

Clinical trials of cholesterol lowering intervention for cardiovascular prevention in all chronic situations

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1 colestipol-niacin

Trial	Treatments	Patients	Trials design and methods
colestipol-niacin vs placebo			
CLAS , 1987 n=94/94 follow-up: 2 ans	Colestipol + Niacin 30 g / j 3-12 g / j (titr sur chaque patient sur la base de la baisse de cholestrol sanguin) versus placebo: methyl cellulose	Patients coronariens avec antcdent de revascularisation chirurgicale coronarienne.	Parallel groups Non dterminable
CLAS , 1987 n=NA follow-up: 65279;2 years	colestipol + niacin versus placebo	nonsmoking men aged 40 to 59 years with previous coronary bypass surgery	Parallel groups double blind

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Blankenhorn DH, Azen SP, Crawford DW, Nessim SA, Sanmarco ME, Selzer RH, Shircore AM, Wickham EC Effects of colestipol-niacin therapy on human femoral atherosclerosis. *Circulation* 1991;83:438-47 [[1991366](#)]

2 combination therapies

Trial	Treatments	Patients	Trials design and methods
intensive lipid-lowering therapy vs diet			
FATS , 1990 [NCT00000512] n=94/52 follow-up: 2.5 years	intensive lipid-lowering therapy with various drugs versus placebo	men no more than 62 years of age who had apolipoprotein B levels greater than or equal to 125 mg per deciliter, documented coronary artery disease, and a family history of vascular disease	Parallel groups open Japan
colestipol+clofibrate vs placebo			
SCOR , 1990 n=48/49 follow-up: 2.0 years	colestipol (15 to 30mg/d) + clofibrate (2g/d) versus diet	patients with primary hypercholesterolemia	Parallel groups

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3 diet

Trial	Treatments	Patients	Trials design and methods
diet vs usual diet			
Black , 1994 n=56/55 follow-up: 2.0 years	diet with 20 percent of total caloric intake as fat versus usual diet	patients with nonmelanoma skin cancer	Parallel groups open
Finnish Mental Hospital (Miettinen) , 1985 n=612/610 follow-up: 6.0 years	cholesterol-lowering diet (low in saturated fats and cholesterol and relatively high in polyunsaturated fats) versus usual diet	middle-aged institutionalized women without CHD	Cluster-randomized cross-ove open, blind assessment Finland
Goteborg , 1986 n=10004/20028 follow-up: 10 years	multifactorial intervention programme versus no intervention	men, 47-55 years old at entry	Parallel groups open Sweden
Gteborg (Wilhelmsen) , 1986 n=10004/20028 follow-up: 10.0 years	multifactorial intervention programme versus usual care	men, 47-55 years old at entry	Parallel groups open

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Trial	Treatments	Patients	Trials design and methods
Hjermann , 1981 n=604/628 follow-up: 6.5 years	diet versus usual diet	healthy, normotensive men at high risk of coronary heart disease	Parallel groups open Sweden
Kallio , 1979 n=188/187 follow-up: 3.0 years	diet (multifactorial intervention programme) versus usual diet	patients below 65 years who had an acute myocardial infarction	Parallel groups open
Los Angeles VA (Dayton) , 1969 n=424/422 follow-up: 65279;8.0 y	diet versus usual diet	men in domiciliary care, age>55, with or without CHD	Parallel groups double blind USA
Minnesota coronary survey (Frantz) , 1975 n=2197/2196 follow-up: 1.1 y (max 4.5y)	cholesterol lowering diet versus control diet	65279;Adult residents of mental hospitals; no illness restrictions, no cholesterol concentration requirements	Parallel groups double-blind USA
MRC low fat , 1965 n=123/129 follow-up: 3 y	-	-	Parallel groups open
MRC Soya , 1968 n=199/194 follow-up: 3.5 y	Rgime pauvre en graisses satures + 85 g/j d'huile de soja versus usual diet	ambulatory men with recent MI	Parallel groups open, blind assessment
MRFIT , 1982 n=6428/6438 follow-up: 6.5 y	multifactor intervention program versus usual diet	high-risk men aged 35 to 57 years	Parallel groups open
Ornish , 1990 n=28/20 follow-up: 1.0 y	low-fat vegetarian diet, stopping smoking, stress management training, and moderate exercise versus usual-care	Patients with angiographically documented coronary artery disease	Parallel groups open USA
Oslo Diet Heart Study (Leren) , 1966 n=206/206 follow-up: 5 y (11y)	diet versus usual care	middle-aged ambulatory men with prior MI	Parallel groups open, blind assessment
Rose , 1965 n=28/26 follow-up: 1.2 years	Rgime restreint en graisses + 80 g/j huile de mas versus usual diet	men, <70 years	Parallel groups open
Singh , 1992 n=204/202 follow-up: 65279;2.0 years	strict diet versus usual diet	patients with suspected acute myocardial infarction	Parallel groups open
STARS (St Thomas, diet) , 1992 n=30/30 follow-up: 3.0 years	dietary advice versus usual diet	patients with angina or past myocardial infarction	open, blind assessment

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Trial	Treatments	Patients	Trials design and methods
Veterans Ad. (Dayton) , 1969 n=424/422 follow-up: 3.6 and 8 y	cholesterol lowering diet versus usual diet	men in domiciliary care, age>55, with or without CHD	Parallel groups double blind USA
WHI low fat , 2005 [NCT00000611] n=19541/29294 follow-up: 8.1y mean	dietary modification intervention to promote dietary change with the goals of reducing intake of total fat to 20% of energy and increasing consumption of vegetables and fruit to at least 5 servings daily and grains to at least 6 servings daily versus usual diet	postmenopausal women, aged 50 to 79 years, without prior breast cancer	Parallel groups open US
WHO Collaborative , 1986 n=30489/26971 follow-up: 5.5 years	multifactorial prevention versus usual diet	middle-aged men	Parallel groups open Belgium, Italy, Poland, UK
Woodhill , 1966 n=221/237 follow-up: <7 years	diet versus usual diet	men, 30-59 years	Parallel groups open
low fat diet vs mediterranean-style diet			
Tuttle , 2008 n=NA follow-up: 24 months	low-fat versus Mediterranean-style diets	First MI survivors	Parallel groups open

