PRISMA 2009 Checklist

Section/topic	#	Checklist item	Reported on page #
TITLE			
Title	1	Identify the report as a systematic review, meta-analysis, or both.	1
ABSTRACT			
Structured summary	2	Provide a structured summary including, as applicable: background; objectives; data sources; study eligibility criteria, participants, and interventions; study appraisal and synthesis methods; results; limitations; conclusions and implications of key findings; systematic review registration number.	3
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of what is already known.	4
Objectives	4	Provide an explicit statement of questions being addressed with reference to participants, interventions, comparisons, outcomes, and study design (PICOS).	4
METHODS			
Protocol and registration	5	Indicate if a review protocol exists, if and where it can be accessed (e.g., Web address), and, if available, provide registration information including registration number.	5
Eligibility criteria	6	Specify study characteristics (e.g., PICOS, length of follow-up) and report characteristics (e.g., years considered, language, publication status) used as criteria for eligibility, giving rationale.	5
Information sources	7	Describe all information sources (e.g., databases with dates of coverage, contact with study authors to identify additional studies) in the search and date last searched.	5
Search	8	Present full electronic search strategy for at least one database, including any limits used, such that it could be repeated.	5
Study selection	9	State the process for selecting studies (i.e., screening, eligibility, included in systematic review, and, if applicable, included in the meta-analysis).	5-7
Data collection process	10	Describe method of data extraction from reports (e.g., piloted forms, independently, in duplicate) and any processes for obtaining and confirming data from investigators.	6
Data items	11	List and define all variables for which data were sought (e.g., PICOS, funding sources) and any assumptions and simplifications made.	6
Risk of bias in individual studies	12	Describe methods used for assessing risk of bias of individual studies (including specification of whether this was done at the study or outcome level), and how this information is to be used in any data synthesis.	6
Summary measures	13	State the principal summary measures (e.g., risk ratio, difference in means).	6-7
Synthesis of results	14	Describe the methods of handling data and combining results of studies, if done, including measures of consistency (e.g., I^2) for each meta-analysis.	6-7

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Section/topic	#	Checklist item	Reported on page #
Risk of bias across studies	15	Specify any assessment of risk of bias that may affect the cumulative evidence (e.g., publication bias, selective reporting within studies).	6-7
Additional analyses	16	Describe methods of additional analyses (e.g., sensitivity or subgroup analyses, meta-regression), if done, indicating which were pre-specified.	7
RESULTS			
Study selection	17	Give numbers of studies screened, assessed for eligibility, and included in the review, with reasons for exclusions at each stage, ideally with a flow diagram.	8, fig. 1, ESM table 2
Study characteristics	18	For each study, present characteristics for which data were extracted (e.g., study size, PICOS, follow-up period) and provide the citations.	Table 1
Risk of bias within studies	19	Present data on risk of bias of each study and, if available, any outcome level assessment (see item 12).	9-12 (reported in text per outcome), ESM fig. 1, ESM table 4
Results of individual studies	20	For all outcomes considered (benefits or harms), present, for each study: (a) simple summary data for each intervention group (b) effect estimates and confidence intervals, ideally with a forest plot.	Fig. 2-4
Synthesis of results	21	Present results of each meta-analysis done, including confidence intervals and measures of consistency.	Fig. 2-4
Risk of bias across studies	22	Present results of any assessment of risk of bias across studies (see Item 15).	9-10, ESM table 4, ESM fig 2
Additional analysis	23	Give results of additional analyses, if done (e.g., sensitivity or subgroup analyses, meta-regression [see Item 16]).	10-11 (reported in text per outcome), ESM table 3, ESM Fig

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			3
DISCUSSION			
Summary of evidence	24	Summarize the main findings including the strength of evidence for each main outcome; consider their relevance to key groups (e.g., healthcare providers, users, and policy makers).	13
Limitations	25	Discuss limitations at study and outcome level (e.g., risk of bias), and at review-level (e.g., incomplete retrieval of identified research, reporting bias).	16
Conclusions	26	Provide a general interpretation of the results in the context of other evidence, and implications for future research.	13-17
FUNDING			
Funding	27	Describe sources of funding for the systematic review and other support (e.g., supply of data); role of funders for the systematic review.	17

From: Moher D, Liberati A, Tetzlaff J, Altman DG, The PRISMA Group (2009). Preferred Reporting Items for Systematic Reviews and Meta-Analyses: The PRISMA Statement. PLoS Med 6(6): e1000097. doi:10.1371/journal.pmed1000097

For more information, visit: **www.prisma-statement.org**.

Supplementary table 2: List of excluded studies (assessed by full-text)

Study		Reason for exclusion
1.	Albarran NB, Ballesteros MN, Morales GG, Ortega MI. Dietary behavior and type 2 diabetes care. *Patient Education And Counseling.* 2006;61(2):191-199.	Did not address the main objective of the study
2.	Al-Shookri A, Khor GL, Chan YM, Loke SC, Al-Maskari M. Effectiveness of medical nutrition treatment delivered by dietitians on glycaemic outcomes and lipid profiles of Arab, Omani patients with Type 2 diabetes. *Diabetic Medicine: A Journal Of The British Diabetic Association.* 2012;29(2):236-244.	Did not address the main objective of the study
3.	Andersén E, Hellström P, Kindstedt K, Hellström K. Effects of a high-protein and low-fat diet vs a low-protein and high-fat diet on blood glucose, serum lipoproteins, and cholesterol metabolism in noninsulin-dependent diabetics. *The American Journal Of Clinical Nutrition.* 1987;45(2):406-413.	Participants in the control-group consisted of individuals without type 2 diabetes
4.	Andrews RC, Cooper AR, Montgomery AA, et al. Diet or diet plus physical activity versus usual care in patients with newly diagnosed type 2 diabetes: the Early ACTID randomised controlled trial. *Lancet.* 2011;378(9786):129-139.	Diet intervention not low-carbohydrate; Physical activity advice provided
5.	Ash S, Reeves MM, Yeo S, Morrison G, Carey D, Capra S. Effect of intensive dietetic interventions on weight and glycaemic control in overweight men with Type II diabetes: a randomised trial. *International Journal Of Obesity And Related Metabolic Disorders: Journal Of The International Association For The Study Of Obesity.* 2003;27(7):797-802.	Diet intervention not low-carbohydrate
6.	Azadbakht L, Fard NRP, Karimi M, et al. Effects of the Dietary Approaches to Stop Hypertension (DASH) eating plan on cardiovascular risks among type 2 diabetic patients: a randomized crossover clinical trial. *Diabetes care.* 2011;34(1):55-57.	Duration less than 3 moths
7.	Barakatun Nisak MY, Ruzita AT, Norimah AK, Gilbertson H, Nor Azmi K. Improvement of dietary quality with the aid of a low glycemic index diet in Asian patients with type 2 diabetes mellitus. *Journal Of The American*	Diet intervention not low-carbohydrate

	College Of Nutrition. 2010;29(3):161-170.	
8.	Barnard ND, Cohen J, Jenkins DJ, et al. A low-fat vegan diet improves glycemic control and cardiovascular risk factors in a randomized clinical trial in individuals with type 2 diabetes. *Diabetes Care.* 2006;29(8):1777-1783.	Diet intervention not low-carbohydrate
9.	Barnard ND, Cohen J, Jenkins DJA, et al. A low-fat vegan diet and a conventional diabetes diet in the treatment of type 2 diabetes: a randomized, controlled, 74-wk clinical trial. *The American Journal Of Clinical Nutrition.* 2009;89(5):1588S-1596S.	Diet intervention not low-carbohydrate
10.	Barnard ND, Gloede L, Cohen J, et al. A low-fat vegan diet elicits greater macronutrient changes, but is comparable in adherence and acceptability, compared with a more conventional diabetes diet among individuals with type 2 diabetes. *Journal Of The American Dietetic Association.* 2009;109(2):263-272.	Diet intervention not low-carbohydrate
11.	Beattie VA, Edwards CA, Hosker JP, Cullen DR, Ward JD, Read NW. Does adding fibre to a low energy, high carbohydrate, low fat diet confer any benefit to the management of newly diagnosed overweight type II diabetics? *British Medical Journal (Clinical Research Ed).* 1988;296(6630):1147-1149.	Diet intervention not low-carbohydrate
12.	Ben-Avraham S, Harman-Boehm I, Schwarzfuchs D, Shai I. Dietary strategies for patients with type 2 diabetes in the era of multi-approaches; review and results from the Dietary Intervention Randomized Controlled Trial (DIRECT). *Diabetes Research And Clinical Practice.* 2009;86 Suppl 1:S41-S48.	The DIRECT-trial is included in the review, but with another publication
13.	Blaak EE, Glatz JF, Saris WH. Increase in skeletal muscle fatty acid binding protein (FABPC) content is directly related to weight loss and to changes in fat oxidation following a very low calorie diet. *Diabetologia.* 2001;44(11):2013-2017.	Did not address the main objective of the study
14.	Boden G, Sargrad K, Homko C, Mozzoli M, Stein TP. Effect of a low-carbohydrate diet on appetite, blood glucose levels, and insulin resistance in obese patients with type 2 diabetes. *Annals Of Internal Medicine.* 2005;142(6):403-411.	Duration less than 3 moths

15.	Booth FW, Chakravarthy MV. Physical activity and dietary intervention for chronic diseases: a quick fix after all? *Journal Of Applied Physiology (Bethesda, Md: 1985).* 2006;100(5):1439-1440.	Editorial
16.	Boyce VL, Swinburn BA. The traditional Pima Indian diet. Composition and adaptation for use in a dietary intervention study. *Diabetes care.* 1993;16(1):369-371.	Did not address the main objective of the study
17.	Bradley U, Spence M, Courtney CH, et al. Low-fat versus low-carbohydrate weight reduction diets: effects on weight loss, insulin resistance, and cardiovascular risk: a randomized control trial. *Diabetes.* 2009;58(12):2741-2748. http://onlinelibrary.wiley.com/o/cochrane/clcentral/articles/771/CN-00733771/frame.html.	Study population without type 2 diabetes
18.	Brehm BJ, Lattin BL, Summer SS, et al. One-year comparison of a high-monounsaturated fat diet with a high-carbohydrate diet in type 2 diabetes. *Diabetes care.* 2009;32(2):215-220. http://onlinelibrary.wiley.com/o/cochrane/clcentral/articles/715/CN-00686715/frame.html.	Diet intervention not low-carbohydrate
19.	Burani J, Longo PJ. Low-glycemic index carbohydrates: an effective behavioral change for glycemic control and weight management in patients with type 1 and 2 diabetes. *The Diabetes Educator.* 2006;32(1):78-88.	Not a randomized controlled trial; Did not address the main objective of the study
20.	Cardot JM, Saffar F, Aiache JM. Influence of food on glycemia, insulin, C-peptide and glucagon levels in diabetic patients treated with antidiabetic metformin at steady-state. *Methods And Findings In Experimental And Clinical Pharmacology.* 1997;19(10):715-721.	Did not address the main objective of the study
21.	Carty CL, Kooperberg C, Neuhouser ML, et al. Low-fat dietary pattern and change in body-composition traits in the Women's Health Initiative Dietary Modification Trial. *The American Journal Of Clinical Nutrition.* 2011;93(3):516-524.	Diet intervention not low-carbohydrate
22.	Christensen AS, Viggers L, Hasselström K, Gregersen S. Effect of fruit restriction on glycemic control in patients with type 2 diabetes--a randomized trial. *Nutrition Journal.* 2013;12:29-29.	Diet intervention not low-carbohydrate
23.	Chung HK, Chae JS, Hyun YJ, et al. Influence of adiponectin gene	Did not address the main objective of the study

