

Coconut oil - composition and attributes

What [Wikipedia](#) says

Physical Properties

Coconut oil is a fat consisting of about 90% saturated fat. The oil contains predominantly medium chain triglycerides,[1] with roughly 92% saturated fatty acids, 6% monounsaturated fatty acids, and 2% polyunsaturated fatty acids. Of the saturated fatty acids, coconut oil is primarily 44.6% lauric acid, 16.8% myristic acid, 8.2% palmitic acid and 8% caprylic acid. Although it contains seven different saturated fatty acids in total, its only monounsaturated fatty acid is oleic acid while its only polyunsaturated fatty acid is linoleic acid.[2]

In the human body lauric acid is converted into monolaurin. [3]

Unrefined coconut oil melts at 24-25°C (76°F) and smokes at 177°C (350°F),[4] while refined coconut oil has a higher smoke point of 232°C (450°F).

Among the most stable of all oils, coconut oil is slow to oxidize and thus resistant to rancidity, lasting up to two years due to its high saturated fat content. [5] In order to extend shelf life, it is best stored in solid form (i.e. below 24.5°C [76°F]).

Types of Oil Available

Virgin coconut oil

Virgin coconut oil is derived from fresh coconuts (rather than dried, as in copra). Most oils marketed as "virgin" are produced one of three ways:

1. Quick-drying of fresh coconut meat, which is then used to press out the oil.
 2. Wet-milling (coconut milk). With this method, the oil is extracted from fresh coconut meat without drying first. "Coconut milk" is expressed first by pressing. The oil is then further separated from the water. Methods which can be used to separate the oil from the water include boiling, fermentation, refrigeration, enzymes and mechanical centrifuge. Refrigeration is simplest household method by which cooling the coconut milk for around 10 hours will make clean oil and water layers. Sparse amount of water present in the carefully tapped oil can be easily removed by bland heating for an hour or by putting dried lump salt in to it.
 3. Wet-milling (Direct Micro Expelling). In this process, fresh coconut kernel is shredded and dried to about 10% to 12% moisture. The moist shredded coconut is then pressed to expel virgin coconut oil.[6]
- While coconut oil has no world or governing body, the 18 member Asian and Pacific Coconut Community (APCC) produces about 85% of all coconuts.[7] The APCC has published its Standards for Virgin

For more information or to order CoolStance/PowerStance, please
call 803-647-1200 or e-mail Claudia@stanceglobal.com

Coconut Oil.[8] The Philippines has established a Department of Science and Technology (DOST) governmental standard.[9]

Refined oil

Coconuts sundried in Kozhikode, Kerala for making copra, which is used for making coconut oil. Refined coconut oil is referred to in the coconut industry as RBD (refined, bleached, and deodorized) coconut oil. The starting point is "copra", the dried coconut meat. Copra can be made by smoke drying, sun drying, or kiln drying. The unrefined coconut oil extracted from copra (called "crude coconut oil") is not suitable for consumption[citation needed] and must be refined. Another method for extraction of "a high quality" coconut oil involves the enzymatic action of alpha-amylase, polygalacturonases and proteases on diluted coconut paste.[10]

Hydrogenated oil

Coconut oil is often partially or fully hydrogenated to increase its melting point in warmer temperatures. This increases the amount of saturated fat present in the oil, and may produce trans fats.

Fractionated oil

"Fractionated coconut oil" is a fraction of the whole oil, in which most of the long-chain triglycerides are removed so that only saturated fats remain. It may also be referred to as "caprylic/capric triglyceride" or medium-chain triglyceride (MCT) oil because it is primarily the medium-chain triglycerides caprylic and capric acid that are left in the oil.

Because it is completely saturated, fractionated oil is even more heat stable than other forms of coconut oil and has a nearly indefinite shelf life.[citation needed]

Health Effects

The APCC provides a short bibliography of publications summarizing the coconut's health benefits.[11] Research shows that replacing other cooking oils with virgin coconut oil generally creates a more favourable HDL/LDL ratio. This oil has antiviral, antibacterial, antimicrobial, and antiprotozoal properties and, like all whole foods, contains nutrients for a healthy body.[12]

Over many decades coconut oil received bad publicity due to its saturated fat content, but research has shown that not all saturated fats are alike and coconut oil is unique in its structural make-up. It is not only the highest source of saturated fats (92%) but included in this is the highest source of saturated medium chain triglycerides (62%) of any naturally occurring vegan food source. Furthermore around 50% of these MCT's are made up of lauric acid, the most important essential fatty acid in building and maintaining the body's immune system.

