Cardiovascular disease is related to the increase in LDL cholesterol level. For decades, health practitioners had been concerned with the contribution of diet to an increase production of LDL cholesterol (LDL-c) level. However, research has shown that dietary cholesterol has a moderate contribution to plasma LDL cholesterol concentration. Dietary cholesterol can increase the rate of oxidizing LDL-c, which increases the risk of cardiovascular disease. It is then recommended by the American Heart Association to reduce dietary cholesterol intake by 300 mg per day. A meta-analysis has been done on prospective cohort studies to investigate further into the effects of egg consumption on coronary heart disease.

Eggs are the major source of dietary cholesterol, which may consist up to 210 mg of cholesterol per egg. The recommended daily intake has been limited to one egg per day. However, eggs are low in calorie and have other nutrients that may reduce the risk of cardiovascular disease. The meta-analysis consists of 17 reports, where there are 5,847 cases of coronary heart disease and 7,579 cases of stroke. Results showed that the consumption of eggs had no correlation between these cardiovascular disease and stroke, yet subjects with diabetes had a 25% lower risk of developing hemorrhagic stroke, and a significant increase in coronary heart disease when the consumption of eggs increased. This study did not describe whether or not the eggs in the study were organic. Fresh organic eggs are believed to cause lesser oxidation of LDL-c compared to the hormone-exposed eggs. To have a better understanding of why different studies have controversial results, researchers might need to question the source of the eggs.

Process of skin destruction decreases giving astaxanthin an anti-aging property. By quenching these radicals (also known as singlet oxygen), astaxanthin reacts with oxidants by singlet oxygen quenching activities. Oxygen is easily converted into a radical molecule through oxidation and the oxygen radical rapidly creates another radical by reacting with a lipid membrane in the skin through a process called lipid peroxidation. In the past, astaxanthin has been overlooked where it has been used as just food coloring. The use of astaxanthin has now become one of the major sources for dietary supplements and cosmetic products targeted by industries. Astaxanthin is usually extracted from Haematococcus pluvialis microalgae, which has a red color. This microalga can survive dry and hot environments without food and water for a prolonged period of time, up to 20 years. Astaxanthin within microalgae reacts with oxidants by singlet oxygen quenching activities. Oxygen is easily converted into a radical molecule through oxidation and the oxygen radical rapidly creates another radical by reacting with a lipid membrane in the skin through a process called lipid peroxidation. By quenching these radicals (also known as singlet oxygen), the process of skin destruction decreases giving astaxanthin an anti-aging property. In a single blind placebo controlled clinical trial, 49 healthy women were either given 2 bottles of 70 mL of EOC or 2 bottles of 70 mL placebo (containing milk casein, caramel, and flavoring to mimic the EOC taste) per day for 7 days in a double blind crossover study design. Before and after the 7 days, the subjects had measurements in the changes in oxy-hemoglobin (oxy-Hb) concentrations in the bilateral prefrontal areas of the brain NIRS during the performances of three tasks: simple reaction test, the Groton Maze Learning Test, and the cognitive function. The oxy-Hb is significantly increased in many areas of the prefrontal cortex of the brain. This Hb-ox suggests that EOC is a viable source of nutritional supplements that enhance cognitive function. It is also useful to keep in mind that a routine use of cognitive function such as the tasks in the study done everyday stimulates the body system to stimulate the delivery of oxygen to the brain.

The study consisted of 1,230 subjects, between ages of 70-89 years old, living in Minnesota, USA. Subjects were asked to complete a 128-item food-frequency questionnaire where their cognitive functions were also evaluated. Of the one thousand two hundred thirty, 937 subjects had no signs of cognitive impairment. The daily caloric and macronutrient-intakes were then calculated from the questionnaires. Results after 4 years showed that 200 subjects developed cognitive impairment such as problems with memory, language, thinking, and judgment. Results also showed that within these 200 subjects, their meals consisted of higher carbohydrate intakes compared to other subjects. High carbohydrate intakes were shown to have a 1.5 times more chance of developing cognitive impairment, while meals with high fat and protein were associated with 42% and 21% reduced risk of dementia respectively. In young adults and adults, an increase in glucose enhances cognitive performance; however, amongst elderly subjects, enhanced glucose level causes a decrease in sensitivity of insulin secretion, which may contribute to cognitive impairment. For a clearer understanding of the correlation between dementia and macronutrients, studies with more rigorous parameters are required.