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4 ezetimibe

Trial	Treatments	Patients	Trials design and methods
ezetimibe+simvastatin vs placebo			
SHARP , 2010 [NCT00125593] n=4193/4191 follow-up: 4.9 years	Simvastatin 20mg/Ezetimibe 10mg versus placebo	patients with established chronic kidney disease (dialysis or pre-dialysis)	Parallel groups double-blind 20 countries
ezetimibe vs placebo (on top statins)			
IMPROVE-IT , 2014 [NCT00202878] n=9067/9077 follow-up: 5.68 years	10 mg/day of ezetimibe and 40 mg/day of simvastatin versus simvastatin 40 mg/day	subjects with stabilized high-risk acute coronary syndrome	Parallel groups double blind 39 countries
ezetimibe vs niacin			
ARBITER-HALTS 6 , 2010 n=NA follow-up: 14 months	addition of ezetimibe (10 mg/daily) to statin therapy versus extended-release niacin 2000 mg/daily	patients at high risk for vascular disease but with LDL-cholesterol levels <100 mg/dL and moderately low HDL-cholesterol levels (<50 mg/dL)	Parallel groups open

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5 Fibrates

Trial	Treatments	Patients	Trials design and methods
bezafibrate vs placebo			
LEADER trial , 2000 n=783/785 follow-up: 5 ans	Bezafibrate: 400 mg/ jour pour les hommes avec cratinimie <135 micromole/litre versus placebo de mme aspect	Stade de la maladie : II.	Parallel groups Double aveugle
BECAIT , 1996 n=47/45 follow-up: 5.0 years	bezafibrate 200 mg three times daily versus placebo	dyslipidaemic male survivors of myocardial infarction who were younger than 45 years at the time of the event	Parallel groups double blind Sweden
BIP , 2000 n=1548/1542 follow-up: 6.2 y	bezafibrate 400 mg/d versus placebo	patients with a previous myocardial infarction or stable angina, total cholesterol of 180 to 250 mg/dL, HDL-C <or =45 mg/dL, triglycerides <or =300 mg/dL, and low-density lipoprotein cholesterol <or =180 mg/dL	Parallel groups double blind Israel
LEADER , 2002 n=783/785 follow-up: 4.6y	bezafibrate 400 mg daily versus placebo	men with lower extremity arterial disease	Parallel groups double-blind UK
SENDCAP , 1998 n=81/83 follow-up: 3.0 years	bezafibrate 400 mg daily versus placebo	type 2 diabetic subjects without a history of clinical cardiovascular	Parallel groups double blind UK
clofibrate vs placebo			
Acheson , 1972 n=NA follow-up: 6 years	clofibrate versus placebo	cerebral vascular disease	Parallel groups NA UK
Begg , 1971 n=76/79 follow-up: 3.5 y	clofibrate versus placebo	peripheral arteriopathy	Parallel groups
CDP Clofibrate , 1975 n=1103/2789 follow-up: 6.2 years	clofibrate 1.8 mg/d versus placebo	men, 30-64 y	Parallel groups double blind USA
Cullen , 1974 n=20/20 follow-up: 2 years	clofibrate versus placebo		Parallel groups
Hanefeld , 1991 n=379/382 follow-up: 5 years	clofibric acid 1.6 g/day versus placebo	newly diagnosed middle-aged (30- to 55-yr-old) patients with non-insulin-dependent diabetes mellitus	Parallel groups double-blind Germany
Harrold , 1969 n=30/33 follow-up: 1 years	clofibrate versus placebo	diabetic retinopathy	Parallel groups double-blind

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Trial	Treatments	Patients	Trials design and methods
Newcastle , 1971 n=244/253 follow-up: 3.6 y	clofibrate 1.5-2 g daily versus placebo	Hommes et femmes <65 ans	Parallel groups double blind UK
Scottish , 1971 n=350/367 follow-up: 3.4 years	clofibrate 1.6-2 g daily versus placebo	Hommes et femmes, de 40 69 ans	Parallel groups double blind Scotland
VA Neurology Section , 1974 n=268/264 follow-up: 1.8 years	clofibrate versus placebo	treatment of cerebrovascular disease	Parallel groups USA
WHO clofibrate , 1978 n=5331/5296 follow-up: 5.3 years	clofibrate 1.6 g daily versus olive oil	primary prevention, Hommes, de 30 59 ans	Parallel groups double blind Scotland, Hungary, Czech Republic
etofibrate vs placebo			
Emmerich , 2009 n=NA follow-up: 12 months	etofibrate 1g/j versus placebo	patients with type 2 diabetes mellitus and concomitant diabetic retinopathy	Parallel groups double-blind Germany
fenofibrate vs placebo			
DAIS , 2001 n=207/211 follow-up: 3.3 years	fenofibrate 200 mg/day versus placebo	men and women with type 2 diabetes and coronary atherosclerosis	Parallel groups double-blind Canada, Finland, France, Sweden
FIELD , 2005 [ISRCTN64783481] n=4895/4900 follow-up: 5 years	fenofibrate 200mg/d versus Placebo	participants aged 50-75 years, with type 2 diabetes mellitus, and not taking statin therapy at study entry	Parallel groups double blind Australia, New Zealand, Finland
gemfibrozil vs placebo			
Helsinki (HHS) , 1987 n=2046/2035 follow-up: 5 years	gemfibrozil 1,2 g/d versus placebo	asymptomatic middle-aged men (40 to 55 years of age) with primary dyslipidemia (non-HDL cholesterol greater than or equal to 200 mg per deciliter [5.2 mmol per liter])	Parallel groups double blind Finland
LOCAT , 1997 n=197/198 follow-up: 32 months	gemfibrozil 1200 mg/d versus placebo	post-coronary bypass men, who had an HDL cholesterol concentration <or = 1.1 mmol/L and LDL cholesterol <or = 4.5 mmol/L	Parallel groups double blind Germany
VA-HIT , 1999 [NCT00283335] n=1264/1267 follow-up: 5.1 years	gemfibrozil 1.2g daily versus placebo	men with coronary heart disease, an HDL cholesterol level of 40 mg per deciliter (1.0 mmol per liter) or less, and an LDL cholesterol level of 140 mg per deciliter (3.6 mmol per liter) or less	Parallel groups double blind USA
fenofibrate vs placebo (on top simvastatine)			

