

# *GLYCATION*

## The Ageing Accelerator

DR AMIR FARID ISAHAK

*What's*  
**NEW?**

Many factors contribute to ageing. Among the more important factors are oxidative stress, chronic inflammation, chronic toxicity and glycation.

# What is Glycation:

**Glycation is the abnormal attachment of a sugar to a protein or fat, causing harm to the body.** It is different from glycosylation, which is the attachment of a sugar to a protein or fat as part of the normal metabolic process. Glycosylation involves enzymes and ATP (the energy-carrying molecule), whereas glycation does not.

Glycation end-products are believed to contribute to inflammation, chronic diseases (especially diabetes) and ageing. **Certain glycation reactions result in advanced glycation end-products (AGEs)** which are markers for the severity of certain degenerative diseases and for biological ageing.

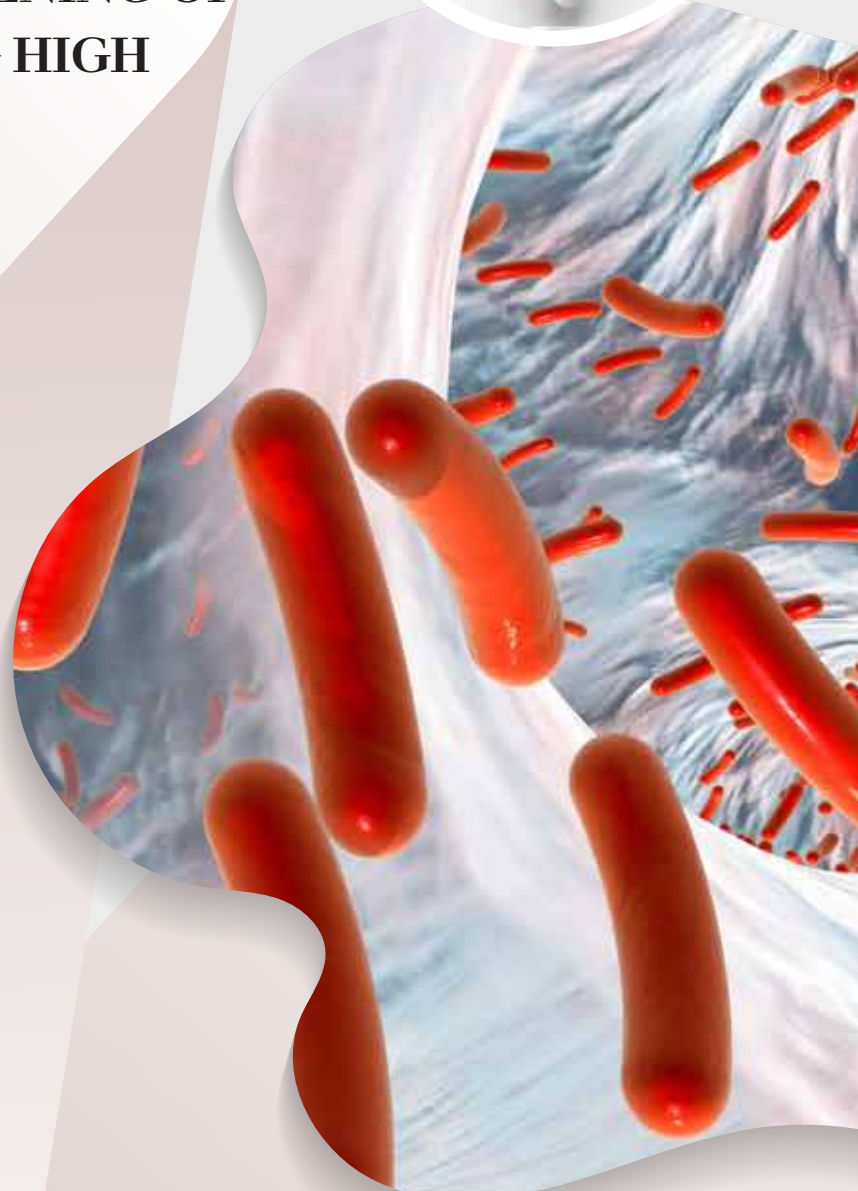
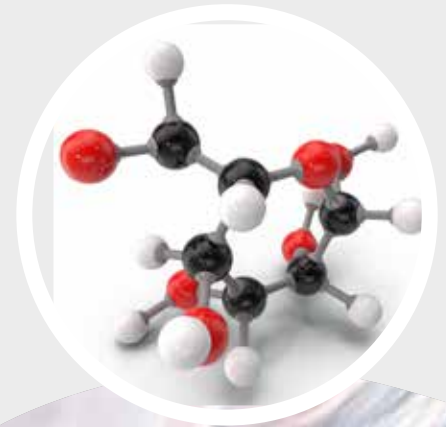


