
AN ANALYSIS OF HEALTH BENEFITS OF COCONUT

Manjeet Kaur*

*SOP

Sanskriti University, Mathura, Uttar Pradesh, INDIA

Email id: manjeet.pharmacy@sanskriti.edu.in

DOI: [10.5958/2249-7315.2021.00291.4](https://doi.org/10.5958/2249-7315.2021.00291.4)

ABSTRACT

Coconut & palm oils, which have main sources of dietary fats throughout much of West Africa for millennia, have labeled as harmful, high-saturated fats. Its intake has promoted as a way to elevate blood cholesterol levels & therefore increase risk of coronary heart disease. Because of this negative perception, its use in West Africa has decreased, & it has been replaced by imported vegetable oils. Recent evidence, on the other hand, suggests that these oils have some positive benefits, especially in terms of nutrition, health, & national development. A greater knowledge of its impacts on health, nutrition, & country development is necessary. As a result, the purpose of this article is to examine functions that coconut & palm oils play in these areas in developing nations in order to advocate for its reintroduction into local diets.

KEYWORDS: Coconut, *Cocos nucifera*, Health, Milk, Oil.

1. INTRODUCTION

Cocos nucifera is the scientific name for coconut, according to Theodor Schimper & Ngoddy. 3 indentations (eyes) on the hairy nut mimic the head & look of a monkey, thus it was given the name *Cocos* by early Spanish voyagers. Meaning of *Nucifera* is nut bearing. For generations, coconut has supplied a healthy supply of milk juice, & meat oil that fed & sustained people all across the globe. Coconut juice is a nutrient-dense beverage that is high in vitamin & mineral. It is categorized as functional food since it has numerous fitness advantages in addition to its nutritional value. Tender coconuts are an excellent supply of electrolytes, chlorides, potassium, & magnesium, along with a little bit of sugar & protein. Blood pressure & cardiac function are aided by potassium level. Dietary fiber, manganese, calcium, riboflavin, & Vitamin C are all present in coconut water (1).

Coconut oil is a well-known cooking oil prepared from the kernel of ripe coconuts collected from the palm of coconut. Fatty acid profiles of 2 major kinds of coconut oil, copra oil (CO) & virgin coconut oil (VCO), are comparable; however, the latter includes more nutrients & dietary bioactive compounds (e.g., polyphenols). Extraction methods for 2 oils are different. CO is extracted from dried coconut kernels by crushing & extracting oil, which is subsequently refined, deodorized & bleached (RBD). RBD-CO is a kind of shortening that is frequently used in frying. VCO is produced through crushing tattered wet coconut kernels for extracting oil & coconut milk, then forming an emulsion which is subsequently detached using a variety of methods. VCO isn't refined, therefore it isn't exposed to higher temperatures of free fatty acid distillation & deodorization, which might volatilize & otherwise damage numerous heat-sensitive components. In recent years, VCO has grown in popularity (2).

1.1 Vita Coco juice:

Coconut water that is still young & green is ideal for fermentation. Various probiotic cultures from the diet of body ecology, along with having a slew of advantages, as detailed below. When coconut water is fermented, it creates a potent probiotic food with many health advantages. Vita Coco is made entirely of young green coconut water, with no additives or subtractions. This one-of-a-kind

product is similar to what you'd receive from fresh young green coconut, which is renowned throughout globe for its fitness advantages. Natural coconut water is substance of nature, biologically clean, full of natural sugar, salt, & vitamins to fend against tiredness & is next wave of energy beverages, according to data related to coconut water from green coconut. But, according to Mortin Satin, UN Food & Agriculture Organization's Chief, "natural." Coconut Medium-chain triglycerides (MCTs) are found in water & help to stimulate weight loss(3).

