

■ By Dr Kamariah Long

AS of late the overwhelming news of obesity among school children has captured the public's attention. Its many causes have been discussed and highlighted among various parties including the type of food that is sold in school canteens and out of school areas.

Different opinions have been voiced on the issue of obesity and the consumption of nasi lemak has been accused as one of the causes.

This issue has gotten more controversial as there are rumours that the Ministry of Education will be banning the sale of nasi lemak in school canteens. The rationale behind the ban is not the dish itself, but rather, the usage of coconut milk in the preparation of nasi lemak.

As a professional that is involved in coconut research, I am compelled to share my views and shed light on the myth that surrounds coconut milk.

I remember during my school years, if a student fell asleep in the classroom, the teacher would automatically name nasi lemak as the culprit for the student's sleepiness.

To date, the coconut milk myth persists. Unfortunately, this myth is also popular among professionals, including Malaysia's food experts. Even when I had my health screening done at a private hospital, I was advised to cut down on my coconut milk intake.

Coconut milk is said to contain high cholesterol content. However, a scientific analysis found that cholesterol levels in coconut milk are negligible compared to fats from other sources, particularly animals. Similarly, the cholesterol content in coconut oil is lower compared to vegetable oil and animal fat. (Source: *Inform Vol 13, 2002*)

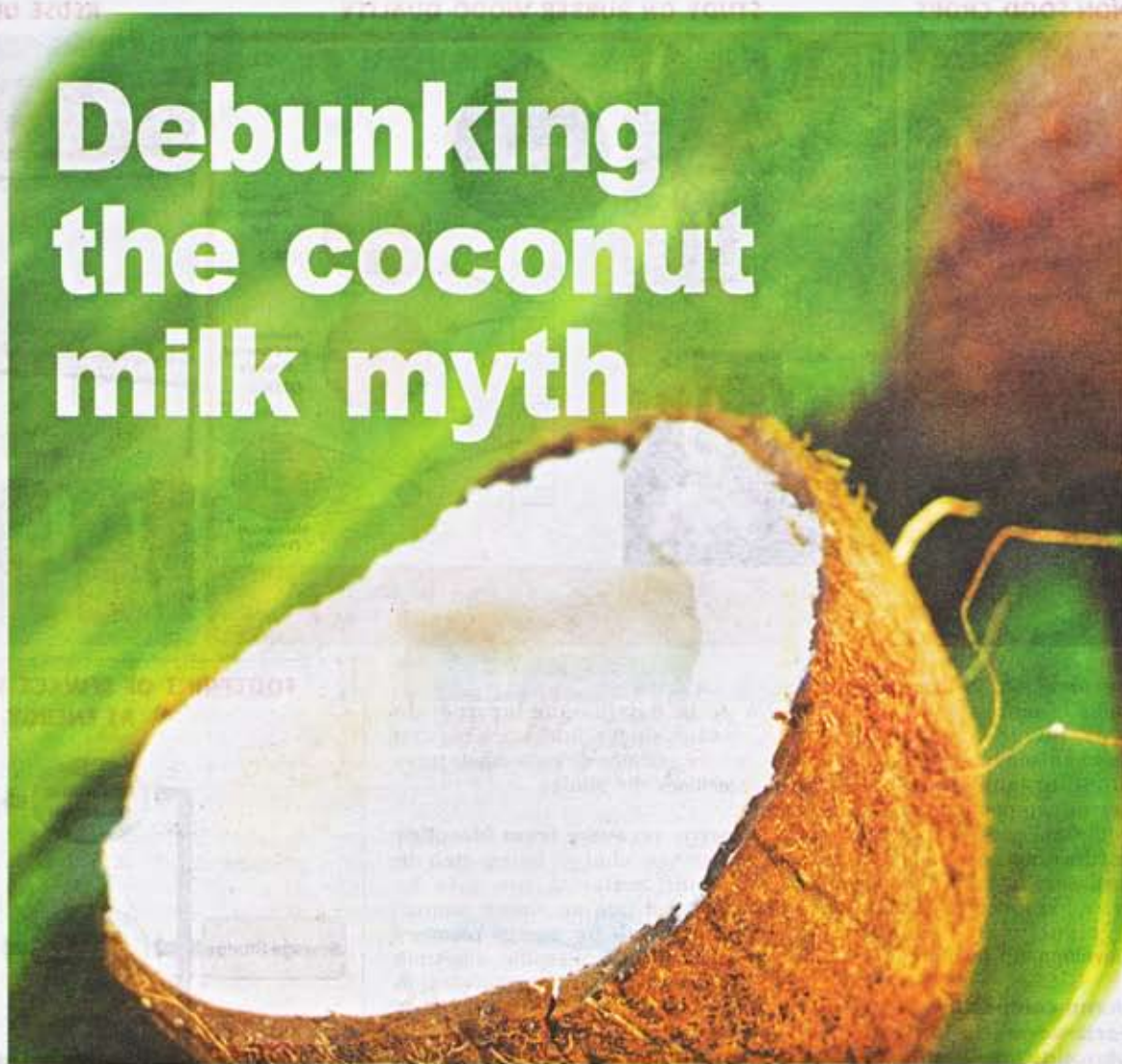
The question now is whether any scientific research has been conducted to uncover the effects of coconut milk consumption in people's daily food intake. Personally, I have not found any scientific paperwork regarding this matter. Even so, coconut milk is still regarded as one of the causes of obesity and heart-related diseases.