A small proportion of the simple sugars like glucose, fructose and galactose in the blood and tissues become attached to certain proteins and fats. The higher the sugar level, the more will become attached. Fructose is particularly prone to become attached. Fructose is commonly used to sweeten many commercial food products and drinks, which make them bad for health.





**ARTERIAL ENDOTHELIUM, COLLAGEN AND FIBRINOGEN ARE REGULAR TARGETS, AND THESE BECOME DAMAGED AFTER GLYCATION. THIS LEADS TO STIFFENING AND HARDENING OF THE ARTERIES CAUSING HIGH BLOOD PRESSURE.**



Glycated LDL (“bad”)-cholesterol becomes easily oxidized and hardened. **This leads to hardening of the atheromatous plaques, and narrowing of the arteries.**

The arteries can also become weakened because of the damaged collagen in their walls. This may cause aneurysms, and if this happens in the brain, there is risk of strokes.

Glycation in the brain also produces by-products ( $\beta$ -amyloid) which cause Alzheimer’s disease.

Inside the cell, AGEs cause cross-linkages between important cellular components, interfere with their functions, and can even induce cell-death.

And since AGEs also worsen oxidative stress and inflammation, the damage to the cells and organs becomes worse. **Hence glycation is indeed the ageing and disease accelerator.**



# DIABETES CAUSES MOST GLYCATION

**Diabetes is associated with high glucose levels, and is therefore particularly exposed to glycation and AGEs.**

In fact, glycated hemoglobin (HbA1c) level is used to monitor diabetic control. A high HbA1c means poor control, and is directly correlated with a high risk for all the complications of diabetes, involving almost all the organs.



▲ Cataracts



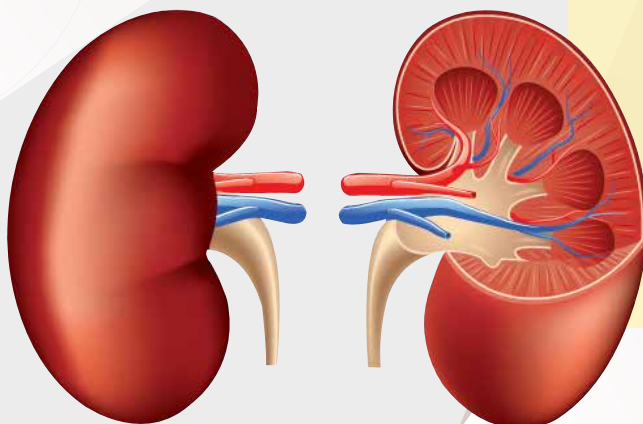
▲ Peripheral arterial



▲ Heart disease

Brain ageing, strokes, cataracts, blindness, heart disease, kidney disease, peripheral arterial & nerve diseases (causing loss of toes and limbs) in diabetics can all be blamed on micro and macro-vascular problems brought about by AGEs.

“ The kidneys have to get rid of the degradation products of AGEs. Some of these are even more harmful than the AGEs and damage the kidneys further. ***This is the main reason why many diabetics end up with kidney failure.*** ”





# HOW TO REDUCE THE HARM FROM GLYCATION

Since glycation causes much harm to the body, we should reduce glycation from occurring; break the cross-linkages caused by AGEs; and counter the damage caused by AGEs.

**The most obvious strategy is to reduce intake of sugars, especially fructose.** A healthy lifestyle, healthy diet (including plenty of fruits and veggies), sufficient exercise and avoiding obesity should prevent metabolic syndrome and diabetes, which is the danger zone for glycation.

Strong antioxidants are clearly vital to our health and can prevent glycation, accumulation of AGEs, and can prevent or reduce the harmful effects of AGEs that are already formed. Besides, they also can help to fight the signs of ageing that make us look older than our real age!



