



# SLMNA NEWSLETTER

SRI LANKA MEDICAL NUTRITION ASSOCIATION OFFICIAL NEWSLETTER

*Linking nutrition research to practice...*

## THIS MONTH'S FEATURED ARTICLES

- Capture of the Month
- Article of the Month  
Role of diet in Migraine
- Food of the Month  
Blue tea  
Star fruit
- Past Events
- Upcoming Events



## Message from editors...

### World Diabetes Day

Dear readers,

Every year, on 14th of November we celebrate “World Diabetes Day”. The day marks the birthday of Nobel Prize winner, Sir Frederick Banting who discovered insulin in 1922. In 1991, the International Diabetes Federation and World Health Organization created the “World Diabetes Day” due to growing concerns about the increasing health threat posed by diabetes mellitus. It also became an official United Nations’ Day in 2006.

World Diabetes Day, which is the largest diabetes mellitus awareness campaign including more than 160 countries, draws attention to important issues related to diabetes.

In 2021, 537 million adults (1 in 10) worldwide were living with diabetes mellitus was also found that 1 in 2 adults with diabetes mellitus remain undiagnosed. There’s a staggering increase of health expenditure of 316% for diabetes mellitus during the last 15 years.

This year’s theme for the World Diabetes Day is “Access to Diabetes Care”. Millions of people with diabetes mellitus do not have access to diabetic care in the world, as the disease requires ongoing care and support to manage their condition and avoid complications. Nutrition plays an important role in diabetes mellitus care and prevention.

Until next time,

Gayathri & Nishanthika





# CAPTURE OF THE MONTH



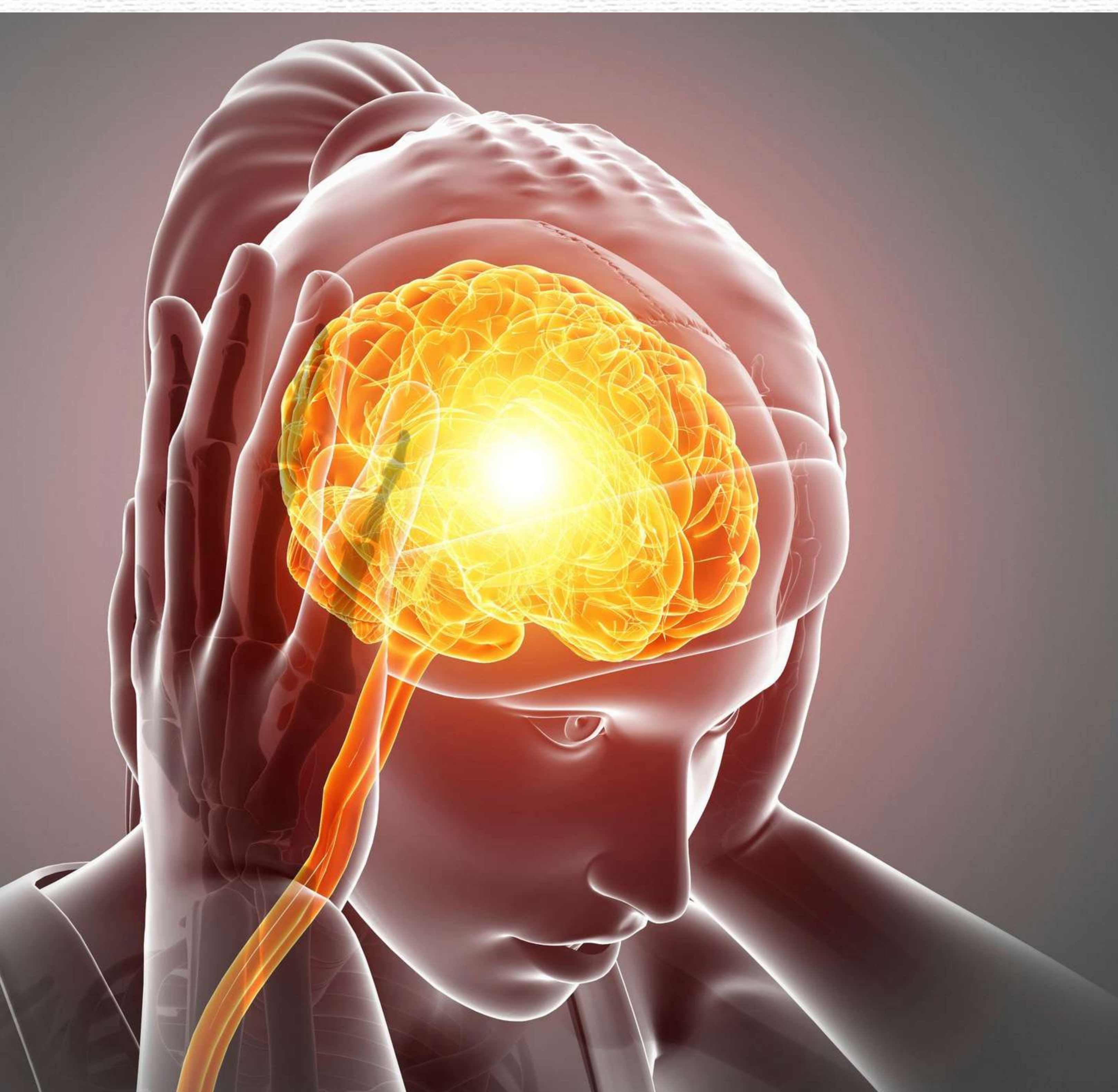
**"Stability found at the center of acceptance"**



