

# Clinical trials of fish oil

TrialResults-center [www.trialresultscenter.org](http://www.trialresultscenter.org)

## 1 cardiovascular prevention

Trial	Treatments	Patients	Trials design and methods
<b>fish oil vs control</b>			
<b>Bemelmans , 2002</b> n=51/52 follow-up: 24 months	a-lin rich margarine (80% fat of which 15% was a-lin) versus linoleic rich margarine (80% fat of which 0.3% was a-lin), identical in taste and packaging	patients with multiple cardiovascular risk factors (10 yr IHD risk 20% )	Parallel groups double-blind the Netherlands
<b>Brox , 2001</b> n=40/40 follow-up:	seal oil - 15 ml/d (2.6g EPA + DHA) versus no supplement	dyslipidaemia	open with blind assessment
<b>Franzen , 1993</b> n=15/15 follow-up: 12 months	fish oil capsules, 9g/d (1.8g EPA + 1.4g DHA daily) versus olive oil capsules	people with angiographically determined CHDg	Parallel groups double-blind
<b>Katan , 1997</b> n=44/14 follow-up: 12 months	Fish oil capsules, all took 9 per day (1.1g omega-3 fats low dose, 2.2g medium dose, 3.3g high dose per day) versus 9 olive and palm oil capsules (0g omega-3 fats per day)	healthy monks	Parallel groups NA The Netherland
<b>Malaguarnera , 1999</b> n=26/26 follow-up: 6 months	EPA + DHA daily (3g/d EPA + DHA) plus IFNa subcutaneously versus IFNa subcutaneously only	chronic hepatitis with ALT =2x normal limit for =12 mo	Parallel groups open Italy
<b>Shimizu , 1995</b> n=29/16 follow-up: 12 months	EPA-ethyl capsules 3/d (0.9g/d EPA) versus no treatment	people with non-insulin dependant diabetes	Parallel groups open Japan
<b>Terano , 1999</b> n=10/10 follow-up: 12 months	DHA capsules, 6/d (4.3g/d DHA) versus no treatment	dementia of CVD	Parallel groups open with blind assessment japan

continued...

<b>Trial</b>	<b>Treatments</b>	<b>Patients</b>	<b>Trials design and methods</b>
<b>fish oil vs placebo</b>			
<b>Almallah , 1998</b> n=18/18 follow-up: 6 months	fish oil extract, 15 ml/d (5.6g EPA + DHA) versus placebo (sunflower oil, 15 ml/d)	people with distal procto-collitis (ulcerative colitis)	Parallel groups single blind and outcome ass. UK
<b>Borchgrevink , 1966</b> n=100/100 follow-up: mean 10 months (range 3-16 mo)	linseed oil 10 ml/d initially, later raised to 20 or 30 ml/d (4.5g/d a-lin, later 9 or 13.5 g/d) versus placebo (corn oil, 10 ml/d initially, later raised to 20 or 30 ml/d)	men with impending or recent myocardial infarctionage/p	Parallel groups double-blind Norway
<b>Dry , 1991</b> n=6/6 follow-up: 12 months	Liparmonyl (1g/d EPA + DHA) versus placebo	people with asthma	Parallel groups double blind France
<b>Geusens , 1994</b> n=60/30 follow-up: 12 months	high and ow dose fish oil capsules versus placebo (olive oil capsules, 6/d)	people with active rheumatoid arthritis on NSAIDs or DMARDs	Parallel groups double blind Belgium
<b>Leaf , 1994</b> n=275/276 follow-up: 6 months	fish oil concentrate capsules 10x1 g/d (6.9g/d EPA + DHA) versus placebo (corn oil capsules 10x1 g/d with 0.4% fish oil to maintain blinding (0.003g/d EPA + DHA))	people undergoing angioplasty	Parallel groups double blind US
<b>Loeschke , 1996</b> n=31/33 follow-up: 24 months	fish oil capsules 6x1 g/d (5.1g/d omega-3 fats), with orange flavour versus placebo (maize oil capsules 6x1 g/d with orange flavour)	people with ulcerative colitis, in remission	Parallel groups double-blind Germany
<b>Lorenz-Meyer , 1996</b> n=70/65 follow-up: 12 months	ethyl ester fish oil concentrate capsules 6x1 g daily (5.1g/d EPA + DHA) versus placebo (corn oil capsules 6x1 g daily)	people with Crohns disease in remission	Parallel groups double blind
<b>Sacks (TOHP 1) , 1994</b> [NCT00000528] n=NA follow-up:	fish oil versus placebo	double blind	double-blind

