

# CLA Complex



## Clinical Applications

- Supports Healthy Body Composition\*
- Helps Decrease Catabolic Effect of Training on Muscle Protein\*
- Affects the Production of Cytokines and Arachidonic Acid-Derived Eicosanoids\*

**CLA Complex** is a patented form of conjugated linoleic acid (CLA). The yield of CLA is at least 78%, providing 1.56 g of pure CLA per serving. Animal and human studies suggest that CLA may reduce body fat and help maintain healthy body composition and lean muscle mass. CLA Complex is guaranteed to provide the highest levels of pure CLA and contains those isomers that are most commonly associated with positive health benefits. While CLA in the diet is found primarily in dairy products and beef fat, CLA Complex is derived from pure, non-GMO safflower oil.\*

All 3rd Opinion Inc Formulas Meet or Exceed cGMP Quality Standards

## Discussion

Conjugated linoleic acid (CLA) is a fatty acid found in small amounts in the human diet and can amount to an estimated average intake of 0.35-0.43 g CLA per day.<sup>[1]</sup> Research using higher doses of CLA (via supplementation) suggests that it reduces body fat in a dose-related manner. A 2007 meta-analysis of randomized, double-blind, placebo-controlled (RDBPC) human trials revealed that a mean dose of 3.2 g CLA per day produced modest fat loss in human subjects.<sup>[2]</sup> Four capsules of CLA Complex provides 3.12 g of CLA in a 50:50 ratio of cis-9,trans-11 (c9,t11) and trans-10,cis-12 (t10,c12) isomers, the composition commonly used in clinical studies. Though c9,t11 is the principal CLA isomer found in food, t10,c12 appears to specifically affect fat cells by inhibiting lipoprotein lipase and stearyl-CoA desaturase, resulting in reduced uptake of lipids into adipocytes.\*<sup>[3]</sup>

A three-month RDBPC study of 60 overweight or obese volunteers was conducted utilizing various doses of CLA. A significantly higher reduction in body fat mass (BFM) was seen in all CLA groups compared to placebo. However, no further reduction in BFM occurred with doses >3.4 g/day.<sup>[4]</sup> A six-month clinical trial suggested that fat loss from CLA supplementation occurred primarily in the abdominal area and legs of females and in the abdomen of males without specific diet or exercise efforts. No adverse effects on blood parameters or insulin sensitivity were observed.<sup>[5]</sup> In 2004, a long-term RDBPC study was performed in healthy, overweight subjects. After 12 months, BFM was significantly reduced in subjects receiving CLA (50:50 ratio of c9,t11 and t10,c12) in both triacylglycerol and free fatty acid form when compared to placebo. Statistical significance was observed as early as six months and increased as the study progressed. Lean body mass (LBM) was significantly higher in the free fatty acid form of CLA (the form in CLA Complex) when compared to placebo; LBM in the triacylglycerol CLA supplemented group did not differ from placebo.<sup>[6]</sup> A 12-month extension study suggested that long-term CLA supplementation decreased BFM, was well tolerated, and helped maintain reductions in body fat and weight over time.\*<sup>[7]</sup>

Interestingly, CLA supplementation was found to decrease body fat percentage even in normal weight subjects. Without changing diet, calorie intake, or lifestyle, the group consuming 2.4 g CLA in an RDBPC study experienced a decrease in body fat from 21.3 to 17% (representative of a 15-20% reduction in fat but no change in weight) while the placebo group experienced an increase in body fat.<sup>[8,9]</sup> In fact, when calories are restricted by more than 200 per day, hypocaloric intake appears to negate the effects of CLA on fat loss.<sup>[10]</sup> Although the mechanism of action of CLA is not completely understood in humans, animal studies suggest that CLA upregulates gene expression of mitochondrial uncoupling proteins and lipid metabolizing proteins. These modifications ultimately contribute to reduced fat mass and increased LBM. CLA affects peroxisome proliferator-activated receptors as well. These nuclear receptors are found to regulate metabolic processes in the cell.\*<sup>[11]</sup>

A seven-week, randomized, placebo-controlled, crossover study addressing the effects of 5 g/day of CLA on muscle resistance training suggested that the CLA group had a significant increase in lean tissue mass, a significant decrease in fat mass, and a "lessening of the catabolic effect of training on muscle protein."<sup>[12]</sup> A study of 44 healthy young women suggested that supplementing with 3.6 g of CLA alone or with exercise helped maintain healthy glucose metabolism.\*<sup>[13]</sup>

Research in vivo and in vitro suggested that CLA affected the production and balance of arachidonic acid-derived eicosanoids, NF-kappaB, COX-2 enzymes, and cytokines.<sup>[14,15]</sup> A double-blind, randomized study of 28 healthy subjects revealed that levels of TNF-alpha and IL-1beta were significantly decreased ( $P < 0.05$ ) and levels of IL-10 were significantly increased ( $P < 0.05$ ) following supplementation with 3 g/d CLA (50:50 ratio of c9,t11 and t10,c12 CLA).<sup>[15]</sup> Supplementation with 2.5 g/d of CLA (equivalent to 2 g/d 50:50 ratio of c9,t11 and t10,c12 CLA) produced statistically significant test results that reflected a decrease in joint discomfort and stiffness in a randomized, double-blind placebo controlled three-month study. When combined with alpha-tocopherol, supplementation with CLA produced a significant decrease in erythrocyte sedimentation rate (ESR).<sup>[16]</sup>





# Supplement Facts

Serving Size: 2 Softgels  
Servings Per Container: 60

	Amount Per Serving	%Daily Value
Calories	20	
Calories from Fat	20	
Total Fat	2 g	3%†
Conjugated Linoleic Acid (CLA)	1.56 g	**

\*\* Daily Value not established.  
†Percent Daily Values are based on a 2,000 calorie diet.

**Other Ingredients:** Softgel (bovine gelatin, glycerin, and natural caramel color), and mixed natural tocopherols.

## Directions

Take one to two softgels twice daily with food, or as directed by your healthcare practitioner.

Consult your healthcare practitioner prior to use. Individuals taking medication should discuss potential interactions with their healthcare practitioner. Do not use if tamper seal is damaged.

## References

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## Does Not Contain

Wheat, gluten, corn, yeast, soy protein, dairy products, fish, shellfish, peanuts, tree nuts, egg, artificial colors, artificial sweeteners, or artificial preservatives.

**\*These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure, or prevent any disease.**