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Trial	Treatments	Patients	Trials design and methods
ACCORD lipid , 2010 [NCT00000620] n=2765/2753 follow-up: 4.7y	fenofibrate on top simvastatin versus placebo (on top simvastatine)	high-risk patients with type 2 diabetes	Factorial plan double-blind United States and Canada

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6 hormones

11

Trial	Treatments	Patients	Trials design and methods
estrogen vs placebo			
CDP estrogen 2.5 , 1975 n=1101/2789 follow-up: 4.7 years	estrogen 2.5 mg daily versus placebo	-	Parallel groups
CDP estrogen 5 , 1975 n=1119/2788 follow-up: 1.5 years	estrogen 5.0 mg daily versus placebo	-	Parallel groups
Marmorstein , 1962 n=285/147 follow-up: 5.0 y	estrogen versus placebo	-	Parallel groups
Stamler , 1963 n=156/119 follow-up: 5.0 years	estrogen versus placebo	-	Parallel groups
VA Neurology Section (estrogen) , 1966 n=295/287 follow-up: 1.4 years	estrogen versus placebo	-	Parallel groups
estrogen or thyroxine vs placebo			
VA drugs (Estrogen or thyroxine) , 1968 n=427/143 follow-up: 65279;3.2 years	estrogen or thyroxine versus placebo	-	Parallel groups
thyroxine vs placebo			

continued...

Trial	Treatments	Patients	Trials design and methods
CDP tyroxine , 1975 n=1083/2715 follow-up: 3.0 years	thyroxine versus placebo	-	Parallel groups

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CDP tyroxine, 1975:

The coronary drug project. Findings leading to further modifications of its protocol with respect to dextrothyroxine. The coronary drug project research group. JAMA 1972;220:996-1008 [4337170]

7 niacin

Trial	Treatments	Patients	Trials design and methods
niacin vs control			
VA drugs , 1968 n=77/143 follow-up: 3.2 years	-	-	Parallel groups double blind
niacin vs placebo			
CDP niacin , 1975 n=1119/2789 follow-up: 6.2 years	niacin 3 mg/d versus placebo	Hommes, de 30 64 ans	Parallel groups double blind
niacin vs ezetimibe			

continued...

Trial	Treatments	Patients	Trials design and methods
ARBITER 6-HALTS (niacin vs ezetimibe) , 2009 [NCT00397657] n=97/111 follow-up: 14 months	extended-release niacin 1 g/d, titrated to max tolerable dose up to 2 g/d (HDL-focused strategy) versus ezetimibe 10 mg/d (LDL-focused strategy)	patients with known coronary or vascular disease or coronary risk equivalents	Parallel groups open US

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CDP niacin, 1975:

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ARBITER 6-HALTS (niacin vs ezetimibe), 2009:

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8 niacin (on top statin)

Trial	Treatments	Patients	Trials design and methods
niacin vs placebo (on top statin)			
AIM-HIGH , 2011 [NCT00120289] n=1718/1691 follow-up: 32 months	high-dose, extended-release niacin in gradually increasing doses up to 2000 mg daily (+ simvastatin) versus placebo	patients with a history of cardiovascular disease, high triglycerides, and low levels of HDL cholesterol	Parallel groups double blind US, Canada
HPS 2-Thrive [NCT00461630] n=12838/12835 follow-up: 3.9y (median)	2 g of extended-release niacin and 40 mg of laropiprant versus placebo	patients with vascular disease	Parallel groups double blind UK, Scandinavia, China
Oxford Niaspan Study , 2009 [NCT00232531] n=35/36 follow-up: 1 year	niacin 2g daily (added to statin therapy) versus placebo (statins alone)	patients with low HDL-C (<40 mg/dl) and either a type 2 diabetes with coronary heart disease or a carotid/peripheral atherosclerosis	Parallel groups double blind USA
ARBITER 2 , 2009 n=87/80 follow-up: 1 y	long-acting niacin target dose of 1 g/day (added to statin therapy) versus placebo	patients with known coronary artery disease and well controlled on statin therapy	Parallel groups double blind USA

continued...