continued...

Trial	Treatments	Patients	Trials design and methods
von Schacky , 1999 n=112/111 follow-up: 24 months	concentrated fish oil capsules, 6/d for first 3 mo, 3/d for rest of study (4g/d EPA +DHA + DPA+ a-lin for first 3 mo, then 2g/d) versus placebo (capsules containing fat which replicated the fat composition of the average European diet, 6/d for first 3 mo, 3/d for rest of study, opaque soft gelatine capsules identical to fish capsules)	people with angiographically proven coronary artery disease	Parallel groups double blind Germany

More details and results :

- omega-3 fatty acids for cardiovascular prevention in all type of patients at <http://www.trialresultscenter.org/go-Q121>
- omega-3 fatty acids for cardiovascular prevention in patients at high risk at <http://www.trialresultscenter.org/go-Q123>
- omega-3 fatty acids for cardiovascular prevention in patients at low risk at <http://www.trialresultscenter.org/go-Q124>

3

## References

### Bemelmans, 2002:

Bemelmans WJ, Broer J, Feskens EJ, Smit AJ, Muskiet FA, Lefrandt JD, Bom VJ, May JF, Meyboom-de Jong B Effect of an increased intake of alpha-linolenic acid and group nutritional education on cardiovascular risk factors: the Mediterranean Alpha-linolenic Enriched Groningen Dietary Intervention (MARGARIN) study. *Am J Clin Nutr* 2002 Feb;75:221-7 [11815311]

Bemelmans WJ, Broer J, de Vries JH, Hulshof KF, May JF, Meyboom-De Jong B Impact of Mediterranean diet education versus posted leaflet on dietary habits and serum cholesterol in a high risk population for cardiovascular disease. *Public Health Nutr* 2000 Sep;3:273-83 [10979147]

### Brox, 2001:

Brox J, Olaussen K, Osterud B, Elvevoll EO, Bjornstad E, Brattebog G, Iversen H A long-term seal- and cod-liver-oil supplementation in hypercholesterolemic subjects. *Lipids* 2001 Jan;36:7-13 [11214732]

### Franzen, 1993:

Franzen D, Geisel J, Hpp HW, Oette K, Hilger HH [Long-term effects of low dosage fish oil on serum lipids and lipoproteins] *Med Klin (Munich)* 1993;88:134-8 [8474402]

### Katan, 1997:

Katan MB, Deslypere JP, van Birgelen AP, Penders M, Zegwaard M Kinetics of the incorporation of dietary fatty acids into serum cholesteryl esters, erythrocyte membranes, and adipose tissue: an 18-month controlled study. *J Lipid Res* 1997 Oct;38:2012-22 [9374124]

Blok WL, Deslypere JP, Demacker PN, van der Ven-Jongekrijg J, Hectors MP, van der Meer JW, Katan MB Pro- and anti-inflammatory cytokines in healthy volunteers fed various doses of fish oil for 1 year. *Eur J Clin Invest* 1997 Dec;27:1003-8 [9466128]

### Malaguarnera, 1999:

Malaguarnera M, Restuccia N, Fazio ID, Panebianco MP, Gulizia G, Giugno I Fish oil treatment of interferon-alpha-induced dyslipidaemia: study in patients with chronic hepatitis C. *BioDrugs* 1999;11:285-91 [[18031138](#)]

