

Coconut Oil and Health



Scientists and consumers alike are asking, “What is the deal with fat?” Research has confirmed that the type of fat we eat is more important than how much we eat. But which fats are the healthiest? And we eat food, not just fats—so what should we eat?

Some say coconut oil will soothe and even cure all that ails you. Most people know that any cure-all claim will lead to disappointment. Still, when efforts to lose weight, lower cholesterol, and avoid diabetes remain unsuccessful for so many people, it is easy to see why we are looking for solutions that are off the beaten path.

This fact sheet will examine the evidence for the many claims made about coconut oil so that you can make smart decisions about how to incorporate it into your diet.

COCONUT OIL CLAIMS

One of the supposed health effects tied to coconut oil is protection against heart disease. Some say coconut oil will help you lose body fat, especially from your abdomen or trunk, where stored fat is most harmful to your health. Other claims are that coconut oil may prevent and even treat cancer, diabetes, and HIV/AIDS, boost brain function in people with Alzheimer’s disease, stimulate thyroid function, and fight off bacterial, viral, and yeast infections.

WHAT DOES COCONUT OIL RESEARCH REVEAL?

Evidence is sparse for several claims associated with coconut oil:

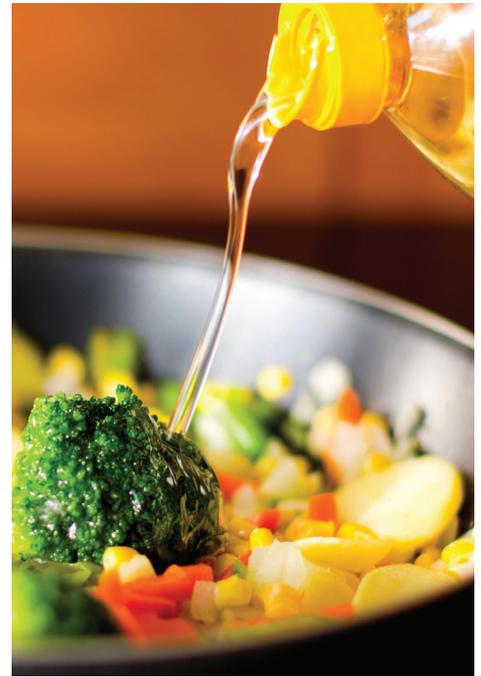
- No research directly assesses the effects of coconut oil on Alzheimer’s disease, diabetes, or thyroid function.
- The human body forms monolaurin which is a substance with antimicrobial and anti-fungal properties. However, a study comparing monolaurin to dietary coconut oil in rats revealed no antimicrobial benefit of refined or virgin coconut oils. (Manohar 2013).
- While a study on coconut oil supplementation and improved nutritional status of people with HIV/AIDS is mentioned on the Internet, no such study has been published in the peer-reviewed literature.
- Animal research documents mixed effects of various fat sources in comparison to coconut oil on carcinogenesis, (Eder 2008; Fang 2007; Diggs 2013; Walker 2007; Reddy 1984; Cohen 1984; Craig-Schmidt 1993) but studies are limited. One human study suggests improved quality of life for advanced cancer patients given coconut oil supplementation versus no treatment; however, the possibility of a placebo effect cannot be ruled out with this study design (Law 2014).



Heart health...

In animal studies, some evidence suggests that saturated fat from coconut oil may improve blood lipids (such as LDL cholesterol, HDL cholesterol, triglycerides, and others), and that virgin coconut oil is particularly beneficial (Nevin 2004; Nevin 2008). However, the cardiovascular effects of coconut oil in humans are complicated and still unfolding.

Small, case-control studies have observed a lack of association between coconut or saturated fat intake and coronary heart disease (CHD) in communities for whom coconut is an important part of the diet (Lipoeto 2004; Kumar 1997; Prior 1981). A larger study of Filipino



WHAT IS A FATTY ACID?

Basically, fatty acids are the building blocks of fats. Most of the fats in foods are triglycerides, which are molecules containing three fatty acids attached to a glycerol backbone. Fatty acids are categorized and listed on nutrition labels as saturated, polyunsaturated (PUFA), monounsaturated (MUFA), and trans fats. There are several individual fatty acids within each of these categories. For example, the predominant saturated fatty acids in the American diet include lauric, palmitic, myristic, and stearic acids. Caprylic, capric, and lauric acids are shorter in the chain length than other saturated fatty acids. Thus, they are commonly referred to as medium-chain fatty acids. A medium-chain triglyceride (MCT) is a dietary fat in which the majority of fatty acids are medium-chain.



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females observed that HDL cholesterol, considered protective, was significantly higher for those who consumed the most coconut oil (Feranil 2011).

