

Medicine for Managers

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Chocolate

The cacao tree produces seeds (beans) have been used to create beverages for over 2000 years. They originated in the Aztec and Mayan civilisations in Central and South America and they were held to give a wide range of physical benefits as well as being a stimulant. The Aztecs believed it made them victorious in battle and it was used in their religious rituals. The beans were even used as currency.

Columbus, in about 1502, became aware of cacao on his travels but did not appreciate its full significance.

Several years later, Hernan Cortés travelled from Spain to explore what is now Mexico and he established Spanish colonies.

He was greeted by the natives with copious cocoa drinks and he took it back to Spain on his return, where it became very popular.

The origin of the word 'chocolate' is uncertain but it may have been derived, either from the Aztec word xocolati (the name of the bitter drink) or from the Aztec word choqui meaning warmth.

In Spain it was sweetened with honey or sugar and it became very popular, particularly in the Spanish court.



In 1828, the Dutchman Coenraad van Houten invented the 'cocoa press' which separated the fatty components leaving a fine powder.

The powder was much more tasty and was dissolved in hot water and later in milk, making it like the drinking chocolate of today.

It was mass produced, enabling it to become available for the whole public.

Joseph Fry, a Quaker, born in 1728, started producing chocolate in 1759. Fry invented a machine for grinding cocoa beans in 1799.

In 1822 the company became J S Fry and Sons and, in 1847, the chocolatier developed the technique of recombining the components, adding sugar and setting the resulting mixture in moulds.

The chocolate bar was created.

The chocolate using the Fry's formulation was essentially a dark chocolate bar.

Subsequently, in 1875, Swiss chocolatier Daniel Peter added milk to the mixture and created the world's first milk chocolate bar.

Fry's went on to create the first cream-filled bar and Fry's Chocolate Cream was first released in 1866. Fry's was acquired by Cadbury early in the twentieth century.

Chocolate has gained a reputation for its health effects, notably for weight gain, development of diabetes, acne, coronary heart disease and raised blood pressure.

However, it is believed also to have positive health effects.

A review article published in the Netherlands Journal of Medicine has suggested that chocolate may have significant health benefits.

Cocoa beans contain **flavanol**, which has been found to cause blood vessel dilation.

It seems likely that this characteristic may reduce the risk of cardio-vascular disease. Flavanol also activates an enzyme called nitric acid synthase, which may confer a protective effect against disease of the cardio-vascular system.

A study has also shown that blood pressure may be reduced in elderly patients. However, these benefits vary because of varying levels of flavanol in different types of chocolate and, of course, the addition of sugar has a negative health benefit. For health benefits it is recommended that chocolate contains 70% cocoa.

The concentration of flavanol depends on the origin of the cocoa used in its production.

For example, milk chocolate has much lower flavanol than dark chocolate.

Another study showed that the addition of olive oil to chocolate improves endothelial function. When extra-virgin olive oil was added to a 40

gramme bar of dark chocolate daily for one month, endothelial health, as measured by the formation of new cells, improved. Endothelial cells line blood vessels and lymphatic vessels and impaired cellular function can lead to serious health issues throughout the body.

Apart from the possible cardiovascular benefits, other research has suggested other benefits:

- i. **Cognitive function** may be improved by drinking two cups of hot chocolate a day, according to some Harvard scientists.
- ii. **Stroke risk** may be reduced by up to a third by regular consumption of chocolate, according to some Canadian scientists
- iii. **Foetal growth**. At a symposium in Atlanta in 2016, a study was presented suggesting 30 gm chocolate a day could improve foetal growth
- iv. **Athletic Performance**. A UK study of cyclists suggested that less oxygen was consumed during time trials following consumption of dark chocolate.



There has been a lot of controversy about whether milk or dark chocolate is better for health.

The milk chocolate protagonists point out that milk chocolate contains protein and calcium.

The dark chocolate enthusiasts say that the higher level of cocoa provides a higher level of antioxidants.

Antioxidants are molecules that fight free radicals in the body. Free radicals cause harm if their levels become too high in the body.

They are associated with diseases such as diabetes, heart disease and cancer.

The body has its own antioxidants but antioxidants in food (such as fruit and vegetables) augment the quantity available.

Antioxidant levels in chocolate are particularly high in 100% cocoa products.

So, in summary, chocolate can make you fat, cause your teeth to decay, aggravate migraine, may interfere with the formation of healthy bone and some cocoa may contain lead and cadmium which could be toxic.

On the other hand, it may support cardiovascular health, formation of some cellular structures, reduce strokes, improve cognitive function and athletic prowess.

The evidence for many of these claims is far from definitive and some is even anecdotal.

However, for those of you addicted to chocolate as I am, it is tempting to cling on to the advantages.

Finally, there are no shortage of quotes about chocolate. For those of us who are chocoholics:

“Chocolate is the answer; who cares what the question is”

“Chocolate is God’s apology for broccoli”

“Nochophobia is the fear of running out of chocolate!”

And finally,



Have a very Happy Christmas.

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