	polymorphisms on adiponectin level and insulin resistance index in response to dietary intervention in overweight-obese patients with impaired fasting glucose or newly diagnosed type 2 diabetes. *Diabetes care.* 2009;32(4):552-558.	
24.	Clifton P. Effects of a high protein diet on body weight and comorbidities associated with obesity. *The British Journal Of Nutrition.* 2012;108 Suppl 2:S122-S129.	Did not address the main objective of the study; Not a randomized controlled trial
25.	Coles LT, Fletcher EA, Galbraith CE, Clifton PM. Patient freedom to choose a weight loss diet in the treatment of overweight and obesity: a randomized dietary intervention in type 2 diabetes and pre-diabetes. *International Journal of Behavioral Nutrition and Physical Activity.* 2014;11(1):64.	Did not address the main objective of the study
26.	Coppell KJ, Kataoka M, Williams SM, Chisholm AW, Vorgers SM, Mann JI. Nutritional intervention in patients with type 2 diabetes who are hyperglycaemic despite optimised drug treatment--Lifestyle Over and Above Drugs in Diabetes (LOADD) study: randomised controlled trial. *BMJ (Clinical Research Ed).* 2010;341:c3337-c3337.	Diet intervention not low-carbohydrate
27.	Craig LD, Nicholson S, SilVerstone FA, Kennedy RD. Use of a reduced-carbohydrate, modified-fat enteral formula for improving metabolic control and clinical outcomes in long-term care residents with type 2 diabetes: results of a pilot trial. *Nutrition (Burbank, Los Angeles County, Calif).* 1998;14(6):529-534. http://onlinelibrary.wiley.com/o/cochrane/clcentral/articles/480/CN-00688480/frame.html.	Excluded due to enteral nutrition
28.	Culling KS, Neil HAW, Gilbert M, Frayn KN. Effects of short-term low- and high-carbohydrate diets on postprandial metabolism in non-diabetic and diabetic subjects. *Nutrition, Metabolism, And Cardiovascular Diseases: NMCD.* 2009;19(5):345-351.	Duration less than 3 moths
29.	Davies MJ, Metcalfe J, Day JL, Grenfell A, Hales CN, Gray IP. Improved beta cell function, with reduction in secretion of intact and 32/33 split proinsulin, after dietary intervention in subjects with type 2 diabetes mellitus. *Diabetic Medicine: A Journal Of The British Diabetic Association.* 1994;11(1):71-78.	Did not address the main objective of the study

30.	Davis JN, Ventura EE, Alexander KE, et al. Feasibility of a home-based versus classroom-based nutrition intervention to reduce obesity and type 2 diabetes in Latino youth. *International Journal Of Pediatric Obesity: IJPO: An Official Journal Of The International Association For The Study Of Obesity.* 2007;2(1):22-30.	Did not address the main objective of the study
31.	Davis NJ, Cohen HW, Wylie-Rosett J, Stein D. Serum potassium changes with initiating low-carbohydrate compared to a low-fat weight loss diet in type 2 diabetes. *Southern Medical Journal.* 2008;101(1):46-49.	Duration less than 3 moths
32.	Davis NJ, Crandall JP, Gajavelli S, et al. Differential effects of low-carbohydrate and low-fat diets on inflammation and endothelial function in diabetes. *Journal Of Diabetes And Its Complications.* 2011;25(6):371-376.	The study is included in the review with another publication
33.	Davis NJ, Tomuta N, Isasi CR, Leung V, Wylie-Rosett J. Diabetes-specific quality of life after a low-carbohydrate and low-fat dietary intervention. *The Diabetes Educator.* 2012;38(2):250-255.	The study is included in the review with another publication
34.	de Bont AJ, Baker IA, St Leger AS, et al. A randomised controlled trial of the effect of low fat diet advice on dietary response in insulin independent diabetic women. *Diabetologia.* 1981;21(6):529-533.	Published prior to 1983
35.	de Luis Román D, Izaola O, Aller R. [Assessment of the compliance of a 1,500 calorie diet in a population of overweight type-2 diabetics]. *Nutrición Hospitalaria.* 2001;16(4):122-125.	Not a randomized controlled trial
36.	De Natale C, Annuzzi G, Bozzetto L, et al. Effects of a plant-based high-carbohydrate/high-fiber diet versus high-monounsaturated fat/low-carbohydrate diet on postprandial lipids in type 2 diabetic patients. *Diabetes Care.* 2009;32(12):2168-2173.	Did not address the main objective of the study
37.	Dimitriadis E, Griffin M, Collins P, Johnson A, Owens D, Tomkin GH. Lipoprotein composition in NIDDM: effects of dietary oleic acid on the composition, oxidisability and function of low and high density lipoproteins. *Diabetologia.* 1996;39(6):667-676.	Did not address the main objective of the study
38.	Dunstan DW, Mori TA, Puddey IB, et al. The independent and combined effects of aerobic exercise and dietary fish intake on serum lipids and glycemic control in NIDDM. A randomized controlled study. *Diabetes Care.* 1997;20(6):913-921.	Multiple interventions (i.e. exercise)

39.	Dussol B, Iovanna C, Raccah D, et al. A randomized trial of low-protein diet in type 1 and in type 2 diabetes mellitus patients with incipient and overt nephropathy. *Journal of renal nutrition : the official journal of the Council on Renal Nutrition of the National Kidney Foundation.* 2005;15(4):398-406. http://onlinelibrary.wiley.com/o/cochrane/clcentral/articles/220/CN-00561220/frame.html.	Did not address the main objective of the study
40.	Dyson PA, Beatty S, Matthews DR. A low-carbohydrate diet is more effective in reducing body weight than healthy eating in both diabetic and non-diabetic subjects. *Diabetic Medicine: A Journal Of The British Diabetic Association.* 2007;24(12):1430-1435.	Study included individuals without type 2 diabetes
41.	Eakin E, Reeves M, Winkler E, Lawler S, Owen N. Maintenance of physical activity and dietary change following a telephone-delivered intervention. *Health Psychology: Official Journal Of The Division Of Health Psychology, American Psychological Association.* 2010;29(6):566-573.	Did not address the main objective of the study
42.	Educators AAoD. *Diabetes-specific Quality of Life After a Low-carbohydrate and Low-fat Dietary Intervention.* Sage CA: Los Angeles, CA: Sage Publications, Inc;2012. 0145-7217.	The study is included in the review with another publication
43.	Escalante-Pulido M, Escalante-Herrera A, Milke-Najar ME, Alpizar-Salazar M. Effects of weight loss on insulin secretion and in vivo insulin sensitivity in obese diabetic and non-diabetic subjects. *Diabetes, Nutrition & Metabolism.* 2003;16(5-6):277-283.	Did not address the main objective of the study
44.	Esposito K, Ciotola M, Maiorino MI, Giugliano D. Lifestyle approach for type 2 diabetes and metabolic syndrome. *Current Atherosclerosis Reports.* 2008;10(6):523-528.	Not a randomized controlled trial
45.	Esposito K, Ida Maiorino M, Ciotola M, et al. Effects of a mediterranean-style diet on the need for antihyperglycemic drug therapy in patients with newly diagnosed type 2 diabetes: A randomized trial. *Obstetrical and Gynecological Survey.* 2010;65(6):379-380.	Did not address the main objective of the study
46.	Esposito K, Maiorino MI, Petrizzo M, Bellastella G, Giugliano D. The effects of a Mediterranean diet on the need for diabetes drugs and remission of newly diagnosed type 2 diabetes: follow-up of a randomized trial. *Diabetes care.* 2014;37(7):1824-1830.	Did not address the main objective of the study

47.	Fabricatore AN, Wadden TA, Ebbeling CB, et al. Targeting dietary fat or glycemic load in the treatment of obesity and type 2 diabetes: a randomized controlled trial. *Diabetes Research And Clinical Practice.* 2011;92(1):37-45.	Diet intervention not low-carbohydrate
48.	Faridi Z, Shuval K, Njike VY, et al. Partners reducing effects of diabetes (PREDICT): a diabetes prevention physical activity and dietary intervention through African-American churches. *Health Education Research.* 2010;25(2):306-315.	Did not address the main objective of the study
49.	Feinman RD, Volek JS. Carbohydrate restriction as the default treatment for type 2 diabetes and metabolic syndrome. *Scandinavian Cardiovascular Journal: SCJ.* 2008;42(4):256-263.	Not a randomized controlled trial
50.	Ferdowsian HR, Barnard ND, Hoover VJ, et al. A multicomponent intervention reduces body weight and cardiovascular risk at a GEICO corporate site. *American Journal Of Health Promotion: AJHP.* 2010;24(6):384-387.	Diet intervention not low-carbohydrate
51.	Fitzgerald N, Damio G, Segura-Pérez S, Pérez-Escamilla R. Nutrition knowledge, food label use, and food intake patterns among Latinas with and without type 2 diabetes. *Journal Of The American Dietetic Association.* 2008;108(6):960-967.	Did not address the main objective of the study
52.	Fransen MP, von Wagner C, Essink-Bot M-L. Diabetes self-management in patients with low health literacy: ordering findings from literature in a health literacy framework. *Patient Education And Counseling.* 2012;88(1):44-53.	Did not address the main objective of the study
53.	Franz MJ, Monk A, Barry B, et al. Effectiveness of Medical Nutrition Therapy Provided by Dietitians in the Management of Non–Insulin-Dependent Diabetes Mellitus: A Randomized, Controlled Clinical Trial. *Journal of the American Dietetic Association.* 1995;95(9):1009-1017.	Information on dietary composition is not provided
54.	Fraser A, Abel R, Lawlor DA, Fraser D, Elhayany A. A modified Mediterranean diet is associated with the greatest reduction in alanine aminotransferase levels in obese type 2 diabetes patients: Results of a quasi-randomised controlled trial. *Diabetologia.* 2008;51(9):1616-1622.	The study is included in the review with another publication
55.	Gaede P, Beck M, Vedel P, Pedersen O. Limited impact of lifestyle education in patients with Type 2 diabetes mellitus and	Diet intervention not low-carbohydrate