- Coconut water is healthier compared to orange juice since it has less calory.
- Coconut water is preferable compared to processed infant milk because it includes lauric acid, found in milk.
- It is inherently sanitary because filtering husk allows water to pass through!
- It is wide spread contributor because it is chemically similar to human plasma.
- It is naturally isotonic beverage, meaning it has similar electrolytic balance as human blood. It is, in a sense, fluid of life. During Pacific War, which lasted from 1941 to 1945, both sides in war utilized coconut water, which was extracted straight from nut, to provide backup plasma transfusions for injured troops.
- It has higher potassium (approximately 294 mg) compared to most sport drink & energy beverages (117 mg).
- Coconut contain fewer sodium (25 mg), compared with athletic drinks (41 mg) & energy drink (200 mg)!
- It has 5 milligrams of natural sugar, while sport & energy beverages include 10 to 25 milligrams of artificial sugar. Figures are for 100 mL drink.

1.2 Coconut water:

Coconut water has long used in tropical regions around world for rehydration & as a health & beauty aid. Coconut oil is well-known for its rapeutic properties. Coconut water has now added to pantry cabinet. Antiviral, antifungal, & antibacterial properties are found in coconuts. Or applications include: Combine coconut water with other juice for delicious drink that boosts fitness benefits while lowering calories & sugars. By adding Vita Coco coconut water to fruit juice, you can boost benefits while lowering sugar content. Coconut water has following health benefits(4):

- Suppresses arterial pressure
- Reduces swelling in hand& feet
- Normalizes functioning of intestine& increases metabolism
- Relieves spasm & stomach discomfort
- Eases burn
- Treat injury caused through antibiotic& toxin in digestive system

1.3 Fitness benefits:

Coconut juice is essentially well-stocked medication cabinet that come in its container & used in folk treatment for variety of ailments, including fever, migraines, stomach trouble, diarrhea, & more. It is also used to strengn heart& provides energy to those who are sick. Pregnant women in tropics enthusiastically consume huge amounts of young coconut juice in belief that it will provide m with. Coconut water contains lauric acid, which has antifungal, antibacterial, & antiviral effects that help body's immune system. Because of its strong antiviral & antibacterial

characteristics, coconut oil's medium chain lipids are comparable to fats found in mother's milk & have a similar nutritional impact, combating yeast fungus & or viruses including measles, herpes simplex, & influenza. Or nutrients, such as vitamins, minerals, & amino acids, are better digested & absorbed as well.

1.4 Coconut oil:

It is beneficial for one's health & energy. It has a role in diet as an essential physiologically functioning food with antiviral, antibacterial, & anti-obesity properties. Coconut oil's health & nutritional advantages have been known for millennia in various areas of the globe. According to a study of diet/heart disease literature appropriate to coconut oil, it is worth noting that in terms of atherogenicity of fats & oils, & is probably for being a helpful oil for preventing & treatment of certain heart disease. Furthermore, it is a non-promotional fat in terms of chemical carcinogenesis & offers a source of antibacterial fluids for those with weak immune systems.

1.5 Physiochemical characteristics of coconut oil:

1.5.1 Chemical properties:

Coconut oil was determined to be different from other fats & oils in the 1920s & 1930s because it was found to be mostly comprised of medium chain triglycerides (MCTs). Saturated fats like myristic, lauric, palmitic acid, linoleic acid, & others are found in virgin coconut oil (VCO) as measured by gas-liquid chromatography. VCO is colorless, rancidity-free, & has a distinct fresh natural coconut fragrance, among other qualities. According to Johnson & Cotte, MCTs present in VCO are considered an important nutrition for infants.

1.5.2 Antioxidant & anti-stress activity:

Researchers from Yaep et al. investigated anti-stress & antioxidant benefits of VCO in vivo in a study. Polyphenols in VCO have been shown to contribute to enhanced antioxidant enzyme levels, which decrease inflammation & lipid peroxidation in VCO-treated mice. Restoration of brain antioxidant levels prevents future neuronal damage &, as a result, monoamine depletion. Polyphenols & medium chain fatty acids found in VCO were shown to have the ability to counteract exercise & prolonged cold restraint stress-induced damage, along with restoring antioxidant balance.

1.5.3 Anti-inflammatory, analgesic, & antipyretic activities of VCO:

Intahphuak et al. used ethyl phenyl to assess anti-inflammatory, analgesic, & antipyretic effects of VCO in rats. Edema caused by propylate, along with paw edema caused by carrageenan & arachidonic acid. VCO was discovered to have anti-inflammatory properties that are modest. Furthermore, according to Sylianco, coconut oil has anticancer properties (5).

