

Nutritional Influences on Illness

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Cancer and Conjugated Linoleic Acid

Conjugated linoleic acid (CLA) is a collective term used

to describe a mixture of positional and geometric isomers of linoleic acid with conjugated double bonds. Commonly present in the diet, CLA appears to have several beneficial health effects.

Excitement over CLA research began when extracts of grilled ground beef were found to inhibit mutagenesis (a change in a gene's chemistry)¹ and carcinogenesis (cancer development),² and CLA was identified as the active principle.³ CLA is unique because, in experimental models, most naturally occurring substances with anticarcinogenic activity are of plant origin, while CLA is present in food from animal sources.⁴ It is the only fatty acid shown unequivocally to inhibit carcinogenesis in experimental animals.⁵ Most importantly, it shows anticancer efficacy at concentrations close to those present in the average diet.⁶

CLA inhibits *in vitro* proliferation of human malignant melanoma, colorectal, breast and lung cancer cell lines at physiological concentrations.⁷ Moreover, in a number of animal studies, CLA inhibited the development of mammary tumors at near-physiological concentrations, and the effect was unrelated to the amount and type of fat in the diet.⁸ This finding is consistent with the epidemiological observation that high intakes of milk and milk fat appear to be associated with a low risk of breast cancer⁹ – despite the fact that dairy products contain both hormones and growth factors that have been implicated in the proliferation of breast cancer cells.¹⁰

In fact, even though epidemiological data associates the consumption of high-fat milk products with a substantially increased risk of prostate cancer,¹¹ research with an animal model suggests again that CLA is protective. When mice fed a CLA-supplemented diet were compared to a regular diet-fed group, not only were their local tumors smaller, but they also had a drastic reduction in lung metastases. By contrast, linoleic acid promoted tumor development.¹²

What particularly interests me about CLA is the evidence suggesting that, due to modern changes in our diet, most of us are failing to ingest adequate amounts for optimal health. Ruminants (cud-chewing animals) have bacteria that convert linoleic acid into CLA. Beef and whole cow's milk are the main sources of CLA in the Western diet, and both have lost favor among health-conscious consumers due to their high content of saturated fat.

Moreover, the CLA content of beef and cow's milk is readily affected by the animal's diet and, over the past few decades, their CLA content has been declining steadily as cattle are increasingly being switched from grazing in pastures to feed lots in which they are fed prepared feeds to make them gain more weight quickly and produce more milk.¹³ In one study, for example, cows grazing in pastures and receiving no

supplemental feed had 500% more CLA in the milk fat than cows fed typical dairy feed-lot diets.¹⁴

How much CLA is optimal? While it is too early to give a final answer, it appears that the ideal dosage for a person weighing 165 pounds is in the range of 3 to 5 grams daily.⁶ Since most people ingest less than one gram daily – and I would not suggest eating several pounds of cheese a day to make up the difference – a CLA supplement makes sense for those who don't wish to wait until adequate human trials are eventually completed. (Tonalin, which is packaged under several name brands, is the standardized extract that has been most widely used in research studies.) Taking it with a meal should help avoid the possibility of mild gastrointestinal side effects.

Reports of human trials with standardized CLA supplements started to appear in 1997 and the supplements have so far been found to be quite safe. We can't rule out the possibility of long-term adverse effects. However, so long as supplementation is merely repleting a dietary deficiency, adverse effects would be highly unlikely.

Doctor Werbach cautions that the nutritional treatment of illness should be supervised by physicians or practitioners whose training prepares them to recognize serious illness and to integrate nutritional interventions safely into the treatment plan.

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Doctor Werbach has teamed with Michael Murray ND again for the second edition of *Botanical Influences on Illness*, their acclaimed sourcebook for clinicians practicing herbal medicine, which is twice the size of the original edition. For information, contact Third Line Press Inc., 4751 Viviana Drive, Tarzana, California 91356 USA; 800-918-0076; 818-996-0076; Fax: 818-774-1575; E-mail: tlp@third-line.com; Internet: <http://www.third-line.com>.