Trial	Treatments	Patients	Trials design and methods
HATS , 2001 n=73/73 follow-up: 3 y	simvastatin plus niacin versus placebo	patients with coronary disease, low HDL cholesterol levels and normal LDL cholesterol levels	Factorial plan double blind USA, Canada

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AIM-HIGH, 2011:

Boden WE, Probstfield JL, Anderson T, Chaitman BR, Desvignes-Nickens P, Koprowicz K, McBride R, Teo K, Weintraub W Niacin in patients with low HDL cholesterol levels receiving intensive statin therapy. *N Engl J Med* 2011;365:2255-67 [22085343] 10.1056/NEJMoa1107579

HPS 2-Thrive, :

Landray MJ, Haynes R, Hopewell JC, Parish S, Aung T, Tomson J, Wallendszus K, Craig M, Jiang L, Collins R, Armitage J Effects of extended-release niacin with laropiprant in high-risk patients. *N Engl J Med* 2014 Jul 17;371:203-12 [25014686] 10.1056/NEJMoa1300955

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Brown BG, Zhao XQ, Chait A, Fisher LD, Cheung MC, Morse JS, Dowdy AA, Marino EK, Bolson EL, Alaupovic P, Frohlich J, Albers JJ Simvastatin and niacin, antioxidant vitamins, or the combination for the prevention of coronary disease. *N Engl J Med* 2001 Nov 29;345:1583-92 [11757504]

9 other cholesterol lowering drugs

Trial	Treatments	Patients	Trials design and methods
clofibrate+niacin vs placebo			
Carlson (Stockholm) , 1977 n=279/276 follow-up: 5 years	clofibrate, 1 g twice daily, and nicotinic acid 1 g three times daily versus control	survivors of a myocardial infarction below 70 years of age	Parallel groups open Sweden
colestipol-niacin vs placebo			
CLAS , 1987 n=94/94 follow-up: 2 ans	Colestipol + Niacin 30 g / j 3-12 g / j (titr sur chaque patient sur la base de la baisse de cholestrol sanguin) versus placebo: methyl cellulose	Patients coronariens avec antcdent de revascularisation chirurgicale coronarienne.	Parallel groups Non dterminable
CLAS , 1987 n=NA follow-up: 65279;2 years	colestipol + niacin versus placebo	nonsmoking men aged 40 to 59 years with previous coronary bypass surgery	Parallel groups double blind

continued...

Trial	Treatments	Patients	Trials design and methods
various drugs vs placebo			
HARP , 1994 [NCT00000461] n=40/39 follow-up: 2.5 years	Various drugs (pravastatin, nicotinic acid, cholestyramine, and gemfibrozil stepwise as needed to reach the specified goal (total cholesterol <or = 4.1 mmol/L, ratio of LDL/high-density-lipoprotein [HDL] cholesterol <or = 2.0) versus placebo	normocholesterolaemic patients with coronary heart disease	Parallel groups open
various drugs vs usual care			
SCRIP , 1994 [NCT00000508] n=145/155 follow-up: 4.0 years	multifactor risk reduction (Various drugs) versus usual care	patients with angiographically defined coronary atherosclerosis	Parallel groups open

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Blankenhorn DH, Nessim SA, Johnson RL, Sanmarco ME, Azen SP, Cashin-Hemphill L Beneficial effects of combined colestipol-niacin therapy on coronary atherosclerosis and coronary venous bypass grafts. *JAMA* 1987;257:3233-40 [3295315]

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Haskell WL, Alderman EL, Fair JM, Maron DJ, Mackey SF, Superko HR, Williams PT, Johnstone IM, Champagne MA, Krauss RM Effects of intensive multiple risk factor reduction on coronary atherosclerosis and clinical cardiac events in men and women with coronary artery disease. The Stanford Coronary Risk Intervention Project (SCRIP). *Circulation* 1994;89:975-90 [8124838]

10 Policosanol

Trial	Treatments	Patients	Trials design and methods
policosanol vs control			
Batista , 1996 n=15/14 follow-up: 1.7 years	-	-	Parallel groups
Castano , 2001 n=27/29 follow-up: 2 years	policosanol 10 mg twice daily versus placebo	intermittent claudication	Parallel groups double-blind
Ms , 1999 n=219/218 follow-up: 24 weeks	policosanol 5mg titrted up for 10mg daily versus placebo	patients with type II hypercholesterolemia and additional coronary risk factors	Parallel groups double-blind

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11 probucol

Trial	Treatments	Patients	Trials design and methods
probucol vs control			
FATS Fukosawa (probucol) , 2002 n=82/81 follow-up: 2 years	probucol 500 mg/day versus diet alone	asymptomatic patients with hypercholesterolemia	Parallel groups open Japan
probucol vs placebo			

continued...

Trial	Treatments	Patients	Trials design and methods
PQRST , 1994 n=152/151 follow-up: 3 ans	Probucol 1 g / j pendant 3 ans versus placebo, de mme aspect(2 tablettes par jour)pendant 3 ans	Stade II: 70%	Parallel groups Double aveugle
McCaughan , 1981 n=88/30 follow-up: 1 year	probucol versus placebo	hypercholesterolemic men	Parallel groups double-blind
PQRST , 1994 n=NA follow-up: 3 y	probucol 0.5 g twice daily versus placebo	hypercholesterolemic patients with visible atherosclerosis	Parallel groups double blind
Tardif , 1997 n=160/157 follow-up: 0.5 years	probucol 500 mg versus placebo	patients undergoing PTCA	Parallel groups open

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Sawayama Y, Shimizu C, Maeda N, Tatsukawa M, Kinukawa N, Koyanagi S, Kashiwagi S, Hayashi J Effects of probucol and pravastatin on common carotid atherosclerosis in patients with asymptomatic hypercholesterolemia. Fukuoka Atherosclerosis Trial (FAST). J Am Coll Cardiol 2002 Feb 20;39:610-6 [11849859]

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Walldius G, Erikson U, Olsson AG, Bergstrand L, Hdell K, Johansson J, Kaijser L, Lassvik C, Mlgaard J, Nilsson S The effect of probucol on femoral atherosclerosis: the Probucol Quantitative Regression Swedish Trial (PQRST). Am J Cardiol 1994;74:875-83 [7977117]

