is indeed a vital and amazing organ. It is only the size of a clenched fist yet it is a powerhouse! It works tirelessly from the moment it starts beating until the moment it stops. It beats at an average of 100,000 beats per day and pumps 7,200 litres of blood per day. In an average lifetime, the heart beats in excess of 2.5 billion times without pausing to rest.

Like a pump, the heart can clog up, break down, short-circuit and need repairing. In this ever advancing medical field, our heart specialists will give an overview of the latest diagnostic and therapeutic cardiac procedures that are revolutionising the field of cardiology.

As heart disease is largely a lifestyle disease, we hope that the topic on eating smart and exercise will provide useful insights on how to prevent CVD, as prevention is always better than cure.

Finally, we would appreciate your feedback by connecting with us on Facebook and Twitter.

As Chinese New Year is around the corner and also a time we enjoy the company of our loved ones over glorious food, remember not to get lost in this joyous occasion and feasting in moderation is always key to everything!

Dr Choo Dee Pheng
Guest Editor

Family Physician
Raffles Executive Medical Centre
Is your heart in step with your body?

Have you ever felt like your heart is beating abnormally? Be it too fast, too slow or even irregular, you might have something known as arrhythmia.

A condition where the heart beats abnormally, arrhythmia is not uncommon. In fact, it is one of the more common presentations that patients visit their doctors for.

The good news is that not all of the above symptoms are related to arrhythmia and not all types of arrhythmia pose health risks. However, there are instances that may have serious consequences, when the heart is unable to effectively pump blood to the other parts of the body. Such cases of arrhythmia, if left untreated, could lead to heart failure, stroke or even sudden cardiac arrest.

Fortunately, there are ways to correct this. Treatment depends on the frequency, type and seriousness of the arrhythmia, all of which can be accurately determined from an electrophysiology study (EPS).

Dr Abdul Razakjr Bin Omar, a consultant cardiologist and heart rhythm expert at Raffles Heart Centre explains, “EPS is a minimally invasive and safe procedure which effectively helps to monitor and identify abnormal heart rhythm that is a cause for heart symptoms. With this understanding of the nature of arrhythmia, we are able to recommend the best form of treatment and improve the outcome for the patient.”

EPS and catheter ablation services are available in Raffles Heart Centre.

Call 6311 2260 today or email heartcentre@rafflesmedical.com to make an appointment with our cardiologist to have a better understanding of your heart condition and determine the best individualised treatment plan.

Some symptoms of arrhythmia include:

- Palpitations (a sensation of skipped heart beats or a fast heart beat)
- Shortness of breath
- Chest discomfort (pain, pounding etc)
- Lightheadedness
- Fainting
- Dizziness

Dr Razakjr’s areas of interest include general cardiology, cardiac arrhythmia and cardiac interventional therapy including cardiac electrophysiology study, catheter ablation and cardiac resynchronisation therapy.
Zaobao Lohas Seminar on Ageing Well

Close to 400 participants joined Raffles Hospital for its first Lianhe Zaobao mandarin public seminar <<让岁月雍容地增添在您身上>> on 10 November 2012. The four speakers, Dr Lee Jong Jian, Dr Watt Wing Fong, Dr Joshua Kua and Dr Lim Kok Bin, shed light on how one could combat ageing symptoms in the areas of eye diseases, menopause, emotional wellbeing and memory and incontinence with the help of modern medicine.

Hosted by Ms Anna Lim from UFM 100.3, the event was well received by the participants with many asking for an extension in time for the forum as they wanted to learn more from the doctors. “Give the doctors more time so that they can give us more information,” pleaded Mdm Lee HC.

Mr Barry Liu summed it up simply: “The best forum I have ever attended!”

Thanks for Making Us Top Again

Raffles Medical Group was voted once again the Preferred Employee Healthcare Provider by HR practitioners in the Human Resources’ seventh annual HR Vendors of the Year survey.

Key to its win is the Group’s integrated corporate solution, RafflesOne. As corporate healthcare needs have evolved significantly, RafflesOne promises to help corporate clients better manage their healthcare needs with ease.

Explained Mr Yong Yih Ming, Deputy General Manager of Raffles Medical: “With one point of contact, you can access our full range of services by leveraging on our group practice model where clinical standards, service quality and pricing policies are all accounted for and managed centrally by the group. These are supported by our fee-for-service, health insurance and third party administration platforms to offer you an all-rounded partnership.”

With over 36 years of experience and partnerships with MNCs, government agencies and SMEs regionally, the Group’s RafflesOne experience seeks to confer operating benefits and value to you and your company.
Diagnostic tests for the heart can be broadly classified into two categories, non-invasive and invasive. These tests are important as they help the doctor determine whether a heart attack has occurred, the extent of damage within a patient’s heart as well as the severity of the patient’s condition. Knowing what these tests involve and why they are being performed can help you feel more confident about them. It allows you and others to make an informed decision which could save someone else’s or even your own life. So read on and be empowered!

Let us begin with invasive tests (sounds intimidating?). These techniques involve the insertion of catheters into the blood vessels of the heart for a closer look or deeper probe into and around the heart. While invasive in nature, do remember that these procedures are performed by specialists who will constantly be monitoring you throughout. So have no fear if you undergo these procedures. Remember, they help your doctor devise the best treatment plans for you.

Did you know that your heart is one of nature’s most amazing creations? It consistently pumps blood throughout every beating moment of your life without fail. This process never stops and is occurring right now even as you’re reading these words. In fact, the heart is one of the organs whose activities are mostly unnoticed, yet, when a problem presents itself, its reactions are easily felt. It is therefore imperative that doctors are able to find out what exactly is wrong with the heart once a symptom has been experienced. Over the next few pages, we will show you some of the tools specialists use to help diagnose what might be wrong with our heart.
Cardiac Catheterisation (Coronary Angiograms)

What this is: Cardiac catheterisation, an imaging procedure allows the doctor to evaluate one’s heart function. This is done by inserting a thin hollow tube (catheter) into a blood vessel via the arm or leg and the use of a special X-rays called angiograms. With these, the catheter is guided into the heart by a cardiologist. Contrast material is then injected and X-ray movies are created as it flows through the heart’s valves, blood vessels and chambers.

Why this is done: Dr Ng Wai Lin, Specialist in Cardiology & Managing Partner, Raffles Heart Centre, explained the need for this test: “Cardiac catheterisations are the gold standard for determining the presence of CAD and remains the test conducted to determine severity of stenosis and disease extent. It helps cardiologists to determine whether a patient’s CAD is best treated with drugs, stenting or surgery.”

Did you know: Cardiac catheterisations form part of some larger interventional procedures designed to help open narrowed coronary arteries for improved blood flow into the heart such as stent placement or rotablation.

Transoesophageal Echocardiogram (TEE)

What this is: The TEE test utilises ultrasound technology to provide a close look at the heart’s valves and chambers. This is done by placing the ultrasound equipment on an endoscope, a thin and flexible instrument, and guiding it down the patient’s esophagus. Once in position, pictures of the heart are obtained at various angles using ultrasound technology.

Why this is done: A TEE test is usually performed when a specialist needs to assess the overall health and function of the heart’s valves and chambers. A TEE allows for a closer look at the small and detailed structures of the heart as well as its associated vessels. This test also helps to check for abnormalities or diseases within the heart structure such as pericardial disease.

Did you know: “The ultrasound technology used in this test is the same one gynaecologists use to show an expectant mother a ‘first look’ of the developing foetus in their wombs. Also, while the procedure sounds unnerving, the endoscope does not actually interfere with breathing and patients are able to breathe freely and easily during the procedure,” quipped Dr Abdul Razak Jr, Specialist in Cardiology & Consultant, Raffles Heart Centre.

Electrophysiology Study (EP Study)

What this is: A detailed evaluation of the electrical activity in one’s heart. Catheters inserted into the body are guided by a fluoroscopy machine into the heart. These catheters sense the electrical activity of the heart and are able to stimulate increased heartbeats.

Why this is done: “EP studies are usually recommended when other tests, such as holter monitors, ECGs or angiograms are unable to provide enough information to thoroughly explain a patient’s abnormal heart rhythm. The test even allows a safe reproduction of an abnormal heart rhythm. From here, specialists are then able to provide adequate medications which can best control it,” explained Dr Razak Jr.

Did you know: Despite what it involves, the EP study is a safe and one of the best methods of evaluating abnormal heart rhythms in a person’s heart.
Moving on ...

Having covered some of the invasive diagnostic techniques for heart patients, it is now time to look at the other side of the coin. These tests do not contain any invasive element to them and primarily use imaging to allow doctors a peek into a patient’s heart.

Chest X-Ray

**What this does:** A test which most would have heard of, a chest X-ray is simply a picture of the chest. It shows the location, size and shape of the heart as well as its blood vessels.

**Why this is done:** The patient’s chest will be placed next to the X-ray film and they will then be asked to hold their breaths and be still for two to three seconds. During this time, a beam of X-ray passes through the chest and an image is captured on a special photographic film.

**Did you know:** The amount of radiation from a chest X-ray is very low; in fact, it is about one-fifth the dose a person gets from natural sources (such as the sun and ground) annually. However, if you are pregnant, you should still avoid radiation, no matter how low the amount. Mummies-to-be, beware!