1.6 Effect of coconut on several diseases:

1.6.1 Alzheimer's Disease:

Alzheimer's disease (AD) is a widespread arrangement of dementia & is a progressive neurodegenerative disease. While the precise reason is unknown, lifestyle variables comparable to those linked to CVD have been linked to an elevated risk of Alzheimer's disease. Chronic inflammation & oxidative stress are believed to be the root of lifestyle variables that raise the risk of Alzheimer's disease. As a result, researchers have looked at dietary patterns along with specific food & nutrients to see where they might help prevent Alzheimer's disease. Coconut is one of these foods. Lay literature has a plethora of claims, case studies, tiny clinical trials, & anecdotal data, but there are no well-controlled clinical trials in people for backing up effective claims. Though, a plausible mechanism of action seems to encourage additional research into the role of coconut oil & MCTs it contains in enhancing cognition in those with early-stage cognitive impairment. Coconut has significant amounts of

MCFA, which leads to production of ketone bodies, moreover to its neuroprotective antioxidant effects. By offering an alternate energy source, ketones are believed to counteract an early symptom of Alzheimer's disease, brain glucose hypo metabolism. Pilot research was performed for evaluating intellectual changes in 44 people with Alzheimer's disease. coconut-enriched diet resulted in substantial gains in episodic, temporal, & semantic memory in those who consumed it. Women with mild-moderate Alzheimer's disease had most improvement. While there are no major clinical trials or cohort studies for supporting use of coconut oil to enhance cognitive function, evidence from mechanism of action & small studies suggests that further study is needed in this area(6).

1.6.2 Antimicrobial/Antiviral:

Coconut has been used as a food & medicine for thousands of years all throughout globe. It has been used in Ayurvedic treatment for about 4000 years. MCFAs are believed to be helpful in a variety of ways. Dissolving lipid membrane of a broad range of lipid-coated bacteria to kill them. Coconut oil has proven to have antifungal & antibacterial effects, particularly against *Candida albicans*. Bacterial growth has been found to be inhibited by capric, lauric, & caprylic acid. It's also been found to have a substantial impact on activity of polymicrobial dental biofilms. They are believed to interfere with signal transduction along with viral assembly & maturation in viruses. In conclusion, use of VCO for antibacterial & antiviral purposes has a lengthy history. Because of its long history of usage & findings of many research, further human studies are needed to better characterize its antibacterial & antiviral properties(7).

2. LITERATURE REVIEW

M&S et al. discussed use of coconut in health promotion & disease prevention in which they discussed how coconut tree, *Cocos nucifera* L., is grown for a variety of reasons, most important of which are its nutritional & therapeutic properties are delicate coconut. It is also used to strengthen heart & provide energy to those who are sick. Pregnant women in tropics enthusiastically consume huge amounts of young coconut juice in belief that it will provide them with. Coconut water contains lauric acid, which has antifungal, antibacterial, & antiviral effects that help body's immune system. Because of its strong antiviral & antibacterial characteristics, coconut oil's medium chain lipids are comparable to fats found in mother's milk & have a similar nutritional impact, combating yeast fungus & or viruses including measles, herpes simplex, & influenza. Other nutrients, such as vitamins, minerals, & amino acids, are better digested & absorbed as well. For example, coconut water & coconut kernels contain micro minerals & nutrients that are beneficial to human health; as a result, coconut is consumed by people all over world, mostly in tropical countries. As a result, coconut palm is extolled as 'Kalpavriksha' in Indian classics, & current study investigates facts & phenomena surrounding its use in health & sickness prevention.(8).

