THE SECRET OF

EXTRA VIRGIN COCONUT OIL CAPSULES

What does Virgin Coconut Oil (VCO) contains ?

Virgin coconut oil (VCO) is defined as the oil resulting from the fresh and mature kernel of the coconut *(Cocos nucifera L.)* through mechanical and natural means, either with the use of heat or not provided that it does not lead to alteration or transformation of the oil.[1]

VCO has many advantages, which include the health benefits from the retained vitamins and antioxidants, the antimicrobial and antiviral activity from the lauric acid components and through its easy digestibility from the medium chain fatty acids (MCFA).[1]

The oil extracted from fresh coconut meat (Virgin coconut oil) contains more ***medium chain fatty acids (MCFAs) (70–85%)***[1]

The major triacylglycerols obtained for the oils were LaLaLa, LaLaM, CLaLa, LaMM and CCLa (La, lauric; C, capric; M, myristic)[4]

The highest FA (fatty acid) is lauric acid in all of the VCO and ranged from 46.36 – 48.42 %, while the principal TAG (triacylglycerol) is LaLaLa (La: Lauric) with 17.94 – 19.83 % of the total TAG.[2]

Fatty acid profile of Virgin Coconut Oil[2]

	Fatty acid profile	Concentration (%)
C6	Caproic	2.215
C8	Caprylic	12.984
C10	Capric	6.806
C11	Undecanoic	0.028
C12	Lauric	47.280
C13	Tridecanoic	0.030
C14	Myristic	15.803
C15	Pentadecanoic	0.006
C16	Palmitic	6.688
C16 : 1	Heptadecanoic	0.011
C17	Stearic	0.011
C18	Oleic	1.481
C18 : 1n9c	Elaidic	5.073
C18 : 1n9t	Linoleic	0.231
C18 : 2n6c	Linolelaidic	1.168
C18 : 2n6t	γ-Linolenic	0.045
C18 : 3n6g	α-Linolenic	0.007
C18 : 3n3a	Arachidic	0.013
C20	Cis-11-Eicosenoic	0.039
C20 : 1n9	Behenic	0.039
C22	Cis-13,16-Docisadienoic	0.006
C24	Lignoceric	0.020

Source: Food Quality Research Unit, Universiti Kebangsaan Malaysia (UKM), Kuala Lumpur, Malaysia.

Biological active components available in the Virgin Coconut Oil are Anti-Oxidants, Vitamins and Phenolic compounds.[3]

Lauric acid possess powerful anti microbial properties capable of destroying disease causing bacteria, fungi, viruses and parasites.

Cardioprotective & Lipid lowering

The phenolic content was compared with that of conventional coconut oil and was found to be much higher in VCO, thus further supporting the potential health benefits of VCO, which is capable of reducing the lipid peroxidation content. The high phenol content is also responsible for normalizing lipids through various pathways. The higher polyphenolic fraction of VCO is responsible for its anti-inflammatory and antioxidant effects, which all work toward the prevention of CVD by preventing the progression of atherosclerosis. Apart from these benefits, VCO has also been found to enhance antithrombotic effects related to inhibition of platelet coagulation and promote anti-inflammatory effects.

Cancer prevention

Coconut oil has two qualities that help it fight cancer. One, because of the ketones produced in it's digestion. Tumor cells are not able to access the energy in ketones and are glucose dependent. It is believed that a ketogenic diet could be a possible component of helping cancer patients recover.

Anti-aging

According to research published in the medical journal Food and Function, coconut oil improves antioxidant levels and can slow aging. Coconut oil works by reducing stress on the liver and by lowering oxidative stress.

Diabetes

Protective and Antidiabetic effects of Virgin coconut oil

Results indicate Virgin coconut oil (VCO) to have an ameliorative effect on regenerating pancreatic islets while also having a favourable effect on blood glucose levels, it implies VCO to be beneficial in managing and preventing diabetes mellitus. VCO has blood glucose lowering properties.

