

Linoleic Acid

Subjects: Nutrition

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Definition

The purpose of this entry was to summarize human intervention trials that investigated the effects of linoleic acid consumption on lipid risk markers for cardiovascular disease (CVD) in healthy individuals. It also provided mechanistic details, and dietary recommendations for linoleic acid. Future research directions were also discussed. The findings from this entry demonstrated that linoleic acid consumption decreases CVD risk markers in healthy individuals.

1. Introduction

Linoleic acid (LA) is an essential omega-6 (or n-6) polyunsaturated fatty acid (PUFA)^{[1][2][3]}. It has been suggested that replacement of saturated fat with LA decreases serum cholesterol, but does not decrease the risk of death from coronary heart disease (CHD)^[4]. Additionally, there has been concern that consuming high amounts of LA may increase the risk of inflammation^[5]. Therefore, this entry reviewed human intervention trials in which cardiovascular disease lipid risk markers were analyzed following consumption of LA. The results will provide insights regarding recommendations of LA to decrease the risk for cardiovascular disease.

2. Sources

2.1. Oil Sources

Table 1. Oil sources of linoleic acid (per 100 g)¹.

Oils	Energy (Kcal)	Total Lipid (g)	Linoleic Acid (g)	Alpha-Linolenic Acid (g)	Total Saturated Fat (g)
Canola oil	884	100	18.6	9.14	7.37
Corn oil	900	100	53.5	1.16	13.0
Cottonseed oil	884	100	51.9	0.20	25.9
Grapeseed oil	884	100	69.6	0.10	9.60
Olive oil	884	100	9.76	0.76	13.8
Peanut oil	884	100	32.0	0.00	16.9
Safflower oil	884	100	12.7	0.10	7.54
Sesame oil	884	100	41.3	0.30	14.2

Soybean oil	884	100	51.0	6.79	15.7
Sunflower oil	884	100	65.7	0.00	10.3
Walnut oil	884	100	52.9	10.4	9.10

¹ Source: U.S. Department of Agriculture, Food Data Central^[6].

2.2. Food sources

Table 2. Food sources of linoleic acid (per 1 ounce [28.3495 g])¹.

Food Sources	Energy (Kcal)	Total Lipid (g)	Linoleic Acid (g)	Alpha-Linolenic Acid (g)	Total Saturated Fat (g)
Almonds	164	14.2	3.49	0.001	1.08
Brazil nuts	185	18.8	6.82	0.01	4.52
Cashews	157	12.4	2.21	0.018	2.21
Pecans	196	20.4	5.85	0.28	1.75
Pine nuts	191	19.4	9.4	0.046	1.39
Pistachios	159	12.8	4.0	0.082	1.68
Pumpkin seeds	163	13.9	5.55	0.031	2.42
Sesame seeds	159	13.4	5.78	0.102	1.88
Sunflower seeds	165	14.1	9.29	0.02	1.48
Walnuts	185	18.5	10.8	2.57	1.74

¹ Source: U.S. Department of Agriculture, Food Data Central^[6].

References

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Keywords

cardiovascular disease;linoleic acid;lipoproteins;intervention trial

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