

Conjugated Linoleic Acid: Recent Advances in Disease Prevention and Management

Conjugated Linoleic Acid (CLA) is a polyunsaturated fatty acid similar in structure to linoleic acid. CLA has received increasing attention in recent years. Starting with anticarcinogenic effects, the potential benefits of this unique fatty acid have extended to antiatherogenic properties, anti-diabetic properties, enhanced immune response and positive effects on lean muscle mass vs. body fat.

CLA is found in food products of ruminants, such as cattle and sheep. Total CLA content in foods may vary widely. Representative and relative concentrations of CLA in a variety of foods are summarized in the following table. Concentrations are highest in food from beef, lamb and dairy products - generally from 3-7mg/g fat. Seafoods, pork, most poultry products and vegetable oils are not notable sources of CLA. People may be giving up important sources of CLA if they are trying to eliminate all the dairy and meat fat from their diets.

Current measures of usual or actual dietary intakes of CLA are very limited. Estimates based on intake data from USDA's Continuing Survey of Food Intake of Individuals (CSFII 1994-1996) suggests that beef users consume 221 mg of CLA/ day; while non-beef users consume 102 mg/day. Studies have suggested that high levels of CLA in the diet may have strong disease preventive properties.

Representative/Relative Concentrations of CLA in Uncooked Foods¹

Food	Total CLA (mg/g fat)	c9, t11-isomer (%)
Meat		
Fresh ground beef	4.3	85
Beef round	2.9	79
Beef frank	3.3	83
Beef smoked sausage	3.8	84
Veal	2.7	84
Lamb	5.6	92
Pork	0.6	82
Poultry		
Chicken	0.9	84
Fresh ground turkey	2.5	76
Seafood		
Salmon	0.3	n.d.*
Lake trout	0.5	n.d.
Shrimp	0.6	n.d.
Dairy Products		
Homogenized milk	5.5	92
Butter	4.7	88
Sour cream	4.6	90
Plain yogurt	4.8	84
Ice cream	3.6	86
Sharp cheddar cheese	3.6	93
Mozzarella cheese	4.9	95
Colby cheese	6.1	92
Cottage cheese	4.5	83
Reduced fat swiss	6.7	90
Am. Processed cheese	5.0	93
Cheez whiz™	5.0	92
Vegetable Oils		
Safflower	0.7	44
Sunflower	0.4	38
Canola	0.5	44
Corn	0.2	39

* n.d. => not detectable

CLA Content of Sample Menu

Breakfast

Cereal with 2% Milk (25 mg)
Whole Wheat Toast with Butter (40 mg)
Orange Juice
Banana
Coffee with Half and Half (10 mg)

Lunch

Roast Beef & Swiss Cheese Sandwich (77 mg)
Carrot and Broccoli Salad
Smoothie with 2% Milk (38 mg)
Applesauce Bread with Cream Cheese (13 mg)
2% Milk (25 mg)

Dinner

Lamb Chop (170 mg)
Baked Potato with Sour Cream (18 mg)
Tossed Salad with Raisins
Pineapple and Banana Bread
Tea

Snack

Chocolate Pudding (2% milk) (13 mg)

= 429 mg CLA

1. Adapted from Chin, S.F.; Liu, W.; Storkson, J.M.; Ha, Y.L.; Pariza, M.W. Dietary sources of conjugated dienoic isomers of linoleic acid, a newly recognized class of anticarcinogens. J. Food Comp. Anal. 5:185-197; 1992.

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