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12 resins

Trial	Treatments	Patients	Trials design and methods
cholestyramine vs control			
STARS (cholestyramine) , 1992 n=30/30 follow-up: 3 years	cholestyramine versus diet	patients with angina or past myocardial infarction	
cholestyramine vs placebo			
LRC , 1984 n=1906/1900 follow-up: 7.4 years	cholestyramine 24 g daily versus placebo	asymptomatic middle-aged men with primary hypercholesterolemia (type II hyperlipoproteinemia)	Parallel groups double blind USA
NHLBI (Brensike) , 1984 [NCT00000594] n=71/72 follow-up: 5.0 y	cholestyramine versus placebo	patients with Type II hyperlipoproteinemia and coronary artery disease	Parallel groups double blind
colestipol vs placebo			
Gross , 1973 n=23/29 follow-up: 65279;1.0 years	colestipol versus placebo		Parallel groups
Gundersen , 1976 n=36/30 follow-up: 0.8 years	colestipol 10g twice daily versus placebo	hypercholesterolemic patients	Parallel groups double-blind
Ruoff , 1978 n=21/19 follow-up: 3.2 years	colestipol versus placebo	hypercholesterolemic patients	Parallel groups
Ryan , 1974 n=44/48 follow-up: 3.0 years	colestipol15 g/day versus placebo	patients with hypercholesterolemia	Parallel groups
UCS (Dorr) , 1978 n=1149/1129 follow-up: 1.9 years	colestipol hydrochloride 32 mg/dl versus placebo	Hommes et femmes, >18 ans	Parallel groups double blind

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Watts GF, Lewis B, Brunt JN, Lewis ES, Coltart DJ, Smith LD, Mann JI, Swan AV Effects on coronary artery disease of lipid-lowering diet, or diet plus cholestyramine, in the St Thomas' Atherosclerosis Regression Study (STARS) Lancet 1992;339:563-9 [1347091]

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Bresnake JF, Levy RI, Kelsey SF, Passamani ER, Richardson JM, Loh IK, Stone NJ, Aldrich RF, Battaglini JW, Moriarty DJ Effects of therapy with cholestyramine on progression of coronary arteriosclerosis: results of the NHLBI Type II Coronary Intervention Study. Circulation 1984;69:313-24 [6360414]

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Ryan JR, Jain AK, McMahon FG Long-term treatment of hypercholesterolemia with colestipol hydrochloride. Clin Pharmacol Ther 1975;17:83-7 [1091391]

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Dorr AE, Gundersen K, Schneider JC Jr, Spencer TW, Martin WB, Colestipol hydrochloride in hypercholesterolemic patients—effect on serum cholesterol and mortality. J Chronic Dis 1978; 31:5-14 [346598]

13 statins

Trial	Treatments	Patients	Trials design and methods
pravastatin vs control			
MEGA , 2006 [NCT00211705] n=3866/3966 follow-up: 5.3 y	pravastatin 10 mg daily (20 mg per day if the total cholesterolconcentration did not decrease to 569 mmol/L or less) versus control	patients with hypercholesterolaemia (total cholesterol 569698 mmol/L) and no history of coronary heart disease or stroke	Parallel groups open, blind assessment Japan
Rosuvastatin vs control			
ASTEROID <i>ongoing</i> n=NA follow-up:	-	-	
simvastatin vs control			
Hong , 2005 n=106/96 follow-up: 1 year	simvastatin versus no treatment	patients with ischemic heart failure who underwent percutaneous coronary intervention (PCI) for acute myocardial infarction (left ventricular [LV] ejection fraction <40%)	Parallel groups open
atorvastatin vs placebo			

continued...

Trial	Treatments	Patients	Trials design and methods
SPARCL , 2006 [NCT00147602] n=2365/2366 follow-up: 4.9y (median)	atorvastatin 80mg daily versus placebo	patients who had had a stroke or TIA within one to six months before study entry, had low-density lipoprotein (LDL) cholesterol levels of 2.6 to 4.9 mmol per liter, and had no known coronary heart disease	Parallel groups double blind
Deutsche Diabetes Dialyse Studie (4D) , 2005 n=619/636 follow-up: 4 y (median)	atorvastatin 20mg daily versus matching placebo	patients with type 2 diabetes mellitus on maintenance hemodialysis	Parallel groups double blind
Strey , 2005 n=24/24 follow-up: 6 weeks	atorvastatin 40mg versus placebo	patients with stable, symptomatic heart failure (New York Heart Association Class II or III) and a left ventricular ejection fraction <40%	Cross over
ASCOT , 2003 n=5168/5137 follow-up: 3.3 years	atorvastatin 10mg/d versus placebo	hypertensive patients aged 40-79 years with at least three other cardiovascular risk factors	Parallel groups double blind UK et Scandinavie
ASPEN , 2006 n=1211/1199 follow-up: 4 year	atorvastatin 10mg versus placebo	subjects with type 2 diabetes and LDL cholesterol levels below contemporary guideline targets	Parallel groups double blind 14 countries
Mohler III , 2003 n=240/114 follow-up: 1 an	Atorvastatine: 10 mg/ jour ou 80 mg/ jour pendant 12 mois (groupes 1 et 2). versus placebo	Stade de la maladie : II , stable pendant au moins 6 mois.	Parallel groups Double aveugle
CARDS , 2004 [NCT00327418] n=1429/1412 follow-up: 3.9 years	atorvastatin 10mg/d versus placebo	patients with type 2 diabetes without high concentrations of LDL-cholesterol and at least one of the following: retinopathy, albuminuria, current smoking, or hypertension.	Parallel groups double blind UK, Irlande
cerivastatin vs placebo			
Laufs , 2004 n=8/7 follow-up: mean 20 weeks	cerivastatin 0.4 mg versus placebo	patients with heart failure NYHA II-III caused by non-ischemic dilated cardiomyopathy	Parallel groups double blind
fluvastatin vs placebo			
ALERT , 2003 n=1050/1052 follow-up: 5.1 years	fluvastatin versus placebo	renal transplant recipients with total cholesterol 4090 mmol/L.	Parallel groups double blind
ALERT , 2003 n=1050/1052 follow-up: 5.1 years	fluvastatin 40 mg daily versus placebo	renal transplant recipients with total cholesterol 4.0-9.0 mmol/L	Parallel groups double-blind Belgium, Denmark, Finland, Germany, Norway,