Fern&W et al. discussed role of dietary coconut for prevention & treatment of Alzheimer's disease in which they explained how coconut tree, *Cocos nucifera* L., is cultivated for a variety of goods, although it is primarily planted for its nutritional & therapeutic properties. Coconut oil, which is produced from coconut fruit, has long been thought to be rich in saturated fat; nevertheless, deeper examination indicates that coconut should be viewed more favorably. Coconut oil has medium-chain fatty acids, unlike most other dietary fats, which are rich in long-chain fatty acids (MCFA). MCFAs are unusual in that they might be converted to ketones & are readily absorbed & metabolized by liver. Ketone bodies are a kind of alternate energy source in brain that might help individuals who are developing or have memory problems, such as Alzheimer's disease (AD). Coconut is considered a nutrient-dense 'functional food.' Coconut is high in dietary fiber, vitamins, & minerals; however, evidence is growing that it might be helpful in treatment of obesity, dyslipidemia, increased LDL, insulin resistance, & hypertension - all of which are risk factors for CVD, type 2 diabetes, & Alzheimer's disease. Furthermore, phenolic chemicals & hormones

(cytokinins) present in coconut might help to prevent amyloid-peptide aggregation, possibly blocking a crucial stage in development of Alzheimer's disease. goal of this study was to look into coconut literature, outline known molecular physiology, & evaluate possible function of coconut supplementation as a therapeutic alternative in prevention & treatment of Alzheimer's disease(9).

Hoe et al. discussed Current Scenario & Development of Coconut Industry in which y explained how Coconut (*Cocos nucifera*), often known as "tree of life," is grown in more compared to 90 countries, mostly in Asia, Pacific Isl&s, & South America. Coconuts are grown on approximately 12 million hectares across globe, with a potential yearly output of 70 billion nuts. India, Indonesia, & Philippines are world's top coconut producers, accounting for more compared to 75% of total output. coconut business has seen fast expansion in creation of coconut goods, which are in high dem& in United States, Europe, Middle East, & East Asia. Traditional coconut goods include coconut oil, copra meal, dried coconut, & coir products, while coconut water, virgin coconut oil, coconut milk, & cream are among fastest growing. New coconut hybrids were developed, with potential copra yields ranging between 7.65 & 9.12 tonnes per hectare per year. *Brontispaalonissima*, *Aceriaguerreronis*, & *Aspidiotus rigidus* *Rhynchophorus ferrugineus* are among new invasive pests harming coconut farms in Southeast Asia. Meanwhile, phytoplasma-caused lethal yellowing disease (LYD) is most damaging coconut disease now affecting production in Caribbean, Americas, & Africa. Borgia coconut syndrome, first deadly yellowing ailment reported in Oceania, was recently identified in Papua New Guinea (PNG).— coconut business is propelled forward by fast expansion & considerable dem& for coconut-based goods across world, which has proved to provide higher economic returns for coconut farmers. As a result, nations who are highly reliant on a single industrial crop should take advantage of this chance to diversify its plantation crops by switching to coconut as a new economic crop(10).

3. DISCUSSION

Coconut palm is a valuable crop for people all around world, since it provides food, fiber, wood, & medicine. Extra virgin coconut oil, in particular, has many beneficial components. Because of its fatty acid makeup, many of its health advantages have ignored. It is mainly made up of saturated fatty acids. A high-saturated-fat diet has linked to elevated risk of cardiac disease & other chief lifestyle diseases. As a result, public health messaging in past have emphasized on urging people to consume less saturated fats, such as those found in coconuts. However, link between saturated fat intake & CVD has lately called into doubt. When it comes to establishing where or not reducing saturated fat consumption mends lipid profiles &, possibly, CVD risk, it's apparent that what's substituted with saturated fat is crucial to understating findings. It seems that replacing fat with vegetable fats is further advantageous compared to replacing fat with simple carbs. This is unsurprising given detrimental health effects of eating too much simple carbs. While diet–disease associations cannot be conclusively established solely on a single meal or food category, it is apparent that identifying dietary sources of nutrients is critical when evaluating such associations.

There is much evidence to support distinguishing various dietary sources of saturated fats in order to explain specific nutrients of each source & its health implications. This was comparable to how various kinds of polyunsaturated fats are recognized for their distinct characteristics & health effects, such as omega 3 & omega 6 polyunsaturated fats. When comparing nutritional content of coconut to other saturated fat sources, like beef, using same method with various kinds & source of saturated fatty acid is justified. Beef contains a lot of long-chain saturated fats, whereas coconut has a lot of medium-chain saturated fats & oils. Medium-chain fatty acids are assimilated contrarily compared to longer chain fatty acids & have related to a number of health welfares, involving increased cognitive function & healthier lipid profile.