DR AMIR FARID ISAHAK





***Pine bark extract is one of the strongest antioxidants that can do these.***

First of all, **pine bark is rich in flavonoid compounds that not only give antioxidant effects, but also anti-inflammatory effects.** Besides, it has been shown that dietary supplementation with pine bark extract formulation can improve cognitive performance in individuals who suffer from memory loss problems. Cognitive function will decline with age. Hence, pine bark extract can help to improve the brain performance during ageing.

Other than that, ***SOD (superoxide dismutase enzyme) also play a significant role in cell ageing prevention as it acts as the first line of antioxidant defense.***

Other than that, SOD (superoxide dismutase enzyme) also play a significant role in cell aging prevention as it acts as the first line of antioxidant defense. However, SOD levels significantly decrease with ageing and make cells more vulnerable to oxidative and inflammatory reactions. The accumulation of oxidative damage then will elevate the ageing process. Thus restoration of the SOD levels signifies an efficient approach to prevent cell damage and slow down ageing.





Next, **an extract of the Thai black turmeric (also called Thai ginseng) is also very effective in preventing glycation (and the formation of AGEs).**

Besides, it has anti-metabolic syndrome and anti-inflammatory effects. On top of that, black turmeric extract has polymethoxy flavonoids, (KPMF) as its active ingredients which can help to activate the longevity gene, SIRT1 hence delay ageing. More information on SIRT1 can be found in the next article!



Other than the antioxidants mentioned above, grape seed extract, resveratrol and curcumin also can counter the harmful effects of existing AGEs.



Vitamins also play significant roles in reversing the glycation process. For instance, vitamin C has been recognized as one of the best inhibitors of the glycation process. Other than that, vitamin B6 also helps in preventing diabetic complications by blocking the formation of AGEs which cause loss of function and structure accompanying aging.

These powerful nutrients have many other actions that improve our health, slow down ageing and may prevent or reverse some health problems and diseases.

Look out for more exciting info about these nutrients that will greatly enhance your health!



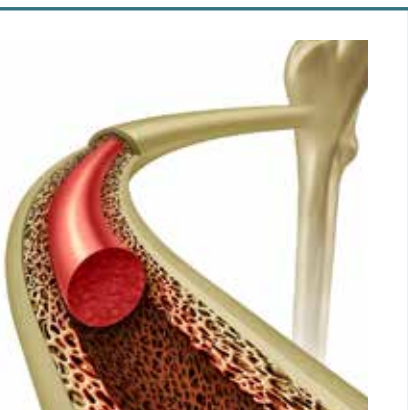
What comes first in your mind when you hear of the term “ageing”? Wrinkles? Grey hair? Muscle weakness? Or even death? According to the World Health Organization (WHO), ageing is a course of biological reality which starts at conception and ends with death. It has its own dynamics, much beyond human control. In simple words, ageing is an inevitable natural process in a human’s life cycle. Even though ageing cannot be stopped, there are ways to slow it down and reduce its impact. To overcome the fear of ageing, we should firstly understand the factors of ageing. There are two types of factors that cause ageing: intrinsic and extrinsic factors.



## AGEING: *Global Worst Fear*

Intrinsic ageing, also known as chronological ageing, is affected by the body’s hormonal changes, degenerative effects of free radicals and the body’s inability to perfectly repair the damage. **Excessive free radicals in the body are harmful to the cells, eventually causing deterioration of body tissues and organs.** Hence, antioxidants play an essential role in anti-ageing, due to their excellent ability in protecting and repairing

damaged cells, tissues and organs. Since intrinsic ageing starts from internal parts of the body, its effects are more towards the internal tissues and organs, such as muscle, bone, heart, blood vessels, kidney and brain. The structures and functions of the organs will be gradually destroyed, resulting in serious chronic diseases such as cardiovascular disease, kidneys failure, Parkinson’s disease, osteoporosis etc.





Furthermore, intrinsic ageing is a process that is highly dependent on the individual's genes and metabolism of the body. One of the important genes that can affect the rate of ageing is silent information regulator T1 (SIRT1), the "longevity gene". SIRT1 plays a role across multiple cellular pathways, such as regulation of gene expression, DNA repair, maintenance of telomere length and regulation of metabolism. **Studies show that SIRT1 may increase longevity and reduce the risk of age-related diseases.** Therefore, consuming supplements that can activate the SIRT1 gene is also a good way to achieve healthy ageing. Polymethoxy flavonoid (KPMF) in black turmeric and resveratrol in giant knotweed are compounds that can help to activate SIRT1 gene and help to slow down ageing.

