

## VIRGIN COCONUT OIL'S NUTRITIONAL PROFILE AND THERAPEUTIC ADVANTAGES

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### ABSTRACT

*Virgin coconut oil is a product that can be produced from fresh coconut meat, milk, or residue. It has earned a reputation as a well-liked cooking oil that serves several purposes. It is regarded as the newest, highest-quality coconut product, and consumers are particularly interested in it because of its functional food qualities and human, nutraceutical advantages. Many studies that demonstrate its positive effects are to blame for its rising popularity. A number of research have looked at the pharmacological effects of virgin coconut oil, including its anti-inflammatory, analgesic, antipyretic, antioxidant, anti-stress, and antibacterial activities. The benefits of virgin coconut oil in preventing bone loss and cardio protection have also been examined in another research.*



**KEYWORDS:** Introduction, Virgin coconut oil, Chemical composition and Health benefits,

### INTRODUCTION

Coconut oil is a crucial ingredient in a variety of traditional Asian and Pacific cuisine recipes. Coconut oil differs from other vegetable oils due to its high content of medium chain fatty acids (MCFAs), particularly lauric acid. Since MCFAs are quickly burned up after consumption, the body uses them to create energy right away as opposed to storing them as body fat. Lauric acid is converted into the antiviral and antibacterial compound monolaurin, which has several beneficial properties. Therefore, it is thought that consuming coconut oil may help with infection prevention. Typically, mechanical or natural methods, together with heat or without it, are used to extract coconut oil from wet coconut meat. It's not necessary to use chemical methods for refining, bleaching, or deodorizing. As a result, virgin coconut oil (VCO), which has not had its nature changed, has been created. VCO is quickly gaining enormous significance because of its many health advantages, high saturation level, and strong stability. Coconut oil in its most pure state,

VCO has a flavor and fragrance that are uniquely coconut. It becomes colorless like water when it liquefies after becoming solid at low temperatures. This type of coconut oil is the purest; it smells like a fresh coconut, includes natural Vitamin E, and contains other priceless ingredients found in coconut meat. Because VCO is a source of saturated fatty acids (SFAs), it has positive benefits that dispel all myths that were prevalent. Analgesic, antipyretic, antioxidant, anti-stress, antibacterial, anti-obesity, anti-HIV, and cardioprotective effects are just a few of the impressive functional qualities that health experts believe this amazing meal offers.

**Table 1. Fatty acid profile of virgin coconut oil**

<b>Fatty Acids</b>	<b>Composition (% of Total Fatty Acids)</b>
<b>Lauric Acid</b>	45-53%
<b>Myristic Acid</b>	16-21%
<b>Caprylic Acid</b>	5-10%
<b>Palmitic Acid</b>	7-10%
<b>Capric Acid</b>	5-8%
<b>Oleic Acid</b>	2-8%
<b>Linoleic Acid</b>	1-3%

## **NUTRITIONAL PROFILE**

VCO is primarily composed of various types of fatty acids. Saturated fats make up nearly 87% of the fats in virgin coconut oil. The medium-chain triglycerides (MCTs) that make up the saturated fat in coconut oil are shorter than the long-chain triglycerides (LCTs) that are found in the majority of other dietary fats. The potential health benefits of coconut oil are becoming more and more popular since it differs from other oils in terms of composition. Here's a table outlining the approximate composition of fatty acids found in VCO.