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Trial	Treatments	Patients	Trials design and methods
BCAPS , 2001 n=395/398 follow-up: 3.0 years	fluvastatin 40 mg once daily versus placebo	subjects who had carotid plaque but no symptoms of carotid artery disease	Factorial plan double-blind Sweden
FLARE , 1999 n=409/425 follow-up: 40 weeks	fluvastatin 40 mg twice daily versus placebo	successful coronary balloon angioplasty	Parallel groups double blind
LCAS , 1997 n=164/157 follow-up: 2.5 years	fluvastatin 20 mg twice daily versus placebo	men and women aged 35 to 75 years with angiographic CHD and mean low-density lipoprotein (LDL) cholesterol of 115 to 190 mg/dl despite diet	Parallel groups double-blind
LIPS , 2002 n=844/833 follow-up: 3.9 years	fluvastatin, 80 mg/d versus placebo	patients (aged 18-80 years) with stable or unstable angina or silent ischemia following successful completion of their first PCI who had baseline total cholesterol levels between 3.5-7.0 mmol/L and with fasting triglyceride levels of less than 4.5 mmol/L	Parallel groups double blind Europe, Canada, and Brazil
Riegger et al. , 1999 n=187/178 follow-up: 1.0 years	fluvastatin 40 mg (o.a.d. or b.i.d.) versus placebo	hyperlipidaemic patients with symptomatic, clinically-diagnosed (exercise-ECG) coronary heart disease	Parallel groups double blind
lovastatin vs placebo			
ACAPS , 1994 [NCT00000469] n=460/459 follow-up: 2.8 years	lovastatin 20mg daily versus placebo	men and women, 40 to 79 years old, with early carotid atherosclerosis and moderately elevated LDL cholesterol.	Factorial plan double blind USA
AFCAPS/TextCAPS , 1998 n=3304/3301 follow-up: 5.2 years	lovastatin 20-40 mg/d versus placebo	men and women without clinically evident atherosclerotic cardiovascular disease with average total cholesterol (TC) and LDL-C levels and below-average high-density lipoprotein cholesterol (HDL-C) levels	Parallel groups double blind USA
CCAIT , 1994 n=165/166 follow-up: 2 years	lovastatin begun at 20 mg/d and titrated to 40 and 80 mg during the first 16 weeks to attain a fasting low-density lipoprotein (LDL) cholesterol \leq 130 mg/dL versus placebo	patients with diffuse but not necessarily severe coronary atherosclerosis documented on a recent arteriogram and with fasting serum cholesterol between 220 and 300 mg/dL	Parallel groups double-blind Canada
CRISP 20mg , 1994 [NCT00000477] n=NA follow-up: 1 years	lovastatin 20mg daily versus placebo	elderly (mean 71y) with low-density lipoprotein cholesterol levels greater than 4.1 and less than 5.7 mmol/L	Parallel groups double blind
CRISP 40mg , 1994 [NCT00000477] n=NA follow-up: 1 years	lovastatin 40 mg daily versus placebo	elderly (mean 71y) with low-density lipoprotein cholesterol levels greater than 4.1 and less than 5.7 mmol/L	Parallel groups double blind

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Trial	Treatments	Patients	Trials design and methods
Excel , 1991 n=6582/1663 follow-up: 0.9 years	lovastatin (20 mg once daily, 40 mg once daily, 20 mg twice daily, or 40 mg twice daily) versus placebo	patients with moderate hypercholesterolemia	Parallel groups double blind
MARS , 1993 [NCT00116870] n=123/124 follow-up: 2.0y	lovastatin 80 mg/day versus placebo	patients, 37 to 67 years old, with total cholesterol ranging from 4.92 to 7.64 mmol/L (190 to 295 mg/dL) and angiographically defined coronary artery disease	Parallel groups double blind
Weintraub , 1994 n=203/201 follow-up: 0.5 years	lovastatin 40 mg orally twice daily versus placebo	patients undergoing PTCA	Parallel groups double blind
pravastatin vs placebo			
CAIUS , 1996 n=151/154 follow-up: 3 years	pravastatin 40mg/d versus placebo	asymptomatic patients with hypercholesterolemia and at least one 1.3 <IMT <3.5 mm in the carotid arteries	Parallel groups double blind Italy
CARE , 1996 n=2081/2078 follow-up: 5 years	pravastatin 40 mg/d versus placebo	men and women with myocardial infarction who had plasma totalcholesterol levels below 240 mg per deciliter (mean,209) and low-density lipoprotein (LDL) cholesterollevels of 115 to 174 mg per deciliter	Parallel groups double blind USA, Canada
KAPS , 1995 n=224/223 follow-up: 3 years	pravastatin 40mg/d versus placebo	Hypercholesterolemics men with serum LDL-C \geq 4.0 mmol/L and total cholesterol <7.5 mmol/L	Parallel groups double blind Finland
LIPID , 1998 n=4512/4502 follow-up: 6.1 years	pravastatin 40 mg/d versus placebo	patients with previous myocardial infarction or unstable angina and a baseline plasma cholesterol concentration of 4.0-7.0 mmol/L	Parallel groups double blind Australie et Nouvelle Zlande
PACT , 2004 n=1710/1689 follow-up: 30 days	pravastatin initiated within 24 hours of onset of symptoms and for 4 weeks versus placebo	patients with unstable angina, non-ST-segment elevation myocardial infarction, or ST-segment elevation myocardial infarction <24 hours	Parallel groups double blind
PLAC I , 1995 n=206/202 follow-up: 3 y	pravastatin 40mg daily versus placebo	men and women with coronary artery disease and mild to moderate elevations in cholesterol levels	Parallel groups double blind United States
PLAC II , 1995 n=75/76 follow-up: 3 y	pravastatin 20-40mg daily versus placebo	coronary patients (men and women)	Parallel groups double blind United States
PMSG , 1993 n=530/532 follow-up: 26 weeks	pravastatin 20 mg once daily versus placebo	patients with hypercholesterolemia(serum total cholesterol concentrations of 5.2 to 7.8 mmol/liter) and \geq 2 additional risk factors for atherosclerotic coronary artery disease	Parallel groups double blind