	microalbuminuria: results from a randomized intervention study. *Diabetic Medicine: A Journal Of The British Diabetic Association.* 2001;18(2):104-108.	
56.	Gaetke LM, Stuart MA, Truszczynska H. A single nutrition counseling session with a registered dietitian improves short-term clinical outcomes for rural Kentucky patients with chronic diseases. *Journal Of The American Dietetic Association.* 2006;106(1):109-112.	Did not address the main objective of the study
57.	Gallagher A, Henderson W, Abraira C. Dietary patterns and metabolic control in diabetic diets: a prospective study. *Journal Of The American College Of Nutrition.* 1987;6(6):525-532.	Did not address the main objective of the study
58.	Gannon MC, Nuttall FQ. Effect of a high-protein, low-carbohydrate diet on blood glucose control in people with type 2 diabetes. *Diabetes.* 2004;53(9):2375-2382.	Duration less than 3 moths
59.	Garg A, Grundy SM, Unger RH. Comparison of effects of high and low carbohydrate diets on plasma lipoproteins and insulin sensitivity in patients with mild NIDDM. *Diabetes.* 1992;41(10):1278-1285.	Duration less than 3 moths
60.	Gerhard GT, Ahmann A, Meeuws K, McMurry MP, Duell PB, Connor WE. Effects of a low-fat diet compared with those of a high-monounsaturated fat diet on body weight, plasma lipids and lipoproteins, and glycemic control in type 2 diabetes. *The American Journal Of Clinical Nutrition.* 2004;80(3):668-673.	Duration less than 3 moths
61.	Gibb AL, Welfare W. Low carbohydrate diets and diabetes control. *The British Journal Of General Practice: The Journal Of The Royal College Of General Practitioners.* 2006;56(522):57-58.	Not a randomized controlled trial
62.	Gillen LJ, Tapsell LC, Patch CS, Owen A, Batterham M. Structured dietary advice incorporating walnuts achieves optimal fat and energy balance in patients with type 2 diabetes mellitus. *Journal Of The American Dietetic Association.* 2005;105(7):1087-1096.	Diet intervention not low-carbohydrate
63.	Golan R, Tirosh A, Schwarzfuchs D, et al. Dietary intervention induces flow of changes within biomarkers of lipids, inflammation, liver enzymes, and glycemic control. *Nutrition (Burbank, Los Angeles County, Calif).* 2012;28(2):131-137.	The study is included in the review with another publication
64.	Goode AD, Winkler EAH, Lawler SP, Reeves MM, Owen N, Eakin EG. A	Did not address the main objective of the study

	telephone-delivered physical activity and dietary intervention for type 2 diabetes and hypertension: does intervention dose influence outcomes? *American Journal Of Health Promotion: AJHP.* 2011;25(4):257-263.	
65.	Gougeon R, Carrington M, Field CJ. The impact of low-carbohydrate diets on glycemic control and weight management in patients with type 2 diabetes. *Canadian Journal of Diabetes.* 2006;30(3):269-277.	Not a randomized controlled trial
66.	Guldbrand H, Lindström T, Dizdar B, et al. Randomization to a low-carbohydrate diet advice improves health related quality of life compared with a low-fat diet at similar weight-loss in Type 2 diabetes mellitus. *Diabetes research and clinical practice.* 2014;106(2):221-227.	The study is included in the review with another publication
67.	Günther ALB, Liese AD, Bell RA, et al. Association between the dietary approaches to hypertension diet and hypertension in youth with diabetes mellitus. *Hypertension.* 2009;53(1):6-12.	Did not address the main objective of the study
68.	Gustafson C. Curing TYPE 2 DIABETES WITH FOOD. *Natural Solutions.* 2011(139):44-48.	Not a randomized controlled trial
69.	Gutierrez M, Akhavan M, Jovanovic L, Peterson CM. Utility of a short-term 25% carbohydrate diet on improving glycemic control in type 2 diabetes mellitus. *Journal Of The American College Of Nutrition.* 1998;17(6):595-600.	Duration less than 3 moths
70.	Haimoto H, Iwata M, Wakai K, Umegaki H. Long-term effects of a diet loosely restricting carbohydrates on HbA1c levels, BMI and tapering of sulfonylureas in type 2 diabetes: a 2-year follow-up study. *Diabetes Research And Clinical Practice.* 2008;79(2):350-356.	Diet intervention not low-carbohydrate
71.	Haimoto H, Sasakabe T, Wakai K, Umegaki H. Effects of a low-carbohydrate diet on glycemic control in outpatients with severe type 2 diabetes. *Nutrition & Metabolism.* 2009;6:1-5.	Not a randomized controlled trial
72.	He YN, Feskens E, Li YP, et al. Association between high fat-low carbohydrate diet score and newly diagnosed type 2 diabetes in Chinese population. *Biomedical And Environmental Sciences: BES.* 2012;25(4):373-382.	Not a randomized controlled trial
73.	Heilbronn LK, Noakes M, Clifton PM. Effect of energy restriction, weight loss, and diet composition on plasma lipids and glucose in patients with type 2 diabetes. *Diabetes care.* 1999;22(6):889-895.	Diet intervention not low-carbohydrate

	http://onlinelibrary.wiley.com/o/cochrane/clcentral/articles/386/CN-00164386/frame.html.	
74.	Helge JW, Tobin L, Drachmann T, Hellgren LI, Dela F, Galbo H. Muscle ceramide content is similar after 3 weeks' consumption of fat or carbohydrate diet in a crossover design in patients with type 2 diabetes. *European Journal Of Applied Physiology.* 2012;112(3):911-918.	Duration less than 3 moths
75.	Higashi K, Shige H, Ito T, et al. Effect of a low-fat diet enriched with oleic acid on postprandial lipemia in patients with type 2 diabetes mellitus. *Lipids.* 2001;36(1):1-6.	Did not address the main objective of the study
76.	Hite AH, Zamora D. Low-carbohydrate diet scores and risk of type 2 diabetes in men... Am J Clin Nutr. 2011 Apr;93(4):844-50. *American Journal of Clinical Nutrition.* 2011;94(2):611-612.	Not a randomized controlled trial
77.	Hjøllund E, Pedersen O, Richelsen B, Beck-Nielsen H, Sørensen NS. Increased insulin binding to adipocytes and monocytes and increased insulin sensitivity of glucose transport and metabolism in adipocytes from non-insulin-dependent diabetics after a low-fat/high-starch/high-fiber diet. *Metabolism: Clinical And Experimental.* 1983;32(11):1067-1075.	Duration less than 3 moths
78.	Hockaday TD, Hockaday JM, Mann JI, Turner RC. Prospective comparison of modified fat-high-carbohydrate with standard low-carbohydrate dietary advice in the treatment of diabetes: one year follow-up study. *The British Journal Of Nutrition.* 1978;39(2):357-362.	Published prior to 1983
79.	Hsieh CJ, Wang PW. Effectiveness of weight loss in the elderly with type 2 diabetes mellitus. *Journal Of Endocrinological Investigation.* 2005;28(11):973-977.	Multiple interventions (i.e. exercise)
80.	Hussain TA, Mathew TC, Dashti AA, Asfar S, Al-Zaid N, Dashti HM. Effect of low-calorie versus low-carbohydrate ketogenic diet in type 2 diabetes. *Nutrition (Burbank, Los Angeles County, Calif).* 2012;28(10):1016-1021.	Not a randomized controlled trial
81.	Imai S, Matsuda M, Hasegawa G, et al. A simple meal plan of 'eating vegetables before carbohydrate' was more effective for achieving glycemic control than an exchange-based meal plan in Japanese patients with type 2 diabetes. *Asia Pacific journal of clinical nutrition.* 2011;20(2):161-168.	Did not address the main objective of the study

	http://onlinelibrary.wiley.com/o/cochrane/clcentral/articles/342/CN-00799342/frame.html.	
82.	Iqbal N, Vetter ML, Moore RH, et al. Effects of a low-intensity intervention that prescribed a low-carbohydrate vs. a low-fat diet in obese, diabetic participants. *Obesity (Silver Spring, Md).* 2010;18(9):1733-1738.	The control-diet contains 40% of energy from carbohydrates
83.	Jenkins DJ, Kendall CW, Banach MS, et al. Nuts as a replacement for carbohydrates in the diabetic diet. *Diabetes care.* 2011;34(8):1706-1711. http://onlinelibrary.wiley.com/o/cochrane/clcentral/articles/022/CN-00811022/frame.html.	Information on dietary composition is not provided
84.	Jenkins DJ, Kendall CW, McKeown-Eyssen G, et al. Effect of a low-glycemic index or a high-cereal fiber diet on type 2 diabetes: a randomized trial. *JAMA : the journal of the American Medical Association.* 2008;300(23):2742-2753. http://onlinelibrary.wiley.com/o/cochrane/clcentral/articles/306/CN-00667306/frame.html.	Diet intervention not low-carbohydrate
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96.	Lim JH, Lee Y-S, Chang HC, Moon MK, Song Y. Association between dietary patterns and blood lipid profiles in Korean adults with type 2 diabetes. *Journal Of Korean Medical Science.* 2011;26(9):1201-1208.	Not a randomized controlled trial; Did not address the main objective of the study
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103.	McVay MA, Voils CI, Coffman CJ, et al. Factors associated with choice of a low-fat or low-carbohydrate diet during a behavioral weight loss intervention. *Appetite.* 2014;83:117-124.	Did not address the main objective of the study
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113.	Nuttall FQ. The high-carbohydrate diet in diabetes management. *Advances In Internal Medicine*. 1988;33:165-183.	Not a randomized controlled trial
114.	Nuttall FQ, Gannon MC. Effect of a LoBAG30 diet on protein metabolism in men with type 2 diabetes. A Randomized Controlled Trial. *Nutrition and Metabolism.* 2012;9(43).	Duration less than 3 moths
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117.	O'Dea K, Traianedes K, Ireland P, et al. The effects of diet differing in fat, carbohydrate, and fiber on carbohydrate and lipid metabolism in type II diabetes. *Journal Of The American Dietetic Association.* 1989;89(8):1076-1086.	Duration less than 3 moths
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125.	Petersen KF DS. Reversal of nonalcoholic hepatic steatosis, hepatic insulin resistance, and hyperglycemia by moderate weight reduction in patients with type 2 diabetes. 2005.	Did not address the main objective of the study
126.	Peterson DB, Lambert J, Gerring S, et al. Sucrose in the diet of diabetic patients--just another carbohydrate? *Diabetologia.* 1986;29(4):216-220.	Did not address the main objective of the study
127.	Pfeiffer A. High-fat diets in diabetes. *Deutsche medizinische Wochenschrift (1946).* 2013;138(18):964-966.	Not a randomized controlled trial
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	a randomized, controlled multicenter trial. *JPEN Journal Of Parenteral And Enteral Nutrition.* 2009;33(1):37-49.	
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132.	Ramadas A, Quek KF, Chan CKY, Oldenburg B, Hussein Z. Randomised-controlled trial of a web-based dietary intervention for patients with type 2 diabetes mellitus: study protocol of myDIDeA. *BMC Public Health.* 2011;11:359-359.	Diet intervention not low-carbohydrate
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135.	Root MM, Dawson HR. DASH-like diets high in protein or monounsaturated fats improve metabolic syndrome and calculated vascular risk. *Int J Vitam Nutr Res.* 2013;83(4):224-231.	Did not address the main objective of the study
136.	Ruth MR, Port AM, Shah M, et al. Consuming a hypocaloric high fat low carbohydrate diet for 12 weeks lowers C-reactive protein, and raises serum adiponectin and high density lipoprotein-cholesterol in obese subjects. *Metabolism-Clinical and Experimental.* 2013;62(12):1779-1787.	Study population without type 2 diabetes

