

Keeping your heart healthy

ACCORDING to the Statistics Department, heart disease remains the leading cause of death in Malaysia. In its "Statistics on Causes of Death", 15% of medically certified deaths in 2019 were due to the disease, which is an increase from its 2017 report, where ischaemic heart disease was the principal cause of death in 2016 at 13.2%.

Having high cholesterol levels is one of the major risk factors in developing heart disease. The formation of plaque in the arteries resulting from high levels of blood cholesterol restricts oxygenated blood flow to the heart and consequently, causes a heart attack.

However, heart disease can be avoided by adopting a healthy lifestyle such as:

- Be physically active by engaging in exercises such as brisk walking, running or jogging, cycling, and swimming among others.
- Avoid red meats such as beef and lamb. For healthier alternatives, choose white meats such as fish and lean chicken.
- Choose healthier cooking methods such as steaming, grilling, baking or boiling which help to reduce the amount of oil used.
- Eat a high fibre diet especially foods rich in soluble fibre such as oat beta-glucan.

Biogrow Oat BG22 is high in total fibres and lactose-free with no added sugar, artificial ingredients and preservatives.

Unleash the power of Bioactive oat beta-glucan in oat bran.

Oat beta-glucan is a type of soluble fibre substantially found in the oat bran which is the outer layer of the grain. However, not all oat beta-glucan is the same.

Bioactive oat beta-glucan with high molecular weight is the unique form as it has been scientifically proven to produce cholesterol-lowering and blood glucose-controlling effects due to its high viscosity.⁽¹⁾

How does bioactive oat beta-glucan work?

Bioactive oat beta-glucan dissolves readily inside the digestive tract where it forms a thick viscous

gel in the small intestine. This viscous gel attenuates the intestinal uptake of LDL cholesterol as well as the reabsorption of bile acids which the body makes from cholesterol.⁽¹⁾⁽²⁾

In response, the body will draw upon the pool of circulating cholesterol to produce new bile acids which are essential for digestion and absorption of fats in the small intestines.

Lower uptake of cholesterol from the gut combined with more bodily cholesterol used for bile acid production results in reduced blood cholesterol level.⁽¹⁾⁽²⁾

Heart-healthy Bioactive Oat Beta-Glucan

Biogrow Oat BG22 contains 100% natural oat bran powder imported from Sweden that provides only the clinically proven bioactive oat beta-glucan with more than 20

published human studies on cholesterol-lowering and blood glucose-controlling effects.⁽¹⁾

Two scoops/sachets (~ 18gm) of Biogrow Oat BG22 oat bran powder daily provide the recommended *3gm of bioactive oat beta-glucan to lower blood cholesterol and control blood glucose levels effectively.⁽¹⁾

Biogrow Oat BG22 is lab-tested low in **Glycemic Index (GI<55)⁽³⁾ which makes it suitable for prediabetic and diabetic patients. Besides, it is also high in total fibres (soluble and insoluble fibres) and lactose-free with no added sugar, artificial ingredients and preservatives.

Biogrow Oat BG22 also has good solubility as it dissolves readily in water with no shaker required. Embrace a healthy lifestyle by making small healthy changes in your diet for good heart health.

Biogrow Oat BG22 is available in all leading pharmacies nationwide and the Biogrow Official Store at

Shopee Mall.

This article is brought to you by Legosan (Malaysia) Sdn Bhd.

■ For more information, call 03-7956 2220 (Monday to Friday, 9am-5pm) or email info@biogrow.com.my.

References

- (1) EFSA Journal 2010; 8(12): 1885.
- (2) Joyce et al. Front. Nutr 2019, 6(171), 1-15.
- (3) Brummer et al. Cereal Chem 2012, 89(5), 225-26.

*Bioactive oat beta-glucans are high in molecular weight and have been scientifically shown to produce a good viscosity effect in the gut for optimal cholesterol-lowering effect -EFSA Journal.

**Diets that are low GI (Glycaemic Index) and high in dietary fibre are protective – WHO Europe Diabetes.



Children are at risk too

HEART disease is not only a concern in adults, but in children as well. Here are descriptions of some conditions known to be found in young children.

Congenital heart disease (CHD)

Congenital heart disease (CHD) describes a number of different problems that affect the heart.

It is a type of birth defect that can be described more accurately as a defect or abnormality of the heart or blood vessels near the heart.

