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Q & A

The Benefits of CLA
Too Good To Be True?

Q From what I have read it seems CLA is too good to be true. Have you had or seen any positive results from its usage, and/or negative for that matter?

A CLA is quite legitimate. It is what we used to get lots of when we ate range fed animals. Of course, as with most things, it helps some people and not others. To use it, you would need to reduce some of your saturated fat intake and replace some more with CLA. I take 2.5 gms per day, but I take so many things and have never had fat/muscle problems, so I can't really tell if it helps in that respect. However, it also has other health benefits. Here are some relevant abstracts:



Effects of conjugated linoleic acid on body fat and energy metabolism in the mouse

Conjugated linoleic acid (CLA) is a naturally occurring group of dienoic derivatives of linoleic acid found in the fat of beef and other ruminants. CLA is reported to have effects on both tumor development and body fat in animal models. To further characterize the metabolic effects of CLA, male AKR/J mice were fed a high-fat (45 kcal%) or low-fat (15 kcal%) diet with or without CLA (2.46 mg/kcal; 1.2 and 1.0% by weight in high- and low-fat diets, respectively) for 6 wk. CLA significantly reduced energy intake, growth rate, adipose depot weight, and carcass lipid and protein content independent of diet composition. Overall, the reduction of adipose depot weight ranged from 43 to 88%, with the retroperitoneal depot most sensitive to CLA. CLA significantly increased metabolic rate and decreased the nighttime respiratory quotient. These findings demonstrate that CLA reduces body fat by several mechanisms, including a reduced energy intake, increased metabolic rate, and a shift in the nocturnal fuel mix.

Am J Physiol 1998 &Sept;275(3 Pt 2):R667- 72

Opposite effects of linoleic acid and conjugated linoleic acid on human prostatic cancer in SCID mice

The relationship between dietary fat intake (level and type) and cancer development is a matter of concern in Western society. The purpose of this study was to determine the effect of three different diets on the local growth and metastatic properties of DU-145 human prostatic carcinoma cells in severe combined immunodeficient (SCID) mice. Animals were fed a standard diet or diets supplemented with 1% LA or 1% CLA for 2 weeks prior to subcutaneous (s.c.) inoculation of DU-145 cells and throughout the study (total of 14 weeks). Mice receiving LA-supplemented diet displayed significantly higher body weight, lower food intake and increased local tumor load as compared to the other two groups of mice. Mice fed the CLA-supplemented diet displayed not only smaller local tumors than the regular diet-fed group, but also a drastic reduction in lung metastases. These results support the view that dietary polyunsaturated fatty acids may influence the prognosis of prostatic cancer patients, thus opening the possibility of new therapeutic options.

Anticancer Res 1998 May -Jun;18(3A):1 429-34

Conjugated linoleic acid modulates tissue levels of chemical mediators and immunoglobulins in rats

The effects of conjugated linoleic acid (CLA) on the levels of chemical mediators in peritoneal exudate cells, spleen and lung, and the concentration of immunoglobulins in mesenteric lymph node and splenic lymphocytes and in serum were examined in rats. After feeding diets containing either 0 (control), 0.5 or 1.0% CLA for 3 wk, there was a trend toward a reduction in the release of leukotriene B4 (LTB4) from the exudate cells in response to the dietary CLA levels. However, CLA did not appear to affect the release of histamine. A similar dose-response pattern also was observed in splenic LTH4, lung LTC4 and serum prostaglandin E2 levels, and the differences in these indices between the control and 1.0% CLA groups were all statistically significant. The reduction by CLA of the proportions of n-6 polyunsaturated fatty acids in peritoneal exudate cells and splenic lymphocyte total lipids seems to be responsible at least in part for the reduced eicosanoid levels. Splenic levels of immunoglobulin A (IgA), IgG, and IgM increased while those of IgE decreased significantly in animals fed the 1.0% CLA diet. This was reflected in the serum levels of

immunoglobulins. The levels of IgA, IgG, and IgM in mesenteric lymph node lymphocytes increased in a dose-dependent manner, while IgE was reduced in those fed the higher CLA intake. However, no differences were seen in the proportion of T-lymphocyte subsets of mesenteric lymph node. These results support the view that CLA mitigates the food-induced allergic reaction.
Lipids 1998 May;33(5):521-7

Q I saw your posting regarding trimethylglycine (TMG). I am currently taking SAME but it is quite expensive. Do you know where I can find more information about TMG, recommended dosage, etc.? I simply want to know if it has the same (direct or indirect) effect as SAME on mood, and what dosage of TMG is "equivalent" to 1600 mgs of SAME. Any pointers would be greatly appreciated.