High Carbohydrate Meals May Lead to Dementia

Our caloric intake is dependent on the macronutrients we eat, which include carbohydrates, proteins, and fats. It is becoming widely common to realize that carbohydrates contribute to most of our calories per meal especially in Asian diets with rice as the main component. Carbohydrates also increase blood sugar, which at high-intake may lead to or exacerbate diabetes. A prospective cohort study was done to investigate the association between cognitive impairment and high caloric intake. The research question also covers “which macronutrients contribute to cognitive impairment the most.” It has been known that a caloric restriction decreases amyloid-β deposition thereby decreasing the rate of dementia or memory loss. A caloric restriction diet vaguely implies a decrease in all macronutrients; hence, it is important to know the specific macronutrient contributing most to dementia.

Oxidation in the brain, which is frequently associated with cognitive impairment and dementia, is primarily caused by the consumption of high-carbohydrate meals. High dietary intake of carbohydrates can lead to a stroke in the brain, called hyperglycemic brain injury (HBI). The oxygen to the brain. The oxy-Hb is a biomarker used for measuring the cognitive function in the brain. An increase in oxy-Hb indicates an increase efficiency in brain function since oxygen is being supplied to the brain, while a lack of oxy-Hb indicates that there is a lack of oxygen being supplied to the brain when it is in demand. Results showed that an increase in oxy-Hb amongst subjects whom consumed EOC is significantly higher than those who took the placebo. The oxy-Hb is significantly increased in many areas of the prefrontal cortex of the brain. This Hb-ox suggests that EOC is a viable source of nutritional supplements that enhance cognitive function. It is also useful to keep in mind that a routine use of cognitive function such as the tasks in the study done everyday stimulates the body system to stimulate the delivery of oxygen to the brain.

Essence of Chicken Sharpens the Brain

Essence of chicken (EOC) is a traditional remedy for many ailments in Southeast Asia. Moreover, Asian students use it to ease anxiety associated with examinations and elderly use it for nutritional supplement. EOC is prepared by boiling the chicken under high temperature and high pressure allowing the fat to be released from the meat and bones. Several studies have shown that EOC has multiple health benefits such as increasing in thermal response, stimulating the production of blood, affecting protein composition in breast milk, and speeding up the elimination of post-exercise plasma waste. None of the studies have shown a mechanistic association between cognitive function in elderly and EOC consumption. Japanese researchers have conducted a study on the effects of EOC and brain function by using near-infrared spectroscopy (NIRS).

Twelve healthy elderly subjects were given either 2 bottles of 70 mL of EOC or 2 bottles of 70 mL placebo (containing milk casein, caramel, and flavoring to mimic the EOC taste) per day for 7 days in a double blind crossover study design. Before and after the 7 days, the subjects had measurements in the changes in oxy-hemoglobin (oxy-Hb) concentrations in the bilateral prefrontal areas of the brain NIRS during the performances of three tasks: simple reaction test, the Groton Maze Learning Test, and the using near-infrared spectroscopy (NIRS).

The oxy-Hb is significantly increased in many areas of the prefrontal cortex of the brain. This Hb-ox suggests that EOC is a viable source of nutritional supplements that enhance cognitive function. It is also useful to keep in mind that a routine use of cognitive function such as the tasks in the study done everyday stimulates the body system to stimulate the delivery of oxygen to the brain.

The Super Seaweed for Healthy Skin

Astaxanthin is a carotenoid found in marine organisms including shrimps, crabs, fish, and sea bream. This carotenoid is a strong antioxidant that is reported to be 1000 times stronger than alpha-tocopherol and 40 times stronger than beta-carotene. Moreover, they do not have any pro-oxidative quality like beta-carotene and lycopene. The anti-oxidative property is exhibited in the cell membrane. In the past, astaxanthin has been overlooked where it has been used as just food coloring. The use of astaxanthin has now become one of the major sources for dietary supplements and cosmetic products targeted by industries. Astaxanthin is usually extracted from Haematococcus pluvialis microalgae, which has a red color. This microalga can survive dry and hot environments without food and water for a prolonged period of time, up to 20 years. Astaxanthin within microalgae reacts with oxidants by singlet oxygen quenching activities. Oxygen is easily converted into a radical molecule through oxidation and the oxygen radical rapidly creates another radical by reacting with a lipid membrane in the skin through a process called lipid peroxidation. By quenching these radicals (also known as singlet oxygen), the process of skin destruction decreases giving astaxanthin an anti-aging property.
The Futility of Vitamin D3 Supplementation to Treat Upper Respiratory Tract Infections