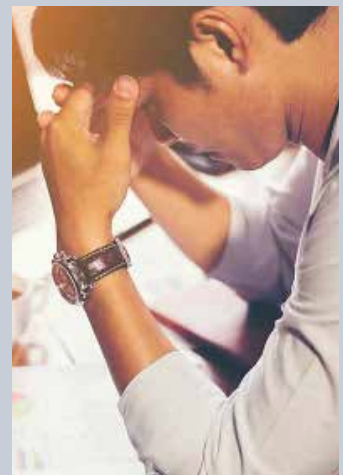
As mentioned in the article above, glycation is a powerful accelerator of ageing. Since glycation acts on protein, and our body is made up by a large percentage of protein, this means that none of the tissues and organs can be safe from the harm of glycation. Glycation is considered as a form of intrinsic ageing because it is a natural process of metabolism, however, it also can be altered by external factors. From this, it shows that there is correlation between intrinsic and extrinsic ageing.

“

*Extrinsic ageing is caused by the individual's lifestyle and environment. There are a number of external factors that cause ageing, including over-exposure to sunlight, poor diet, excessive alcohol consumption, smoking and chronic stress.*

”

The effects of extrinsic ageing are more visible compared to intrinsic ageing. The signs of ageing would show on the skin such as loss of elasticity, appearance of wrinkles and pigmentation of skin. Furthermore, extrinsic ageing could speed up the rate and magnify the effects of intrinsic ageing, and act together with it to cause premature ageing. In fact, extrinsic ageing can be avoided, however, there are still a lot of people who are lacking of awareness and knowledge on how to achieve healthy ageing. Let's find out more information about how to fight ageing in the following article!



# TIPS TO FIGHT AGEING

1

## EXERCISE REGULARLY

Exercise can benefit us in numerous ways.

Exercise benefits us physically in terms of increasing muscle mass, building stronger bones, aiding in weight loss and creating a good physique.

On top of all that, exercise can help to slow down ageing. Exercise can raise one's heart rate, strengthen our cardiovascular system and keep our cells young and fresh.

High intensity interval training (HIIT) is a good way to get some sweat out when short of time. This kind of exercise is short but intense, it ranges from 10 to 30 minutes. HIIT is a short intense exercise and follow by a short period of rest or low intensity recovery, for example, 40 seconds of burpees and 20 seconds of rest, repeat this for 10 times.



2

## GET ENOUGH REST AND SLEEP

Many of the people nowadays suffer from insomnia and lack of sleep.

Little that we know that, sleeping is essential as our body requires rest. When we are sleeping, our body restores energy, regenerates cells, increases blood supply to muscles, promote growth and repairs tissues of tissues and bones and strengthens immunity.

Getting enough sleep can reduce the risk of age related diseases such as Alzheimer's disease, heart disease, diabetes, stroke and so on.





# 3

## STOP SMOKING

### Smoking kills.

Many of us know the fact that smoking is harmful to us, hence smokers should slowly cut down and finally quit smoking. Whereas, for those who are not yet smokers, avoid smoking as it is highly addictive due to the nicotine in cigarettes.

Smoking affect many aspects in our body, not only that it increases the risk of lung cancer, it also affects our heart, immunity, fertility, skin condition, ageing and so on.

There are associations that are helping individuals who struggle to quit smoking by offering free programs to smokers. A free program called MQuit was introduced in 2012 and is recommended by The Malaysian Health Ministry for those who wish to quit smoking. A total of 12400 smokers quit the habit under the MQuit program and even those who did not quit, they reduced the number of cigarettes taken daily.

To quit smoking is hard but it definitely benefits that individual and on top of that, it reduces the number of second hand smokers.



# 4

## PSYCHOLOGICALLY HEALTHY

Other than extrinsic factors which include a healthy diet and staying active physically, intrinsic factors such as mental health are also crucial.

Hormones such as Dopamine, Serotonin, Oxytocin and Endorphins are the ones that keep us happy. Staying happy was found to have association with better life quality, longer life and lower risk of illness.

Hence, try not to stress ourselves and focus on the happy moments instead of the bad memories.