Electrocardiogram (EKG/ECG) aka Electrocardiography

**What this does:** Records electrical activity of the heart such as timing and duration of each phase of the heartbeat.

**Why this is done:** An ECG provides two important kinds of information. Firstly, by measuring time intervals on the test, a doctor can find out how long it takes an electrical wave to pass through the heart. This information shows if the activity is normal or slow, fast or irregular. Next, the test tells doctors if parts of the heart are too large or overworked.

**Did you know:** Despite its name, the ECG test only records the electrical activity within the heart. It does not send any electricity into the body. So don’t worry about literally having a heart attack!

Cardiac Stress Test (Treadmill or Exercise Test)

**What this is:** A stress test helps a doctor find out how well your heart handles work. It does so by (surprise surprise) subjecting your heart to stress by having the patient exercise on a treadmill. Not to worry though, this is conducted under strict supervision with medical personnel present and the patient can stop the test at any time if needed. The patient’s heart rate, blood pressure and an ECG are all monitored while on the treadmill.

**Why this is done:** A treadmill test may be requested when doctors need to evaluate a safe level of exercise for a patient or to even check the effectiveness of procedures done to improve circulation in a patient’s heart. The test also helps to determine the possible cause of symptoms such as chest pains, shortness of breath and lightheadedness, explained Dr Teo Swee Guan, Specialist in Cardiology & Consultant, Raffles Heart Centre.

**Did you know:** Despite its name, you will not always be running on the treadmill. Instead, you will be asked to walk at varying speeds as well as different levels of incline. So think of it as part of your routine exercise regime!
Holter Monitors

What this is: A battery-operated device which records your heart activity (ECG) continuously for 24 to 48 hours or longer. It is the size of a small camera and has wires which attach small electrodes onto your skin.

Why is this done: While ECG testing lets the doctor look at activity within the heart, it is only during that window of time where abnormal heart symptoms may come and go. Therefore, monitoring over time while the patient goes about their daily activities may be required.

Did you know: Dr Ng assured: “Holter monitors are safe, cause no pain and are a reliable way of observing one’s heart activity throughout the day. Naturally, care must be taken while it is attached to the body and should the patient experience any palpitations, they can press a button on the Holter monitor for it to record the occurrence. As the monitor needs to be on for the entire duration, patients cannot shower and should use a towel to clean themselves. Patients are encouraged to go about their usual activities including non-strenuous exercise and work.”

Cardiac Computed Tomography Scans

What this is: Also known as CT scans, these diagnostic imaging tests use X-rays to create three-dimensional image of the heart to show any blockages a patient may have in their coronary arteries.

Why this is done: Dr. Teo explained: “Such scans are recommended in selected patients when other tests such as ECGs do not provide enough information about a patient’s heart. They also provide additional information, like the amount of plaque build-up in a patient’s arteries or in some cases, the presence of scarring in the heart muscle caused by heart attacks.”

Did you know: Using a contrast dye along with the scan, this “lights up” your blood vessels and arteries as it passes through them. Any blockages can therefore be clearly observed.

And now… the ultimate test

Cardiac diagnostic tests are used by specialists to help assess what could possibly be wrong with a patient’s heart. Unfortunately, most heart problems present no symptoms until late or advanced stages where sometimes the first discernible symptom could unfortunately be a heart attack. It is therefore, important for patients to take good care of their heart. Dr Teo concluded with some advice on keeping the heart healthy: “A balanced and healthy diet coupled with a regular regime of cardiovascular exercise is a good starting point. Regular health screening as one progresses with age is also a good habit to have. So with this in mind, I hope everyone reading will aim to live well and healthy for 2013!”
We hardly notice it but our heart beats about 100,000 times a day. Yet when it does stop, be it due to a heart attack or a cardiac arrest, it will not go unnoticed. In fact, 15 people die daily from cardiovascular disease alone in Singapore. We speak to the experts on the latest in heart treatments.

**Heart Attack**

A heart attack is when blood supply to your heart is cut off or severely reduced. Your heart will be damaged by the lack of oxygen and begin to die.

**Cardiac Arrest**

Cardiac arrest is when the heart stops beating suddenly, preventing blood and oxygen from reaching the vital organs.

**Stroke**

Stroke occurs when blood flow to the brain is interrupted or severely limited, cutting off oxygen and nutrients from brain tissue. Brain cells will start dying within minutes after a stroke.
Dr Abdul Razak Jr, Specialist in Cardiology & Consultant, Raffles Heart Centre said: “The current available treatments for heart disease have significantly improved mortality and morbidity rates. A good example is 72-year-old Mr Dick Cheney (the previous vice president of USA) who had multiple heart attacks in his thirties. The open heart surgery, cardiac stents, defibrillator, heart pump and a new heart have kept him well and alive. He is indeed a testimony of modern science!”

Depending on the symptoms and the severity of the heart condition, treatments can range from low-tech to high-tech, and from non-invasive procedures to open heart surgery.

“Medical advancements in recent years have shifted towards less invasive procedures and devices to pre-empt potential life-threatening heart problems,” added Dr Ng Wai Lin, Specialist in Cardiology & Managing Partner, Raffles Heart Centre.

Happy Pills

Though the invention of a single miracle pill one can take for heart health is not happening soon, pharmaceutical companies have come a long way with a wide variety of medications for every known symptom and problem of the heart. Patients now have plenty of options.

According to Dr Teo Swee Guan, Specialist in Cardiology & Consultant, Raffles Heart Centre, among the newer drugs out in the market, ticagrelor and prasugrel are two drugs that are worth highlighting. As anti-platelet medications (medications that keep blood clots from forming by preventing blood platelets sticking together) with greater potency, they reduce the risk of cardiovascular morbidity more effectively than established antiplatelet such as clopidogrel (Plavix®).

Ticagrelor when used with aspirin can prevent atherothrombotic events in acute coronary syndrome (ACS). Prasugrel is a novel prodrug with more efficient platelet inhibition and is recommended for use in combination with aspirin for ACS patients undergoing percutaneous coronary intervention (PCI).

Bracing Up

The stenting technology has evolved over the decades. Stents can help brace up arteries or veins that have constricted flow due to plaque build-up.

Dr Teo shared on its development: “The stenting technology started out as an option over balloon to prevent elastic recoil, which is the returning of the stretched blood artery to its original position. While providing structural support to the problem vessel, the metal stent does not prevent intimal hyperplasia, which leads to narrowing of the blood vessel.”

It was not until in the last decade that drug eluting stents first made their appearance, reducing the chances of intimal hyperplasia from 35% to 5%. Drug eluting stents are an improved version of metal stents. This class of stents releases a drug to block cell proliferation to prevent fibrosis that, could otherwise block the stented artery, a process called restenosis, a result of intimal hyperplasia.

However, other issues persist including stent thrombosis, which requires prolonged antiplatelet therapy. The good news is that the incidence of stent thrombosis is decreasing with newer generation of drug eluting stents and new potent antiplatelets.

Now You See Stent, Now You Don’t

The latest development in this area, made commercially available for use in Singapore in the last few months, is the invention of bioresorbable vascular scaffolding (BVS). BVS or bioabsorbable stents can be absorbed into the body after two years, leaving behind only the healed natural vessel, restoring your arteries reactivity and allowing the vessel to be potentially remodeled should there be a need.

“With BVS, patients can have multiple stents applied to the same problem vessel should restenosis occur, since the stent is absorbed,” said Dr Teo. “These stents are also compatible with MRI and MSCT imaging which are becoming the default non-invasive imaging modality for the heart and blood vessels.”

About one in three deaths in Singapore is due to heart disease or stroke.
Aortic Aneurysm Repair

Just as blood vessels could narrow due to plaque build-up, they can also swell up to become an aneurysm, a blood-filled balloon-like bulge in the wall of a blood vessel. In particular, aneurysm of the aorta (the largest artery in the body) is an extremely serious problem as it can burst with increasing size over time. This is usually catastrophic and can cause immediate death. Rarely, the aneurysm can also be a focus of clot formation leading to end organ damage of abdomen or legs.

Aortic aneurysm repair is a tricky surgery. Dr Manish Taneja, Specialist in Interventional Radiology & Consultant, Raffles Radiology explained: “The traditional mode of treatment for aortic aneurysm involves open surgery which is a major operation that carries with it high risks and morbidity rates. In the past couple of decades, aortic stent grafting, a minimally invasive procedure, has transformed the way aortic aneurysm is managed.”

“During aortic stent grafting, a special covered stent is introduced through the groin into the aorta without a surgical cut-down using special percutaneous closure device. Through this method, the aneurysm is repaired from the inside in a minimally invasive manner. For uncomplicated cases, the recovery is very fast and majority of our patients are free to return home within two to three days of the operation,” added Dr Manish.

Hearts on Fire

Ablation therapy seeks to stop abnormal electrical signals for patients with heart rhythm problems. Radiofrequency (RF) ablation involves threading catheters into the heart and using RF energy, targeted toward the area(s) causing the abnormal heart rhythm, to permanently damage small areas of tissue with heat.

Dr Razak explained how the procedure works: “It neutralises (ablates) the heart tissues that are causing the electrical disturbance by creating a block which the electrical impulses can no longer cross. This restores the normal electrical pathways of your heart and allows it to beat normally again.”

In some cases, cryoablation, which damages tissue by freezing rather than heating, may be used instead.

For efficiency and lower cost, this procedure can be carried out together with an electrophysiological study (EPS). Raffles Heart Centre is one of the few private heart centres in Singapore where this procedure can be conducted.