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138.	Sanders TAB. High- versus low-fat diets in human diseases. *Current Opinion In Clinical Nutrition And Metabolic Care.* 2003;6(2):151-155.	Not a randomized controlled trial
139.	Sanz-París A, Calvo L, Guallard A, Salazar I, Albero R. High-fat versus high-carbohydrate enteral formulae: effect on blood glucose, C-peptide, and ketones in patients with type 2 diabetes treated with insulin or sulfonylurea. *Nutrition (Burbank, Los Angeles County, Calif).* 1998;14(11-12):840-845. http://onlinelibrary.wiley.com/o/cochrane/clcentral/articles/433/CN-00157433/frame.html.	Duration less than 3 moths
140.	Saslow LR, Kim S, Daubenmier JJ, et al. A randomized pilot trial of a moderate carbohydrate diet compared to a very low carbohydrate diet in overweight or obese individuals with type 2 diabetes mellitus or prediabetes. *PloS one.* 2014;9(4):e91027.	Study population with pre-diabetes and diabetes (separate data for participants with type 2 diabetes was not provided)
141.	Saslow LR, Kim S, Daubenmier JJ, et al. A randomized pilot trial of a moderate carbohydrate diet compared to a very low carbohydrate diet in overweight or obese individuals with type 2 diabetes mellitus or prediabetes. *PloS one.* 2014;9(4):e91027.	Duplicate
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143.	Sears B, Kahl P, Rapier G. The San Antonio Type 2 Diabetic Study. *International Journal of Applied Kinesiology & Kinesiologic Medicine.* 2006(21):66-67.	Not a randomized controlled trial
144.	Shahar DR, Abel R, Elhayany A, Vardi H, Fraser D. Does dairy calcium intake enhance weight loss among overweight diabetic patients? *Diabetes Care.* 2007;30(3):485-489.	The study is included in the review with another publication
145.	Sharafetdinov KK, Plotnikova OA, Kulakova SN, Alekseeva RI, Meshcheriakova VA, Mal'tsev GI. [Effect of a monounsaturated fatty acids-enriched diet on the clinical and metabolic parameters in type 2 diabetic patients]. *Voprosy Pitaniia.* 2003;72(4):20-24.	Not a randomized controlled trial; Diet intervention not low-carbohydrate

146.	Shige H, Nestel P, Sviridov D, Noakes M, Clifton P. Effect of weight reduction on the distribution of apolipoprotein A-I in high-density lipoprotein subfractions in obese non-insulin-dependent diabetic subjects. *Metabolism: Clinical And Experimental.* 2000;49(11):1453-1459.	Diet intervention not low-carbohydrate
147.	Spritzler F. A Low-Carbohydrate, Whole-Foods Approach to Managing Diabetes and Prediabetes. *Diabetes Spectrum.* 2012;25(4):238-243.	Not a randomized controlled trial
148.	Stacpoole PW. Should NIDDM patients be on high-carbohydrate, low-fat diets? Affirmative. *Hospital Practice (Office Ed).* 1992;27 Suppl 1:6-10.	Did not address the main objective of the study
149.	Swinburn BA, Metcalf PA, Ley SJ. Long-term (5-year) effects of a reduced-fat diet intervention in individuals with glucose intolerance. *Diabetes Care.* 2001;24(4):619-624.	Did not address the main objective of the study
150.	Tapsell LC, Gillen LJ, Patch CS, et al. Including walnuts in a low-fat/modified-fat diet improves HDL cholesterol-to-total cholesterol ratios in patients with type 2 diabetes. *Diabetes Care.* 2004;27(12):2777-2783.	Diet intervention not low-carbohydrate
151.	Tirosh A, Golan R, Harman-Boehm I, et al. Renal function following three distinct weight loss dietary strategies during 2 years of a randomized controlled trial. *Diabetes care.* 2013;36(8):2225-2232.	The study is included in the review with another publication
152.	Turner RC, Cull CA, Frighi V, Holman RR. Glycemic control with diet, sulfonylurea, metformin, or insulin in patients with type 2 diabetes mellitus: progressive requirement for multiple therapies (UKPDS 49). UK Prospective Diabetes Study (UKPDS) Group. *JAMA: The Journal Of The American Medical Association.* 1999;281(21):2005-2012.	Diet intervention not low-carbohydrate; Did not address the main objective of the study
153.	Vadstrup ES, Frølich A, Perrild H, Borg E, Røder M. Lifestyle intervention for type 2 diabetes patients: trial protocol of The Copenhagen Type 2 Diabetes Rehabilitation Project. *BMC Public Health.* 2009;9:166-166.	Multiple interventions implemented
154.	Vestli-Nielsen J. Ett logiskt val vid typ 2 diabetes - protein och fett i stället för kolhydrat?. . *Tidskr Medikam.* 2004;9:9-10.	Did not address the main objective of the study
155.	Viviani GL, Carta G, Berri F, et al. Effects of normoglycemia after a low carbohydrate diet in NIDDM. Insulin secretion and effectiveness. *Minerva Endocrinologica.* 1984;9(2):229-232.	Did not address the main objective of the study
156.	Vlachos D, Ganotopoulou A, Stathi C, et al. A low-carbohydrate protein sparing modified fast diet compared with a low glycaemic index reduced calorie diet in obese type 2 diabetic patients. *Diabetologia.* 2011;54:S355.	Conference abstract

157.	Vuksan V, Jenkins DJ, Spadafora P, et al. Konjac-mannan (glucomannan) improves glycemia and other associated risk factors for coronary heart disease in type 2 diabetes. A randomized controlled metabolic trial. *Diabetes Care.* 1999;22(6):913-919.	Did not address the main objective of the study
158.	Wolever T, Gibbs A, Chiasson J-L, et al. Altering source or amount of dietary carbohydrate has acute and chronic effects on postprandial glucose and triglycerides in type 2 diabetes: Canadian trial of Carbohydrates in Diabetes (CCD). *Nutrition, Metabolism and Cardiovascular Diseases.* 2013;23(3):227-234.	The study is included in the review with another publication
159.	Wolever T, Mehling C, Chiasson JL, et al. Low glycaemic index diet and disposition index in type 2 diabetes (the Canadian trial of Carbohydrates in Diabetes): a randomised controlled trial. *Diabetologia.* 2008;51(9):1607-1615.	The study is included in the review with another publication
160.	Wolever TM, Chiasson JL, Josse RG, et al. No relationship between carbohydrate intake and effect of acarbose on HbA1c or gastrointestinal symptoms in type 2 diabetic subjects consuming 30-60% of energy from carbohydrate. *Diabetes care.* 1998;21(10):1612-1618. http://onlinelibrary.wiley.com/o/cochrane/clcentral/articles/642/CN-00155642/frame.html.	Diet intervention not low-carbohydrate
161.	Wycherley TP, Noakes M, Clifton PM, Cleanthous X, Keogh JB, Brinkworth GD. A high-protein diet with resistance exercise training improves weight loss and body composition in overweight and obese patients with type 2 diabetes. *Diabetes Care.* 2010;33(5):969-976.	Multiple interventions (i.e. exercise)
162.	Yancy Jr WS, Foy M, Chalecki AM, Vernon MC, Westman EC. A low-carbohydrate, ketogenic diet to treat type 2 diabetes. *Nutrition & Metabolism.* 2005;2:34-37.	Not a randomized controlled trial
163.	Yancy Jr WS, Westman EC, McDuffie JR, et al. A randomized trial of a low-carbohydrate diet vs orlistat plus a low-fat diet for weight loss. *Archives of internal medicine.* 2010;170(2):136-145.	Multiple interventions (i.e. orlistat)
164.	Ziemer DC, Berkowitz KJ, Panayioto RM, et al. A simple meal plan emphasizing healthy food choices is as effective as an exchange-based meal plan for urban African Americans with type 2 diabetes. *Diabetes Care.* 2003;26(6):1719-1724.	Diet intervention not low-carbohydrate

Supplementary table 3A Subgroup-analysis based on study duration ≤6 months (short term) vs ≥12 moths (long term)

Outcome	Short term	Long term	Test for subgroup effect	
	MD (95 % CI)	MD (95 % CI)	p-value	I^2
Weight [kg]	-0.87 [-1.88, 0.15]	0.14 [-0.29, 0.57]	0.07*	69.0%
BMI [kg/m2]	-1.21 [-2.73, 0.32]	-0.69 [-1.51, 0.13]	0.56	0%
HbA1c [%]	-0.17 [-0.27, -0.08]	-0.00 [-0.10, 0.09]	0.01*	83.7%
LDL [mmol/l]	-0.08 [-0.29, 0.14]	0.03 [-0.10, 0.16]	0.40	0%
HDL [mmol/l]	-0.01 [-0.07, 0.04]	0.06 [-0.01, 0.13]	0.10*	64.1%
Total cholesterol [mmol/l]	-0.06 [-0.41, 0.30]	0.07 [-0.04, 0.19]	0.49	0%
Triacylglycerol [mmol/l]	-0.18 [-0.36, 0.00]	-0.10 [-0.23, 0.03]	0.48	0%
SBP [mmHg]	-0.33 [-2.31, 1.65]	-1.39 [-3.20, 0.43]	0.44	0%
DBP [mmHg]	-0.06 [-1.46, 1.34]	-0.55 [-2.17, 1.06]	0.65	0%

Supplementary table 3B: Subgroup-analysis based on the amount of carbohydrates in the LCD group, LCD (21-70 g CHO) vs LCD (30-40% TE CHO)

Outcome	Moderate LCD	VLCD	Test for subgroup effect	
	MD (95 % CI)	MD (95 % CI)	p-value	I^2
Weight [kg]	-0.10 (-0.46, 0.26)	-0.66 (-1.99, 0.68)	0.43	0%
BMI [kg/m2]	-0.68 (-1.81, 0.44)	-1.82 (-3.51, -0.13)	0.27	16.9%
HbA1c [%]	-0.07 (-0.17, 0.04)	-0.23 (-0.48, 0.02)	0.23	31.6%
LDL [mmol/l]	-0.06 (-0.19, 0.07)	0.16 (-0.02, 0.34)	0.05*	73.8%
HDL [mmol/l]	0.03 (-0.03, 0.10)	0.07 (0.00, 0.13)	0.46	0%
Total cholesterol [mmol/l]	-0.01 (-0.20, 0.17)	0.17 (-0.02, 0.37)	0.17	45.7%
Triacylglycerol [mmol/l]	-0.10 (-0.23, 0.03)	-0.23 (-0.45, -0.02)	0.29	10.1%
SBP [mmHg]	-0.92 (-2.32, 0.47)	-0.99 (-4.77, 2.79)	0.98	0%
DBP [mmHg]	-0.06 (-1.13, 1.01)	-1.19 (-3.90, 1.52)	0.44	0%