# 5

## HEALTHY DIET

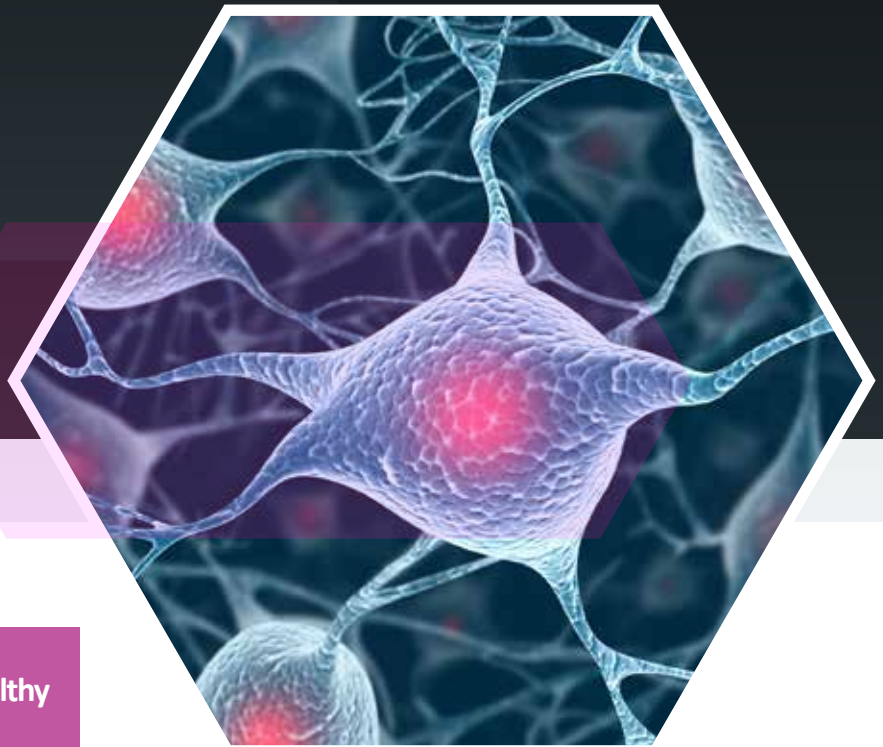
**'You are what you eat.'**  
This quote implies that if you have a healthy diet you will get a healthy life.

A simple guide would be the Malaysian Food Pyramid, whereby the pyramid is composed of 4 levels of food groups, level 1 which are the rice, noodles, bread, cereal, cereal products and tubers, level 2 are fruits and vegetables, level 3 fish, poultry, meat, legumes, milk and dairy products, and lastly level 4 would be the fats, oils, sugar and salt.

It is recommended to take 4-8 servings of level 1 food group which is mostly carbohydrate dense food, which provide 50-55% of the total daily energy. Some examples of a serving of level 1 food would be 1 cup of cooked rice, 2 slices of bread and 2 whole potatoes.

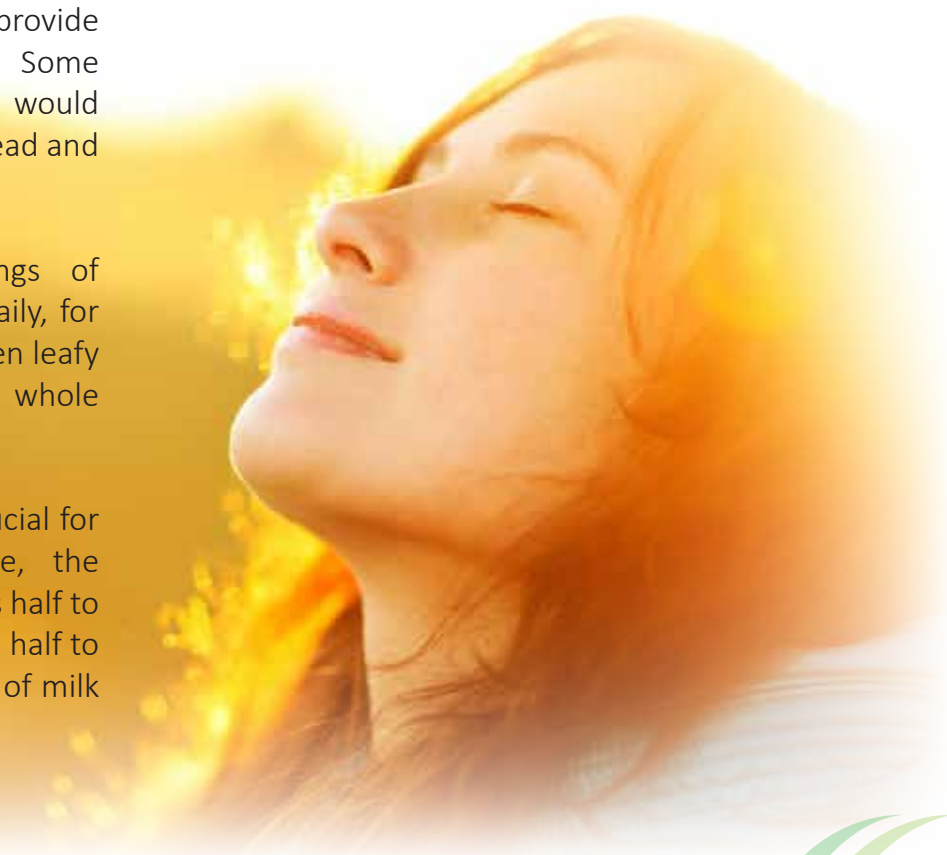
Secondly, take at least 3 servings of vegetables and 2 servings of fruits daily, for example: half cup of cooked dark green leafy vegetable, 1 whole apple and 1 whole medium banana.