**Shimizu, 1995:**

Shimizu H, Ohtani K, Tanaka Y, Sato N, Mori M, Shimomura Y Long-term effect of eicosapentaenoic acid ethyl (EPA-E) on albuminuria of non-insulin dependent diabetic patients. *Diabetes Res Clin Pract* 1995;28:35-40 [[7587910](#)]

**Terano, 1999:**

Terano T, Fujishiro S, Ban T, Yamamoto K, Tanaka T, Noguchi Y, Tamura Y, Yazawa K, Hirayama T Docosahexaenoic acid supplementation improves the moderately severe dementia from thrombotic cerebrovascular diseases. *Lipids* 1999;34 Suppl:S345-6 [[10419198](#)]

**Almallah, 1998:**

Almallah YZ, Richardson S, O'Hanrahan T, Mowat NA, Brunt PW, Sinclair TS, Ewen S, Heys SD, Eremin O Distal procto-colitis, natural cytotoxicity, and essential fatty acids. *Am J Gastroenterol* 1998 May;93:804-9 [[9625132](#)]

**Borchgrevink, 1966:**

Borchgrevink CF, Skaga E, Berg KJ, Skjaeggstad O Absence of prophylactic effect of linolenic acid in patients with coronary heart-disease. *Lancet* 1966 Jul 23;2:187-9 [[4161161](#)]

**Dry, 1991:**

Dry J, Vincent D Effect of a fish oil diet on asthma: results of a 1-year double-blind study. *Int Arch Allergy Appl Immunol* 1991;95:156-7 [[1834587](#)]

**Geusens, 1994:**

Geusens P, Wouters C, Nijs J, Jiang Y, Dequeker J Long-term effect of omega-3 fatty acid supplementation in active rheumatoid arthritis. A 12-month, double-blind, controlled study. *Arthritis Rheum* 1994 Jun;37:824-9 [[8003055](#)]

**Leaf, 1994:**

Leaf A, Jorgensen MB, Jacobs AK, Cote G, Schoenfeld DA, Scheer J, Weiner BH, Slack JD, Kellett MA, Raizner AE Do fish oils prevent restenosis after coronary angioplasty? *Circulation* 1994 Nov;90:2248-57 [[7955181](#)]

Mehta VY, Jorgensen MB, Raizner AE, Wolde-Tsadik G, Mahrer PR, Mansukhani P Spontaneous regression of restenosis: an angiographic study. *J Am Coll Cardiol* 1995 Sep;26:696-702 [[7642861](#)]

**Loeschke, 1996:**

Loeschke K, Ueberschaer B, Pietsch A, Gruber E, Ewe K, Wiebecke B, Heldwein W, Lorenz R n-3 fatty acids only delay early relapse of ulcerative colitis in remission. *Dig Dis Sci* 1996 Oct;41:2087-94 [[8888725](#)]

**Lorenz-Meyer, 1996:**

Lorenz-Meyer H, Bauer P, Nicolay C, Schulz B, Purrmann J, Fleig WE, Scheurlen C, Koop I, Pudel V, Carr L Omega-3 fatty acids and low carbohydrate diet for maintenance of remission in Crohn's disease. A randomized controlled multicenter trial. Study Group Members (German Crohn's Disease Study Group). *Scand J Gastroenterol* 1996 Aug;31:778-85 [[8858747](#)]

**Sacks (TOHP 1), 1994:**

The effects of nonpharmacologic interventions on blood pressure of persons with high normal levels. Results of the Trials of Hypertension Prevention, Phase I. *JAMA* 1992 Mar 4;267:1213-20 [[1586398](#)]

**von Schacky, 1999:**

von Schacky C, Angerer P, Kothny W, Theisen K, Mudra H The effect of dietary omega-3 fatty acids on coronary atherosclerosis. A randomized, double-blind, placebo-controlled trial. Ann Intern Med 1999;130:554-62 [10189324]