According to the World Heart Federation, the majority of children born today with CHD will survive and lead a normal or near-normal life with proper treatment.

CHD may be diagnosed during infancy (mild CHD) or soon after birth (severe CHD). Some are diagnosed during prenatal screening.

- Examples of CHD are:
- Atrial septal defect (a hole between the two upper chambers of the heart)
 - Ventricular septal defect (a hole between the two lower

chambers of the heart)

- Coarctation of the aorta (the main artery leaving the heart is constricted)

- Transposition of the great arteries (the two large arteries leaving the right and left sides of the heart are switched)

- Tetralogy of Fallot (a complex condition involving several structural defects)

Acquired heart disease

There are heart diseases that are not present at birth but acquired. The two major types are rheumatic heart disease and Kawasaki disease.

Rheumatic heart disease

Rheumatic heart disease is the most commonly acquired heart disease in many countries, especially in developing countries.

It is a condition where the heart muscle and heart valves are damaged due to rheumatic fever, which is caused by streptococcal bacteria.

Rheumatic fever is an inflammatory reaction and

begins as a consequence of the streptococcal infection of the throat (strep throat).

Most strep throat infections do not lead to rheumatic fever but when the infection is undiagnosed, untreated or undertreated, rheumatic fever can occur.

According to the World Heart Federation, rheumatic fever and RHD are responsible for about 233,000 deaths annually and affects mostly children and young adults.

Primary prevention of acute rheumatic fever is the effective treatment of acute throat infections caused by group A streptococcus, achieved by up to 10 days of oral antibiotics or a single intramuscular penicillin injection.

Secondary prevention is the prevention of a recurrence of rheumatic fever and involves regular administration of antibiotics over many years. However, for severely damaged heart valves, surgery is often required to repair or replace them.

Kawasaki disease

Kawasaki disease is characterised by fever, rash,



Parents cannot take their children's health for granted and must take an active role in ensuring they are free of any heart disease.

swollen hands and feet, bloodshot eyes, swollen lymph nodes, a strawberry appearance to the tongue and an acute inflammation of the blood vessels, especially the coronary arteries.

The cause of the disease is unknown but may be caused by some kind of infectious agent.

The disease occurs in young children. According to the World Heart Federation, 80% or more that are affected are less than five years old and it occurs more in boys than in girls.

Children who are undiagnosed or untreated can contract serious heart damage.

Obesity

Obesity is one of the factors that causes cardiovascular disease and is determined by the dietary habits of individuals. It is a major public health concern and is steadily affecting many low- and middle-income countries, particularly those living in urban settings.

There are several environmental factors associated with childhood obesity. In many economic-driven nations, increased consumption of energy-dense, high-calorie foods and drinks and decreased physical activity contribute to uncontrolled weight gain in children.

Boosting your metabolic rate

INCREASING metabolic rates have been an interest of many, especially among weight-conscious individuals. Understanding metabolism is crucial in guiding us to obtain an optimal metabolic rate.

'Metabole' is a Greek word for 'change'. In the context of the human body, metabolism means the conversion of energy intake – consumed food into energy and waste products. Increasing the rate of conversion is believed to increase the rate of burning off body fat. Is this true?

Consultant family medicine and lifestyle medicine physician at MSU Medical Centre Dr Faridah Mohd Zin explains, "Our body consumes energy through four pathways: basal metabolism, food thermogenesis, non-exercise activities thermogenesis (NEAT) and exercise activities thermogenesis (EAT).

"More than half of the body's metabolism is consumed as basal metabolism i.e., for the function of vital organs such as the heart, kidneys, brain and many others (about 60%). The thermic effect of food has the lowest contribution which involves the energy needed to change the food we eat into substances that are "edible" by our cells such as glucose (about 10%). Increasing the metabolic rate would mean increasing the energy-burning rate of the body, which theoretically could be increased by optimising the NEAT, EAT, thermic effect of food and the body's metabolism."

NEAT relates to the energy consumed while performing daily activities. Optimising daily activities such as cooking while standing or pacing around the room while on the phone have shown to increase metabolic rate. Since these activities are done every day, enhancing the energy burnt through this pathway could be regarded as an opportunity that should not be missed. Moreover, NEAT is found to be associated

with an improvement in overall health and helps in body fat reduction.