Beating as One

Dys-synchrony, or the abnormal coordination of contraction of the heart walls, is common among...
patients with enlarged hearts and poor heart function. As a result, blood is ineffectively pumped around the body. There is also an increased leakage of blood backwards across the heart valve instead of pushing blood forwards (mitral regurgitation).

To tackle this, Dr Ng recommended the Cardiac Resynchronisation Therapy (CRT). The procedure uses a special pacemaker coupled with wires (leads) in the atrium (top) and ventricle (bottom) chambers of the heart to resynchronise the way the heart chambers contract.

“This procedure has good results with most patients seeing improvement of symptoms, effort tolerance, heart function and survival,” added Dr Ng.

Shocking You Back to Life

For patients with high risk of sudden cardiac death due to arrhythmia (heart rhythm disorders), an implantable cardiac defibrillator (ICD) is a sophisticated device that can help. While an ICD is similar to a pacemaker, there are key differences between the two, explained Dr Teo. Pacemakers give off only low-energy electrical pulses and are used usually to treat less dangerous heart rhythms, such as those that occur in the upper chambers of your heart. An ICD on the other hand act both as a pacemaker and defibrillator.

“The ICD will monitor your heart rhythm, and when life-threatening arrhythmias occur (those in the ventricles, the heart’s lower chambers), electrical pulse or shock will be released to treat the arrhythmia.” said Dr Teo. “Ventricular arrhythmias are deadly as you can pass out within seconds and die within minutes if not treated immediately,” said Dr Teo.

Watching Out for You

Among the wide array of devices, the Watchman, Left Atrial Appendage (LAA) closure device, promises patients with atrial fibrillation (AF) - a form of irregular heart beat that predisposes you to stroke, and who have a contraindication to warfarin and newer oral anticoagulants, a new treatment option for stroke reduction.

“The LAA is a muscular pouch connected to the left atrium of the heart,” explained Dr Ng. “While it is a normal heart structure and does not cause problems for most people, in patients with AF, the LAA can be a source of clot formation.”

“The Watchman is a novel device introduced into the heart via a catheter (a flexible tube) through a vein in the groin intended to close off the left atrial appendage. The device is designed to capture any clots that may form in the appendage, reducing the risk of stroke and potentially eliminating the need for long term use of blood thinning medications,” shared Dr Ng.

Currently, Raffles Heart Centre is the only private heart centre in Singapore which has successfully implanted such a device.

Life Goes On

No matter how serious or how mild your heart condition may be, lifestyle changes are essential to any treatment plan. This means eating a low-fat and low-sodium diet, getting at least 30 minutes of moderate exercise three to five times a week, quitting smoking, and limiting the amount of alcohol you drink. This, together with the treatment plan designed for you by your doctor, is the best way to manage your heart condition effectively. HN
A Healthy Heart,
A Blissful Soul

Love is not just between you and your soul mate. It can also involve your loved ones, be it your family, friends or colleagues. And there’s no better day to shower extra love than on Valentine’s Day, the day of love.

Love is as important as oxygen for your mind and body. The more connected you are, the healthier you will be, both physically and emotionally. The less connected you are, the more prone you will be to complications.

We recommend you three foolproof ideas on how to celebrate Valentine’s Day – but with a slight twist!
A Chocolate Fest – Savoury or Sinful?

Nothing says Valentine’s Day like a big box of chocolates! However, before you start devouring all those truffles, do spare a thought for your heart. Dr Stanley Liew, Specialist in Endocrinology & Consultant, Raffles Internal Medicine Centre noted that overindulging in high-calorie food like chocolates would eventually lead to weight gain. As we all know, excessive weight gain can lead to health problems that include heart disease, diabetes and high blood pressure.

So does this mean we have to say no to all those chocolaty goodness? Not necessarily. Instead of the usual milk chocolates, why not opt for dark chocolates?

Studies have shown that dark chocolate is chock full of antioxidants called flavonoids. Flavonoids cause dilation to the blood vessels which promotes blood flow. This increase in blood flow prevents plaque from forming within the blood vessels and in the arteries, which may aid in stopping blood clots from forming. This will ensure that your heart and all other major organs are getting adequate blood flow with fewer blockages.

Not only that, dark chocolate contains serotonin, a feel-good chemical naturally produced in our brain. In other words, it is almost like a healthy anti-depressant as it can help improve our moods. In addition, dark chocolate enhances endorphin production, which also increases feelings of goodness and happiness.

So head to your nearest convenience store, grab some dark chocolate for your sugar fix – without any regrets! To take it up a notch, why not dip fruits in melted chocolate? It will definitely tantalise your taste buds!

Hit The Highway!

Thinking of getting away from all that stress at work or at home? Take this opportunity to de-stress with your loved ones!

With our busy schedules and stressful work life, we rarely have the time to spend quality alone time with our loved ones. Studies have also shown that extreme stress may pose risks to our heart. According to Dr Abdul Razakjr Bin Omar, Specialist in Cardiology & Consultant, Raffles Heart Centre, a high level of stress influences our heart activity as it activates the autonomic nervous system. This could negatively affect the heart as it increases the pumping action and rate of the heart, simultaneously causing the arteries to narrow. This restricts blood flow to the heart.

Thus, the best way to avoid such complications is to have fun! Even simple acts of taking deep breaths can help one to de-stress, collect their thoughts and simply enjoy life. If taking a holiday seems too big an activity, why not catch a movie instead? Most importantly, enjoy what you are doing, unwind and of course have huge doses of laughter with your loved ones.
Uniquely Yours!

If you think giving chocolates and flowers are too mainstream, why not consider these ideas? They will certainly make your loved ones go “Awwww”!

1. Scrapbook Your Moments!
Don’t know what to do with that pile of polaroids stashed in the corner of your room? Piece them together in a photo-scrap book! It will be a montage of your beautiful moments spent together.

Choose some beautiful papers, select some nice fonts and type some heart-felt words. Print them out and arrange your photos accordingly before binding the papers with ribbons or felt, whichever you deem fit.

2. Sing a Love Song
Translate your heartfelt words into a song, record it and transfer it to a CD! No, you do not need to go to the extent of recording it in a proper recording studio, you can do it at the comforts of your home! Just grab a laptop, a portable microphone and voila, you are all set to conjure up your masterpiece!

3. Collecting Your Own Jar of Hearts!
This is an idea that is simple yet so meaningful! Write heartfelt notes on heart shaped cards, place them in a jar and decorate it in any way that you want! By giving this jar of hearts to your Valentine, it can also be a way of declaring that your love is only meant for him/her! HN

A Cook-out With Baby?

Nothing beats having a picnic outside with glorious homemade food! However if you are too lazy to head outside, you can even have your own indoor picnic or even have your meal in the comforts of your own bedroom!

By cooking your own meal, you will be able to control the ingredients that go into your dishes. Try opting for healthier alternatives such as using olive oil or substituting the meat cuts to vegetables or soy products. Your heart will definitely thank you for that wise choice.

Other means of substitution would include using natural seasonings rather than salt and sauces. When preparing such dishes, it’s best to use natural seasonings like herbs and spices. These condiments will enhance your dish’s flavour without increasing its salt content. Once you get the hang of it, substituting ingredients with healthier options will be a breeze.

Not only that, the idea of cooking with your loved one is just so romantic! Your heart will definitely be filled with wholesome goodness, from both the food and the warm feelings evoked just by being near your loved ones.

Ultimately, the best thing your loved ones can wish for this Valentine’s is simply spending quality time together. So remember, stay connected, and keep your spirits filled with love!

Valentine’s To-Do List
- Cook a delicious meal
- Have chocolate dipped fruits
- Head out to the beach maybe?
- Have FUN!
You would agree that there are so many types of cooking oil on a supermarket shelf that sometimes you can’t help but wonder which one is better and healthier.

Before you make the next purchase, let’s understand more about what oil does to our body and the determining factors that will help us in the selection phase so as to benefit our health.

All of us need fats. “Fat is an essential dietary source of energy for our body that cannot be made from scratch. It serves as a vital form of energy storage and aids in the absorption of fat soluble vitamins A, D, E and K, which helps to prevent essential fatty acid deficiency,” said Dr Stanley Liew, Specialist in Endocrinology & Consultant, Raffles Internal Medicine Centre. One of the channels of consuming this important source is the oil that we use to cook our food everyday.

Dr Liew explained that the initial step in fat digestion is the mixing and dissolving in the watery content of the intestine. The bile acids produced by the liver and gall bladder help to dissolve fat into tiny droplets and allow pancreatic and intestinal enzymes to break the large fat molecules into smaller ones, such as fatty acids and cholesterol. The bile acids, when combined with fatty acids and cholesterol, help these molecules move into the cells of the mucosa. In these intestinal mucosal cells, the small molecules are formed back into large ones, most of which is passed into vessels called lymphatic near the intestine. These small vessels then carry the fat to the veins of the chest, and the blood carries the fat to storage depots in different parts of the body.
Oil contains fat that are further categorised into two groups. The good: polyunsaturated and monounsaturated. The bad: saturated and trans. Let’s look at what each group does to our body.