# Role of diet in Migraine

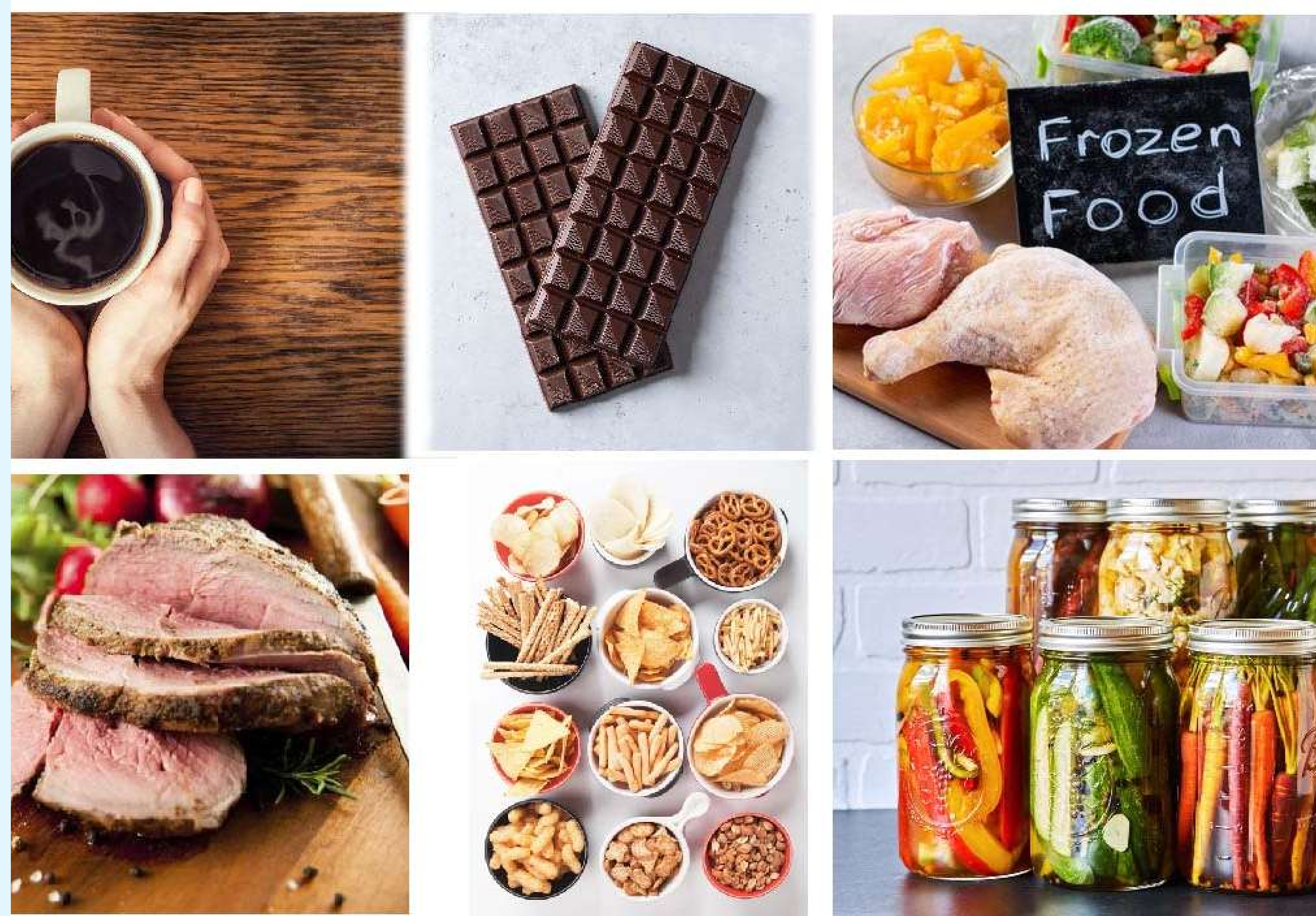
**Dr KDM Lionel ( MBBS)**

Millions of individuals throughout the world suffer from migraine, a primary headache condition. Triggers, such as specific food regimens and components, are frequently linked to it. Numerous research has examined the connection between food and migraine, and the data suggests that if dietary triggers or patterns are changed, dietary treatments may help reduce the frequency of migraine attacks. Nonetheless, there is still much to learn about the fundamental mechanisms of migraine development and how dietary variables may affect them. The purpose of this literature review is to encourage more research and awareness by presenting the current state of knowledge and future directions regarding nutrition and migraine. However, it's important to remember that food is not the only thing that can cause migraines; other well-known triggers include stress, visual stimuli, menstruation, sleep difficulties, hunger, and weather changes.



## Dietary Triggers

In an attempt to design lifestyle adjustments for migraine, dietary triggers were discovered. It has been discovered that a number of food elements are frequently linked to diet-related triggers and an increased frequency of migraine attacks. These consist of chocolate, caffeine, and alcoholic beverages. Aged cheeses, foods containing mono sodium glutamate (MSG), aspartame, sucralose, almonds, citrus fruits, ice cream, dairy products, onions, and tomatoes are some other common dietary triggers. Baked foods, wine, beer, aged cheese, soy products, pickled foods, bacon, hot dogs, salami, and processed meat products are among the few foods that contain MSG. Foods high in histamine and low in tyramine, such as meat, dairy products, baked goods, and smoked salmon, are other recognized triggers. The impact of a food trigger is influenced by genetics, exposure duration and intensity, and both. Aspartame and high doses of MSG are required to cause headaches, and caffeine withdrawal causes headaches. Nevertheless, each person may have different triggers, therefore it's critical to determine each trigger individually by maintaining a food journal and going through a process of elimination.





Another study, carried out in 2021 with 89 migraine patients older than 65, discovered that red meat, onion, pickle, orange, oat, grapes, wheat, cheese, coffee, eggs, milk, chocolate, alcohol, tea, and tea are migraine triggers. Reducing exposure to these triggers significantly reduced the frequency of attacks and the need for analgesics and triptans. According to one study, the western food pattern—which emphasizes whole grains, minimal amounts of vegetables, full-fat milk, refined carbs, and high levels of saturated fat—exacerbates the frequency and duration of migraine attacks. In addition, one study found that an imbalance in the pro-inflammatory omega 6 fatty acids, which are more prevalent in the western diet, may also act as a trigger.



## Beneficial diets for migraine



Several types of diets have been developed alongside elimination diets, including high folate diet, low-fat diet, high omega-3, and low omega-6 fatty acid diets, ketogenic diet, Atkins diet, and low carbohydrate diets. Another study showed that vegan diet also helpful to reduce migraine severity as vegan diet contains more antioxidants and anti-inflammatory compounds and not contains meat or dairy products. Apart from that one study stated that Mediterranean diet and DASH diet also beneficial to reduce severity and frequency of migraine attacks. A randomized controlled trial which was done in 2021 showed that a diet with high omega-3 fatty acids and low omega-6 fatty acids is more effective in reducing both frequency and severity of migraine attacks.







### Dietary elimination

This diet calls for determining which foods cause inflammation and then avoiding or removing such foods from the diet. Additionally, this needs to be unique. It's not always the case that only being around the trigger meal can result in issues; exposure duration and quantity are important factors to consider. It can be difficult to pinpoint the precise food that triggers a migraine attack because other variables, such as stress and the weather, can also cause migraines. It can be challenging to identify a single element that specifically causes a migraine when eating complex cuisine with several constituents. An elimination diet's drawback is that it may result in undernutrition since the patient will not be able to eat items that are vital for their body.



### Low fat diet

Eating fat increases the synthesis of prostaglandin, which through its vasoactive and pain-sensitizing pathways is known to play a role in the pathophysiology of migraines. Hence, a low-fat diet lessens both the frequency and intensity of migraine episodes.

### The Atkins and Ketogenic diets

These diets focus on consuming relatively large amounts of protein and fat with relatively low carbohydrate intake.

A ketogenic diet decreases the rate at which cortical spreading depression progresses, increases glutamine's conversion to GABA, and lowers mitochondrial free radicals, oxidative stress, and neuroinflammation. Thus, these pathways aid in the amelioration of migraine. Numerous studies have demonstrated the benefits of a ketogenic diet in migraine prophylaxis. In addition to lowering migraine frequency and intensity, the ketogenic diet occasionally makes migraines completely disappear.

Compared to the ketogenic diet, the Atkins diet has lower carbohydrate restriction and higher protein and lower fat intake.



### Low glycemic diet / low carbohydrate diet

Some studies have shown that low glycemic diet is also beneficial in migraine prophylaxis as it reduces inflammation.





## Mediterranean Diet

The foundation of the Mediterranean diet is a daily consumption of fruits, vegetables, whole grains, olive oil, legumes, and fish, poultry, and eggs in moderation, along with a decrease in meat and processed food intake. It therefore has higher levels of fiber, unsaturated fatty acids, and antioxidants. Elevated levels of antioxidants can mitigate oxidative stress, whereas elevated levels of unsaturated fatty acids can lessen the stimulation of pain and neuroinflammation. Thus, this diet aids in the prevention of migraine episodes.