EAT relates to the body's energy consumption through structured exercise, which primarily includes cardiovascular, strengthening, flexibility and balance exercises. Furthermore, each type should have specific criteria in terms of frequency, intensity, time and types to achieve the different exercise objectives. For example, in maintaining fitness, a total of 150 minutes of cardiovascular exercise per week is recommended, while a longer duration is needed for body weight reduction.

Food thermogenesis contributes the least to body energy consumption. High lean protein and whole foods use more energy compared to other types of food and processed foods. Although consuming them would induce a higher metabolic rate, the contribution made to the increase of daily body metabolism is the lowest.

The major factors contributing to basal metabolic rate include sex, height, age, ethnicity, body composition and genetic factors. Body fat and muscle mass are the only factors that can be intentionally changed.

Total body fat is composed of essential and storage fat. Storage fat is mainly deposited under the skin as subcutaneous fat, or around body organs as visceral fat. The latter has been shown to have a strong correlation with cardiovascular diseases including heart attack and stroke. Energy consumption of more than required would be stored in the body as fat. Hence, a negative balance between energy intake and consumption is essential to force our body to use stored fat as a source of energy, leading to weight reduction. As the origin of stored fat comes from food, an alteration of an individual's food intake is crucial to achieve



Dr Faridah Mohd Zin.

the desired level of body fat.

Increasing muscle mass would increase the body's ability to use up energy. The American College of Sports Medicine recommends regular resistance training exercises to build and maintain muscle. Men and women should participate in muscle-strengthening activities that work the major muscle groups (legs, hips, back, chest, abdomen, shoulders and arms) at least two times each week. Examples of muscle-strengthening activities include lifting weights, using resistance bands, and doing push-ups and some forms of yoga. Even daily activities such as gardening, playing with your kids and carrying the groceries can strengthen muscles.

Although resistance training is an important part of a complete exercise regimen, consuming the appropriate amount and type of protein to maintain and build muscle is just as important. On top of that,

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a healthy balanced diet is crucial to ensure adequate macro and micronutrients are supplied for a healthy body.

Body metabolism happens continuously, allowing ongoing opportunities to maximise its effect. Body fat is a way our body stores unused energy. Hence, optimising the body's metabolism while eating less than our body's daily energy requirement will certainly force our body to burn energy from the stored body fat. Thus, consistency in creating this negative balance in energy will gradually get rid of unwanted body composition, namely the stored fat.

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It is important to learn the right techniques in performing CPR so that you do not cause more harm than good.

Learn a life-saving skill

DO you know how to react if you see someone collapsing in front of you? What would your first course of action be if the person is not showing signs of breathing? Is it a classic case of a heart attack and is it safe to move the person?

These questions are important to consider so you can be prepared should a medical emergency unfold in front of you. Knowing what to do in those crucial moments can be the difference between life and death for someone in medical distress.

According to The Heart Foundation of Malaysia, up to 30% of medically certified deaths in government hospitals are attributed to cardiovascular diseases. From this total, some deaths occur outside hospitals and within the first two hours after the onset of symptoms.

Coupled with the fact that cardiovascular diseases remain the leading cause of death among Malaysians, it should be an issue that everybody is aware about.

Sadly, this is not the case and many Malaysians do not fully understand the dangers of heart disease, its prevalence or

the various symptoms associated with heart disease.

While hospitals and non-governmental organisations are taking steps to create awareness, the public must do its part to be informed not merely to spot possible cases of heart attack or heart failure, but also equip themselves with life-saving skills such as cardiopulmonary resuscitation (CPR) knowledge.

Learn how to respond

CPR is performed in emergency situations when a person does not show signs of life or the heart stops. In the case of a heart attack, the victim's ventricle has lost its ability to beat in an organised fashion and thus fails to pump blood throughout the body.

The brain, which is the most sensitive part of the human body, is affected within seconds of the heart stopping. The victim will lose consciousness due to the lack of oxygen and brain death will occur in less than 10 minutes.

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Heart diseases with unique names

THE world of medicine can prove to be slightly confusing to those who are not very well versed in it. Many diseases got their names through foreign languages such as Greek or Latin. Sometimes, a disease was named after the person who first came upon it. Today, however, it is less common for diseases to get their names from animal species, people groups or the geographical locations where they were first discovered. Mostly, names are now derived from describing its appearance and the symptoms it causes. *Healthy Heart* takes a look at some of the more curious conditions that may afflict and assail the human body's most hardworking organ.



The heart is the most hard-working organ in the body, hence it is vital to take care of it throughout our lives.