Apart from coconut oil, the only other source of lauric acid found in such high concentrations is in mother's milk. Tropical oils and mother's milk are by far the richest food sources of medium chain fatty acids available. The closest other source of these vital building blocks for our immune system would be

For more information or to order CoolStance, please
call 803-647-1200 or e-mail Claudia@stanceglobal.com

milk fat and butter, comprising around 3% of its content. Any other vegetable oil is completely deficient in these medium chain fatty acids.

Heart Disease

Blood tests performed on rats showed decreased risk factors for heart disease (reduced total cholesterol, triglycerides and low-density lipoprotein and increased high-density lipoprotein) in rats fed virgin coconut oil, when compared to rats fed copra oil.[13] In addition, the polyphenol fraction of unprocessed coconut oil prevented in vitro oxidation of low-density lipoproteins.[14]

A study of Polynesian populations that consumed mainly coconut meat found that increased consumption of coconut was associated with significantly higher levels of serum cholesterol but this was not associated with higher rates of death due to heart attacks and other forms of cardiovascular disease.[15]

Coconut oil has been shown to reduce the tendency of the blood to clot when compared to polyunsaturated fats [16]

Reducing the consumption of coconut oil and replacing a portion of it with polyunsaturated fats resulted in changes to blood cholesterol levels that are associated with a reduced risk of cardiovascular diseases.[17]

Coconut oil is composed of a group of unique fat molecules known as medium-chain fatty acids (MCFA). Although they are technically classified as saturated fats, this fat can actually protect you from getting a heart attack or suffering a stroke. Although coconut oil is predominately a saturated fat, it does not have a negative effect on cholesterol. Natural, non-hydrogenated coconut oil tends to increase HDL cholesterol and improve the cholesterol profile. HDL is the good cholesterol that helps protect against heart disease. Total blood cholesterol, which includes both HDL (good) and LDL (bad) cholesterol, is a very inaccurate indicator of heart disease risk. A much more accurate way to judge heart disease risk is to separate the two types of cholesterol. Therefore, the ratio of the bad to good cholesterol (LDL/HDL) is universally recognized as a far more accurate indicator of heart disease risk. Because of coconut oil's tendency to increase HDL, the cholesterol ratio improves and thus decreases risk of heart disease. People who traditionally consume large quantities of coconut oil as part of their ordinary diet have a very low incidence of heart disease and have normal blood cholesterol levels. This has been well supported by numerous population studies. The research shows that those people who consume large quantities of coconut oil have remarkably good cardiovascular health.[18]

Antimicrobial Effects

Coconut oil has been found effective against certain strains of the Candida yeast, though it is ineffective against others.[19] Coconut oil taken orally was found to be a useful adjunct therapy in children with community-acquired pneumonia.[20] Taken in conjunction with IV ampicillin, coconut oil supplementation resulted in earlier normalization of respiratory rate and earlier normalization of lung sounds vs. IV ampicillin alone. Monolaurin from coconut oil has demonstrated virucidal activity against 14 human RNA and DNA enveloped viruses in vitro.[21] Another laboratory study investigated the effect of monolaurin on primary and secondary skin infections compared with six common antibiotics.[22] In culture isolates from

For more information or to order CoolStance, please
call 803-647-1200 or e-mail Claudia@stanceglobal.com

the skin infections, monolaurin showed statistically significant broad-spectrum sensitivity to both Gram-positive and Gram-negative bacterial isolates, such as *Staphylococcus aureus*, *Streptococcus* spp. and *Enterobacter* spp.

Applications

Cooking

Coconut oil is commonly used in cooking, especially when frying. In communities where coconut oil is widely used in cooking, the unrefined oil is the one most commonly used. Coconut oil is commonly used to flavour many South Asian curries.

Manufacturing

Coconut oil is used in volume quantities for making margarine, soap and cosmetics.

Hydrogenated or partially-hydrogenated coconut oil is often used in non-dairy creamers, and snack foods.

Coconut oil is an important component of many industrial lubricants, for example in the cold rolling of steel strip.

Cosmetics and skin treatments

Coconut oil is excellent as a skin moisturizer and softener. A study shows that extra virgin coconut oil is effective and safe when used as a moisturizer, with absence of adverse reactions.[23] Although not suitable for use with condoms, coconut oil may be used as a lubricant for sexual intercourse,[24] though it may cause an allergic reaction in some.

Fractionated coconut oil is also used in the manufacture of essences, massage oils and cosmetics

In India and Sri Lanka, coconut oil is commonly used for styling hair, and cooling or soothing the head. People of Tamil Nadu and other coastal areas such as Kerala, Karnataka, Maharashtra and Goa bathe in warm water after applying coconut oil all over the body and leaving it as is for an hour in the belief it keeps the body, skin, and hair healthy.

For more information or to order CoolStance, please
call 803-647-1200 or e-mail Claudia@stanceglobal.com