## Dietary Approach to Stop Hypertension, or DASH Diet

Vegetables, fruits, whole grains, dairy items with low fat, lean meat, nuts, oily seeds, and legumes are all part of this diet plan. Both plant-based and lean meat-based proteins are present. Eat fewer processed foods. Thus, the low sodium level of the DASH diet has the effect of lessening the severity of migraine attacks.

In conclusion, the following diets are supported by research and are helpful in preventing migraines: low-fat, ketogenic, Atkins, high- and low-oleic acid, low-glycemic, vegan, Mediterranean, DASH, and high-oleic in fatty acids.



## Nutraceuticals' role in migraine prevention

Pharmaceutical products known as nutraceuticals contain food-based active ingredients that have positive physiological and health effects. They comprise herbal goods, vitamins, and supplements. Patients who are unhappy with traditional medical therapies are the ones who drive their use.

The three main evidence-based nutraceuticals that are helpful in preventing migraines are magnesium, riboflavin (vitamin B2), and coenzyme Q10. Herbal remedies such as feverfew and butterbur (*Petasites hybridus*) are helpful in the prevention of migraine attacks.



## Magnesium (Mg)

Migraine attacks have been linked to deficiencies in Magnesium (Mg). A 2016 meta-analysis study found that oral magnesium lowers migraine frequency and intensity whereas intravenous magnesium decreases acute migraine attacks within 15 to 45 minutes. Therefore, it suggests that oral magnesium be taken as a migraine preventive measure and intravenous magnesium as an adjuvant treatment for acute migraine attacks. Another study, which involved 30 patients and was published in 2008 as a double blind randomized controlled trial, demonstrated that taking 600 mg of magnesium citrate orally daily is an effective way to prevent migraines without aura.



## Riboflavin



Vitamin B2 is riboflavin. It is a precursor to flavin adenine dinucleotide (FAD) and flavin mononucleotide (FMN) and is involved in the energy metabolism of mitochondria. Giving 400 mg of riboflavin daily compared to a placebo in randomized controlled research including 55 migraine sufferers demonstrated a substantial reduction in headache days and frequency. It demonstrated its high effectiveness, affordability, and good tolerance. Riboflavin has been demonstrated to be an effective agent to reduce migraine frequency, severity, and impairment in another randomized controlled experiment that was carried out in North Sumatera and involved 98 teenagers.

## Coenzyme Q10

Like riboflavin, coenzyme Q10 plays a role in energy metabolism and is helpful in the electron transport chain. 42 migraine patients participated in a randomized controlled experiment that was published in 2005. The results showed that coenzyme Q10 was well tolerated and more effective than a placebo at reducing the frequency and intensity of migraine attacks. They had been taking 300 mg of coenzyme Q10 daily.



### Butterbur (*Petasites hybridus*)

A few studies have indicated that the herbal extract from the butterbur (*Petasites hybridus*) root is effective in migraine prophylaxis. In Germany, a tablet form of this root extract is produced and sold under the name Petadolex. A considerable effect in avoiding migraine attacks was demonstrated by a randomized controlled study including 245 migraine patients and *Petasites* extract. It also demonstrated that a twice-daily dosage of 75 mg of *Petasites* extract is more beneficial than 50 mg. The effectiveness of *Petasites* extract was investigated in 2004 through a placebo-controlled trial. *Petasites* extract was administered to 33 patients, while a placebo was given to 27 patients. When compared to the placebo group, it was shown that the group treated with *Petasites* extract experienced less migraine attacks on a regular basis



### Feverfew or *Tanacetum parthenium*,



Parthenolide, the active component of feverfew, is another therapeutic herb with a variety of effects on the central nervous system. However, because the literature is heterogeneous, definitive conclusions cannot be drawn. In a multicenter, double-blind, placebo-controlled research, the effectiveness and safety of feverfew extract were assessed. The results indicated that feverfew significantly reduced the frequency of migraines in 170 patients and had good tolerability when compared to placebo. So as a summary following are the evidence-based nutraceuticals which are efficient in prophylaxis of migraine,

- Magnesium
- Riboflavin
- Coenzyme Q10
- Butterbur extract
- Feverfew extract



## Summary

When it comes to managing migraines, diet is crucial. Although dietary triggers can differ from person to person, processed meats, aged cheeses, chocolate, and caffeine are frequently mentioned. The frequency and intensity of migraine attacks can be decreased with dietary interventions such as high-omega-3 diets, the DASH diet, the Mediterranean diet, the ketogenic diet, the low-carb diet, and nutraceuticals including riboflavin, coenzyme Q10, magnesium, and herbal items like butterbur. In addition to dietary changes, lifestyle choices like consistent exercise, stress management, and enough sleep can affect how quickly migraine attacks occur. To guarantee proper nutrition and avoid adverse consequences, these therapies should only be tried with medical and nutritional support. To offer evidence-based dietary recommendations tailored to migraineurs, more study is required.



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## Health benefits of blue tea

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Butterfly pea flower tea also known as “blue tea”, is a unique, colorful, and caffeine-free tea that has gained popularity worldwide due to its potential health benefits and adaptability in food and beverage items. Blue butterfly pea flower ( *Clitoria ternatea* ), or nil katarolu or sangu poo, is an edible flower with ornamental and medicinal values and tea is made by using blue butterfly pea flower petals



*Clitoria ternatea* plant is from the fabacean family. This has 58 species, which are found in nations in several parts of the world, including Sri Lanka, Malaysia, Thailand, Philippines, Indonesia, South Africa, and Australia. The edible portions of this plant are its flowers, seeds, roots, and leaves. They are utilized in food production, cooking, folk medicine, and even in religious rituals. Although white and light yellow blooms are occasionally found, in Asian countries blue/dark blue/purple flowers are more common.

*Clitoria ternatea* (CT) is known by a variety of names, including blue pea, butterfly pea, bluebell, cordofan pea, chandrakanta and Shankapushpi and Asian pigeon wing or nil katarolu or sangu poo, .



Due to the presence of anthocyanins, it has a blue-purple hue, making it well suited to use as a natural food coloring agent. The blue butterfly pea has high concentrations of anthocyanins that are present in blue pea petals. The polyacylated anthocyanins which are found in blue pea flowers are known as Ternatins. These anthocyanins from blue peas have good thermal and storage stability. Blue pea blossom anthocyanins at pH 3.6 and 5.4 are stable at 60 °C for 6 hours. This stability makes anthocyanins from blue pea flowers suitable as a natural food colouring agent in functional foods and blue pea flower anthocyanins have also been used in intelligent packaging.



Further study into the bioavailability and other functional aspects of blue pea flower anthocyanins should be conducted as there are few blue food colorants available and blue pea flower anthocyanins will be an excellent natural blue food coloring agent.



Blue tea has many health benefits including anti-inflammatory, antioxidant activity, anti-adipogenesis, cytotoxic/anti-proliferative/anti-cancer, cardiovascular protection, anti-hyperglycaemic, anti-microbial, anti-helminthic / larvicidal and hepatoprotective effects.



In Cuba, a decoction of roots or roots and flowers is regarded as an emmenagogue

Its usage in CNS illnesses in the Ayurvedic medicine is justified by its reasonably well-documented neuropharmacological effects, which include increasing acetylcholine content, nootropic, antistress, anxiolytic, antidepressant, anticonvulsant, tranquilizing and sedative activities.