Supplemantary table 3C: Sensitivity analyses high versus low risk of bias

Outcome	Low RoB	High RoB	P-value	I^2
Weight	0.86 [-1.86, 3.57]	-1.75 [-2.82, -0.69]	0,08	67,5
HbA1c	0.12 [-0.12, 0.35]	-0.30 [-0.54, -0.07]	0,01	83,6
LDL	0.10 [-0.11, 0.31]	-0.05 [-0.25, 0.16]	0,34	0
HDL	0.04 [-0.02, 0.09]	-0.12 [-0.23, -0.01]	0,01	83,2
TC	0.10 [-0.14, 0.33]	0.07 [-0.13, 0.27]	0,86	0
Triglyc	0.06 [0.00, 0.12]	-0.26 [-0.41, -0.12]	<0,0001	93,8
SBP	-2.57 [-7.21, 2.07]	-2.69 [-6.93, 1.55]	0,97	0
DBP	-0.48 [-2.51, 1.55]	-2.38 [-6.04, 1.28]	0,37	0
Compliance	1.08 [0.83, 1.42]	1.03 [0.80, 1.33]	0,79	0

Carbohydrate quantity in the dietary management of type 2 diabetes

Outcomes	№ of participants (studies) Follow-up	Certainty of the evidence (GRADE)	Anticipated absolute effects	
			Risk with HCD	Risk difference with LCD
Weight follow up: 3 months to 3 ± 1.8 years	1587 (17 RCTs)	⨁⨁⨁◯ MODERATE [a]	The mean weight was **86.4** kg	MD **0.35 kg lower** (0.91 lower to 0.21 higher)
HbA1c follow up: 3 months to 24 months	1425 (16 RCTs)	⨁⨁⨁◯ MODERATE [a]	The mean HbA1c was **7.2** %	MD **0.09 % lower** (0.17 lower to 0.01 lower)
LDL-cholesterol follow up: 3 months to 3 ± 1.8 years	1409 (15 RCTs)	⨁⨁◯◯ LOW [a,b]	The mean LDL-cholesterol was **2.68** mmol/l	MD **0.01 mmol/l lower** (0.13 lower to 0.11 higher)
HDL-cholesterol follow up: 3 months to 3 ± 1.8 years	1438 (16 RCTs)	⨁⨁◯◯ LOW [a,c]	The mean HDL-cholesterol was **1.17** mmol/l	MD **0.04 mmol/l higher** (0.01 lower to 0.1 higher)

Outcomes	№ of participants (studies) Follow-up	Certainty of the evidence (GRADE)	Anticipated absolute effects	
			Risk with HCD	Risk difference with LCD
Total cholesterol follow up: 3 months to 3 ± 1.8 years	1373 (14 RCTs)	⊕⊕◯◯ LOW [a,d]	The mean total cholesterol was **4.62** mmol/l	MD **0.04 mmol/l higher** (0.12 lower to 0.2 higher)
Triacylglycerol follow up: 3 months to 24 months	1391 (16 RCTs)	⊕⊕◯◯ LOW [a,e]	The mean triacylglycerol was **1.59** mmol/l	MD **0.13 mmol/l lower** (0.24 lower to 0.02 lower)
Systolic blood pressure follow up: 3 months to 24 months	1179 (14 RCTs)	⊕⊕⊕◯ MODERATE [a]	The mean systolic blood pressure was **129.7** mmHg	MD **0.93 mmHg lower** (2.24 lower to 0.37 higher)
Diastolic blood pressure follow up: 3 months to 24 months	944 (12 RCTs)	⊕⊕⊕◯ MODERATE [a]	The mean diastolic blood pressure was **75.4** mmHg	MD **0.21 mmHg lower** (1.2 lower to 0.79 higher)

Explanations

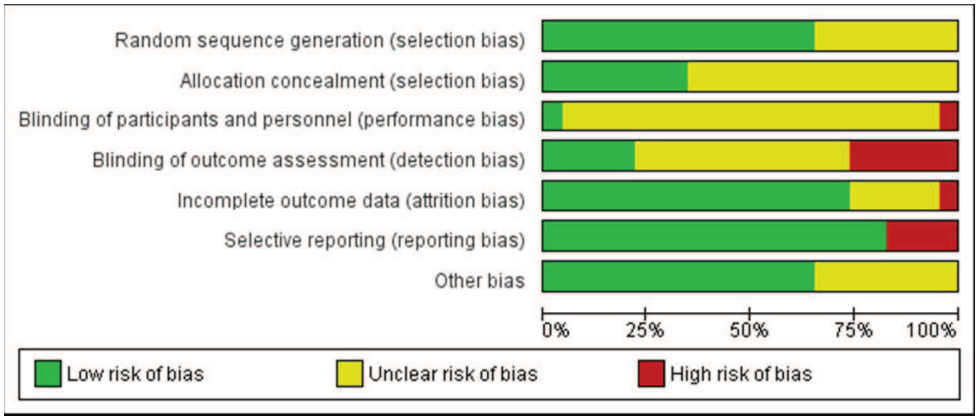
a. Downgraded by one level due to risk of bias: The majority of evidence is from studies at high- or unclear risk of bias

b. Downgraded by one level due to inconsistency: Substantial heterogeneity (I2 statistics 64%, $p < 0.001$) and limited overlap of CI

c. Downgraded by one level due to inconsistency: Substantial heterogeneity (I2 statistics 72%, p < 0.001) and limited overlap of CI

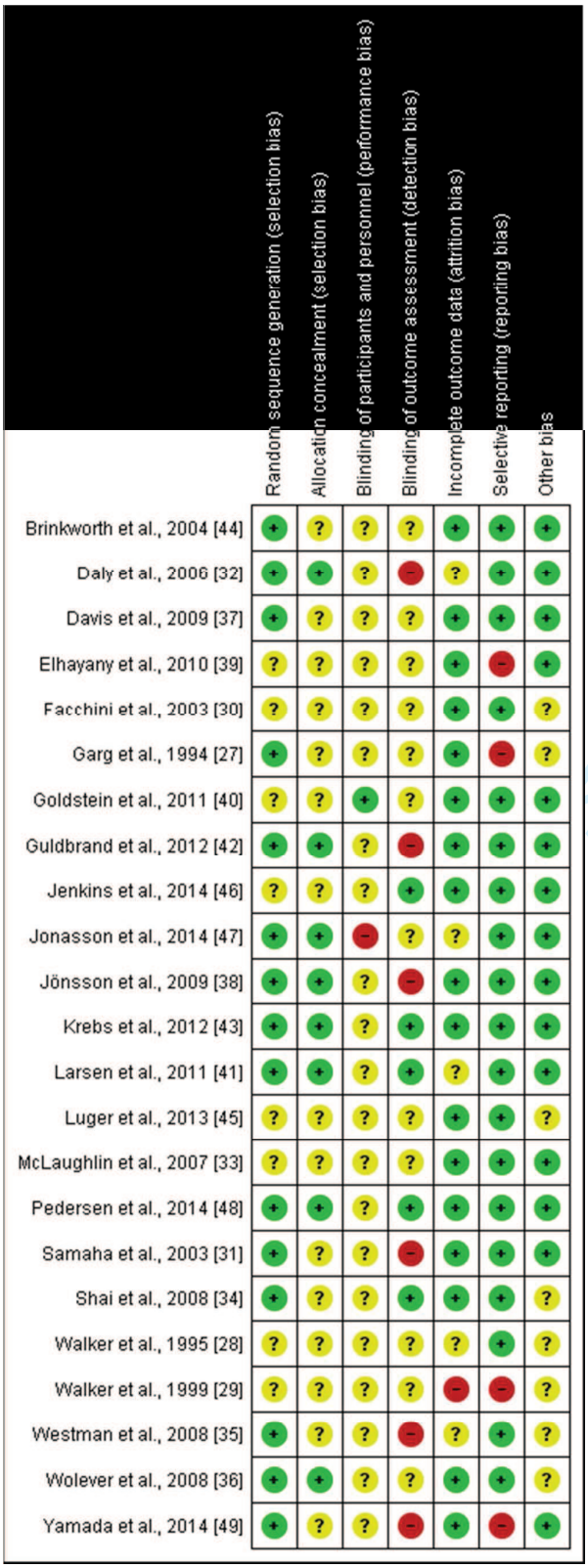
d. Downgraded by one level due to inconsistency: Substantial heterogeneity (I2 statistics 71%, p < 0.001) and limited overlap of CI

e. Downgraded by one level due to inconsistency: Substantial heterogeneity (I2 statistics 57%, p = 0.003) and limited overlap of CI

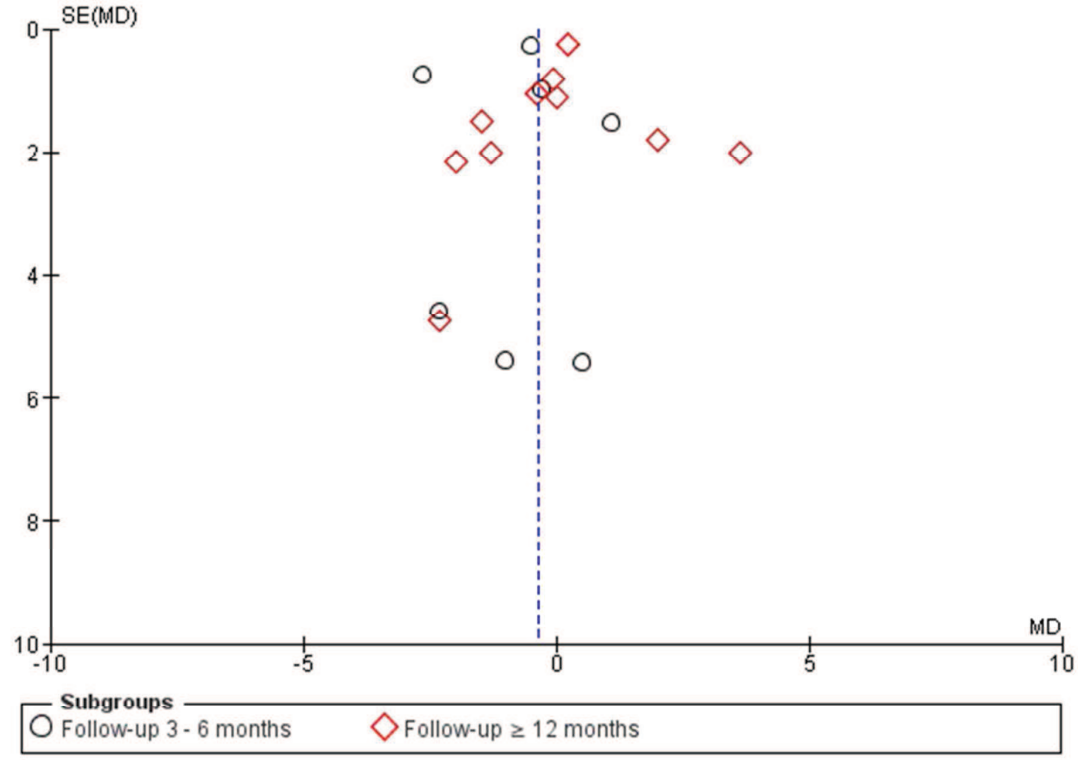


213x90mm (72 x 72 DPI)