**Good Fatty Acids**

**Polyunsaturated**

**Omega-3 and Omega-6**
Types of oil: Canola oil, soybean oil, vegetable oils (e.g. corn oil, and sunflower oil)

**Facts:**
- Helps in reducing blood clotting in the arteries and protects it from hardening.
- Can decrease the total and LDL (bad) cholesterol levels in the blood.
- Reduces the level of triglycerides in the blood.
- Usually liquid at room temperature and when stored in the refrigerator.
- Can help lower the risk of heart disease.

**Monounsaturated**
Types of oil: Vegetable oils (e.g. canola oil, olive oil and peanut oil)

**Facts:**
- Lowers total and LDL-cholesterol (bad cholesterol) levels in the blood.
- Usually liquid at room temperature but may start to solidify in the refrigerator.

**Bad Fatty Acids**

**Saturated**
Types of oil: Coconut, palm and other tropical oils

**Facts:**
- Increases your total and LDL (bad) cholesterol.
- Usually solid or waxy at room temperature. Other foods high in saturated fat.
- Can increase your risk of heart disease.

**Trans**
Derived from vegetable oils that have undergone hydrogenation process that hardens liquid oil, e.g. margarine and shortening.

**Facts:**
- Increases total cholesterol and decrease HDL (good) cholesterol.
- Increases your risk of heart disease.

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**What should I take note of?**

Since there are so many types of oil for selection, you should consider the following before making your next purchase. Dr Liew and Ms Chong recommended the following.

**Purpose**
- Consider the purpose of using the oil to add to your food. Is it for frying, steaming or to be used as dressings and dips?
- Oil adds flavour and fragrance to a dish. Consider the nutrition level and refrain from adding too much to a dish.

**Smoke point**
- Some types of oil have a higher smoke point as compared to the rest and they will be more suited for cooking dishes that require high temperature e.g. frying.
- Oils with low smoke points should not be used for high temperature cooking as they can be oxidised; their healthful benefits will also be destroyed, and toxic fumes and harmful free radicals are produced in the process of heating.

**Recommendation**
- The recommended types of unsaturated oil are olive oil, canola oil, safflower oil, sunflower oil, tea seed oil and corn oil. Olive oil is rich in monounsaturated fat and antioxidants. Canola oil is more suitable for cooking as it has a higher smoke point and longer shelf life. It is also a rich source of alpha-linolenic acid, a kind of Omega-3 fatty acid found in plants.
- When taken in moderation and used to replace saturated fat and trans fat, they can help to lower LDL cholesterol and reduce the risk of heart diseases. However, the amount and frequency of these oils need to be balanced.
- While we recommend a low fat diet, a small amount of fat is required as part of a healthy diet.

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**How much is enough?**

Ms Janice Chong, Healthcare Executive, Raffles Internal Medicine Centre, advised that the daily fat allowance depends on the individual energy needs. Generally, it is around seven teaspoons of fats and oils each day. This includes not only the added fats and oils but also those found naturally in food. However, we need to be mindful of the type of fat that we consume. Although seven teaspoons of fats and oils may seem like a lot, it can be easily exceeded if we do not plan our diet properly. For example, if you have an egg tart for breakfast, a plate of dry wanton noodle for lunch and a plate of char kuey teow for dinner, you would have already consumed about 14 teaspoons of oil.

Eating in moderation is key. By understanding what best matches your individual health needs and cooking plan, it will help you determine on the food quality to meet those needs. HN
Hearty Bento

It’s that time of the year again and if you are looking to prepare something for your loved ones this Valentine’s Day, you are in luck! This issue, we have prepared a simple and hearty recipe for two which includes Omega-3, antioxidants and potassium ingredients. There is nothing more romantic than preparing a meal with a personal touch. It’s not to say that eating out isn’t as special. But if you enjoy cooking then this is the best time to put that skill to good use. Or if you enjoy cooking together, planning and preparing for a meal will surely be a fun activity for both of you. What’s more, this meal is not too elaborate and can be whipped up quickly.

Ingredients (2 servings)

**Rice:**
- 1 cup of uncooked rice
- 2 cups of water
- Black sesame seeds, carrot and cucumber (for decoration)

**Salmon:**
- 2 salmon fillet (60g)
- 1 tablespoon of Dijon mustard
- 1 tablespoon of lemon juice
- 1 teaspoon of thyme (freshly chopped, leaves)
- 1 teaspoon of rosemary (freshly chopped, leaves)
- 3 cloves of garlic (minced)
- 1 teaspoon of sesame oil
- Black pepper

**Vegetables:**
- 1 cup of broccoli flowerets
- 1 cup of cauliflower flowerets
- 1 clove of garlic (minced)
- ½ teaspoon of canola oil
- ½ teaspoon of cornstarch
- ½ cup of orange juice
- 1 teaspoon of Dijon mustard

**Fruit Salad:**
- 1 cup of mixed berries (quartered strawberries, raspberries and blueberries)
- 1 cup of kiwi (peeled and cut into ½-inch pieces)
- 1 cup of lettuce (coarsely chopped)
- Lime juice
- A handful of walnuts and raisins

*Cooking Tips:*

Instead of using high sodium sauces like teriyaki, barbeque, soy sauce in cooking, try to substitute with natural ingredients which are low in sodium to keep blood pressure at normal range.

*Methods:*

1. Cook the rice first.
2. Sprinkle some black sesame seeds. Decorate by arranging carrot and cucumber into a heart-shape.
3. Rinse the salmon under running water and pat them dry.
4. Mix the mustard, lemon juice, thyme, rosemary, garlic and pepper in a small bowl.
5. Put salmon fillets in a baking dish and marinate it with the mixture. Cover and refrigerate for about 20 minutes.
6. Drizzle toasted sesame oil to the salmon fillets right before grill. Grill in oven until desired doneness.
7. Meanwhile, cook the broccoli and cauliflower in a medium saucepan with a small amount of boiling water about 5 minutes or until crisp-tender. Drain. Cover and keep warm.
8. For sauce, put 1 teaspoon of canola oil in a small saucepan, add garlic and stir fry. Stir in cornstarch. Add orange juice and mustard. Cook and stir until mixture is thickened.
9. Pour the sauce over the vegetables and grilled salmon.
10. Place lettuce in another compartment and top up with kiwi, strawberries, blueberries and raspberries.
11. Drizzle with lime juice. Sprinkle with toasted walnuts and raisins.

Salmon is a good source of Omega-3 fatty acids, which help in lowering blood triglycerides level. Fruits and vegetables like berries, kiwi, carrot and tomatoes rich in antioxidants (vitamins A, C and E) and potassium play an important role in reducing cell damage and preventing inflammation. Besides, soluble fibers found in fruits and vegetables help to lower blood cholesterol. HN

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1 Berries
According to Dr Choo Dee Pheng, Family Physician, Raffles Executive Medical Centre, eating a moderate amount of berries may increase your High-Density Lipoprotein (HDL), more often known as “good” cholesterol while bringing down your blood pressure. Berries are also packed with polyphenols which contains high level of antioxidants. You can eat them on their own or add them to juices.

The list of healthy nutrients in blueberries is extensive. For example, anthocyanins, a type of polyphenol gives the blueberries its deep blue colour which support our heart health. Blueberries also contain ellagic acid, beta-carotene, lutein, vitamin C, folate, magnesium, potassium, and fibre which have also been linked to lowering heart disease risk.

Tip: One serving size of fresh blueberries is equivalent to a cup or 140g. Add fresh or dried blueberries to your yogurt, pancakes or cereal.

2 Salmon
A top food for our heart health, salmon is an excellent source of Omega-3 fatty acids that protects our heart by reducing both the risk of blood clots and inflammation. “These fats work to keep your cholesterol levels healthy. Eat at least two servings of salmon or other oily ocean fishes like sardines or tuna,” said Ms Janice Chong, Healthcare Executive, Raffles Internal Medicine Centre.

Salmon is rich in EPA (eicosapentaenoic) and DHA (eicosapentaenoic) which are essential fatty acids that are highly unsaturated fat. Ms Chong also shared that Omega-3s in salmon may reduce blood pressure, lower risk of rhythm disorders, reduces inflammation and lowers blood triglycerides.

Tip: For a heart-healthy meal, try cooking grilled salmon steak with green vegetables as a side salad and sprinkle lemon juice instead of high-caloric salad dressing.

3 Soy Protein
Soy protein is a practical substitution for the protein we normally gain by eating meats. While meat is normally associated with fat content, soy protein is not. Additionally, soy protein contains all the amino acids gained from eating meat, which is an essential part of maintaining our healthy muscles and reducing body fats. These amino acids are also a fundamental part of insulin production in the body.

According to Ms Chong, a diet should ideally include at least four servings of soy protein, which makes up to a total of 25 grams of soy protein each day. This plays an integral role in reducing the bad cholesterol (also known as LDL) by up to 10%. Studies have shown that soy protein can lower total cholesterol and LDL cholesterol while not adversely affecting HDL cholesterol in any ways.

We all know that diet and exercise are vital for an overall good health. However, do you know which foods are especially helpful in keeping your heart and blood vessels in tip-top condition? Here are some recommended foods to help you keep your heart functioning well.
Ms Chong also shared that a drop of 1% in cholesterol works out to about a 2% drop in the risk of heart disease. The health benefit of this alone makes a strong evidence for adding soy protein to our diet on a regular basis which will not only continue to lower cholesterol over time but also produce healthier veins, blood flow and a healthier heart.

**Tip:** Add tofu to your favourite stir fry dishes or add in soy milk to your morning cereal instead for a heart healthy meal.