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Trial	Treatments	Patients	Trials design and methods
PROSPER , 2002 n=2891/2913 follow-up: 3.2 years	pravastatin 40mg daily versus placebo	men and women aged 70-82 years with a history of, or risk factors for, vascular disease	Parallel groups double blind Ecosse, Irlande, Pays bas
REGRESS , 1995 n=450/435 follow-up: 2 years	pravastatin 40 mg daily versus placebo	symptomatic men with normal to moderately elevated serum cholesterol levels	Parallel groups double blind Netherlands
WOSCOPS , 1995 n=3302/3293 follow-up: 4.9 years	pravastatine 40 mg daily versus placebo	men aged 45-64 yr with no history of myocardial infarction and with raised plasma cholesterol levels (LDL cholesterol of at least 155 mg/dL, total cholesterol of at least 252 mg/dL)	Parallel groups double blind Scotland
rosuvastatin vs placebo			
AURORA , 2009 n=1391/1385 follow-up: 3.2 y mean (max 5.6y)	rosuvastatin 10 mg daily versus placebo	in patients with end-stage renal disease on hemodialysis	Parallel groups double blind
HOPE 3 , 2016 [NCT00468923] n=6361/6344 follow-up: 5.6 years	rosuvastatin 10 mg per day versus placebo	subjects who did not have cardiovascular disease and were at intermediate risk	Factorial plan double-blind 21 countries
CORONA , 2007 [NCT00206310] n=2514/2497 follow-up: 32.9 months median	rosuvastatin 10mg/d versus placebo	patients at least 60 years of age with NYHA class II, III, or IV ischemic, systolic heart failure	Parallel groups double blind
Krum , 2007 n=40/46 follow-up: 6 months	rosuvastatine 40mg/d versus placebo	patients with systolic (LVEF<40%) CHF of ischemic or nonischemic etiology	Parallel groups double blind Australia
GISSI-HF rosuvastatine , 2008 [NCT00336336] n=2314/2317 follow-up: 3.9y median (IQR 3-4.4)	low-dose rosuvastatin 10 mg daily versus placebo	Patients with NYHA classes II to IV heart failure, whatever the cause and the LVEF and already receiving optimized recommended therapy with no clear indication or contraindication to cholesterol-lowering therapy	Parallel groups double blind Italy
JUPITER , 2008 [NCT00239681] n=8901/8901 follow-up: median 1.9 year	rosuvastatin 20 mg daily versus placebo	apparently healthy individuals with low LDL-cholesterol levels of less than 130 mg per deciliter but elevated C-reactive-protein (high-sensitivity C-reactive protein levels of 2.0 mg per liter or higher)	Parallel groups double blind 26 countries
METEOR , 2007 [NCT00225589] n=702/282 follow-up:	rosuvastatin 40mg daily versus placebo	individuals, with either age (mean, 57 years) as the only coronary heart disease risk factor or a 10-year Framingham risk score of less than 10% , modest CIMT thickening (1.2-<3.5 mm), and elevated LDL cholesterol	Parallel groups double-blind USA, Europe

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Trial	Treatments	Patients	Trials design and methods
simvastatin vs placebo			
4S , 1994 n=2221/2223 follow-up: 5.4 years	simvastatin 20 or 40 mg/d, target CT between 3 et 5.2 mmol/l versus placebo	patients with angina pectoris or previous myocardial infarction and serum cholesterol 5.5-8.0 mmol/L on a lipid-lowering diet	Parallel groups double blind Scandinavia
Mondillo , 2003 n=43/43 follow-up: 6 mois	simvastatine: 40 mg/ jour pendant 6 mois. versus placebo	Stade de la maladie: II.	Parallel groups Double aveugle
Aronow , 2003 n=34/35 follow-up: 1 an	simvastatine 40 mg/j versus placebo	Stade II	Parallel groups Non dterminable
Node , 2003 n=24/27 follow-up:	simvastatin 10mg/d versus placebo	patients with symptomatic, nonischemic, dilated cardiomyopathy	
CIS , 1997 n=129/125 follow-up: 2.3 years	simvastatin 40 mg versus placebo	men with documented coronary artery disease and hypercholesterolaemia	Parallel groups double blind
HPS , 2002 n=10269/10267 follow-up: 5 years	simvastatin 40 mg/d versus placebo	adults (aged 40-80 years) with coronary disease, other occlusive arterial disease, or diabete	Factorial plan double blind UK
MAAS , 1994 n=193/188 follow-up: 4 y	simvastatin 20 mg daily versus placebo	patients with coronary heart disease	Parallel groups double blind
atorvastatin vs usual care			
GREACE , 2002 n=800/800 follow-up: 3 years mean	atorvastatin 10-80 mg/d versus usual care	patients with established coronary heart disease	Parallel groups open
lovastatin vs usual care			
CLAPT , 1999 n=112/114 follow-up: 2.0 years	lovastatin begun at 20 mg daily and tritrated up to 80 mg daily versus usual care	patients undergoing PTCA	Parallel groups open (blind assesement)
Sahni , 1991 n=79/78 follow-up: 2 years	lovastatin 20-40mg/d versus conventional therapy alone	patients undergoing successful PTCA	Parallel groups open
pravastatin vs usual care			
ALLHAT , 2002 [NCT00000542] n=5170/5185 follow-up: 4.8 years	pravastatin 40mg/d versus usual care	aged 55 years or older, moderately hypercholesterolemic, hypertensive participants with at least 1 additional CHD risk factor	Factorial plan open USA, Puerto Rico, Canada