References

1. International Food Research Journal 19 (3): 837-845 (2012), Physicochemical properties of virgin coconut oil extracted from different processing methods.

2. An Open-Label Pilot Study to Assess the Efficacy and Safety of Virgin Coconut Oil in Reducing Visceral Adiposity. ISRN Pharmacology Volume 2011, Article ID 949686, 7 pages.

3.Virgin Coconut Oil Supplementation Prevents Bone Loss in Osteoporosis Rat Model. Evidence-Based Complementary and Alternative Medicine Volume 2012 (2012), Article ID 237236, 8 pages.

4. Chemical Properties of Virgin Coconut Oil. Journal of the American Oil Chemists' Society. April 2009, Volume 86, Issue4, pp 301–307

5. The role of dietary coconut for the prevention and treatment of Alzheimer's disease: potential mechanisms of action, British Journal of Nutrition (2015), 114, 1–14

Alzheimer's Disease

Certain parts of the brain have an impaired ability to use glucose, partially due to disruption of insulin signaling. Thus, ketone bodies may help alleviate symptoms of Alzheimer's by providing an alternative energy source for the brain.

Virgin Coconut Oil is rich in medium-chain fatty acids (MCFA) helps to improve cognition.

MCT or MCFA can act as a non-carbohydrate fuel source by enhancing the formation of ketones or ketone bodies in the body which are AcAc, 3-b-hydroxybutyrate (3HB) and acetone.

The first two molecules are used for energy production, whereas acetone is a breakdown product of AcAc.

Brain can utilise alternative fuels such as monocarboxylic acids, lactate and ketones to maintain energy homeostasis and ketone bodies are used extensively as an energy source during glucose deficiency (ketosis).

AcAc and 3HB are short-chain (four-carbon) organic acids (ketone bodies) that can cross cell membranes freely, and cross the BBB through proton-linked, monocarboxylic acid transporters.

Osteoporosis in Post menopausal women

Virgin coconut oil improves bone antioxidant status by increasing the levels of glutathione peroxidase (GPX) and Superoxide dismutase (SOD).
The significant increase in the levels of GPX and SOD represents the endogenous release of antioxidant enzymes, in response to oxidative stress and the high free radical activity. The positive effect on the antioxidant enzymes was supported by a low level of malondialdehyde (MDA)

The antioxidant activity of VCO is due to the high composition of polyphenol compounds in the oil.