### Whole grains

Whole grains contain the entire grain – the bran, endosperm and germ. According to Dr Ng Wai Lin, Specialist in Cardiology & Consultant, Raffles Heart Centre, eating whole grains has important health benefits as they are generally good sources of dietary fibre, which helps to reduce blood cholesterol levels and may lower the risk of heart disease.

Grains are also essential sources of many nutrients as part of an overall healthy diet. “Whole grains contain folate (folic acid) and one of the B vitamins which helps the body to produce and maintain red blood cells and iron which is used to carry oxygen in the blood. Examples of whole grains include whole-wheat bread and brown rice,” shared Ms Chong.

It is important to include a variety of grains in our eating plan because grains differ in their nutrient content. Studies have shown that whole grains can be a good source of dietary fibre, which can be classified as soluble or insoluble.

When eaten regularly as part of a diet low in saturated fat, transfat and cholesterol, soluble fibre has been interlinked with increased diet quality and decreased risk of cardiovascular disease. Oats, for instance, have the highest proportion of soluble fibre of any grain. Foods high in soluble fibre include rice bran and barley. On the other hand, insoluble fibre has been interlinked with decreased cardiovascular risk and slower progression of cardiovascular disease in high-risk individuals. Foods high in insoluble fibre include wholesome breads, wheat cereals and wheat bran.

**Tip:** Use one-third of oats instead of flour while making pancakes or muffins. Also, use oats instead of bread crumbs in cooking for the crispy aftertaste.

### Nuts

Studies conducted over the years have strongly suggested that eating an ounce (about three or four tablespoons) of nuts four or five times a week can significantly reduce your risk of coronary artery disease by as much as 40%.

There are several other reasons why nuts may be useful in protecting us from coronary artery disease. According to Ms Chong, in addition to dietary fibre which may be responsible for the reduction of LDL, nuts also contain arginine, a type of amino acid which helps to make blood vessel more flexible and indirectly reduce the chances of blood clotting.

A variety of nuts for example almonds, walnuts and flaxseed, are high in alpha-linolenic acids, which is a plant-based Omega-3 fatty acids, helps to lower plasma triglycerides and exhibit anti-thrombotic effect. Nuts are also high in MUFA (monounsaturated fats), which is the right kind of fat for our heart. When substituted for saturated fat and transfat in moderation, it helps to protect us against heart disease.

**Tip:** Sprinkle some walnuts, pine nuts, almonds or macadamia nuts on your greens together with lemon juice to make a healthy and delicious salad as a side dish.

### Olive oil

Olive oil is not only tasty and delicious; it is also beneficial to our heart, which has been linked to longevity and our heart health.

The coronary arteries provide blood to our heart muscles. The monounsaturated fats help to keep those arteries clear so that our heart can get sufficient nutrients and oxygen to keep pumping. “We can get this health benefit by substituting other unhealthy fats with olive oil in moderation. Olive oil contains polyphenols that work as antioxidants to protect our blood vessels, reduce inflammation and keep our heart healthy,” shared Ms Chong. Olive oil is also good for our heart as it keeps our cholesterol levels healthy.

**Tip:** Use olive oil for your salads, on cooked veggies, and as a dip for your wholemeal bread.

### Fresh herbs

One of the elements required for a healthy heart is to have a healthy circulation. It keeps the heart pumping, moving blood throughout arteries and veins and providing us with the nutrients which we need to live and prevent disease. Prevention is the best medicine and herbs have a lot to offer in this instance. The medicinal effect of some well-known herbs have been empirically proven.

The primary action of herbs used in circulatory disorders is to increase the blood flow to the body’s extremities (fingers, toes, arms and legs) and to improve the health of blood...
8 Red wine
Consuming red wine in moderation has long been thought of as keeping your heart healthy. Studies have shown that antioxidants, which are known as polyphenols that are contained in red wine may help prevent heart disease by increasing levels of HDL (‘good’ cholesterol) and protecting it against artery damage.

According to Dr Abdul Razakjr, Specialist in Cardiology & Consultant, Raffles Heart Centre, red wine in moderation is known to increase the “good cholesterol” level in your body and prevent artery damage. Several researches have also shown that resveratrol, a key ingredient in red wine could be linked to a reduced risk of inflammation and blood clotting, both of which that can lead to heart disease.

Tip: For the ladies, do not exceed one drink a day and for the men, you should ideally consume one to two drinks. You may add a little amount of red wine while cooking chicken or pasta to get the infused flavour for more taste.

9 Sweet potatoes
Sweet potatoes are packed with loads of nutrition. They contain a great source of minerals such as iron, folate, copper and manganese. The darker coloured variety is a great source of carotenes (precursor of vitamin A), vitamins C, B2, B6 and E, and biotin. Sweet potatoes are also a fantastic source of dietary fibre which is essential for maintaining our heart health.

“Sweet potatoes are a healthy and hearty substitute for white potatoes for people concerned about diabetes. With a low glycermic index, sweet potatoes will not cause a quick spike in the blood sugar. However, one should be aware about the portions taken.” said Ms Ou.

Tip: Include herbs in your variety of foods instead of adding salt or soya sauce to give you the extra natural flavour.

10 Low-fat yogurts
Ms Chong shared that while low-fat dairy is most often touted for bone health, these foods can also effectively help to control high blood pressure, which is closely interlinked to our heart health when consumed in place of full-fat dairy foods. Milk is high in potassium and calcium; however, yogurt has twice as much of these important minerals to promote and maintain our heart conditions.

Studies have shown that eating yogurt regularly will lead to less thickening of the carotid arteries’ walls in one’s body. Thickening of these arterial walls is a sign of atherosclerosis and has been linked to higher risk of stroke and heart attack. Yogurt eaters also tend to have healthier blood vessels according to research.

Tip: Add in low-fat yogurt to your oatmeal and cereals together with fresh fruits for a hearty breakfast or a tea time snack. To boost the calcium and minimise the fat, choose low-fat or non-fat yogurt for better heart health.

“Sweet potatoes are rich in antioxidants, which may help in reducing oxidative damage and prevent arteries from being damaged.”
**What is your diet like?**

I am generally not fussy with food. I take wholemeal bread with fruits for breakfast, and coffee is a must. For lunch, I eat out so anything goes but I generally avoid oily and fried food such as fries and fried chicken. Dinner is mostly home-cooked food: comprising of meat, vegetables and another tofu or egg-based dish. Soup is a must as my mum is Cantonese. We also enjoy steamed fish as a family. After dinner, we usually have some fruits for dessert. As I have quite a high metabolic rate, tea breaks and suppers are also a must… Though I try to take them in small amounts as age is catching up and I have to watch my waist line.

**My indulgences are …**

Laksa, durian, and ‘O-ni’ (teochew yam paste dessert).

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**‘An apple a day keeps the doctor away’, what is your ‘apple’?**

It is my coffee! However, I do ensure that I drink enough water and have some fruits every day. Sometimes, I take a ginseng drink in the morning. I think exercise is terribly important and I try to run two to three times a week (on my stationary bike at home) or rode around my neighbourhood.

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**Tips**

If you’re preparing this on your own...

1. Trim all visible fat on beef striploin before cooking.
2. Drizzle the beef striploin with olive oil or canola oil instead before roasting.
3. Load the sandwich with vegetables such as lettuce, cherry tomatoes, broccoli, carrot and green peppers. Look for fat-free or low-fat versions of horseradish sauce.
4. For those who do not take beef, change the meat to chicken or fish.

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**Nutritional Facts**

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An apple a day keeps the doctors away. Ever wondered how doctors or specialists themselves keep the doctors away? Lunch date with Raffles is a new column where HealthNews dates RMG specialists for lunch to find out what their diet is like and how they keep themselves in good health. This issue’s HealthNews dated Dr Joshua Kua, a specialist and consultant in psychiatry at Raffles Counselling Centre, for a sandwich lunch. Find out what his indulgences are.

“I thought the sandwich was gorgeous. The wholemeal bread was crispy and fresh while the roasted sliced beef striploin was tender although I would prefer thinner cuts. The horseradish dressing was fabulous and the salad was refreshing. The portion was just nice for me and the coffee, with the decorative broth, gave an extra oomph!”

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**Biodata**

**Name:** Dr Joshua Kua  
**Age:** 47  
**Height:** 1.75m  
**Weight:** 65kg  

Dr Kua is a Specialist in Psychiatry and a Consultant at Raffles Counselling Centre. He is happily married to his wife and is a father of two children.
In this issue, it is all about the heart and our guest on Upclose is no stranger to that. From being around our team of cardiologists and assisting them during their procedures to performing computed tomography (CT) scans for a better look at a patient’s heart, we take some time to explore the “heart” of Chief Radiographer, Mr Santhosh Kumar, and find out what keeps him going at his job.
Hi Santhosh, give us some background details and tell us about yourself.

To begin with, I have been a radiographer with Raffles Hospital for the past seven years. I am currently the Chief Radiographer with Raffles Radiology. I am happily married and my wife is a senior staff nurse at a National Healthcare Group polyclinic. Together, we have three children in our lovely family. I have been a radiographer for the past 18 years of my life and throughout these years, I have observed dramatic changes in radiology in terms of technology, much like our mobile phones today.

Why and how did you come to choose to be a radiographer?

I chose radiography as my career for three reasons: a desire to help others, a desire to learn, and a desire to be challenged as an individual. I am passionate about helping others around me. I wanted to touch lives and make an impact.