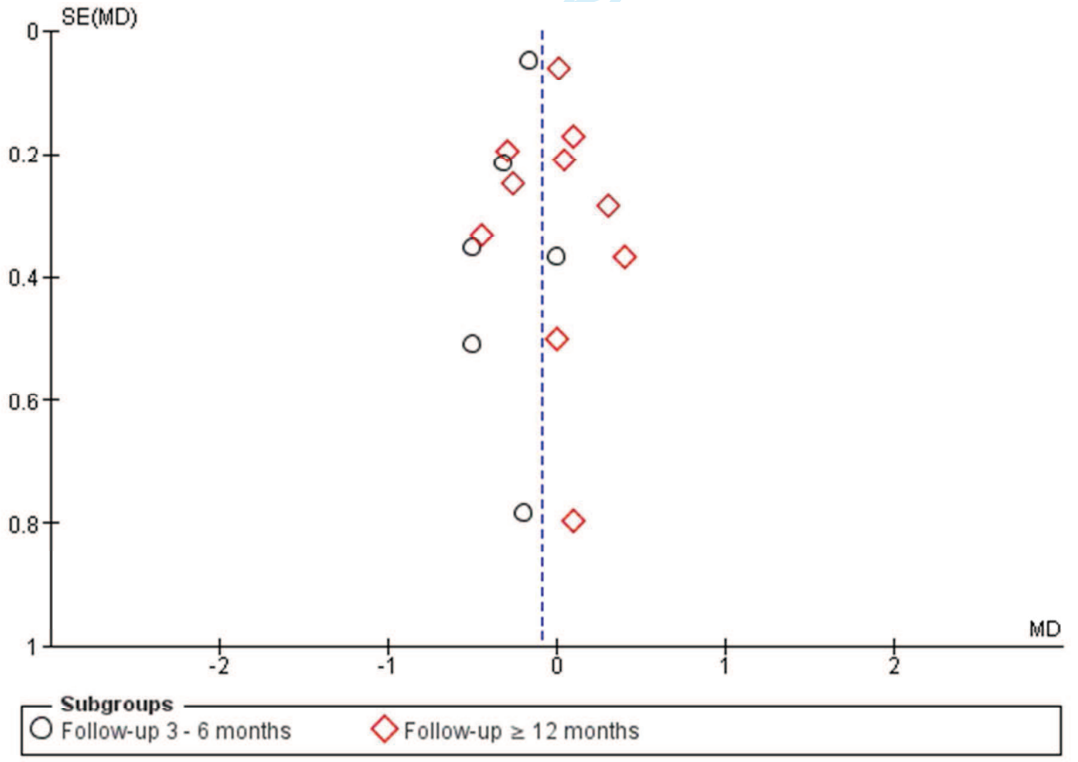
Risk of bias summary: review authors' judgements about each risk of bias item for each included study.