### Health Benefits

Flavonoids are a group of natural substances with variable phenolic structures. There are several subgroups into which flavonoids can be divided. Flavonols and anthocyanins are among them. Flavonoids with a ketone group are called flavonols. The fourteen kaempferol, quercetin, and myricetin glycosides have been discovered as flavonols in petals. Flavonoids have known properties which include free radical scavenging, inhibition of hydrolytic and oxidative enzymes and anti-inflammatory action(Alshaya and Awad, 2022).





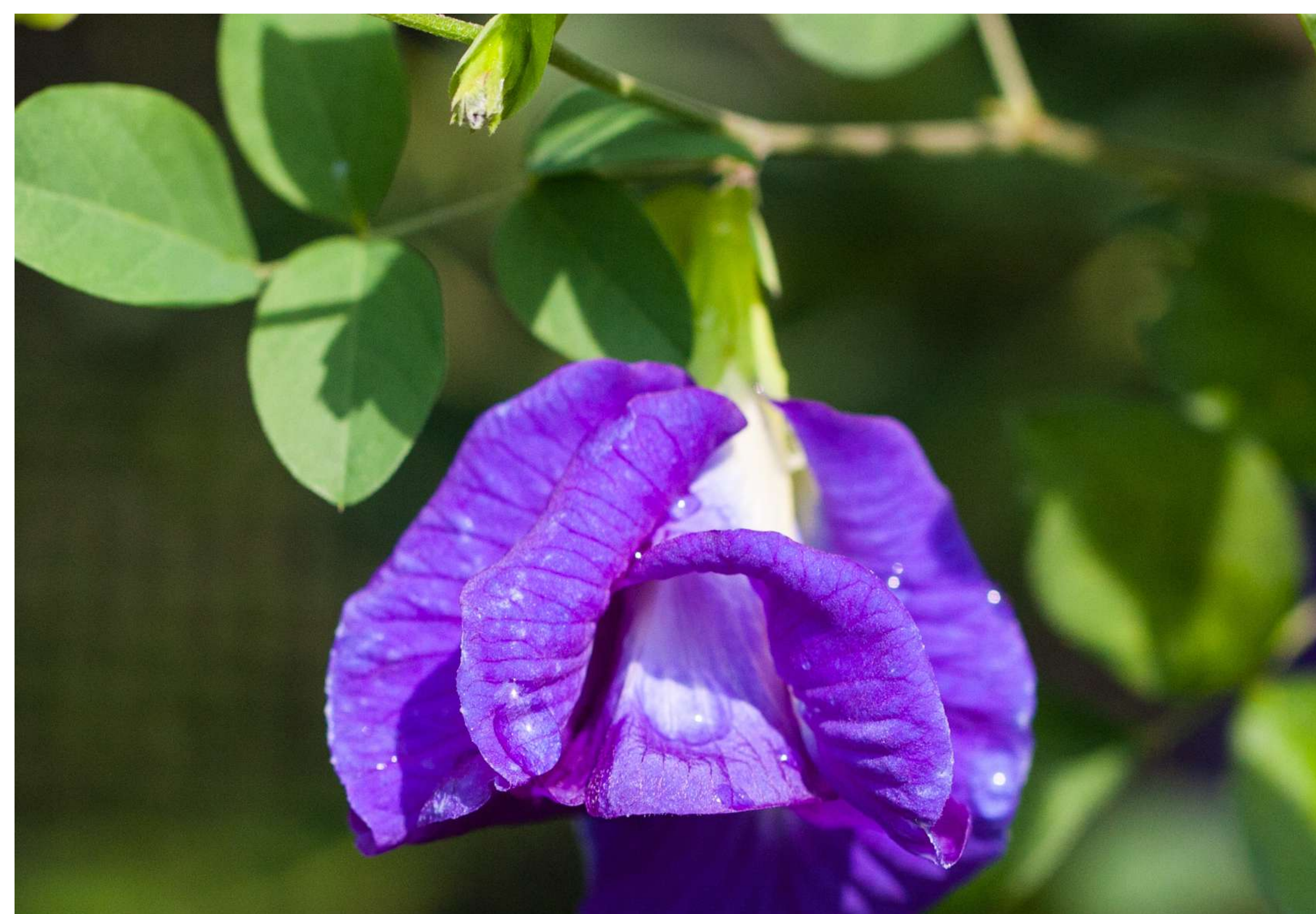
The abundance of polyphenolic and flavonoid components in butterfly pea was used to assess its antioxidant activity (Alshaya and Awad, 2022). The biggest class of phytochemicals, phenols are responsible for the majority of the antioxidant activity in plants and plant extracts. The majority of naturally occurring phenolic chemicals, known as flavonoids, are also found as glycosides and in their free form. Consumption of flavonols has been linked to a number of health advantages, including antioxidant capacity and a decreased risk of vascular disease.

The results of a study by Plasma, Status and Participants, 2021 revealed that taking *Clitoria ternatea* (CTE) extract reduced postprandial serum triglycerides and serum free fatty acids and enhanced plasma antioxidant status and glutathione peroxidase activity responses to a high-fat meal challenge in overweight and obese participants.



### Anti-cancer properties

Several anticancer compounds have been identified in butterfly pea flower extract, including the flavonoid group, which includes ternatins, delphinidin, kaempferol, quercetin, sitosterol, and vitamins (tocopherols, inositol, and pentanal) (Purnamayanti, Budipramana and Gondokesumo, 2022). Phytochemicals have been quantified and used as multi-molecular targets to suppress tumor or cancer cell growth, reduce angiogenesis, increase apoptotic cells, and improve chemotherapy treatments.