Coconuts might therefore offer a healthy supply of saturated fats whereas simultaneously delivering

phenols & antioxidants in context of dietary arrangement that linked to health advantages, such as Mediterranean diet. While data on link between saturated fat intake & heart disease is unclear & therefore does not fully justify reversing recommendation to avoid saturated fats, change is definitely warranted. More research on relationship between various kinds of saturated fat & illness is needed. When drafting revisions & related policies, future suggestions & guidelines should take all elements of study into account.

4. CONCLUSION

It is widespread edible oil made using kernels of ripe coconuts collected from palm of coconut tree. Fatty acid profiles of two major kinds of copra oil coconut oil, & virgin coconut oil, are comparable; however, latter includes more nutrients & dietary bioactive compounds (e.g., polyphenols). Due to supposed fitness benefits of some medium-chain fatty acids, coconut oil products have become more widespread; never less, lauric acid (C12:0), main fatty acid present in coconut oil, has proposed to act as both a medium- & long-chain fatty acid in terms of metabolism. Fur more, since coconut oil contains wide range of fatty acids, studies on pure medium-chain fatty acids can't be directly transferred to products of coconut oil. This narrative review aims to synsize existing peer-reviewed research on health benefits of coconut oil products along with processes that underpin them. Topical usage for atopic dermatitis prevention & treatment, along with "oil pulling" for tooth caries prevention, has limited but consistent data.

Coconut oil products might potentially help to reduce hair damage caused by protein loss & ultraviolet (UV) exposure during grooming; however, further research is required to validate this benefit. re is insufficient evidence to support its usage for Alzheimer's disease prevention or rapy, bone loss prevention, or glycemic control. Larger clinical intervention trials are needed based on evidence on weight reduction & cardiac disease. When compared to butter fat, bleached, refined, & deodorized copra oil seems lower effect on total & low-density lipoprotein (LDL) cholesterol, but not is unsaturated vegetable oils. Numerous claim on products of coconut oil, that are mainly depending upon animal in vitro research or study of pure medium-chain fatty acids, need human clinical & observational studies to be confirmed.

REFERENCES

1. Lay Ting T, Putra Jaya R, Abdul Hassan N, Yaacob H, Sri Jayanti D. A review of utilization of coconut shell & coconut fiber in road construction. *J Teknol.* 2015;
2. Prades A, Salum UN, Pioch D. New era for coconut sector. What prospects for research? *OCL - Oilseeds fats, Crop Lipids.* 2016;
3. Camargo Prado F, De Dea Lindner J, Inaba J, Thomaz-Soccol V, Kaur Brar S, Soccol CR. Development & evaluation of a fermented coconut water beverage with potential health benefits. *J Funct Foods.* 2015;
4. Rodsamran P, Sothornvit R. Physicochemical & functional properties of protein concentrate from by-product of coconut processing. *Food Chem.* 2018;
5. Anuar MF, Fen YW, Zaid MHM, Matori KA, Khaidir REM. Synsis & structural properties of coconut husk as potential silica source. *Results Phys.* 2018;
6. Bellow SA, Agunsoye JO, Adebisi JA, Kolawole FO, Hassan SB. Physical properties of coconut shell nanoparticles. *Kathm&u Univ J Sci Eng Technol.* 2018;
7. Somawiharja Y, Wonohadidjojo DM, Kartikawati M, Suniati FRT, Purnomo H. Indigenous technology of tapping, collecting & processing of coconut (*Cocos nucifera*) sap & its quality in blitar regency, east java, indonesia. *Food Res.* 2018;
8. DebM&al M, M&al S. Coconut (*Cocos nucifera* L.: *Arecaceae*): In health promotion &

disease prevention. Asian Pac J Trop Med. 2011;

9. Fern&o WMADB, Martins IJ, Goozee KG, Brennan CS, Jayasena V, Martins RN. role of dietary coconut for prevention & treatment of Alzheimer's disease: Potential mechanisms of action. British Journal of Nutrition. 2015.
10. Hoe TK. Current Scenario & Development of Coconut Industry. Plant Kuala Lumpur. 2018;