My aunt was a radiographer, and she used to bring home waste radiography films. During my school days, I used that film for artwork and other purposes. I admired those black and white photographs and you could say this created the desire in me to become a radiographer in future.

Additionally, as I got older, I developed a strong interest in the medical field and wanted to take on the challenges of modern health care. I knew I wanted to be an integral part of a diagnostic team producing images of the body using state-of-the-art equipment like Magnetic Resonance Imaging (MRI) and assisting medical professionals to deliver quality healthcare. The whole concept of the combination of technology, science and patient care led me to where I am today.

What do you do as a radiographer?

A radiographer’s role is challenging, rewarding and requires a high level of skill. We are part of a vital group of medical professionals with specialist training and highly developed skills. I operate a wide variety of diagnostic equipment which helps doctors and specialists determine and provide best outcomes for patients. There is significant patient contact and a radiographer plays an important role in improving not just patients’ outcomes but their experiences as well.

An aspect of my job requires me to assist cardiologists during angiography procedures. We play a vital role during this procedure by adjusting and operating the computer systems involved in the procedure to the cardiologist’s specifications. In doing so, not only do we bridge the gap between medicine and technology but we also ensure that the patient is able to receive the best possible care.

MRI is another area I am particularly interested in. It is a relatively new technology that is still constantly evolving. Using a magnet and the magnetic properties of the hydrogen atoms in our body, this technology will change the way we visualise the human body in years to come.

That certainly sounds exciting! Tell us, what do you enjoy about work?

I suppose the most enjoyable part of my job is meeting people from various backgrounds. As a radiographer, I have met and served from Sultans to Kings, Prime Ministers to Presidents, CEOs to scientists and celebrities to even our own neighbour. I have played a role in helping these people get back on the right track to health and leading happier lives once again. What more can I ask for? I certainly cannot find anything else that would give me more satisfaction than this.

What would be your most memorable or fulfilling experience in Raffles?

I have had plenty of experiences, both good and great. However, the best experience would be the feeling of being recognised by patients whom I had perhaps spent only a few moments with. There was this overseas patient who had undergone many procedures including angiograms and scans. He now returns annually for reviews, but what really warms my heart is that he still pays me a visit each time, even when he has no scheduled tests or scans to be done with me.

That is truly inspiring. You must be a happy man at work indeed.

Since we are on the topic of heart health this issue, how do you stay “heart” happy in your own time?

It is surprising that you should phrase the question this way as I reckon the most important aspect of being heart healthy is simply being happy. Stress can have very negative impact on heart health. I love to laugh out loud each time and release any pent-up stress I accumulate at work. And of course, I still advocate what my dear and fellow colleagues, the cardiologists advice, that is to follow a healthy lifestyle and eat wisely. HN
How does obesity increase the risk of heart failure?

Obesity is a more severe form of being overweight. The main causes of obesity or overweight are consuming more calories than required and not being physically active enough. According to Dr Stanley Liew, Specialist in Endocrinology & Consultant, Raffles Internal Medicine Centre, if you consume more calories than your body burns, the extra calories will be stored as fat. Other factors that may affect your weight include your genes (e.g. family history of obesity), your metabolism (i.e. how your body processes food), and your age (i.e. your metabolism rate slows down as you get older). “Sometimes, an illness or medication may contribute to weight gain. However, physical activity and total caloric intake remain as the fundamentals to weight control,” shared Dr Liew.

Studies have found out that excess weight increases a person’s risk of developing heart failure. For example,
an overweight individual with a BMI ranging from 25 to 29.9 has a 34% of increased risk. As for an obese person with a BMI 30 or higher, he or she has a 104% of increased risk. Therefore, obesity has a direct effect on your risk of developing heart failure because the excess weight makes your heart work harder to supply blood to the added fatty tissue. “The more fatty tissue you carry, the harder your heart has to pump. For patients with heart failure (weak heart), this additional burden may tip them into severe heart failure with sudden accumulation of water in the lungs, which can result in a life threatening medical emergency,” shared Dr Teo Swee Guan, Specialist in Cardiology & Consultant, Raffles Heart Centre.

Being overweight brings you nearer to developing a kind of metabolic syndrome, which is also characterised by increased inflammatory markers. According to Dr Choo Dee Pheng, Family Physician, Raffles Executive Medical Centre, metabolic syndrome is a cluster of risk factors that increases your risk of getting heart disease. “These include having low HDL levels (‘good’ cholesterol), increase in normal blood sugar, blood pressure, triglyceride levels and a large waistline. Having three out of these five factors means you have a metabolic syndrome,” shared Dr Choo. Lastly, researches have also shown that obesity can trigger the body’s defensive response to injury, which is known as the inflammatory response, by increasing blood levels of key immune system proteins. The prolonged inflammation of heart tissue can cause the build-up of scar tissue, damage cells and thereby increasing the risk of heart failure.

**A set of healthy teeth for a healthy heart?**

During your childhood days, you learnt that brushing and flossing your teeth is extremely important if you want to avoid tooth decay and have healthy gums. However, can keeping your gums healthy also help to reduce your risk of getting heart disease?

According to Dr Aaron Tan, Dental Surgeon, Raffles Dental, your mouth is filled with bacteria; most of them harmless. Usually, our body’s natural defences and good oral health care, such as daily flossing, brushing and regular six monthly dental visits, should be able to keep these bacteria under control. “Poor oral hygiene can cause a bacterial imbalance which will lead to possible gum infections (gingivitis) and in serious cases, both gum and bone infections (periodontitis). Continued poor dental care will also lead to tooth decay if left unchecked by your dentist,” shared Dr Tan.

Studies have shown that periodontal disease increases the risk of heart disease by 50%. This is because bleeding gums are a gateway for the bacteria to enter into your bloodstream. Once in the bloodstream, the bacteria will travel throughout the body where they could cause inflammation and become a prelude to a build-up of fatty deposits that can block the arteries. When the blood arteries are clogged, stroke and heart disease will occur.

Dr Tan also commented that systemic diseases, medical procedures (radio-therapy) and medications can reduce your salivary flow (xerostomia). Oral pH will thus be reduced and the loss of the buffering capacity of saliva can subsequently lead to dental caries and possible dental infections, not to mention bad breath. It has been proven that periodontitis increases your risk of coronary heart disease (CHD) and also the possibility of pre-term low birth weight babies in pregnant mothers.

Atherosclerosis is described as a condition when plaque builds up along the walls of arteries and causes them to become thick, leaving only a narrow passageway for the blood to flow. Eventually, this can lead to one being diagnosed with a possible stroke, heart attack, high blood pressure and even death. Research has also shown that poor oral hygiene can cause the carotid artery wall, which is the major artery in the neck to become thick with plaque which increases one’s risk of cardiovascular disease.

**Prevention starts early**

Therefore, treating cardiovascular disease (CVD) depends on what form of the disease is and a person’s health condition. The most effective treatment always begins with personal lifestyle changes. Whether cardiovascular disease development is related to obesity and gum disease or not, keeping up with good personal oral hygiene and managing your diet well are essential fundamentals that we need to have to maintain a good heart health. HN
How Can Aerobic Exercises Help My Heart?

Regular and consistent aerobic activity improves your cardiorespiratory endurance. In other words, your heart, blood vessels, and lungs benefit from working harder than normal. Exercise improves your cardiorespiratory function by increasing the activity of these organ systems above what they experience at rest. Over time, your body adapts to these stresses and your fitness improves.

Having better cardiorespiratory endurance is an important aspect of health for the following reasons:

- It helps you to better manage higher levels of routine physical activity as you go about your day-to-day life.
- It lowers your risk of cardiovascular diseases.
- Aerobic fitness is an important foundation that will allow you to engage in daily activities with greater ease.
- It allows you to participate more fully in recreational and sport activities.
- Body weight can be maintained as aerobic activities that promote cardiorespiratory endurance also burn a relatively large number of calories.

Components in an Aerobic Workout

For safety and enjoyment, follow a consistent pattern in your aerobic workout. It should include three phases – warm-up, endurance conditioning, which is the main part of the workout, and cool-down.

Warm-up

The intention of this phase is to warm up the muscles. It should consist of five to ten minutes of low-to-moderate level activities with a lighter version of what you will be doing in the conditioning phase. For example, if you are running, then jogging would be appropriate to include in the warm-up. The point is to gradually bring up the intensity from
resting levels to the intensity that you plan to do in the conditioning phase.

Warm-up activities prepare your heart, lungs, and muscles for the conditioning phase of your aerobic workout. Remember, the more intense the conditioning phase is, the longer the warm-up should be.

**Endurance Conditioning Phase**

This is the main part of your aerobic workout. The activity that you have selected to do should be guided by the FITT principle, which stands for frequency, intensity, time, and type.

**Frequency**: the number of days per week you set aside time for exercise

**Intensity**: how hard you work out an activity

**Time**: the duration you are actively working out

**Type**: the type of activity you do

**Cool-down**

The purpose of a cool-down is to provide an opportunity for the body system to gradually return to pre-exercise levels. Your heart slows down, blood pressure decreases and the muscles recover from the conditioning phase. It should consist a minimum of five to ten minutes of low-to-moderate activity.