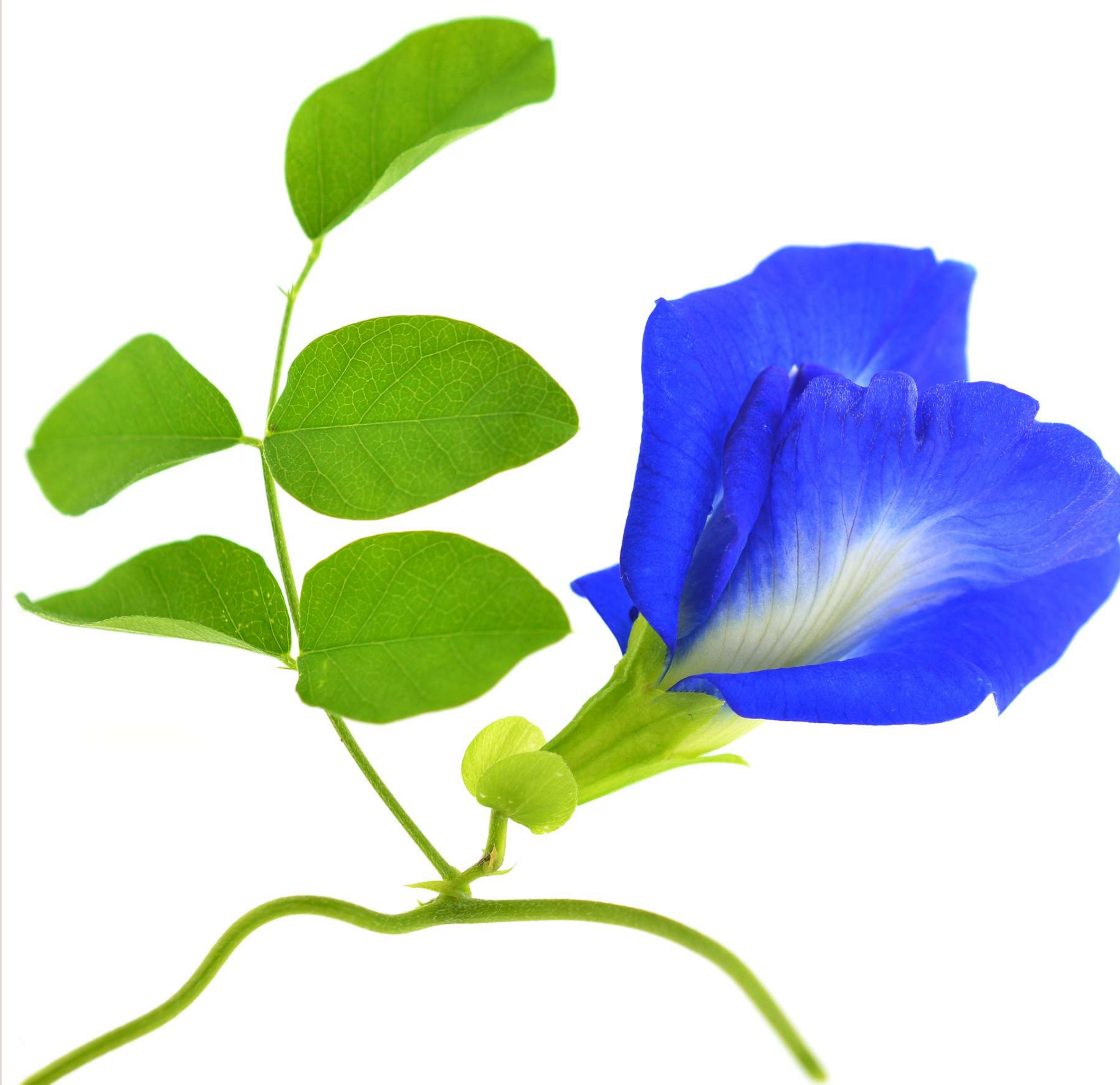


Cardiovascular protection has been demonstrated by a study conducted to examine butterfly pea preventing N $\omega$ -nitro-L-arginine methyl ester hydrochloride (L-NAME)-induced cardiac and vascular dysfunction in rats demonstrated that the CT extract reduced elevated blood pressure in rats who were given L-NAME. CT extract supplementation improved the vasorelaxation responses to acetylcholine and the contractile responses to sympathetic nerve stimulation in the aortic rings and mesenteric vascular beds of L-NAME-treated rats. L-NAME rats exhibited left ventricular hypertrophy and dysfunction, which was partially prevented by CT extract therapy (Maneesai et al., 2021).



## Antioxidant properties

Methylglyoxal (MG) is a highly reactive dicarbonyl precursor for advanced glycation end products (AGEs), which are linked to age-related disorders including diabetes and its complications. Chayaratanasin, Adisakwattana and Thilavech, 2021 studied the possibility of butterfly pea flower extract preventing the formation of MG from inducing protein glycation and oxidative DNA damage. The results of the study imply that the extract could be a potential plant extract for the prevention of MG-induced glycation and oxidative damage.



## Antibacterial Properties

Several studies have evaluated the antibacterial activity of Butterfly pea flower extract (Jeyaraj, Lim and Choo, 2022). Findings suggest the possibility of anthocyanins being responsible for the observed antibacterial activity. However, further studies are required to understand the underlying mechanism for the antibacterial effect and its potential action against bacteria virulence.





## Hepatoprotective properties

The hepatoprotective properties of the butterfly pea flower extract were investigated in a study against liver damage caused by acetaminophen in mice (Nithianantham et al., 2013). According to the findings of the investigations on the liver damage caused by acetaminophen, mice given the extract (200 mg/kg) had significantly lower levels of the enzymes alanine aminotransferase, aspartate aminotransferase, and bilirubin than mice given paracetamol ( $P < 0.05$ ). In contrast to groups treated with acetaminophen alone, extract treated animals were shown to have recovered glutathione levels ( $P < 0.05$ ). Treatment with the extract prevented histological alterations and supported the biochemical finding.



As this flower offers so many advantages, it would be important to conduct further investigations to better understand the biological impacts and explore potential bioactivities.





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# Magical star fruit

**Dr. Thilini Gunasekera (MBBS)**



Named after its shape of a five -point star, the star fruit or carambola, is a succulent, delicious fruit, packed with many essential nutrients. It is scientifically known as *Averrhoa carambola*. It belongs to the family Oxalidaceae. The Star-fruit plant belongs to the genus, *Averrhoa*, which contains 5 species, namely *A. bilimbi*, *A. dolichocarpa*, *A. leucopetala*, *A. microphylla* and *A. carambola*. Among them, *A.carambola* is the most cultivated and exported species commercially, which is said to be originated in Ceylon and Moluccas, although it has been cultivated in Southeast Asia (Malasia and Indonesia) for hundreds of years.

Star fruits are fleshy, juicy , crunchy ,slightly tart, acidic and have a mixture of sweet and sour tastes. Among the two types of star fruits, the large sized fruits taste sweeter and the small sized fruit gives a sour taste. The raw, green colored, small, unripe fruit is transformed to bright golden yellow color when ripens. Although, some star fruits retain their original green color even after getting ripened.

The fruit encompasses 5 longitudinal ridges/angles. And when it is cut horizontally, gives a star shape, hence called the “star fruit”. The size of a fruit is around 5- 15 cm long and up to 9cm wide.



The entire fruit is edible and often eaten raw, including its slightly waxy skin or be used in the preparation of juices, salads, or pickles, jam, chutney, and hot curries.





Ripening and storage

For commercial purposes, star fruits are picked at color break and taken to the packing house for washing, sorting, packing, storing and distribution. Fruits can be stored for about 21 days at 5 to 10°C temperature with a relative humidity of 85%-95%, without any significant loss in fruit quality. Carambolas do not increase in sugar content after picking.



Nutritional value of star fruit

The star-fruit is rich in vitamins, minerals and antioxidants. The composition of the nutrition profile varies with the stage of maturity of the fruit. Antioxidants present in star fruits are mainly vitamin C , Beta carotene and Gallic acid which plays a major role in scavenging oxygen free radicals. The Fruits contain high amount of minerals such as magnesium, potassium phosphorous, iron, zinc and manganese, some of which aid in strengthening the immune system. It is indeed a good source of fiber, in the form of cellulose ( 60%), Hemicellulose ( 27%) and pectin ( 13%).

Nutrient	Value per 100g of fruit
Water	80 g
Energy	34 calories
Protein	0.38 g
Lipid	0.08 g
Carbohydrate	9.38 g
Fiber	0.8-0.9 g
Oxalic acid	9.6 mg
Calcium	6.3 mg
Sodium	3.8 mg
Potassium	167 mg
Phosphorus	17.8 mg
Magnesium	11.8 mg
Iron	0.3- 0.4 mg
Copper	0.1- 0.4 mg
Zinc	0.2- 0.5 mg
Manganese	0.04-0.5 mg



## Health Benefits

Bioactive phytochemicals found in the fruits are responsible for its majority of the health benefits such as antioxidant, anti-inflammatory, anti-cancer, lipid lowering and anti-diabetic effects. The ones present in fresh ripe star fruits are mainly,

- Flavonoids ( quercetin, lutein, zeaxanthin)
- Phenolic acids
- Anthocyanin
- Saponins
- Tannins
- Alkaloids



## Health Benefits

It is important to note that majority of the studies describing the following beneficial effects of star fruit are based on experimental animal studies and in vitro animal studies.