Takotsubo cardiomyopathy

Also known as broken heart syndrome or apical ballooning syndrome, takotsubo cardiomyopathy was first confirmed in Japan in 1991. It is a temporary heart condition that is often triggered by stressful situations and extreme emotions. The condition got its name from how the left ventricle of a patient diagnosed with the condition resembled the shape of a Japanese octopus trap (takotsubo). The syndrome happens in women more often than men. People with takotsubo cardiomyopathy may experience a sudden chest pain or shortness of breath, both of which are symptoms similar to that of a heart attack. While the causes of the condition remain unclear, the

prognosis or likely outcome of this condition is generally favourable as the symptoms are treatable, and most individuals recover within a month.

Tetralogy of Fallot

This is a rare condition present at birth. It was first discovered by Frenchman Étienne-Louis Arthur Fallot in 1888. The "tetra" in tetralogy refers to four defects of the heart and its blood vessels that commonly occur together. This complex heart defect affects the normal blood flow through the heart. According to the United States Centers for Disease Control and Prevention, about one in every 2,518 babies are born with tetralogy of Fallot yearly in the US.

However, patients seem to live normal lives after undergoing the required corrective surgery. The exact cause of this heart defect remains unknown, but is thought to be caused by a combination of genes and environmental risk factors such as what the mother consumed during pregnancy.

Pericarditis

Pericarditis refers to the inflammation of a sac-like tissue that covers the heart called the pericardium. While the cause of the inflammation often remains unknown, it is commonly induced by viral infections. Most cases are mild and will recede on their own. However, more severe cases may lead to an abnormal accumulation

of fluid – pericardial effusion – in which increasing pressure affects heart functions negatively.

Aortic regurgitation

Also known as aortic insufficiency, the condition refers to the leaking of blood flow back into the main pumping chamber of the heart known as the left ventricle. It is caused by an aortic valve, one of four main valves of the heart. In this condition, the aortic valve does not close tightly during the diastole stage of the cardiac cycle when the heart muscle relaxes. This creates flow in two directions during the relaxation of the heart to refill with blood and causes the left ventricle to hold more blood. Over time, this results in the enlargement of the

ventricle – which can weaken it.

Ventricular septal defect

A hole in the heart, present at birth. Ventricular septal defects are the most common birth defects, with about one in every 500 babies born with it. The condition is usually considered non-life-threatening as smaller holes typically close as the child grows – usually during infancy or early childhood. However, significant heart lesions can be remedied with transcatheter treatment to avoid life-threatening complications such as irregular heartbeats.

Heartburn

While the word "heartburn" may appear dangerous and threatening, it is actually caused by the stomach's digestive acid rising up the oesophagus tube. It appears in the form of a burning sensation in the chest. The pain is commonly mistaken as coming from the heart, thus its name. It may also be mistaken for angina – a discomfort of the chest. While medical terminology may appear opaque and confounding to those not well versed in them, it is important to always consult with your physician who can clarify more on any concerns and a medical condition's implications. It is recommended to carry out heart check-ups every two to four years. For patients with high-risk factors, physicians may recommend more frequent monitoring.

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References:

- EFSA Journal 2010; 8(12): 1885;
- Diets that are of low in GI and high in dietary fiber are protective – WHO Europe Diabetes

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DHA helps kids grow healthy and smart

GIVING children the right nutrition during their developmental years is an integral step toward mental growth. To this end, foods rich in omega-3 fatty acids have been traditionally supplemented into a child's diet for a variety of health benefits.

There are three main types of omega-3 fatty acids: alpha-linolenic acid (ALA), eicosapentaenoic acid (EPA), and docosahexaenoic acid (DHA), which are not produced by our bodies naturally and must be obtained from diet consumption.

These nutrients can be sourced from eating certain fish, such as tuna, mackerel and sardines, or supplements containing extracted fish oils.

Improved cognitive function

DHA has historically been linked to improved cognitive function, academic performance and mood regulation.

According to *Docosahexaenoic Acid for Reading, Cognition and Behavior in Children Aged 7-9 Years: A Randomized, Controlled Trial (The DOLAB Study)* by PLoS ONE, DHA supplementation was found to improve other functions such as reading and behaviour control in underperforming yet otherwise healthy children.

The study also determined DHA to be safe and efficient for

consumption when provided to children aged seven to nine with minimal to no side effects.