A The "equivalent" amount of TMG would be about 470 mg, that is if all of it was used for mood regulation purposes, and all of the methionine-the first conversion step-got converted into SAME. However, the latter are unlikely to occur. Therefore, to be safe, I would recommend at least 2 grams of TMG daily, although a lot more is really needed for true "equivalent" effects. A description of TMG is provided below:

TMG may be one of the most important nutrients to prevent heart disease, stroke, liver disease, slow aging and treat depression. TMG is also called glycine betaine, but the name "trimethylglycine" signifies that it has three methyl groups attached to each molecule of glycine. In the body, TMG donates one of its methyl groups to cellular DNA, which may help protect DNA against damage and its consequences, cancer and premature aging. When a TMG methyl group is donated to a molecule of homocysteine, it is converted first to methionine then to s-adenosyl-methionine (SAM). No "safe" level of homocysteine has been established, suggesting that taking nutrients like TMG could lower everyone's risk of heart attack and stroke, in addition to protecting DNA. Dosage and use: 1000 - 2500 mg daily are suggested for healthy people. Three to six grams daily may be taken under the care of a physician to treat liver failure or depression. This product is most effectively utilized when taken with meals. TMG should be taken with co-factors vitamins B6 and B12, and folic acid, which enhance a second and independent conversion pathway.

Q I have been taking 2 gms of Omega-3 fish oil, three times a day for a total of 6 gms in caps, and 1 gm of EPA (eicosapentaenoic acid). In your opinion, is this a plentiful enough dose of Omega-3 fish oil in capsules to help with my prostate cancer?

A Your dosage is certainly quite plentiful and may even be too high with regard to the reduction of blood clotting ability, especially if you are also taking aspirin, vitamin E and other clotting inhibitors. I would suggest taking only one of the capsules three times daily. However, for prostate cancer, a radical, more risky approach may be justified. Just watch for bleeding bruising signs. In addition, I have recently read that DHA is more beneficial than EPA for the latter purpose. So if you can get a high dosage, DHA-only source, that might be best.

Q Can Omega-3 create arachidonic acid and, if so, should arachidonic acid be cut down in my case, given I have prostate cancer?

A Arachidonic is an Omega-6 fatty acid. The Omega-3's and -6's cannot be interconverted in humans.

As far as reducing arachidonic acid in your case, yes- recent papers suggest that reduced Omega-6 intake, particularly of arachidonate, would be beneficial by allowing more cell apoptosis.

Q What would be the consequences of high doses of Omega-3 in an attempt to displace arachidonic acid?

A Given that some of the same enzymes are used to elongate both Omega-3s and Omega-6s, using high doses of Omega-3 in an attempt to displace arachidonic acid may make some sense. Thus, if you ate only minimal linoleic acid (base of Omega-6s) and large amounts of alpha linolenic (base of Omega-3s), the enzymes might be busy elongating the alpha linolenic and make less arachidonic from the linoleic. This may be a strategy worth trying. In addition, there is evidence that consuming the already formed, longer chain omega-3's (EPA and DHA) will inhibit the production of those elongation enzymes, thus inhibiting arachidonate production.

Q What enzymes detoxify the prostate gland?

A The term "detoxify" is not a scientific term with a clearly defined meaning. However, the antioxidants lycopene and alpha tocopherol have recently been shown to have a synergistic inhibitory effect on androgen insensitive prostate cancer cell proliferation. See abstract:

Lycopene in association with alpha-tocopherol inhibits at physiological concentrations inhibits proliferation of prostate carcinoma

cells

The effect of lycopene alone or in association with other antioxidants was studied on the growth of two different human prostate carcinoma cell lines (the androgen insensitive DU-145 and PC-3). It was found that lycopene alone was not a potent inhibitor of prostate carcinoma cell proliferation. However, the simultaneous addition of lycopene together with alpha-tocopherol, at physiological concentrations, resulted in a strong inhibitory effect of prostate carcinoma cell proliferation, which reached values close to 90%. The effect of lycopene with alpha-tocopherol was synergistic and was not shared by beta-tocopherol, ascorbic acid and probucol.

Biochem Biophys Res Commun 1998 Sep 29;250(3):582-5

Q Should the Life Extension Mix be taken with meals, or on an empty stomach. I know that the Mix contains amino acids which, as far as I know should be taken separately and on an empty stomach, so how can they be effective when taken with meals?

A Life Extension Mix contains potent quantities only of those amino acids which are often deficient in the foods that we eat. Their purpose is to augment the protein that is eaten with the meal, not to necessarily act individually.

[Back to the Magazine Forum](#)

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