Observational studies have suggested that vitamin D may be used to combat against infectious diseases or as preventive measures against infectious diseases. The results of clinical trials of vitamin D supplementation remain unclear and inconclusive. The mechanisms of vitamin D2 and vitamin D3 are commonly associated with the absorption of calcium. Vitamin D2 and vitamin D3 in their inactive form, 25-hydroxyvitamin D (25(OH)D), are absorbed and activated into their active form, 1-25-dihydroxyvitamin D (1,25(OH)2D), in the liver and kidneys upon the presence of UVB rays from sunlight. Other roles of vitamin D that have been found are in the innate and adaptive immune responses where vitamin D induces cathelicidins, a group of antimicrobial peptides produced by leukocytes. Epidemiological studies show an inverse association between vitamin D levels and respiratory tract infections. Researchers in Colorado Denver have then conducted a randomized controlled trial to investigate the effect of vitamin D3 supplementation on upper respiratory tract infections in adults.

The randomized double-blind placebo-controlled trial consisted of 322 healthy adults whom were given doses of vitamin D3 or a placebo orally. The doses of vitamin D3 given were 200,000 IU the first month, 200,000 IU the second month, and then 100,000 IU the following months until 18 months (the placebo was also administered in the same regimen). The baseline for the concentration 25 OHD of participants was 29 ng/mL and after the administration of vitamin D3 supplements, the serum 25-OHD increased to greater than 48 ng/mL. Results showed that there were 593 episodes of upper respiratory tract infection in the vitamin D group and 611 episodes in the placebo group with no statistical differences in the number of cases per participants, duration of symptoms per episode, or severity of the infection. This study concludes that vitaminD3 supplements are ineffective against preventing and combating against severe upper respiratory tract infections in healthy adults.

Flavonoids Reduces Risk of Aggressive Prostate Cancer

Flavonoids found in plant-based foods such as tea, wine, fruits (i.e. berries, oranges, and grapes) vegetables, and cocoa are found to have chemo-preventive effects against prostate cancer by decreasing inflammation and increasing the rate of killing cancerous cells. These observations are based on animal and cell cultures that pose promising clinical results among cancer patients. However, only a few epidemiological studies have examined the associations between flavonoid intake and prostate cancer in human. Hence, collaboration between researchers from New York, Louisiana, North Carolina, and California sought to determine the association between the flavonoids and prostate cancer aggressiveness among African Americans and European Americans.

This study was presented at the 11th Annual AACR International Conference on Frontiers in Cancer Prevention Research. Data from 920 African-American and 977 European-American newly diagnosed with prostate cancer were enrolled into the study. Participants were then asked to complete a self-reported dietary history questionnaire to assess flavonoid intake. Results showed that men with the highest flavonoid intake had a 25% reduction in risk for aggressive prostate cancer in both groups compared to the lowest flavonoid intake. According to the dietary questionnaire, the most prominent source of flavonoid is from citrus fruits and juices. Other factors that decrease the risk for aggressive prostate cancer include men that are younger than 65 years. Flavonoid-rich diet also decreases the risk of cancer amongst smokers.


Anthocyanin Reduces Coronary Heart Disease in Women

The risk factor for coronary heart disease among women varies with age due to the metabolic changes that occur in older women. In young and middle-aged women, studies have shown that oral contraceptives and smoking contributes to the increase risk. Coronary heart disease mechanisms are also different in younger women than older women since coronary vasospasm is prominent among younger women. Coronary vasospasm is a condition in which the inner lining of the coronary heart vessels constict leading to the death of the heart vessels. The coronary vessels supply blood to the heart, so without this blood supply, the heart is subjected to lack of oxygen and may eventually stop working due to a heart attack. A prospective cohort study was then conducted to investigate the dietary factors that may correlate with the reduced coronary heart disease in young and middle-aged women.

The study consisted of 93,600 women (25-42 years old) with 18 years of follow up. These women were given semi-quantitative food-frequency questionnaires every four years. The dietary intake of interests were the flavanoids, which were believed to help decrease oxidation of LDL cholesterol. During the 18 years, 405 cases of heart attacks occurred. Results showed that there was an inverse relationship between a higher intake of anthocyanin, a flavonoid subclass, and heart attacks. The combined intake of strawberries and blueberries also showed a decreased risk in heart attacks compared to those who take a single source of flavonoid at least 3 times a week. Other conditions, such as hypertension, did not affect the relative risk of heart attacks to flavonoid consumptions. This relationship can be explained from how flavonoids increase nitric oxide synthase activities, which facilitates vasodilation allowing more blood to enter the coronary vessels. This study however requires a randomized control trial because of the information that could be left out during a meal-memory-recall. It still does not hurt to have berries in our diet because we are certain that they are very rich in antioxidants which will benefit heart health.