**PROCESSING METHODS OF VCO:**

Virgin coconut oil (VCO) is often made using a cold-pressing or wet-milling method in order to preserve the natural tastes and health-improving compounds present in coconuts. The steps involved in generating VCO:

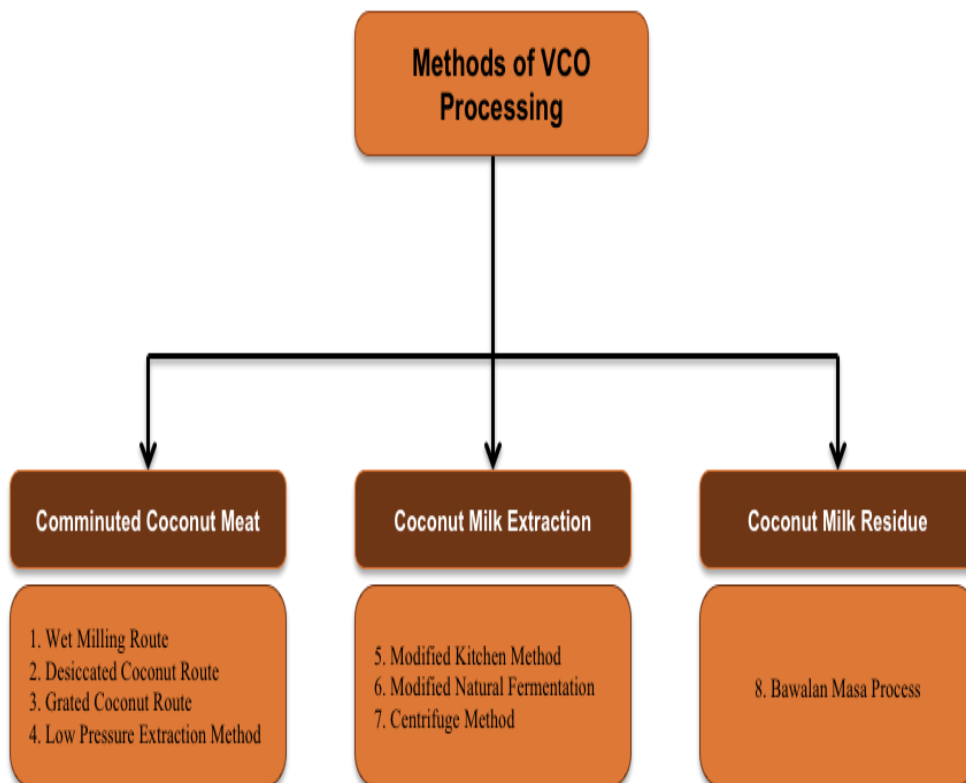


Figure 1. Methods of VCO processing



## THERAPEUTIC ADVANTAGES

The possible health advantages of virgin coconut oil have grown in popularity, but it's vital to keep in mind that scientific study is continuing and that some claims may need to be supported by more evidence. Here are a few potential health advantages of virgin coconut oil:

- ***Anti-inflammatory properties of VCO:*** Although the immune system uses inflammation as a defence against infections, it can have negative effects if it is not controlled. Many illnesses can be caused by and made worse by the intricate immune systems and mediators that play a role in the inflammatory response. Inflammation has been linked to a number of human diseases, including cancer, atherosclerosis, ischemic heart disease, and neurological diseases like Alzheimer's, according to recent studies. These diseases include some that are not predominantly immune system problems. The demand for more potent and secure anti-inflammatory treatments exists, nonetheless, as the existing drugs have side effects. As a result, VCO presents a chance for more investigation into and creation of anti-inflammatory treatments. Due to VCO's high phenolic content, several groups have expressed a strong interest in researching its anti-inflammatory properties. Caffeic acid, p-coumaric acid, and ferulic acid are a few of the phenolic acids found in VCO. Through a number of routes, polyphenols regulate and lower inflammation, which prevents cancer and other illnesses with an inflammatory pathophysiology. This section should thus summarise the research on VCO's potential anti-inflammatory effects.

- ***Analgesic and Antipyretic potential of VCO:*** The capacity of VCO to inhibit the production and release of these endogenous chemicals that cause pain may be the cause of the analgesic effect. The VCO had an analgesic effect in both the hot plate test and the abdominal constriction test, demonstrating that they are active in blocking peripherally and centrally mediated pain brought on by chemical and heat stimuli. The efficacy of VCOs in lowering pain during the formalin test provided additional evidence of both the peripheral and central effects.