Proper cool-down is important for safety reason, it prevents a drop in blood pressure which can lead to fainting, and also avoid negative changes in heart rhythm. This will also help your body temperature to decrease gradually. The higher the intensity of your conditioning phase, the longer your cool-down should be.

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### Calculating Your Maximum Heart Rate

Your heart rate is a good indicator of how hard you are working as we want to get the most out from our workout. To know if you have reached your optimum heart rate during the conditioning phase of your workout, this is how you calculate it in three easy steps.

<table>
<thead>
<tr>
<th>Step</th>
<th>Formula</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong></td>
<td>Resting Heart Rate (RHR)</td>
<td>Measure your resting heart rate. The best time to do it is when you first wake up. You can do while lying in bed for one minute. For a more accurate reading, do so over the next three mornings and average it out.</td>
</tr>
<tr>
<td></td>
<td>BPM = Beats per minute</td>
<td>Example: Reading 1 + Reading 2 + Reading 3 (62 + 58 + 60) / 3 = 60 bpm</td>
</tr>
<tr>
<td><strong>Step 2</strong></td>
<td>Maximum Heart Rate (MHR)</td>
<td>This is simply derived by subtracting your age from 220.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Example: Age is 30 220 - 30 = 190 bpm</td>
</tr>
<tr>
<td><strong>Step 3</strong></td>
<td>Target Heart Rate</td>
<td>You would want to ensure that your heart rate is between 60% and 85%. This is the formula Target Heart Rate = [(MHR – RHR) x %Intensity] + RHR</td>
</tr>
<tr>
<td></td>
<td></td>
<td>For a 30-year old 60% of THR is: [[(190 – 60) \times 0.60] + 60 = 138 \text{ bpm}] 85% of THR is: [[(190 – 60) \times 0.85] + 60 = 170.5 \text{ bpm}]</td>
</tr>
</tbody>
</table>

**The target heart rate for a 30-year old is between 138 bpm and 170.5 bpm.**
Interval Training

Exercise should ideally be fun to keep us coming back for more. Some of the well-known cardio exercises include running, cycling, swimming and brisk-walking. These exercises keep our heart rate up for a longer period of time.

If you’re looking for an extra boost for your heart, why not add interval training to your regular cardio workout routine?

Here are some of the benefits:

a. It saves time - research confirms that fitness level is improved in less time as compared to traditional aerobic training.

b. It’s similar to our everyday activities - It prepares our body for sudden bursts of stress or activity that we experience from time to time, since most people do not stay focus to work at a moderate to high level of intensity for long periods of time throughout the day.

c. It burns more calories - Research has shown that more calories are burned during short, high intensity exercise than longer and lower intensity aerobic workouts.

How Does It Work?

Interval training is a mix of rest and motion. It consists of combinations of short, high intensity bursts of speed (from 20 seconds to three minutes) with slow, recovery phases that are repeated during one workout.

It works both the aerobic (with oxygen) and the anaerobic (absence of oxygen) systems. During a low intensity work out, your body depends on the aerobic system for oxygen to fuel the body. While in the high intensity workout phase, the anaerobic system is activated using energy stored in the muscles (glycogen) to accomplish the short bursts of activity. During this phase, the body experiences fatigue and enters into oxygen debt, which causes one to feel out of breath. The body then switches back to aerobic conditioning level in the recovery phase when the heart and lungs work together to “pay back” the oxygen debt and convert stored carbohydrates into energy.

Therefore, interval training improves your performance such as speed, strength, and endurance by pushing your body past the aerobic threshold for a few moments, before returning to your aerobic conditioning level. Aerobic threshold refers to the intensity where your body switches from burning a greater percentage of fat to a greater percentage of carbohydrate. This is generally 85% of your maximum heart rate. If you train below 85%, it’s aerobic; training above 85% and it’s anaerobic.

Two basic guidelines to note:

1. Achieve 80% to 85% of your maximum heart rate over one to four minutes of exercise. The high-intensity phase should be long and strenuous enough to make you feel out of breath.

2. Avoid recovering for too long to allow your pulse to return to its resting rate.

Put it into Action

As it is intensive in nature, it is not suitable for everyone, especially if you have a health condition. Therefore, it’s wise to seek your doctor’s clearance before embarking on a programme.

If you love running on the treadmill, instead of running at a consistent speed for 30 minutes, break the routine by sprinting for two minutes then reduce the speed to recover before repeating the same.

Apart from the regular options, try circuit training where you can mix and match a series of exercises that can either be performed alone or with a buddy for extra motivation.

Grab a buddy to try out this series of exercises and motivate each other in the midst of making your heart pump stronger. Carry out each of following exercise continuously for 30 seconds in moderate speed and rest for 15 seconds between each one. Repeat the cycle of exercises two to three times.

1. Start in a squat position with your back straight and knees bent.

2. Jump as high as you can and give your buddy a high-five before returning to the starting position.
1. Hold your buddy’s hand lightly for balance and support.
2. With a coordinated movement, starting with the right leg, lunge forward and backward.
3. Change to the left leg after 30 seconds.

1. Get into the push up position. You can choose between the (top left) modified and (top right) standard versions.
2. Give your buddy a high-five as you return to the starting position. Alternate hands for the high-five as you proceed.

There are two exercises in this movement. One is the plank and the other is jumping from side to side over the person in the plank position.

Switch roles immediately after 30 seconds.

1. The person in the plank position should keep his or her back straight and parallel to the ground.
2. The person jumping should start and land with his or her knees bended and not locked.
What’s your daily routine like?

In the morning, I’ll usually turn on all the ultrasound machines and prepare the warm gels for each room. Subsequently, I will check for faxed requests from the wards and clinics before making the necessary arrangements. I will then do up their preliminary reports and scans when they come for their checkup.

What do you enjoy most about your job?

I enjoy seeing patients who come to the hospital being treated and recuperating well. Not only that, the nature of my job allows me to meet different patients and people from all walks of life everyday and that keeps me happy!

How important is “service with a smile”?

Every patient is anxious to know their scan results. The anxiety will always be there. Even though medically and ethically, we are not allowed to reveal the results to a patient, a simple statement of “only if we see something that we think requires immediate medical attention, will we advise accordingly” with a smile is reassuring.

I believe that by saying this with a smile, the patient will understand and at the same time, have a sense of reassurance. A smile certainly does wonders!

#MadeMeSmile is a Twitter tag that is used to sharing on what made you beam. It could be your experience with us and/or someone who made you smile during your visit. Share with us something that ‘made you smile today’. Simply follow and tag us @RafflesMedGrp and share with us what #MadeMeSmile.
Cardiovascular disease is the leading cause of death globally and is projected to remain so. It knows no boundaries; anyone can suffer from it. According to the World Health Organization, it is foreseen that by 2030, almost 25 million people will die from cardiovascular diseases mainly from heart disease and stroke.

Scary as it may seem, there is a way that we can prevent ourselves from contracting such diseases. A healthy lifestyle can help you guard against cardiovascular disease. By adopting several heart-healthy habits, your heart and body will certainly thank you for it!

1. Omega 3 Supplements
Supplements will certainly aid in providing the right amount of nutrients needed by your body. Omega-3 fatty acids which can be found in fish oil and flaxseed oil, help to increase the level of HDL (good cholesterol) in your body. It is also one of the most important supplements for the heart because of its anti-inflammatory agents.

2. Start Exercising
We can never stress this enough! Exercise is an essential component of a healthy well-being. It not only increases the level of HDL (good cholesterol) in our body, it also reduces the level of LDL (bad cholesterol). Some may view exercise as spending hours at the gym, or even hitting the running track every single day. However, exercise need not be strenuous. For starters, try including a short jog around your park in your daily routine. Never mind if it is just for 10 minutes; pace yourself and increase your distance thereafter. As time goes by, you will find exercising a breeze.

3. Diet and Nutrition
People who are overweight or obese are more likely to develop cardiovascular disease and diabetes. To prevent that from happening, having a well-balanced diet is a must. By adopting the healthy diet pyramid as a guide to your food choices, you are well on your way to leading a heart-healthy lifestyle. The key things to note of healthy eating include limiting your fat intake, reducing your cholesterol and salt intake, consuming enough fibre and of course avoiding excessive alcohol consumption.

4. Destress and have a good hearty laugh
Laughter is indeed the best medicine! Take time each day to de-stress and laugh. Studies have shown that high levels of stress can pose risks to your heart. Take a day off to just have fun, be it alone or with your loved ones. Not only will your heart ‘thank you’ for it, you will also be strengthening ties with your loved ones. Nothing beats having a good laugh after a tiring day.
Once a diagnosis of hypertension is confirmed, it is essential to have regular follow up and be monitored by a doctor so that your blood pressure is well controlled.

If left untreated for a long period of time, hypertension can lead to stroke, heart attack, kidney disease and blindness.

Initially, if the hypertension is mild, lifestyle modifications may help manage the condition. These include weight loss, if one is overweight, exercise and a low salt, healthy diet.

There are many classes of blood pressure lowering drugs which can be used safely and effectively on an individual basis. Again monitoring and follow up are required because these drugs should be regularly reviewed and adjusted if necessary by the attending doctor.

In reality, most sudden deaths related to the heart is caused by coronary artery disease i.e. blockages of the arteries of the heart.

Arteries supply blood to the heart muscles for normal function.

When there is a heart attack, there is complete obstruction of this blood flow. The outcome is either chest pain or sudden death. Sudden death is usually a result of a ‘short-circuit’ of the heart rhythm due to sudden and inadequate blood supply.