## 2 cardiac arrest

Trial	Treatments	Patients	Trials design and methods
<b>fish oil vs placebo</b>			
<b>Raitt , 2006</b> [NCT00004558] n=100/100 follow-up:	Fish oil 1.3g versus placebo (olive oil)	-	parallel group double blind
<b>SOFA , 2006</b> [NCT00110838] n=273/273 follow-up: 356 days (14-379)	Fish oil 0.9g versus placebo (High-oleic sunflower oil)	-	Parallel groups double blind Europe
<b>Leaf , 2005</b> n=200/202	Fish oil 2.6g versus placebo (olive oil)	-	

More details and results :

- omega-3 fatty acids for cardiac arrest in patients with an implantable cardioverter defibrillator at <http://www.trialresultscenter.org/go-Q306>

## References

### Raitt , 2006:

Raitt MH, Connor WE, Morris C, Kron J, Halperin B, Chugh SS, McClelland J, Cook J, MacMurdy K, Swenson R, Connor SL, Gerhard G, Kraemer DF, Oseran D, Marchant C, Calhoun D, Shnider R, McNulty J Fish oil supplementation and risk of ventricular tachycardia and ventricular fibrillation in patients with implantable defibrillators: a randomized controlled trial. JAMA 2005 Jun 15;293:2884-91 [15956633]

### SOFA , 2006:

Brouwer IA, Zock PL, Camm AJ, Becker D, Hauer RN, Wever EF, Dullemeijer C, Ronden JE, Katan MB, Lubinski A, Buschler H, Schouten EG JAMA 2006;295:2613-9 [16772624] 10.1001/jama.295.22.2613

### Leaf, 2005:

Leaf A, Albert CM, Josephson M, Steinhaus D, Kluger J, Kang JX, Cox B, Zhang H, Schoenfeld D Circulation 2005;112:2762-8 [16267249] 10.1161/CIRCULATION-AHA.105.549527

### 3 patients with implantable cardioverter defibrillators

Trial	Treatments	Patients	Trials design and methods
<b>fish oil vs placebo</b>			
<b>Raitt , 2006</b> [NCT00004558] n=100/100 follow-up:	Fish oil 1.3g versus placebo (olive oil)	-	parallel group double blind
<b>SOFA , 2006</b> [NCT00110838] n=273/273 follow-up: 356 days (14-379)	Fish oil 0.9g versus placebo (High-oleic sunflower oil)	-	Parallel groups double blind Europe
<b>Leaf , 2005</b> n=200/202	Fish oil 2.6g versus placebo (olive oil)	-	

More details and results :

9

- omega-3 fatty acids for patients with implantable cardioverter defibrillators in all type of patients at <http://www.trialresultscenter.org/go-Q383>

### References

#### **Raitt , 2006:**

Raitt MH, Connor WE, Morris C, Kron J, Halperin B, Chugh SS, McClelland J, Cook J, MacMurdy K, Swenson R, Connor SL, Gerhard G, Kraemer DF, Oseran D, Marchant C, Calhoun D, Shnider R, McAnulty J Fish oil supplementation and risk of ventricular tachycardia and ventricular fibrillation in patients with implantable defibrillators: a randomized controlled trial. JAMA 2005 Jun 15;293:2884-91 [[15956633](#)]

#### **SOFA , 2006:**

Brouwer IA, Zock PL, Camm AJ, Bcker D, Hauer RN, Wever EF, Dullemeijer C, Ronden JE, Katan MB, Lubinski A, Buschler H, Schouten EG JAMA 2006;295:2613-9 [[16772624](#)] [10.1001/jama.295.22.2613](https://doi.org/10.1001/jama.295.22.2613)

#### **Leaf, 2005:**

Leaf A, Albert CM, Josephson M, Steinhaus D, Kluger J, Kang JX, Cox B, Zhang H, Schoenfeld D Circulation 2005;112:2762-8 [[16267249](#)] [10.1161/CIRCULATION-AHA.105.549527](https://doi.org/10.1161/CIRCULATION-AHA.105.549527)

Entry terms: Fish Oils, Fish Liver Oils,