Thirdly, protein and Vitamin B are crucial for the body's building blocks. Hence, the Malaysian Food Pyramid recommends half to 2 servings of poultry, 1 serving of fish, half to 1 serving of legume and 1-2 servings of milk and dairy products.



Lastly, reduce the intake of level 4 food group. Excess intake of fats, oils, sugar and salt can largely contribute to many chronic diseases such as cardiovascular diseases, diabetes, hypertension and cancers.

Other than the Malaysian Food Pyramid, there are many other diet plans such as the Mediterranean diet, vegetarian diet and gluten-free diet that we can practice.







# FAQ ON ANTI GLYCATION/ ANTI-AGING



## WHAT FOODS ARE HIGH IN AGEs?

01



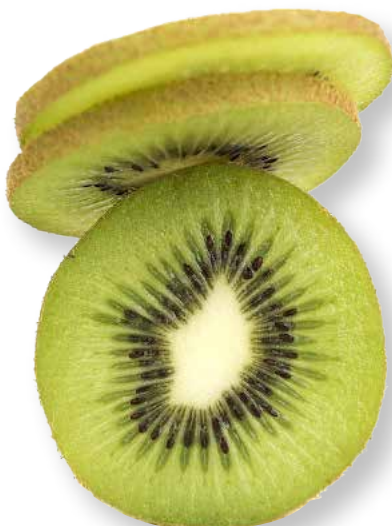
AGEs are particularly high in animal-derived foods that are high in fat and protein, such as meats (especially red meats), certain cheeses, fried eggs, butter and mayonnaise.

Sugary foods, highly processed and pre-packaged products also high in AGEs. Cooking methods that use high temperatures to brown or char foods, such as grilling, roasting, and broiling, have the largest impact on the amount of AGEs consumed.

**ANSWERS**

02

## HOW TO REDUCE INTAKE OF FOODS HIGH IN AGEs?



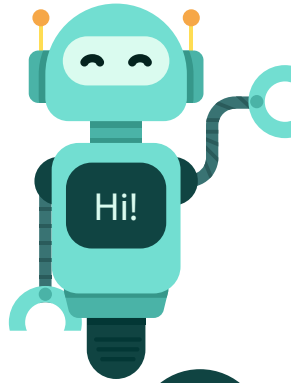
One way to reduce intake of foods high in AGEs is to modify cooking methods. Foods cooked with moist heat, shorter cooking times, lower temperatures, and acidic ingredients such as vinegar or lemon juice produce the least amount of AGEs. For instance, boiling, poaching and steaming cooking methods can minimize the formation of AGEs. In fact, eating a diet full of antioxidant-rich food which includes colourful fruits and vegetables such as kiwifruit, mangosteen, grapes, blueberries are another way to reduce AGEs consumption.

**ANSWERS**





**ANSWERS**



**Yes.** Our body produces antioxidants such as glutathione, coenzyme Q10, alpha-lipoic acid and etc. However, the production decreases due to ageing. Besides, unhealthy diet, cigarette smoke and stress will increase the free radical in our body. When free radicals overwhelm the body's antioxidant level, it causes oxidative stress. Hence, supplementation of antioxidants is needed to fight the free radicals and reduce the oxidative stress.