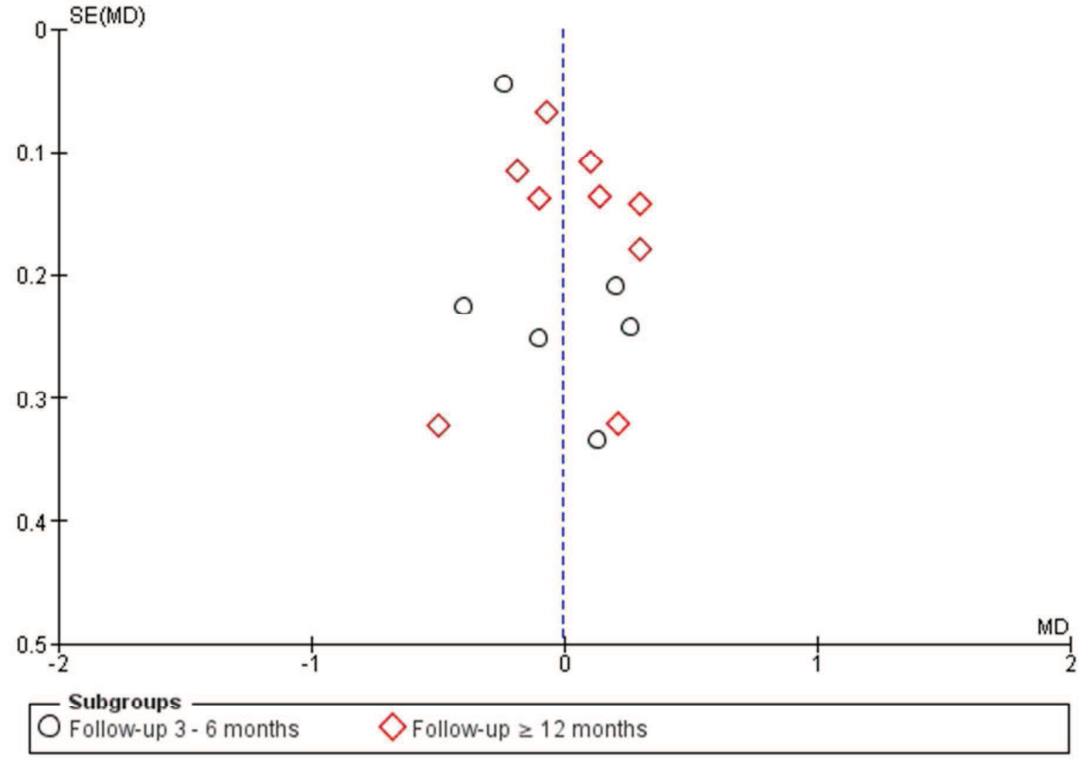
Body weight



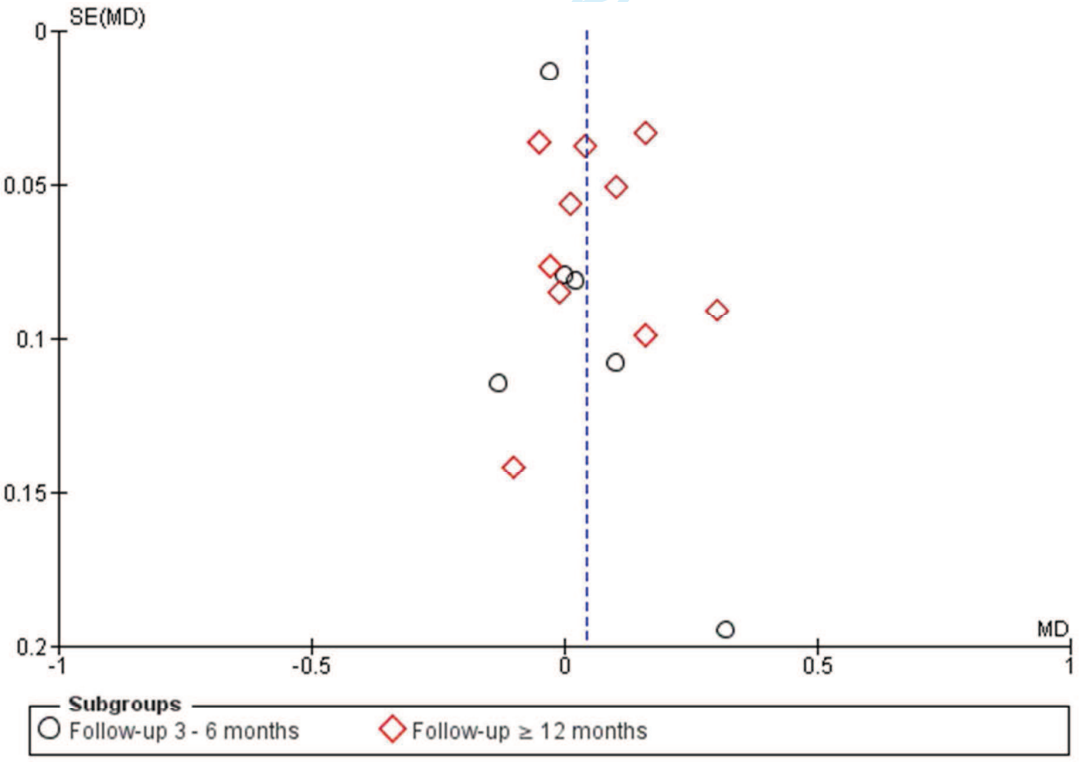
HbA1c



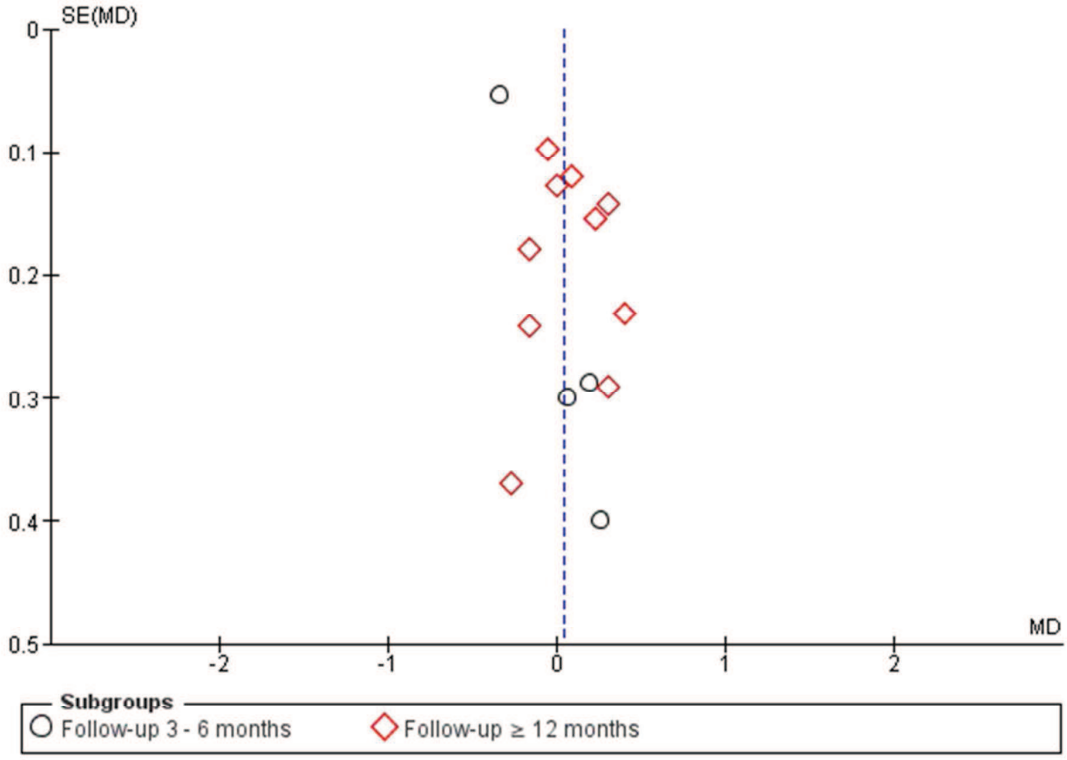
LDL-cholesterol



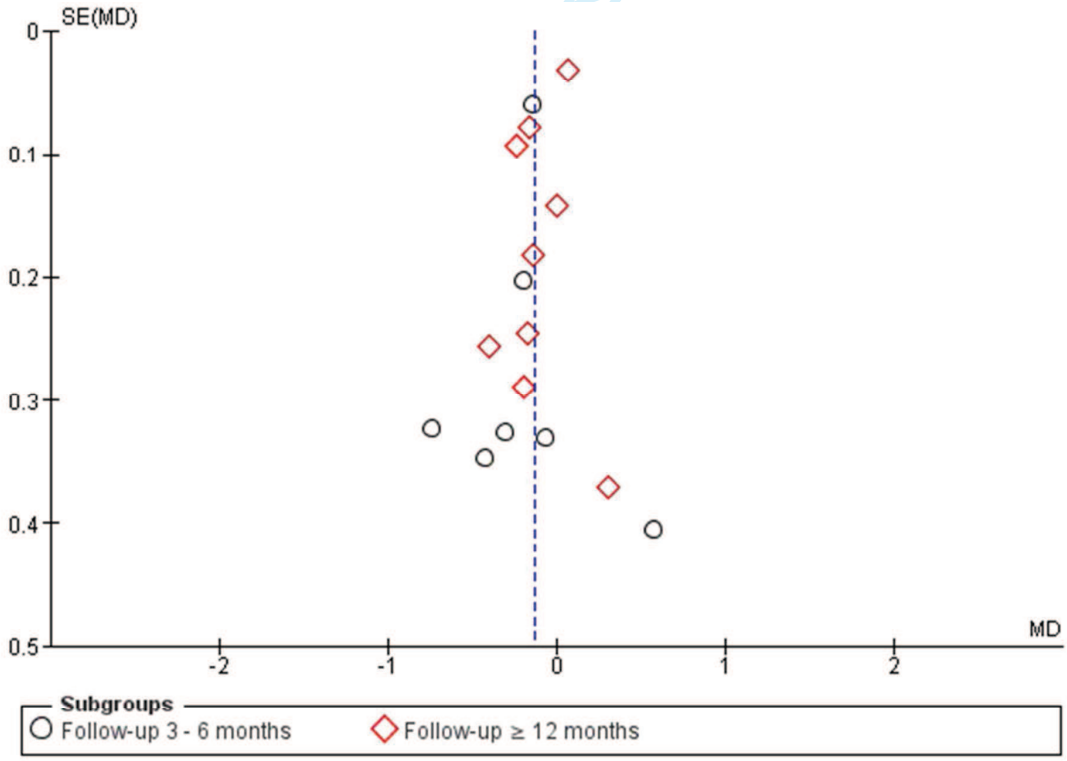
HDL-Cholesterol



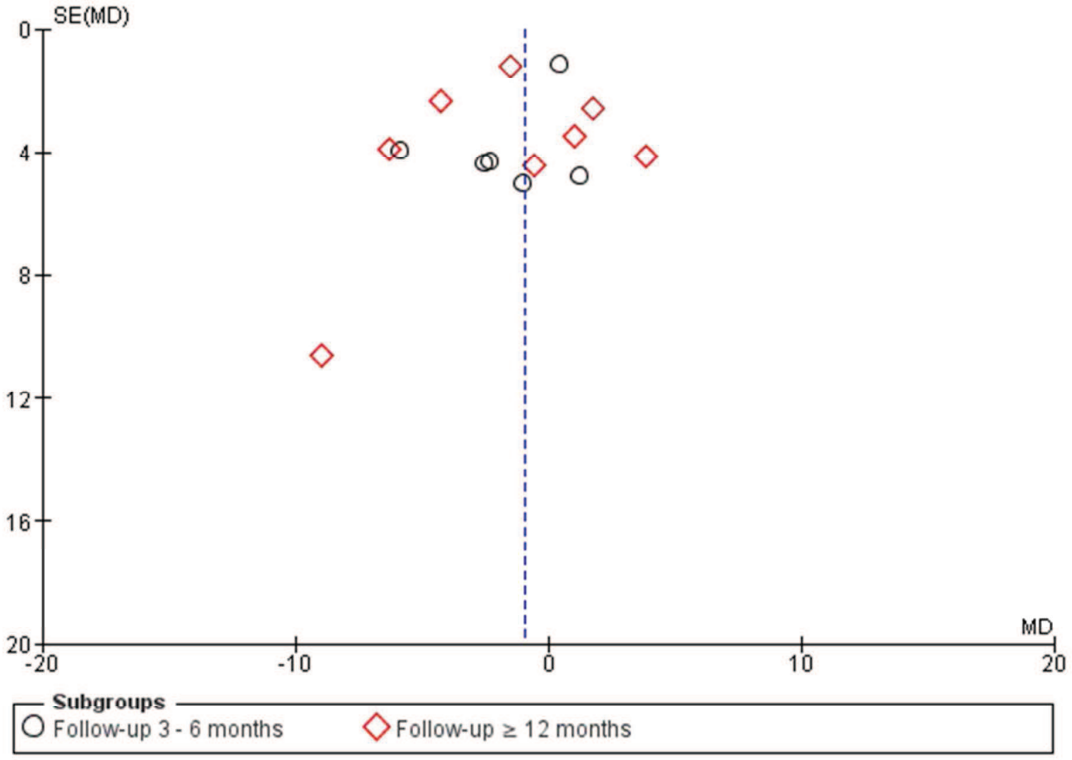
Total cholesterol



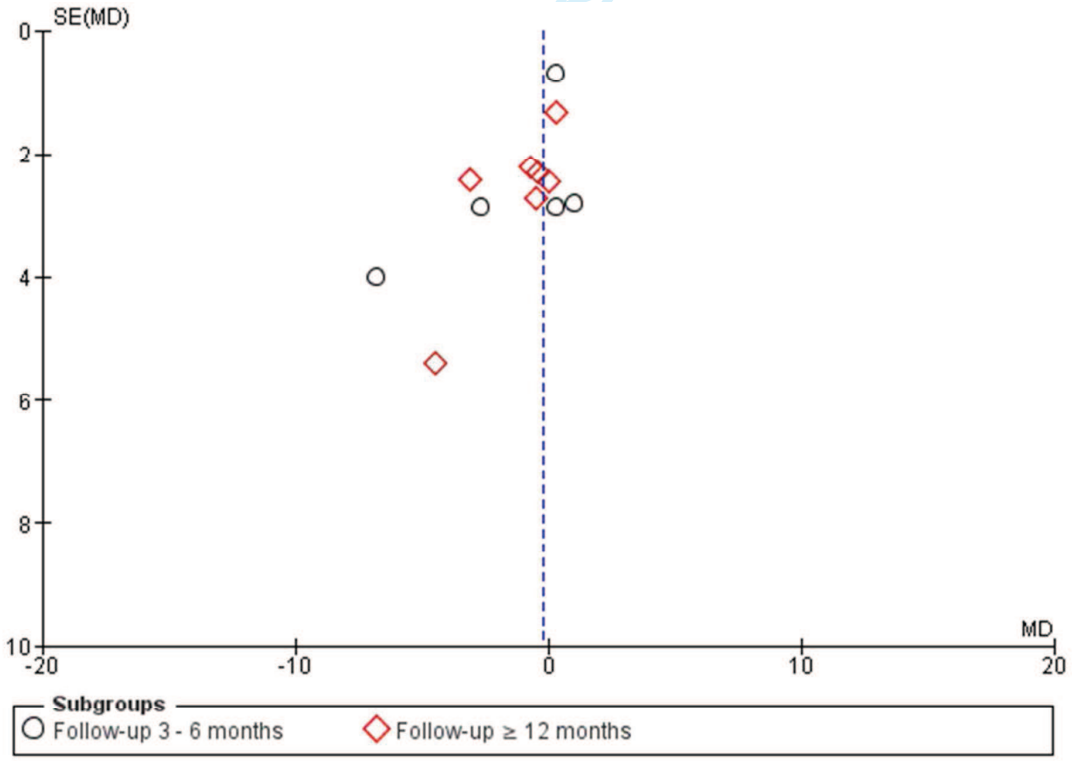
Triacylglyserols



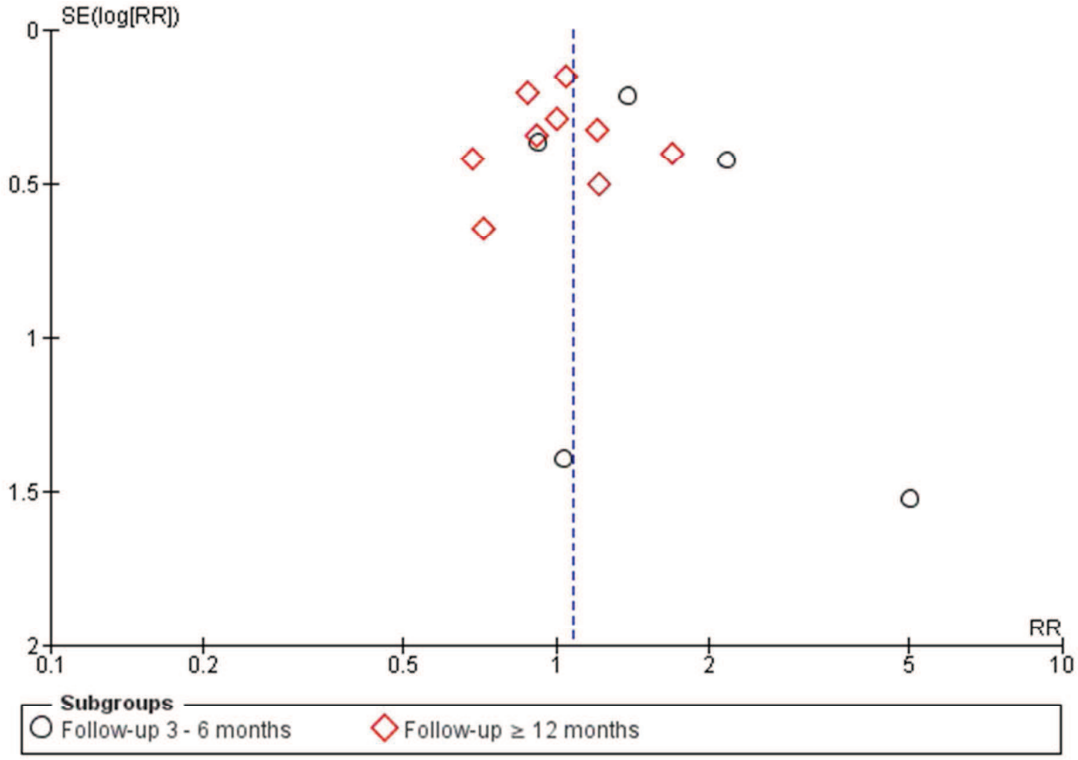
Systolic blood pressure



