

Coconut Holds Promise for Immune Suppressed People

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Originally published in A & U Magazine, December 2000,
and WellBeing Magazine, June 2001

One of the concerns of health professionals involved in the treatment of HIV+ individuals is finding safe, nontoxic, and effective therapies. Over the years, various practitioners have advocated a plethora of alternative remedies, from acupuncture to herbs. More recently the search has turned up a very unlikely find: coconut oil. Once widely used in cooking, coconut oil has virtually disappeared from the American food supply, being found now only in certain ice creams (e.g., Haagen Daas), baked goods, and macaroons. These days, most people associate coconut oil with cosmetics as it is a popular hair and skin moisturizer.

Ongoing research, however, has revealed a virtual powerhouse of compounds in coconut oil that could offer considerable benefits to those with immune problems. These benefits can be broken into three groups: (1) medium chain triglycerides (MCTs), (2) antimicrobial fatty acids, and (3) safety.

MCTs

Medium chain triglyceride oils are a special class of fats that are digested and handled by the body in a different way from other fats. In lipid biochemistry, all fatty acids are classified according to the number of carbon atoms present in their structure, as well as the degree of saturation, or how many hydrogen atoms are bonded to the carbons. Short and medium chain triglycerides are those that have fatty acids with 12 carbons or less, while long and very long chain triglycerides are those having 14-24 carbons. A fatty acid that has two hydrogen atoms linked up to each carbon atom is saturated. Further, a fatty acid with two hydrogens missing is monounsaturated. Lastly, a fatty acid with four or more hydrogens missing is polyunsaturated.

The predominant fatty acids in MCT oils are medium chain saturated fatty acids (MCFAs) and over 60% of the fats in coconut are MCFAs. Its important here to note the difference between coconut oil and commercial MCT oils: coconut oil contains a particular fatty acid called laurate, while commercial MCT oil preparations do not. As we shall see, it is primarily lauric acid that makes coconut oil of particular value to immune-compromised individuals.

How are they handled by the body? MCFAs from MCTs are digested and absorbed quickly and used for energy. Since one gram of fat provides over twice as many calories than either one gram of protein or carbohydrate, MCTs are a superior energy source. Because of their quick absorption and combustion, most MCTs are not stored as fat tissue by the body. MCTs actually have a thermogenic, or fat burning, effect.

They are fats that help you stay slim by keeping your body fat levels down and your energy levels up. Additionally, because of their easy absorption by the body, MCTs are ideal for those with digestive problems, such as diarrhea, who might be having difficulty with long chain fatty foods.

ANTIMICROBIAL FATTY ACIDS

Coconut oil contains several antimicrobial fatty acids that can directly benefit HIVers and PWAs. The first is caprylic acid. Sold as a supplement in health food stores, this fatty acid has been used for decades as a remedy for intestinal yeast infections as caprylic acid directly kills such potentially harmful fungi as candida albicans and candida tropicalis.

Intestinal yeast imbalances are a major concern for those on antibiotics as these drugs kill off the good intestinal bacteria that help to control yeast overgrowth. Coconut oil contains about 8% caprylic acid. Given this amount, integrating coconut oil into one's diet could help prevent and treat intestinal yeast overgrowth.

Some other fatty acids in coconut oil include capric (7%), myristic (18%), palmitic (8%), and oleic (6%). All of these are needed by the body to carry out a range of biological functions. Capric acid has also demonstrated significant activity against Herpes simplex-2, chlamydia, and HIV-1.

The major fatty acid in coconut oil, however, is the one being studied most closely. Lauric acid is a 12-carbon fatty acid that makes up almost 50% of coconut oil. Lauric acid is also one of the principle fats found in human breast milk. It is generally agreed that the lauric acid in breast milk is one of the key things that protects a baby's intestines from bacterial, protozoal, viral, and fungal infections until its immune system can gain enough strength to fend for itself.

Lauric acid converts into the substance monolaurin in the small intestines, a powerful, yet safe, antimicrobial substance. Research by lipid biochemists has shown monolaurin to inactivate fungi such as Candida albicans, and such bacteria as Listeria, Staphylococcus, and Streptococcus, as well as such viruses as Herpes simplex, Cytomegalovirus (CMV), Influenza, Measles, and HIV. Monolaurin apparently inactivates microbes by disrupting their lipid membranes.

The benefits here to HIVers should be obvious. Foods containing lauric acid help to maintain the integrity and health of the digestive tract, as well as help fight and kill a range of pathogens. Besides coconut oil, palm kernel oil and milk fat (butter, ghee, and cream) also contain lauric acid (50% and 5% respectively). Rouqefort cheese also contains appreciable amounts of lauric acid.

SAFETY

A major benefit to using coconut oil is its safety: no side effects have ever been recorded with its use. Although some health professionals might be concerned over the high saturated fat content of coconut oil (about 94%), such worries are unwarranted as we shall see towards the end of this article.

