

Dark Chocolate – is it a healthy option?

Nutrients: Cocoa is a good source of the following nutrients with some of their corresponding health benefits:

- Magnesium – promotes a healthy heart and arteries and in energy production.
- Manganese – antioxidant, enzyme activator, haemoglobin synthesis.
- Copper – helps to control free radicals and is important in Iron absorption.
- Phosphorus – part of many enzymes involved in energy and present in bones.
- Potassium – important for nerve and muscle function.
- Iron – essential for energy and immune functions.
- Zinc – 300 enzymes systems need zinc – used in repair, growth and immune functions.

Antioxidants & Heart Health

- The non-fat portion of the cocoa bean contains the antioxidant polyphenols (found in wine), which include the flavonoids; catechins, epicatechins and procyanidins.
- These, plus theobromine are thought to have a protective effect on cardiovascular health through their ability to alter a number of pathological processes that include:
 - Inhibiting the oxidation of LDL-cholesterol ('bad' cholesterol) by free radicals, an important initial step in the formation of atherosclerotic plaque.
 - Suppressing the tendency for platelets to clump together and form blood clots.
 - Regulating proper inflammatory and immune responses in blood vessel walls.
 - Stimulates the heart, regulates vascular tone, dilates blood vessels, helping lowering blood pressure and reduces the risk of stroke.

Brain Function and Blood Sugar Regulation

- Dark chocolate increases blood flow to the brain improving cognitive function.
- It contains other chemical compounds that have a positive effect on your mood, notably serotonin, dopamine and:
 - Anandamide (a cannabinoid) that produces a global feeling of euphoria.
 - Phenylethylamine (PEA) the same chemical your brain creates when you feel like you are falling in love, and triggers the release of endorphins.
- The flavonoids in dark chocolate also help reduce insulin resistance by helping your cells to function normally and regain the ability to use your body's insulin efficiently.
- It has a low glycaemic index, meaning it won't cause huge spikes in blood sugar levels.

The Bottom Line:

Is chocolate fattening? Yes! Even the darkest chocolate contains a lot of calories because of the high fat content. However, lighter chocolates have additional high sugar (carbohydrate) levels, which have a more negative effect on health. High % cocoa, dark chocolate does have good health benefits, but it should only be eaten in strict moderation, as most of its health compounds can be found in healthier foods in much greater quantities. So if you really can't do without it, then eat a few pieces of plain, dark (70-85%) chocolate – to get the antioxidants, while limiting the calories! And avoid milk and white chocolates!



FOOD *in* FOCUS

CHOCOLATE

Welcome to Vacherin's food in focus.

Each month our nutritionist Gary Baverstock will provide some basic science and will help to demystify certain foods in our diet.

Chocolate

- Chocolate comes from the seeds of the Theobroma Cacao tree.
- It is typically a sweet preparation of the seeds that are roasted, ground and flavoured with vanilla.
- It is made in the form of a liquid, paste or in a block, or used as a flavouring ingredient.
- The seeds of the cacao tree have an intense bitter taste and must be fermented to develop the flavour.
- After fermentation, the beans are dried, cleaned, and roasted – the shell is removed to produce cacao nibs, and then ground to cocoa mass – pure chocolate in rough form.
- Because the cocoa mass is usually liquefied before being moulded with or without other ingredients, it is called chocolate liquor.
- The liquor may be processed into two components: cocoa solids and cocoa butter.

Theobromine

- Theobromine is the primary alkaloid (similar to caffeine) present in cocoa/chocolate.
- Cocoa beans contain 1%, whereas cocoa powder contains 2% - 10% theobromine.
- 25g of milk chocolate yields 60mg of theobromine, whereas 25g of dark chocolate contains up to 200mg.
- It is less addictive than caffeine, but may be the reason for chocolate addiction.
- Like caffeine, theobromine can cause sleeplessness, tremors, restlessness and anxiety.
- Additional side effects include; loss of appetite, nausea and withdrawal-headaches.

MAIN TYPES OF CHOCOLATE

Dark chocolate

- Consisting mainly of cocoa bean mass, cocoa butter, sugar, lecithin and vanillin – that is used for highlighting the flavour.
- The depth of the colour and bitterness of the flavour of the chocolate depend on the ratio between the bean mass and sugar.
- Semi-sweet dark chocolate with a 50% cocoa content, is often used commercially.
- The cocoa content of certain brands of dark chocolate can go up to 100%.
- This chocolate is deemed the healthiest and is mainly due to its higher cocoa content!

Milk chocolate

- Part of the dry cocoa is substituted with powdered, liquid, or condensed milks.
- This gives the chocolate a sweeter flavour, lighter colour and also softer structure.
- It is extremely sensitive to heat – using it for hot desserts is more complicated.
- However, it is very suitable for decorating, offering variation to the dark chocolate in terms of smell, flavour as well as colour.

White chocolate

- The ingredients are similar to those of the regular chocolate, except for one important difference: no cocoa bean mass or powder is used; only the cocoa butter.
- As compared to regular chocolate it also contains much more milk.
- White chocolate is sweeter than others and is very suitable for making desserts.
- Melting white chocolate requires special care, as it may become grainy or burn.

Fat Content

- Cocoa beans contain up to 50% fat, mainly comprised of two saturated fatty acids (Palmitic and Stearic acids) and one mono-unsaturated fatty acid (oleic acid).
- Palmitic acid [27%] tends to raise low-density lipoprotein (LDL) cholesterol.
- Stearic acid [33%] does not increase or decrease cholesterol levels.
- Oleic acid [34%] is associated with decreases in (LDL) cholesterol.

Chocolate Nutrition

Ingredient	Drinking Chocolate*	Cocoa Powder-Bitter	White Chocolate	Milk Chocolate	Dark 70% Chocolate	Dark 85% Chocolate
Calories	380kcal	345kcal	580kcal	544kcal	580kcal	630kcal
Fat	5.9g	22.6g	38.5g	33g	42g	53.5g
Saturates	3.7g	13.2g	23g	19g	25g	32g
Carbohydrates	75.1g	12.5g	51g	56g	36.5g	22.5g
Sugars	72.2g	0.4g	51g	55g	28.5g	13.5g
Dietary fibre	3.3g	30.5g	0.1g	2g	10g	11.5g
Protein	6.3g	22.5g	7.9g	7g	9.1g	9.4g
Cocoa Solids	25%	Unknown	30%	25%	70%	85%

Products analysed are all Green & Blacks, except the Milk Chocolate (Galaxy) and Cadbury's Drinking Chocolate. Numbers are based on 100g values.