This is further supported by *The Relationship of Docosahexaenoic Acid (DHA) with Learning and Behavior in Healthy Children: A Review* published in *Nutrients*, where high levels of DHA in healthy children were shown to lead to improved performances in activities related to learning and behavior.

Stay protected from neurodevelopmental disruptions

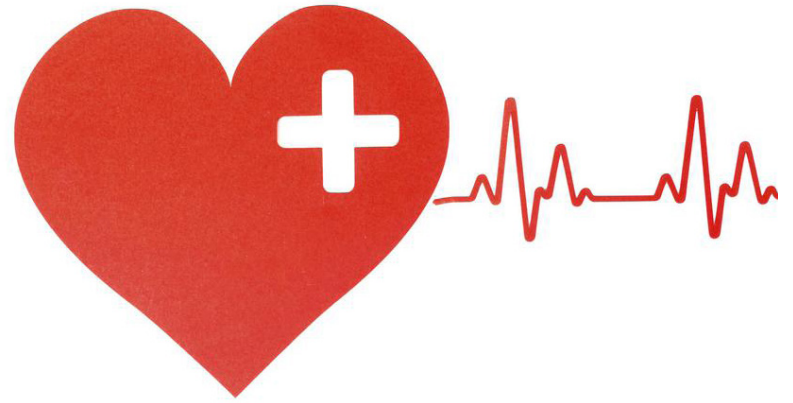
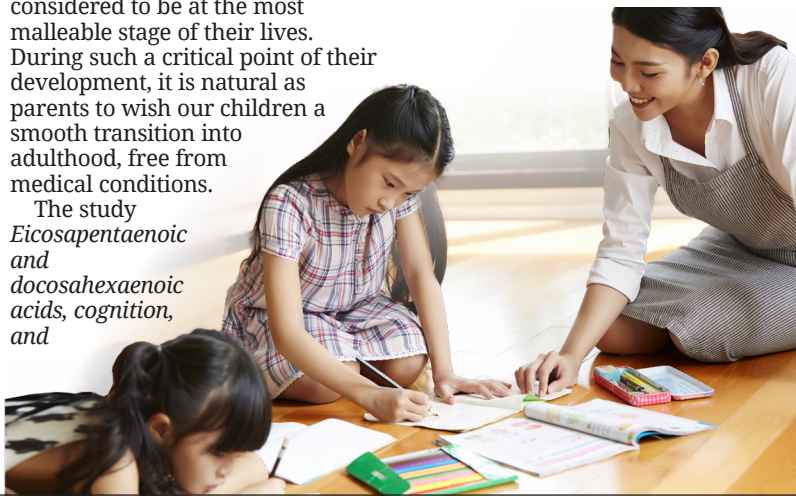
Children at an early age are considered to be at the most malleable stage of their lives. During such a critical point of their development, it is natural as parents to wish our children a smooth transition into adulthood, free from medical conditions.

The study *Eicosapentaenoic and docosahexaenoic acids, cognition, and*

behavior in children with attention-deficit/hyperactivity disorder: A randomized controlled trial published in *Nutrition* observed hyperactivity, compulsive behaviours, difficulty in class, social issues and other attention-deficit/hyperactivity disorder (ADHD) symptoms to determine that increased levels of DHA had reduced overall symptoms of ADHD.

Adding omega-3-rich foods and supplements, particularly those rich with DHA, into children's diets can be a safe and effective way to ensure that they grow up to be capable and healthy adults.

■ For more information, call 03-7490 2138.



Be a helpful bystander

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CPR helps prolong circulatory and lung function by restarting oxygenated blood flow to the heart and brain until the affected person is able to receive medical attention or defibrillation. The sooner you perform CPR on a person who has experienced cardiopulmonary arrest (where there is no sign of breathing or a heartbeat), the greater their chances of being successfully resuscitated.

For this reason, it would be ideal if everyone were to undergo a CPR training programme through initiatives such as the introduction of CPR training in schools. While there are ample resources online that describe the step-by-step process and show videos of how to perform CPR, the

procedure is a taught skill and people need to learn the proper techniques because incorrectly performed CPR can cause broken ribs and bruising.

Among the topics usually highlighted in a CPR course such as those organised by The Heart Foundation of Malaysia are:

- Coronary artery disease
- Risk factors for heart attack
- Lung anatomy and function
- Recognising a heart attack
- Recovery position
- Airway obstruction in conscious and unconscious adults
- CPR and airway obstruction in children and infants

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