RESEARCH

No researcher has done more to call attention to the possible benefits of coconut oil to HIVers and PWAs than Dr. Mary Enig, PhD, formerly of the University of Maryland. Enig is a well-known lipid biochemist who has done extensive research on trans-fatty acids and their connections to heart disease, cancer, and immune dysfunction. More recently, however, she has turned her attention to lauric acid and its possible benefits to HIVers and PWAs. Enig authored a chapter on lauric acid in the just released *Nutrients and Foods in AIDS* (CRC Press; 1999), and is currently involved in designing studies to demonstrate the benefits of lauric acid.

In addition to Enig's work, the first clinical trial involving coconut oil and monolaurin has just finished up in the Philippines. Preliminary results on the small trial indicated that greater than 50% of the patients had a reduced viral load and that one third of the patients had a favorable increase in their CD4/CD8 ratios. The study also indicated that the patients using coconut oil fared better than those just on monolaurin supplements.

Enig also reports on anecdotal data indicating a significant reduction in viral load in individuals not on HIV drug therapies who added 3-4 tbsp of coconut oil to their daily diet to yield 25 grams of lauric acid per day. Details on these stories can be found in her published works, as well as through the organization Keep Hope Alive.

More recent research conducted by Sadeghi, et. al., has demonstrated that coconut oil in combination with fish oil decreases levels of pro-inflammatory cytokines such as Tumor Necrosis Factor (TNF(a)) and Interleukin-6 (IL-6), while stimulating production of anti-inflammatory cytokines such as Interleukin-10 (IL-10). High levels of TNF(a) are directly tied to wasting. Its interesting to note here the prevalence of coconut/fish dishes in Polynesian culture. Perhaps these native peoples knew there was something beneficial in this combination.

INTEGRATING COCONUT INTO THE DIET

In her research, Enig has concluded that immune-compromised individuals should strive to ingest about 25 grams of lauric acid per day. Enig based this figure on comparative levels found in human breast milk. If one is using coconut oil, this amounts to 4 tbsp a day.

DANGERS?

Along with butter, coconut oil has been unfairly demonized over the last few decades by the establishment nutrition community as being bad for one's heart. This pronouncement is based on the belief that saturated fats clog arteries and elevate cholesterol levels, also believed to be a marker for heart disease. In the HIV community, those on HAART sometimes have to deal with elevated blood triglyceride and cholesterol levels. Consequently, HIVers and PWAs are often told to follow low-fat/cholesterol diets.

Dr. Enig, however, has this to say: "The idea that saturated fats cause heart disease is totally wrong. Our bodies manufacture saturated fatty acids all the time to carry out a number of important biological functions. The same saturates that the body makes are the same ones found in food. There were experiments that showed coconut oil to elevate triglyceride and cholesterol levels, but these studies were done with hydrogenated coconut oil, not natural unrefined coconut oil. Furthermore, the rats used in this study were fed only coconut oil--nothing else. This limited diet created a deficiency of essential fatty acids (EFAs) which will cause elevations of cholesterol and triglycerides. In a diet that includes enough EFAs, however, natural, unrefined coconut oil is a safe and healthy food choice.

Heart disease is a complex illness with a number of causes, but saturated fats and dietary cholesterol are not among them."

Furthermore, Enig, along with this author, feel that low-fat diets are inappropriate for HIVers and/or PWAs for a number of reasons. Higher calorie diets are often recommended to HIVers to give the body more energy to fight infection; however, it is very difficult to have a high calorie diet without sufficient fat as fat is a concentrated energy source. In my experience, recommended diets for HIVers and PWAs may be low in fat, but they are conversely loaded with sugar from foods like fruit juice. One diet I analyzed recommended over 10 glasses of fruit juice a day, along with other sugary foods like pudding and soda! It is a known fact that high sugar intake elevates blood triglycerides and can suppress the immune system. Clearly, then, sugar intake should be curtailed, not encouraged, in HIVers and PWAs.

Enig further points out that, "High-calorie diets cannot be palatable without using adequate levels of fat because fat makes food taste good. U.S. government recommendations to lower dietary fat consumption to 30% of one's calories, which are applied to all fats regardless of type, should be ignored by the individual who is HIV+ or has progressed to AIDS as long as the fat in the diet is high lauric fat. Fats that should be avoided are those oils that are partially hydrogenated (like margarine and shortening) and oils that have been overly refined such as all vegetable oils, including corn, cottonseed, and soybean oil. The main reason why is the very high amounts of polyunsaturated fatty acids (PUFAs) in these oils. PUFAs are more prone to oxidation in the body, therefore generating more free-radical activity which damages the cells and tissues. When one increases the amount of natural saturates in one's diet, oxidation is reduced and one's available antioxidant supply is spared."