Elevated body temperature, or fever, is a clinical indicator of inflammation that happens when the PGE2 content in particular regions of the brain rises. By using yeast-induced hyperthermia as a test subject, the team showed that VCO has antipyretic properties. The suppression of cyclooxygenase, which prevents PGs from being produced or released in the thermoregulatory center, is most likely what causes VCO's antipyretic effects.

- ***Anti-cancer:*** One of the main ingredients in coconut oil, lauric acid, has been investigated for its possible anticancer properties. The fatty acid portion of coconut oil specifically targets the liver through

portal circulation and lymph as chylomicron. The anti-cancer effectiveness of coconut oil against oral cancer cells and liver cancer.

- **Cardioprotective effect of VCO:** In the VCO, there are significant amounts of the MCFAs lauric acid, caprylic acid, capric acid, and capric acid. Large amounts of it (65%) are composed of medium chain triglycerides (MCTs). These MCTs are promptly absorbed from the intestinal tract and delivered to the liver, acting as an instant source of energy, without taking part in the production or transportation of cholesterol. This led to the discovery that VCO was effective in lowering cholesterol levels.
- **Obesity:** Coconut oil's MCTs are thought to speed up metabolism and heighten feelings of satiety, which may help with weight control. When they are a part of a balanced diet, several studies have suggested that they may help people lose body weight and shrink their waistlines.
- **Bone loss prevention:** Free radicals and oxidative stress are linked to the pathophysiology of osteoporosis. Antioxidants are hence likely to stop the illness. In one study, it was demonstrated that VCO significantly restored bone structure and stopped bone loss in rats with osteoporosis. The polyphenols in VCO are responsible for this benefit. By reducing lipid peroxidation and raising levels of the enzyme's glutathione peroxidase and superoxide dismutase in the osteoporotic rat model, VCO supplementation also demonstrated a considerable increase in the bone's antioxidant state.
- **Anti-microbial:** As an antibacterial agent, VCO has a long history of usage. There are additional applications for VCO against infections thanks to its history of safe topical use and the absence of any known or documented incidences of side effects. Lauric acid, caproic acid, and caprylic acid are only a few of the many MCFA found in VCO. The antibacterial, antifungal, antiviral, and other activities of this substance are due to MCFA.
- **Heart health:** Although medium-chain triglycerides (MCTs) like lauric acid make up the majority of coconut oil, it does include a lot of saturated fats. According to some research, the cholesterol-lowering effects of these MCTs may be negligible or even somewhat beneficial. Although excessive consumption of saturated fats might be harmful to heart health, it must be done in moderation.
- **Skin and Hair care:** The moisturizing and nourishing qualities of virgin coconut oil make it a popular ingredient in skincare and haircare products. In addition to promoting healthy-looking hair, it can help hydrate the skin and lessen dryness.
- **Digestive health:** Coconut oil is used to enhance digestive health by those who claim it is beneficial for conditions including irritable bowel syndrome (IBS). Additional study is necessary to verify these effects.

- **Brain health:** MCTs may have advantages for the health of the brain, according to ongoing studies. They have been researched as a potential treatment for some neurological diseases, including Alzheimer's disease, and may offer the brain an alternative energy source.
- **Oral health:** It is believed that oil pulling, a practice that involves swishing oil in the mouth (often coconut oil), may improve oral health. It might promote gum health and lessen dangerous microorganisms in the mouth.

## CONCLUSION

In summary, virgin coconut oil has a variety of possible health advantages, but it should only be taken sparingly and as a part of a healthy diet and way of life. The virgin coconut oil (VCO) is produced from the young, mature kernel (flesh) of the coconut using mechanical or natural means, heat may or may not be applied, and the oil is not subjected to any chemical refining, bleaching, or deodorizing procedures. This process keeps virgin coconut oil from losing its properties while preserving the beneficial ingredients such as tocopherols (vitamin E), vital amino acids, and other useful chemicals.

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