Star fruits are commonly used in Ayurvedic and Traditional Chinese Medicine for clinical conditions such as fever, cough, diarrhea, chronic headache, inflammatory skin disorders (eczema), fungal skin infection, eye conditions and to treat bleeding hemorrhoids. Both delicious and nutritious at the same time, star fruits come power-packed with multiple bioactivities , such as anti- oxidant, anti-hyperglycemic, anti-hyperlipidemic, anti-tumor, anti-inflammatory, anti-obesity, immune-boosting, hepatoprotective, cardioprotective, anti-hypertensive and others.

Some of the potential medicinal effects are described here.

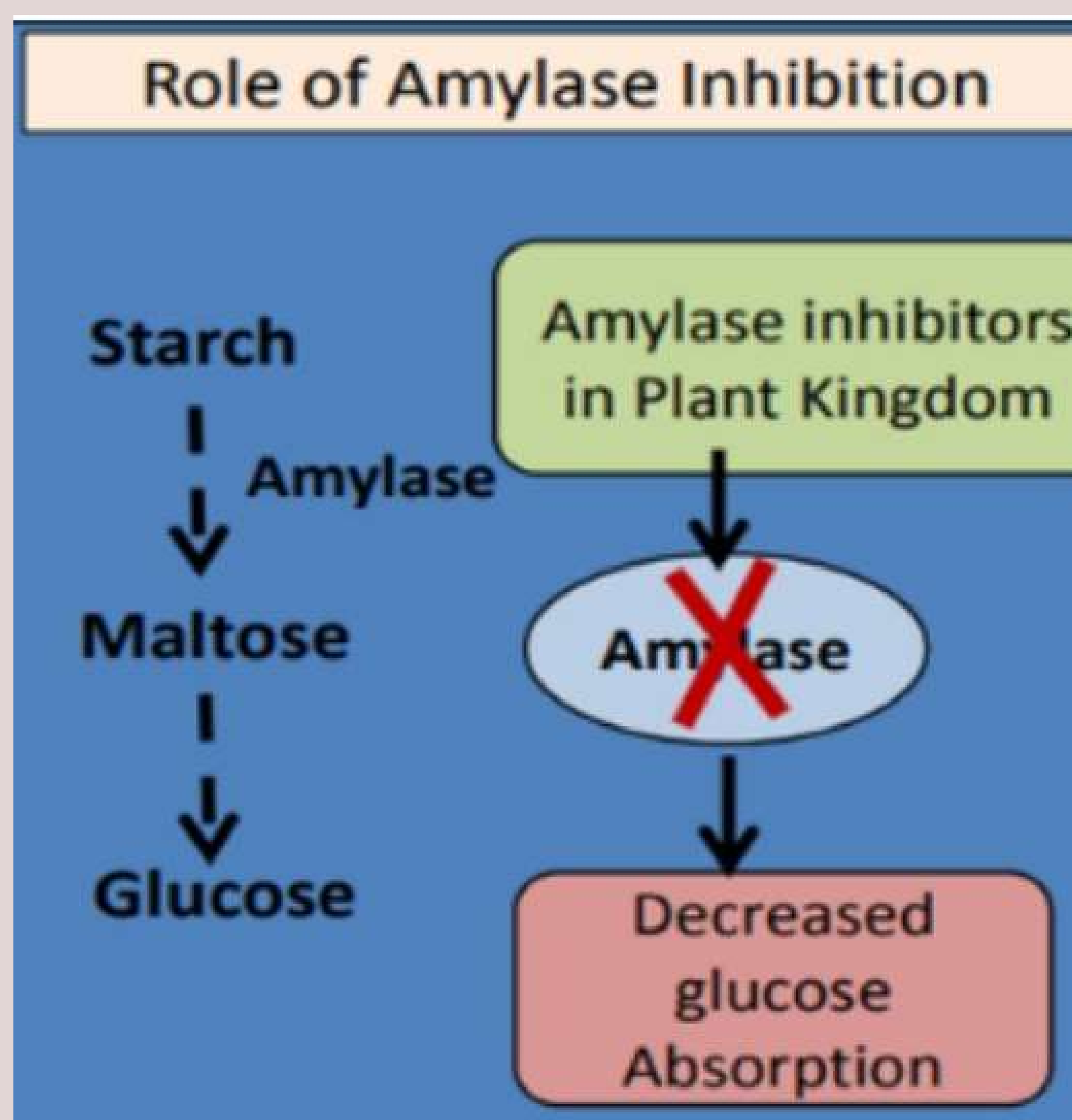




### Anti- diabetic potential

This fruit has excellent hypoglycemic effect, so it has been used in traditional medicine in Sri Lanka over many years. Star fruits are embedded with high amount of water insoluble fiber fraction ( WIFF), so has the capability of lowering blood glucose levels by slowing down the absorption of carbohydrate in our body.

And also, another mechanism of hypoglycemia is by Inhibiting  $\alpha$  -amylase enzyme which is required to break down the ingested starch in the diet to glucose for its absorption, thus altering the carbohydrate digestion in the gut. Alpha- amylase enzyme is inhibited by both dietary fibers and other water-soluble compounds present in the fruit such as polyphenols, flavonoids, diterpens and terpenoids.



Glucose-6-phosphatase enzyme plays a major role in glycogenolysis and gluconeogenesis in carbohydrate metabolism. This enzyme hydrolyzes Glucose-6-phosphate and maintains a continues supply of glucose to the blood. One study showed, when used an aqueous extract of fruit, it has decreased the activity of glucose-6-phosphatase enzyme, which in turn reduce the glucose supply to the blood and in consequence have an anti-hyperglycemic effect.

### Antioxidant effects

Antioxidants scavenge reactive oxygen species(ROS) peroxides and remove toxins from the body, enhancing the immune system. Star fruits are loaded with many antioxidants. The property is mainly exerted by phenolic compounds such as L- ascorbic acid, epicatechin, and gallic acid (in gallotannin form) present in the fruit.

A study showed that consumption of 100 g of star fruit juice, twice daily for continuous 4 weeks by elderly individuals has significantly improved their antioxidant status in the body.



### Hypocholesteremic effect

Being high in fiber, also helps in modulating lipid profile by increased removal of cholesterol and bile acids from the body. Moreover, every 100 g of this fruit contains only 0.08 g of fat.