**Q**

**DOES YOUR BODY PRODUCE ANTIOXIDANTS?**

**03**



**04**

**Q**

**ANTIOXIDANTS ARE ALL VITAMINS?**

There are thousands of antioxidants but relatively a few of them are vitamins such as vitamins C and E. Antioxidants also include a wide range of substances such as Oligomeric Proanthocyanidins (OPC), resveratrol, Superoxide dismutase (SOD), flavonoids, polyphenols and etc.

**ANSWERS**



As stated in the article above, ageing is caused by internal and external factors, and the effects of ageing also can be at the inner and outer parts of our body. Using anti-ageing skincare products can help to reduce the effects of ageing at the outer part, which is our skin. The effects include reduced wrinkles and dark spots, increased skin elasticity and moisture etc. For anti-ageing supplements, the effect is from inside out. Anti-ageing supplements provide nutrients needed to repair cells, maintain organ function and slow down ageing. Therefore, it would take a longer time to see the effects of anti-ageing supplements on our skin compared to skincare products. However, the effect of supplements is more long-lasting and complete as they act on every single cell in our body to fight against ageing.

**ANSWERS**

**Q**

**WHAT IS THE DIFFERENCE IN TERMS OF EFFECTS BETWEEN USING ANTI-AGEING SKINCARE PRODUCTS AND CONSUMING ANTI-AGEING SUPPLEMENTS?**

**05**

**ANSWERS**

**Q 06**

**WHAT EFFECTS CAN I OBSERVE AFTER I CONSUME ANTI-AGEING SUPPLEMENTS?**

The main function of anti-ageing supplement is to restore body function and delay ageing of the body. Most of the anti-ageing supplements are rich in antioxidants like flavonoids, polyphenols, vitamins and plant extracts and these powerful antioxidants can help to scavenge harmful free radicals and enhance the performance of body organs and systems. Normally, consumers will feel more energetic and less easily to get sick less easily after a few weeks of consumption as the body functions have been improved. From the aspect of appearance, consumers will look younger because the active compounds in anti-ageing supplements can help to repair and rejuvenate damaged cells and tissues in the skin.







# iBling series, D-VINE

## Launching Event

5<sup>th</sup> March 2020

“  
**D-VINE,**  
*the all-rounder skin  
superhero for a  
glowing you!*  
”

Wellous launched a new product, D-VINE recently on 5th March. A chewable tablet collagen supplement, D-VINE enhances the skin and lets one shine with confidence.



D-VINE is enriched with ingredients from modern countries, namely Collagen-Tripep20 from South Korea, VIQUA® Pomegranate Extract from Spain, and HYTOLIVE® Olive Polyphenol from America.

With the wholesome ingredients, Collagen-Tripep20 reduces fine lines and firms up the skin by increasing skin moisture. VIQUA® Pomegranate Extract suppresses acne production and improves skin tone. HYTOLIVE® provides sun protection by blocking the sun radiation reaction in the body.







During the launching event, Wellous held a skin test for participants to learn more about their skin condition. It helped participants to identify their skin types and also proper internal and external skin care methods. Following that, a health talk was given. At the end of the talk, participants gained valuable knowledge from the Q&A session.



In addition, Wellous prepared a few photo booths and facts corner to display additional information for participants to learn more about the product.

The launching of D-VINE ended with a group photo of all participants and the speaker.

D-VINE, sparkling one's confidence with enthralling beauty!

## News & Events

### Wellous launched S-GLOW, another product under iBling series

10<sup>th</sup> January 2020

Wellous launched a new product, S-GLOW. As a part of the iBling series, S-GLOW lets you shine from head to toe by giving you silkier hair, smoother skin, and stronger nails.

Made of Lyside® Forte B and Oryza Polyamine, S-GLOW promotes collagen production and prevents potential damage from free radicals in our body.

S-GLOW, refining beauty for delicate women at one's ease.



# Wellous won another Natural Health Award 2019

21<sup>st</sup> February 2020

Wellous captured another 3 Readers' Choice Awards recently, with M-COLL being throned as the Best Collagen 'BIO-GRAPE Seed Extract Tablet', the Best Antioxidant Supplement; and 'BIO-LINGZHI' the Best LingZhi Supplement.

Gaining another Readers' Choice Awards once again proved that Wellous' products are recognised by Natural Health & A Healthy Lifestyle and are trusted and appreciated by the consumers.

This has inspired Wellous to serve the community with health and beauty supplements that place the wellbeing of the consumers above all.