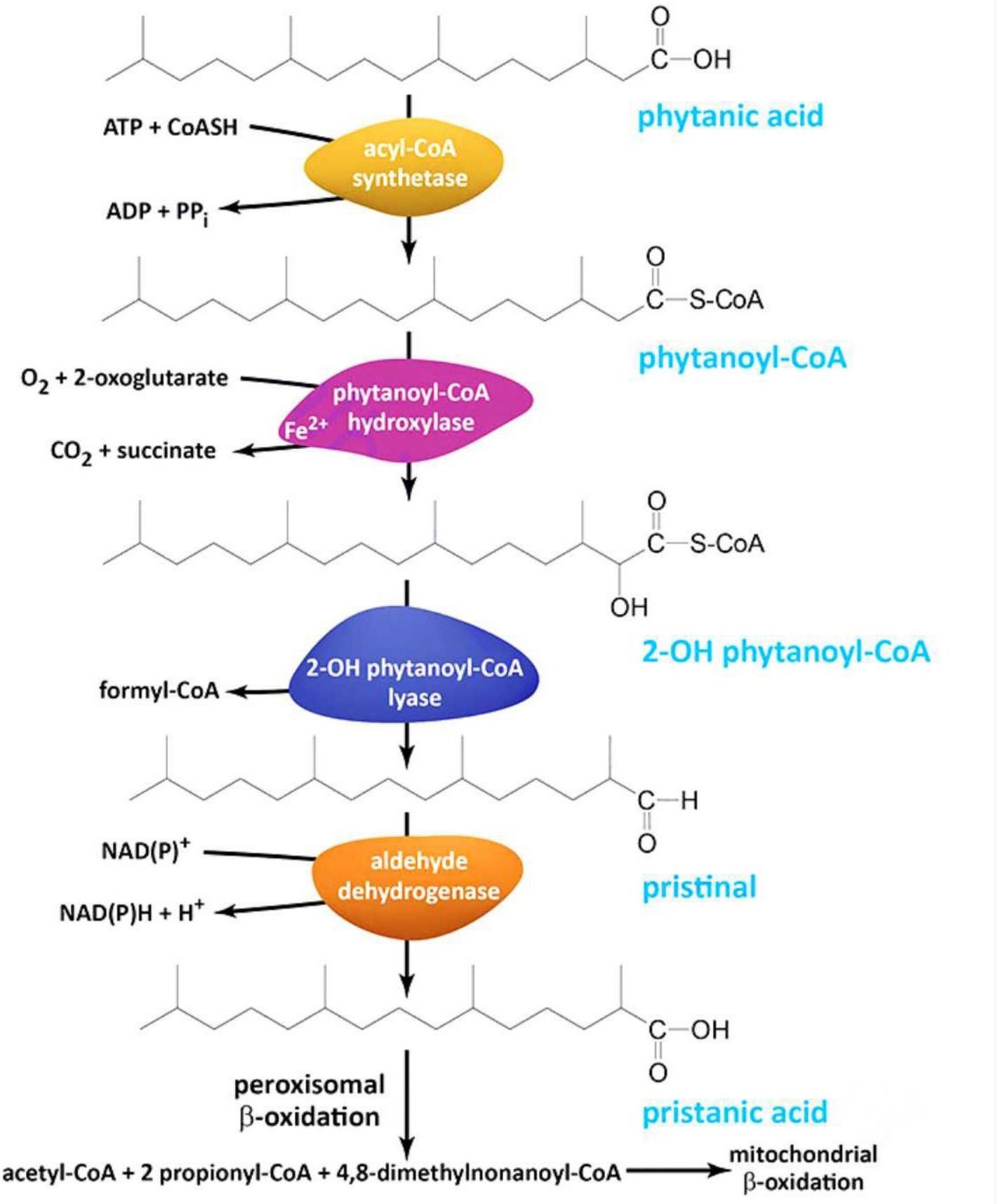
Weight reduction

Of all different types of coconut oils, VCO contains the highest proportion of medium chain fatty acids, with MCFA content being as high as 85.1% in VCO. Hence this oil naturally contains a mixture of MCFA and LCFA in a ratio of 3 : 1. MCFAs are rapidly absorbed in the intestines even without catalyzation by the pancreatic lipase enzyme.

Medium-chain fatty acyl-CoA molecules easily transfer into the mitochondria and can then be converted into acetoacetate (AcAc) and b-hydroxybutyrate, mainly by medium-chain fatty acyl-CoA-dehydrogenase. These two products can be metabolised further in the liver to produce CO2, H2O and energy.

The result of the quicker metabolic conversion of MCFA is that instead of being deposited as fat, the energy generated from MCFA is very competently converted into fuel for immediate use by organs and muscles.

Metabolism of Lauric acid (an MCFA) in liver.



Coconut Oil is most commonly used for improving:

- Heart Health
- Cholesterol Levels
- Skin Health
- Weight Management

References

1. International Food Research Journal 19 (3): 837-845 (2012), Physicochemical properties of virgin coconut oil extracted from different processing methods.

2. An Open-Label Pilot Study to Assess the Efficacy and Safety of Virgin Coconut Oil in Reducing Visceral Adiposity. ISRN Pharmacology Volume 2011, Article ID 949686, 7 pages.

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CAPSULES

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