It is a well-known fact that more than half of heart attacks do not occur in arteries that are very narrow. i.e. as long as there are blockages, they can rupture or ‘crack’ and blood clot can form around it and result in a heart attack and its consequences. This process of plaque formation in the arteries is known as atherosclerosis.

Unfortunately, most annual checks do not check for this. Whilst the traditional risk factors such as hypertension, diabetes mellitus and high blood cholesterol may increase the risk profile of an individual, direct visualisation would actually allow identification of these plaques.

Coronary calcium scoring is available to identify atherosclerosis. This modality utilises a CT scan to identify calcium of the arteries, which ideally should be absent. The presence of calcium, after matching with the appropriate age-group and gender would identify the ‘at risk’ individual.
Connect with us for the latest health tips. Here’s what you have missed…

<COOK OUT>
Are you baking this weekend or the upcoming festive season? Here are 5 healthy ingredient substitutes you might want to consider.

<WORK WELL>
Sitting for hours can cause muscle knots that cause pain in your neck, back, and shoulders. Here are some quick stretches you can do to relieve that stiffness. Know a friend or colleague that could use this advice? Like and share this with them!

<LIVE WELL>
Benefits of drinking H2O. Remember to have 6 to 8 glasses of fluid a day!

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An initiative by Raffles to bring our social media fans closer to us, #AskRMG is a monthly online chat session between our Facebook and Twitter fans and our Specialist of the month. Every last Wednesday of the month, fans can log on to Facebook and Twitter to pose questions they have about that field to our specialist for a LIVE “1-to-all” chat. The best question gets to win a shopping voucher.

Congratulations to our winners for the month of October, November and December 2012!

October #AskRMG Dr David Wong
Winner: Jie Hung

October #AskRMG, we invited an Orthopaedic surgeon, Dr David Wong, to answer questions relating to back pain, spinal issues as well as common Orthopaedic problems. Have some unexplained back pain? Check out the notes tab for some possible reasons.

November #AskRMG Dr David Chan
Winner: Loganayaki Shanmugam

In November’s #AskRMG, we invited an ophthalmologist, Dr David Chan, to answer questions relating to common diseases and problems of the eye as well as LASIK. Have questions about LASIK? Check out the notes tab for the answers to your questions.

December #AskRMG Dr Raymond Kwah
Winner: Fonteyn Leow

As we geared up for the festivity, December’s #AskRMG answered aesthetics issues close to our hearts. Our dermatologist, Dr Raymond Kwah addressed questions such as how to prevent hair fall and which moisturisers to treat eczema conditions. Would you like to know more? Check out the notes tab.
How ready is your workplace for medical emergencies?

According to the Workplace Safety and Health Act, Workplace Safety and Health (First-Aid) Regulations, all workplaces must provide a sufficient number of first-aid boxes on each floor of the building. Where there are more than 25 employees, certified first-aiders must be appointed within the workplace (required ratio one first-aider to every 100 employees). And for every 500 persons employed in a workplace, a first-aid room must be provided and maintained.

### Required Minimum Content of First Aid Boxes

<table>
<thead>
<tr>
<th>S/N</th>
<th>Contents</th>
<th>Box A</th>
<th>Box B</th>
<th>Box C</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Sterile adhesive dressings</td>
<td>20</td>
<td>40</td>
<td>40</td>
</tr>
<tr>
<td>2</td>
<td>Crepe bandage 5cm</td>
<td>1</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>3</td>
<td>Crepe bandage 10cm</td>
<td>1</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>4</td>
<td>Absorbent gauze</td>
<td>5</td>
<td>10</td>
<td>15</td>
</tr>
<tr>
<td>5</td>
<td>Hypoallergenic tape</td>
<td>1</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Triangular bandages</td>
<td>4</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Scissors</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>8</td>
<td>Safety pins</td>
<td>4</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>9</td>
<td>Disposable gloves (pairs)</td>
<td>2</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Eye shield</td>
<td>2</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>11</td>
<td>Eye pad</td>
<td>2</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>12</td>
<td>Resuscitation mask (one-way)</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>13</td>
<td>Sterile water or saline</td>
<td>1</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>14</td>
<td>Torch light with batteries</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

Price (includes GST) $90 $150 $180

### Additional Recommendations

<table>
<thead>
<tr>
<th>S/N</th>
<th>Item</th>
<th>Quantity</th>
<th>To be used for</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Digital Thermometer</td>
<td>1</td>
<td>Measuring body temperature</td>
</tr>
<tr>
<td>2</td>
<td>Primapore Dressing</td>
<td>1</td>
<td>Water resistant, self-adhesive dressings</td>
</tr>
<tr>
<td>3</td>
<td>Forceps</td>
<td>1</td>
<td>A holder for gauze</td>
</tr>
<tr>
<td>4</td>
<td>Splinter Remover</td>
<td>1</td>
<td>Removal of fragments of a foreign body (splinter from wood, thorns, etc)</td>
</tr>
<tr>
<td>5</td>
<td>Antiseptic Cream</td>
<td>1</td>
<td>To prevent infection</td>
</tr>
<tr>
<td>6</td>
<td>Paracetamol 500mg</td>
<td>20</td>
<td>Fever / Headache</td>
</tr>
<tr>
<td>7</td>
<td>Loperamide 2mg</td>
<td>10</td>
<td>Diarrhoea</td>
</tr>
<tr>
<td>8</td>
<td>Ultracolon</td>
<td>10</td>
<td>Flatulence / Stomach wind</td>
</tr>
<tr>
<td>9</td>
<td>Antacid / Hydroxil</td>
<td>10</td>
<td>Gastric discomfort</td>
</tr>
<tr>
<td>10</td>
<td>Chlorpeniramine 4mg</td>
<td>10</td>
<td>Running nose</td>
</tr>
<tr>
<td>11</td>
<td>Emergency Blanket</td>
<td>1</td>
<td>To retain body heat for victims in shock; Can be used as an emergency stretcher</td>
</tr>
<tr>
<td>12</td>
<td>Burns Dressing</td>
<td>1</td>
<td>Burns and scalds</td>
</tr>
</tbody>
</table>

The recommendations listed here are by no means exhaustive. Raffles Medical will be pleased to customise a first-aid box best suited for your workplace.

Raffles Medical Group has accredited professionals to provide training and consultancy to your company should you require First Aid, CPR and AED training for your employees. This can include the customisation of First-Aid Boxes and First-Aid Rooms to cater to your unique workplace environments.

For more information, please contact our Corporate Services Executives or call 6311 1333
Email: rmcs@rafflesmedical.com
www.rafflesmedical.com
Scope for Good Health

Screening colonoscopy and gastroscopy is recommended for those above 50 years of age, with or without a family history of cancer. You may choose to do a colonoscopy or gastroscopy on its own, or together in a single session.

Colonoscopy
Polyps in the colon and rectum show no symptoms and are common among individuals 50 years and above. A screening colonoscopy can help detect polyps for removal before they develop into colorectal cancer, the leading cancer in Singapore.

You should go for a Screening Colonoscopy if you:
• Are above 50 years old
• Have a family history of colorectal cancer
• Notice a change in bowel habits
• Notice blood or mucus in stools or test positive for faecal occult blood test

Gastroscopy
A screening gastroscopy can diagnose conditions such as gastritis, stomach and esophagus cancers, as well as conditions associated with abdominal pain or bleeding.

You should go for a Screening Gastroscopy if you experience:
• Upper abdominal pain or discomfort
• Persistent indigestion
• Heartburn after meal
• Loss of appetite
• Nausea and vomiting
• Weight loss

Screening Packages @ Raffles Hospital

<table>
<thead>
<tr>
<th>Package Prices*</th>
<th>(Include GST)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colonoscopy</td>
<td>$1,250</td>
</tr>
<tr>
<td>Gastroscopy</td>
<td>$642</td>
</tr>
<tr>
<td>Colonoscopy &amp; Gastroscopy</td>
<td>$1,600</td>
</tr>
</tbody>
</table>

* Terms and conditions apply.
** For Singaporeans and Permanent Residents.

Medisave** covers all procedures in full.

Raffles Surgery Centre
Call 6311 1140 today or email specialist@raffleshospital.com for further enquiries or to make an appointment.
Put Your Health In Good Hands

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One-Stop Tertiary Hospital in the Heart of the City
Raffles Hospital offers 24-hour emergency care and executive health screening services. Its 21 specialist clinics provide services in Aesthetics, Cancer, Counselling, Paediatrics, Dental, ENT, Eye, Heart, Internal Medicine, Neuroscience, Obstetrics & Gynaecology, Orthopaedics, Skin, and General Surgery, as well as Japanese Clinic and Traditional Chinese Medicine.

Raffles Medical Clinics
There’s One Near You
For general medical services, vaccination or health screening, visit any of our family medicine clinics located across the island. Our Executive Medical Centre offers medical solutions for busy executives. To bring medical services closer to you, we also provide house/hotel call services.

Changi Airport
Beyond Basics
For medical services at Singapore Changi International Airport, visit any of our six clinics located in the terminals. Our 24-hour clinic at Passenger Terminal 3 also provides executive health screening and dental services.

For more information on our services or for an appointment, please call (65) 6311 1111 or email to enquiries@rafflesmedical.com
www.rafflesmedicalgroup.com

Connect with us for the latest health tips