Coconut milk has a high content of saturated fat that can be processed into coconut oil. It contains about 92 per cent of saturated fatty acids.

The myth about coconut oil can probably be attributed to this. At one point, the consumption of oil that had a high content of saturated fatty acids was a major issue in the US and the consumption of it was vehemently opposed.

The anti-tropical oil campaign and the Food Pyramid Programme were launched by the United States Department of Agriculture (USDA) and American Soybean Association (ASA). ASA prohibited tropical oil intake that had a high content of saturated fatty acids. Saturated fatty acids at the time was believed to be one of the contributing causes of heart diseases and obesity.

As a result of the campaign, Americans changed their eating



Oil source	Cholesterol content (mg/kg)
Coconut oil	5-14
Sunflower oil	8-44
Palm kernel oil	9-40
Palm oil	13-19
Soybean oil	20-35
Cottonseed oil	28-108
Corn oil	18-95
Rapeseed oil	28-108
Animal fat	
Beef tallow	800-1400
Butter	2200-4100
Lard	3000-4000

(Source: *Inform Vol 13, 2002*)

habits by incorporating soybean oil and corn oil as primary ingredients in their regular diet.

This programme clearly presented a problem to their health. After 20 years of the programme, it was found that 64 per cent of Americans are overweight (*National Health and Nutrition Examination Survey 1999-2000*).

In addition, there was a sharp increase in cases of diabetes, high blood pressure and heart diseases in the US. It appeared that the Pyramid Nutrition Programme was more detrimental to the health of the American people.

Recently, scientists have disputed the opinion that heart diseases are related to saturated fatty acids. Recent studies showed that heart diseases are not caused by saturated fatty acids intake

but rather, because of excessive essential fatty acids intake (*Time's March 1, 2004 and Fortune's October 23, 2003*).

The human body cannot synthesise essential fatty acids and it can only be derived from our diet. Corn oil, soybean oil and sunflower oil contain essential fatty acids, namely omega-6 which has a high content of linoleic acid.

The human body will convert linoleic acid to arachidonic acid. Arachidonic acid combines with phospholipids that are found on the body's plasma cell membrane.

When needed, the acid will be separated from the body's plasma cell membrane and will form a compound of active eicosanoisa (prostaglandins) that has a variety of functions. The presence of these active compounds in excess will result in inflammation and

allergies.

Americans consume omega-6 (corn oil, soybean oil, sunflower oil) twenty times more than omega-3 acids (fish oil). This has led to an extreme imbalance in omega-3 and omega-6 acids intake. Prostaglandins that are produced in excess will cause inflammation that can lead to chronic illnesses.

Moreover, trans fatty acids were also found to contribute to heart problems and obesity. Trans fatty acids is not a natural acid; it is formed during the hydrogenation process.

This process is a chemical reaction that is performed to convert soybean oil, corn oil and sunflower oil to solid fats at room temperature. Hydrogen gas is added during the process to convert oil into shortening.

The objective of this process is to diversify the uses of oil in the food industry, especially in manufacturing margarine and shortening. Margarine and shortening are produced from soybean oil and essential corn oil through the hydrogenation process.

Shortenings are widely used in the US in the manufacture of cookies, cakes, ice-creams, pizzas, chocolates and so on.

The Food and Drug Administration (FDA) has finally realised the problems that arise from the use of trans fatty acids. In January 2006, the FDA mandated that food manufacturers label the percentage of trans fatty acids content in their food products.

There are several studies in the US that details the effects of coconut oil consumption in mice.

The findings of this study showed that the cholesterol levels and low density lipoprotein (LDL) increased in the mice's blood.

However, the coconut oil used in the experiment was hydrogenated. In other words, the coconut oil used in the experiment was contaminated by trans fatty acids. Therefore, the results of the experiment should not be accepted as the mice's true reaction to the coconut oil intake.

Saturated fatty acids can be divided into three phases; short carbon chain saturated fatty acids (C4:0-C6:0), medium chain (C8:0-C12:0) and long chain (C14:0-).

Each saturated fatty acid has its own specific function that is essential to us. Coconut oil is a source for Medium Chain Triglyceride, (MCT). Several clinical studies relating to this substance are being carried out in Europe and Japan.

Studies found that medium chain fatty acids are metabolised by the body as rapidly as glucose but it can provide a much higher level of energy. Energy generated from medium chain fatty acids is 7 kcal/gm compared to 4 kcal/gm from glucose.

The consumption of coconut milk provides instant energy because it contains 65 per cent of medium chain saturated fatty acids. These findings triggered the canned coconut milk industry in Hainan Island to export their products to China as instant energy drink products.

With scientific proof, it is time that Malaysians are given accurate information in order to make smart decisions when it comes to their eating habits. Obesity among school children should be viewed from a more comprehensive perspective and not just on the food intake. For the sake of the people's health, it is also time to make it mandatory to label the percentage of trans fatty acids in food products.

Lately, there has been an increase in the business to procure coconut milk to produce virgin coconut oil. Virgin coconut oil contains plenty of nutrients as it can be categorised under functional foods.

Consuming coconut milk is the same as consuming virgin coconut oil. Two tablespoons of virgin coconut oil (30ml) equals to half a coconut.

The facts on the nutritional values of virgin coconut oil are quickly spreading, especially on the Internet.

It is high time to correct the negative perception about coconut milk and recognise the importance of this natural heritage that has been bestowed on us.

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