Anti -microbial effect

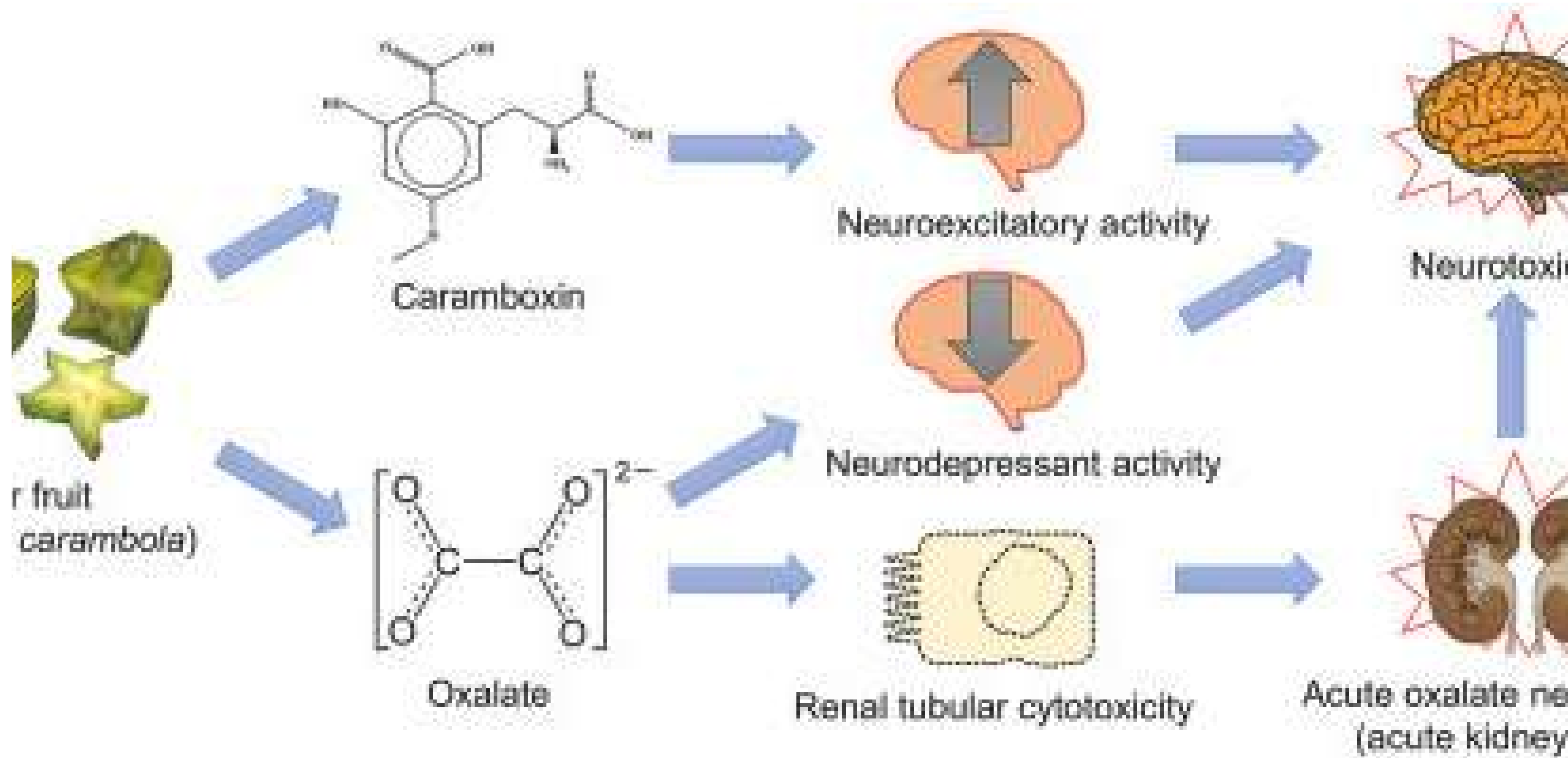
Fruit extracts show potential activity against bacteria mainly, such as, *Staphylococcus aureus*, *Bacillus cereus*, *Lactobacillus bulgaricus*, *E. coli*, *Proteus vulgaricus* and *Pseudomonas aeruginosa*.

Anti -microbial effect

A study shows reduction in some anti -inflammatory cytokines such as interleukin - 23, nitric oxide and TNF- alpha levels in the body, after consuming star fruit juice for 4 weeks in elderly individuals.



- 1.Having preexisting kidney disease/kindey stones/chronicpancreatitis/gastroenet ropathy
- 2.Consumption on empty stomach.
- 3.Level of hydration at the time of consumption.
- 4.The type of star fruit- Oxalic acid is more in sour variety.



Oxalic acid, once absorbed to the circulation, can get deposited in the renal tubules, causing oxalic nephropathy. The neurotoxic effects caused by Caramboxin , on the milder side are hiccups, vomiting, nausea and on the more harmful side, mental confusion, seizures, agitation, coma and even death.



Star fruit toxicity

Carambola, not only delivers the “good”, but also the “bad”. Oxalic acid and Caramboxin are key structural compounds that cause nephrotoxicity and neurotoxicity.Toxic dose of star fruit in human has not been defined yet. Toxic dose is likely to vary depending on the following factors

Taking all these findings in to account, star fruit consumption can be considered generally to be safe for normal healthy individuals, provided taken in moderate amounts with some food in the stomach and hydrate self well soon after eating.. Ability to contain different chemical components with wide array of useful magical actions on human body has made this fruit a “magical star” in the world of fruits. .



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## Events since last publication

### SLMNA Monthly Council Meetings

The SLMNA council convened for their monthly meetings in September and October. The September gathering was conducted on the 7<sup>th</sup> at the Medical Nutrition Unit of the National Hospital of Sri Lanka, Colombo. Meanwhile, the October meeting was held on the 2<sup>nd</sup> as a hybrid event through the Zoom platform at the Medical Research Institute.

### Monthly Clinical Meeting- in collaboration with SLCNP

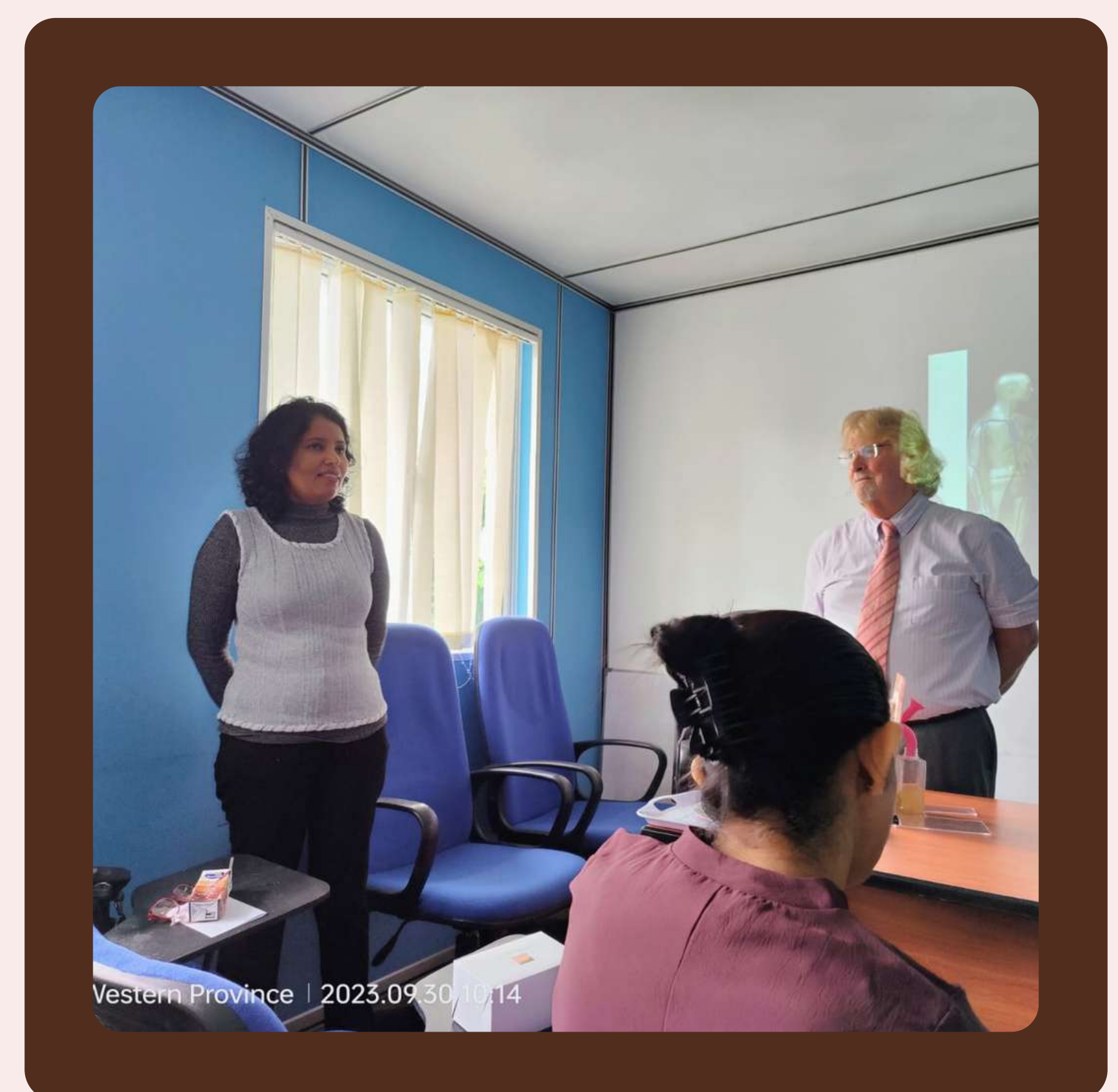
On October 2<sup>nd</sup>, 2023, the monthly clinical meeting was held at the Aldo Castellani Auditorium, Medical Research Institute. The focus of the meeting was "Food Allergy and Nutrition," presented by Dr. Dhanushka Dasanayake, MBBS, MD, a consultant immunologist at the Medical Research Institute.