Compared to diets high in unsaturated fats, diets high in saturated fats from coconut oil have been shown in clinical trials in a variety of populations to increase total and LDL cholesterol, but also improve HDL cholesterol (Mendis 1990; Müller 2003; Assunção 2009; Cox 1995). A more favorable overall effect on total, LDL, and HDL cholesterol together has been demonstrated with partial versus total replacement of coconut with unsaturated fat sources (Mendis 2001).

It is also possible that coconut oil has different blood lipid effects compared to other sources of saturated fats. Coconut oil has been shown to raise both total and HDL cholesterol compared to beef (Reiser 1985) and palm oil (Ng 1991). However, a diet rich in coconut oil resulted in lower levels of triglycerides and total and LDL cholesterol compared to a butter-rich diet (Cox 1995; Cox 1998).

Overall, the favorable effects of diets high in MUFA and PUFA versus saturated fats on LDL cholesterol are well-documented (Vannice 2014). While small amounts of coconut oil may provide some benefit to HDL cholesterol levels, further research is needed to understand the appropriate role for coconut oil in a heart healthy diet.

Body fat loss...

Coconut oil claims are primarily based on the reported beneficial effects of MCTs. About 58% of the fatty acids in coconut oil are medium-chain fatty acids—caprylic (7.4%), capric (5.9%) and lauric acid (44%).



Because medium-chain fatty acids are saturated, 87% of the total fatty acids in coconut oil are saturated (Vannice 2014). MCTs (specifically those consisting of capric and caprylic acid (DeLany 2000)) have been touted as being more efficiently metabolized and less likely to be stored as fat. As coconut oil contains primarily lauric rather than caprylic or capric acid, and a total of 58% rather than 100% medium-chain fatty acids, coconut oil cannot be assumed to have the same health effects as MCTs (Vannice 2014).

There are very few human studies available on coconut oil and body fat loss.

A small pilot human trial showed that men consuming virgin coconut oil had a significant reduction in waist circumference over six weeks (Liau 2011). However, the study was small and there was no control group. In addition, a randomized, double-blind clinical trial compared supplementation with coconut versus soybean oil among obese women consuming low-calorie diets and walking 50 minutes a day (Assunção 2009). There were no differences in body weight between groups, but the coconut oil group had a significant decrease in waist circumference. More research with coconut oil is needed in order to understand any potential effect on body composition.

Anti-inflammatory effects...

Preliminary evidence in animals suggests that coconut oil should be explored as a dietary fat source for protection against the damage to the colon that is caused by inflammatory diseases of the digestive tract (Mañé 2009). Antioxidant and

anti-inflammatory effects have also been noted in arthritic rats with supplementation with polyphenolic fraction of virgin coconut oil (Vysakh 2014). However, one study showed no significant acute effect of coconut oil consumption on inflammation in humans (Voon 2011). Furthermore, some research demonstrates increased inflammatory markers and triglyceride levels in close relatives of people with diabetes (who are themselves at risk for diabetes) following a coconut oil-rich meal (Pietraszek 2011; Pietraszek 2013). The evidence for the effects of coconut oil on inflammation is limited and mixed.

WHAT IS THE BOTTOM LINE?

Coconut oil is not a cure-all. Research supporting claims of its role in preventing, reducing risk for, or curing HIV/AIDS, diabetes, thyroid disease, or Alzheimer's disease is sparse or non-existent. There is little evidence to suggest it has a significant effect on inflammation or bacterial infection when consumed in food. And the pre-clinical research in cancer is mixed. Considerable research is needed to determine whether such claims may one day be substantiated.

Further research may also help to clarify the potentially beneficial effect of coconut oil on HDL cholesterol levels and waist circumference. In order to reduce cardiovascular disease risk through diet, it will be necessary to determine the appropriate balance of dietary fatty acids that will favorably affect a range of cardiovascular risk factors.

It is possible to include coconut oil in a healthful diet. Rather than focus on the saturated fat content of this single food ingredient, it is important to acknowledge that coconut oil contains a blend of fatty acids and other nutrients. It should not replace a significant amount of other plant oils in the diet. Those

who enjoy the flavor of coconut oil may consider using it in place of butter or shortening, or paired with other cooking oils. Coconut oil can be one of a wide variety of plant-based foods that are included to support health and wellness, keeping in mind that only small amounts should be consumed.



VIRGIN COCONUT OIL AND COPRA OIL

Most coconut oil is derived by a "dry" process from copra, the endosperm of the coconut. Light and/or heat used in the process may inactivate natural components of coconut oil that have health-promoting properties.

Virgin coconut oil is extracted from coconut milk by a "wet" process under controlled temperatures, which helps to protect beneficial components such as polyphenols and tocopherols. Coconut oils derived with either method have similar fatty acid profiles. Based on preliminary animal research, some have suggested that the phytochemicals in virgin coconut oil may support health through antioxidant and anti-inflammatory action (Nevin 2004).