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Trial	Treatments	Patients	Trials design and methods
GISSI Prevenzione , 2000 n=2138/2133 follow-up: 23 months (mean)	low-dose pravastatin regimen 20 mg daily versus control	recent acute myocardial infarction patients (<= 6 months) with total blood cholesterol >= 200 mg/dl and <250 mg/dl and after a period of 36 months showed plasma cholesterol levels >=200 mg/ dL despite adequate dietary recommendations	Parallel groups open Italy
simvastatin vs ezetimibe			
Landmesser , 2005 n=10/10 follow-up:	simvastatin 10mg/d versus ezetimibe 10mg/d	patients with chronic heart failure	

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14 statins high dose

Trial	Treatments	Patients	Trials design and methods
atorvastatin high dose vs angioplasty			
AVERT , 1999 n=164/177 follow-up: 1.5 years	atorvastatin 80 mg/d versus recommended percutaneous revascularization procedure(angioplasty) followed by usual care, which could include lipid-lowering treatment	patients referred for percutaneous revascularization, with stable coronary artery disease, relatively normal left ventricular function, asymptomatic or mild-to-moderate angina, and a serum level of low-density lipoprotein (LDL) cholesterol of at least 115 mg per deciliter (3.0 mmol per liter)	Parallel groups open US, Europe
atorvastatin high dose vs atorvastatin			
TNT , 2005 [NCT00327691] n=4995/5006 follow-up: 4.9 years	80 mg of atorvastatin daily versus 10 mg of atorvastatin daily	Chronic coronary artery disease LDL cholesterol <3.4 mmol/L	Parallel groups double blind 14 countries
atorvastatin high dose vs lovastatin			

continued...

Trial	Treatments	Patients	Trials design and methods
Vascular basis , 2005 n=197/103 follow-up: 1 year	atorvastatin (80 mg) with or without vitamin C and E versus low dose lovastatin (5 mg)	Chronic coronary artery disease	Parallel groups double blind
atorvastatin high dose vs pravastatin			
PROVE-IT , 2004 n=2099/2063 follow-up: 2 years	atorvastatin 80 mg daily versus Pravastatin 40 mg	acute myocardial infarction (with or without electrocardiographic evidence of ST-segment elevation) or highrisk unstable angina) in the preceding 10 days	Parallel groups double blind 8 countries
REVERSAL , 2004 n=327/327 follow-up: 1.5 years	atorvastatin 80 mg daily versus Pravastatin(40 mg)	Chronic coronary artery disease	Parallel groups double blind
SAGE , 2007 n=446/445 follow-up: 1 years	atorvastatin 80 mg daily versus pravastatin(40 mg)	Chronic coronary artery disease	Parallel groups double blind
atorvastatin high dose vs simvastatin			
IDEAL , 2005 [NCT00159835] n=4439/4449 follow-up: 4.8 years	atorvastatin 80mg daily versus simvastatine 20mg/j	Men and women aged 80 years or younger with a history of a definite myocardial infarction and who qualified for statin therapy according to national guidelines	Parallel groups open Denmark, Finland, Iceland, Netherlands, Norway, Sweden
simvastatin high dose vs simvastatin			
SEARCH , 2010 [NCT00124072] n=6031/6033 follow-up: 6.7 years (mean)	simvastatin 80 mg daily versus simvastatin 20mg daily	MI survivors	Parallel groups

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TNT, 2005:
Vascular basis, 2005:
PROVE-IT, 2004:
REVERSAL, 2004:
SAGE, 2007:
IDEAL, 2005:
SEARCH, 2010:

15 strategy

Trial	Treatments	Patients	Trials design and methods
aggressive treatment vs standard treatment			

continued...

Trial	Treatments	Patients	Trials design and methods
SANDS , 2008 [NCT00047424] n=252/247 follow-up: 3 years	aggressive targets of LDL-C of 70 mg/dL or lower and SBP of 115 mm Hg or lower versus standard targets of LDL-C of 100 mg/dL or lower and SBP of 130 mm Hg or lower	adults with type 2 diabetes	Parallel groups open US

References

SANDS, 2008:

16 surgery

Trial	Treatments	Patients	Trials design and methods
partial ileum bypass surgery vs no surgery			
POSCH , 1990 [NCT00000490] n=421/417 follow-up: 9.7 years	partial ileum bypass surgery versus no surgery	survivors to a first myocardial infarction	Parallel groups open

References

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17 About TrialResults-center.org

TrialResults-center is an innovative knowledge database that collects the results of RCTs and provides dynamic interactive systematic reviews and meta-analysis in the field of all major heart and vessels diseases.

The TrialResults-center database provides a unique view of the treatment efficacy based on all data provided directly from clinical trial results, offering a valuable alternative to personal bibliographic search, published meta-analysis, etc. Furthermore, it would allow comparing easily the various concurrent therapeutic for the same clinical condition.

Rigorous meta-analysis method is used to populate TrialResults-center: widespread search of published and non published trials, study selection using pre-specified criteria, data extraction using standard form.

TrialResults-center is continually updated on a weekly basis. We continually search all new results (whatever their publication channel) and these news results are immediately added to the database with a maximum of 1 week.

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