## Events since last publication

### Workshop on Chyme Reinfusion Therapy



On September 29<sup>th</sup>, 2023, Professor Gil Hardy, founder of the Chyme Reinfusion Machine, gave a lecture about Chyme Reinfusion Therapy at the Medical Nutrition Unit, NHSL.



## Events since last publication

### Workshop on Audit



A workshop on audit for doctors took place on the 6<sup>th</sup> of October 2023 at Clinmark, NHSL. The primary speaker was Prof. Rasnayake M. Mudiyanse, Professor of Pediatrics at the University of Peradeniya.



## Events since last publication

### ASPEN Malnutrition Awareness Week : Peripheral Events at Apeksha Hospital

A malnutrition awareness program was conducted at Apeksha Hospital, Maharagama, to commemorate the ASPEN Malnutrition Awareness Week.





## Events since last publication

### ASPEN Malnutrition Awareness Week : Peripheral Events at District General Hospital Hospital Kurunegala

An awareness programme was conducted at District General Hospital, Kurunegala in commemoration of ASPEN Malnutrition Awareness Week





## Events since last publication

### ASPEN Malnutrition Awareness Week : Peripheral Events at Lady Ridgway Hospital for Children

In honor of ASPEN Malnutrition Awareness Week, an awareness program was conducted at Lady Ridgeway Hospital for Children.





## Events since last publication

### Peripheral activities

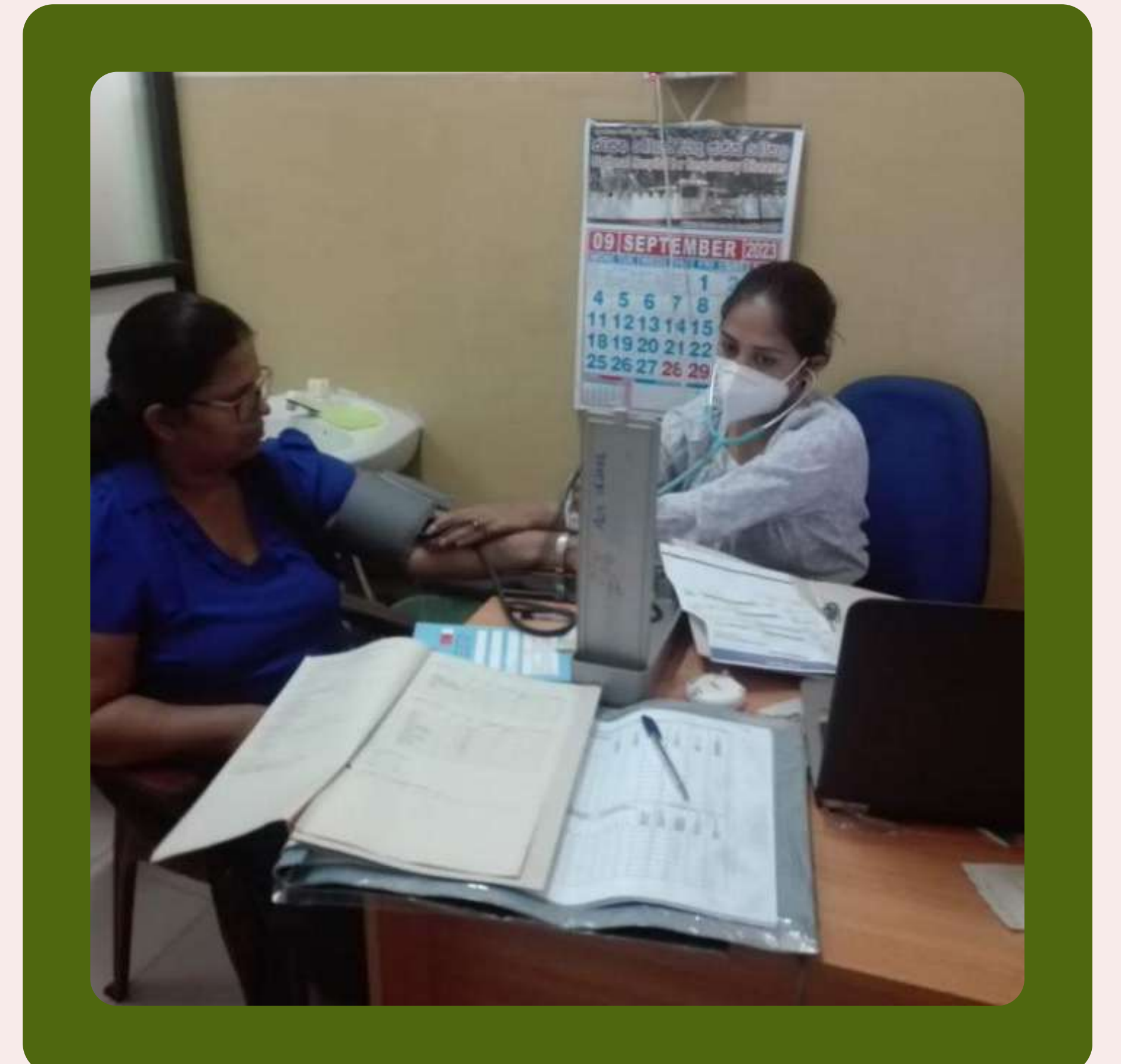


The Nutrition unit at DGH Kegalle conducted a 3-month program for hospital staff aimed at promoting healthy weight loss.



## Events since last publication

### Peripheral activities



A screening program aimed at identifying obesity, NCDs, and associated health outcomes among hospital staff, while promoting healthy eating and physical exercise, was conducted at NHRD Welisara.





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