Diastolic blood pressure



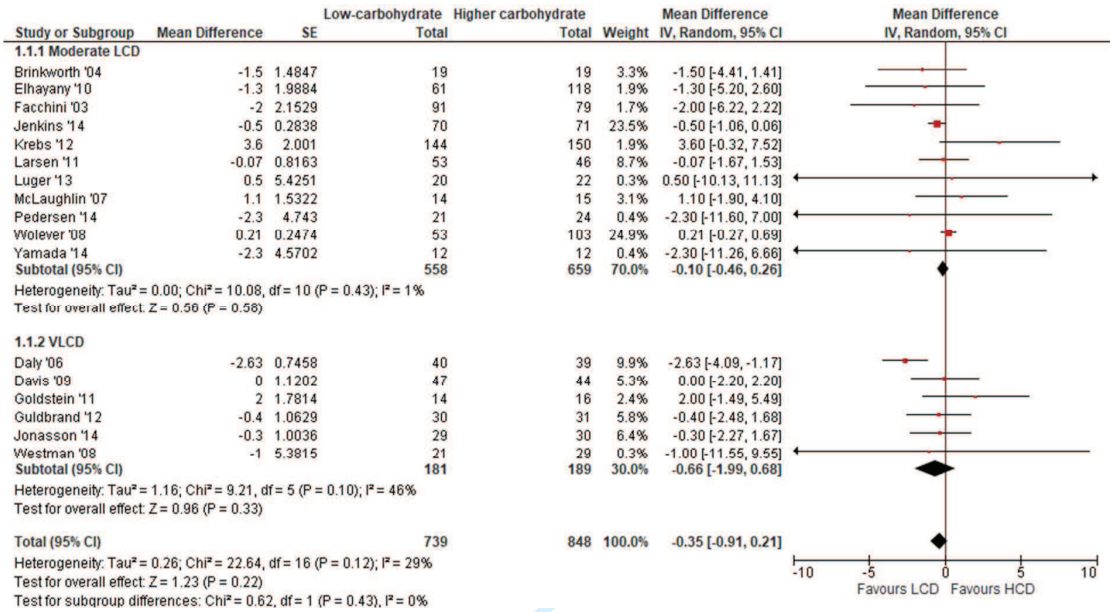
Compliance



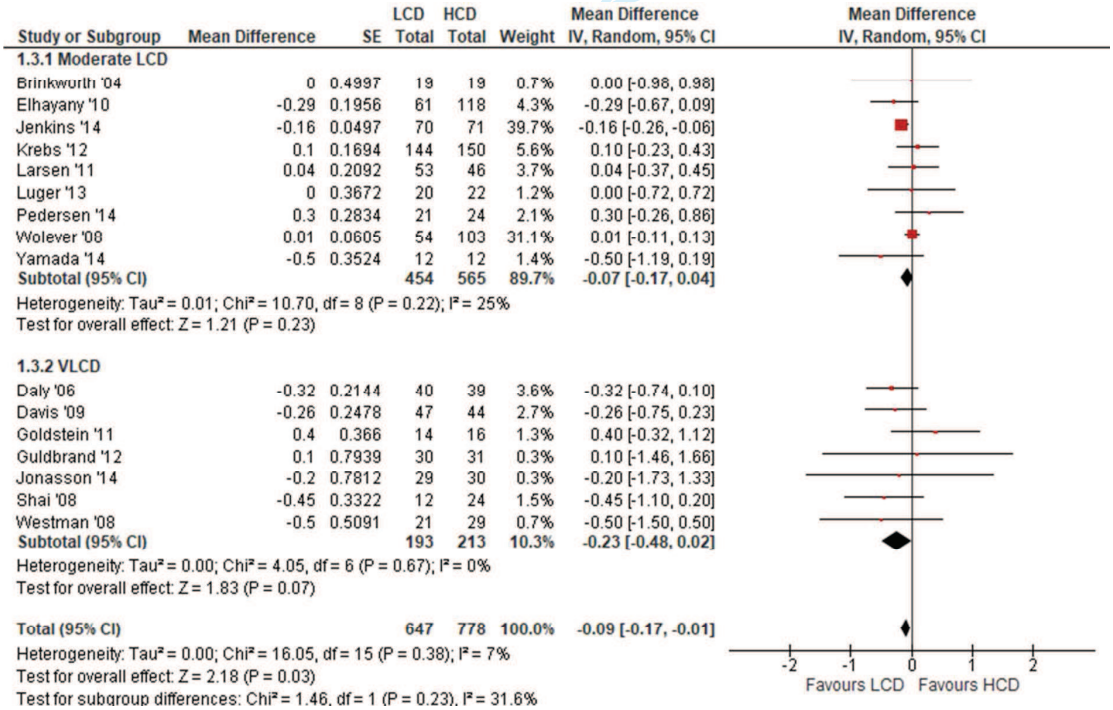
Supplementary figure 3

Subgroup analysis based on carbohydrate restriction in the LCD group (moderate LCD: 30-40% TE CHO and VLCD: 21-70 g CHO)

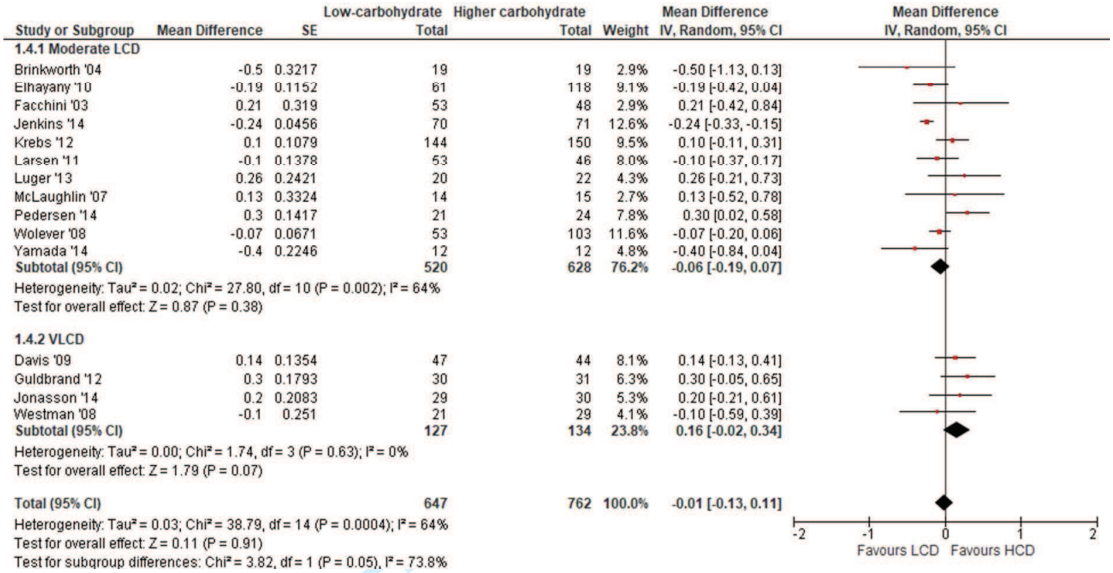
Body weight



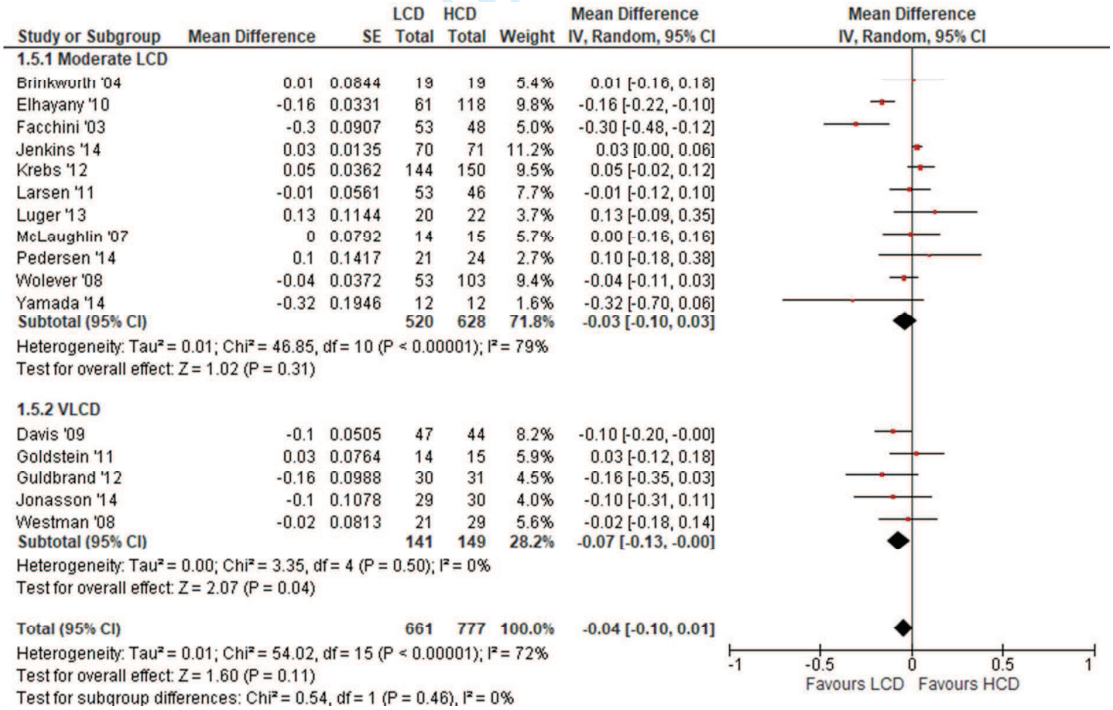
Hb1Ac



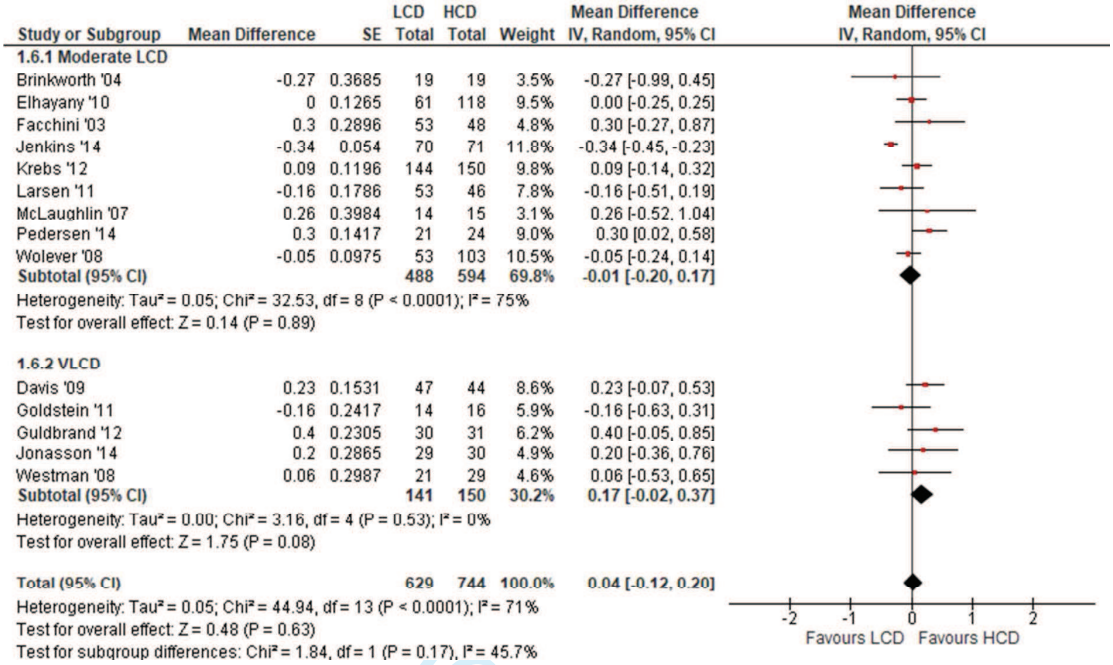
LDL-cholesterol



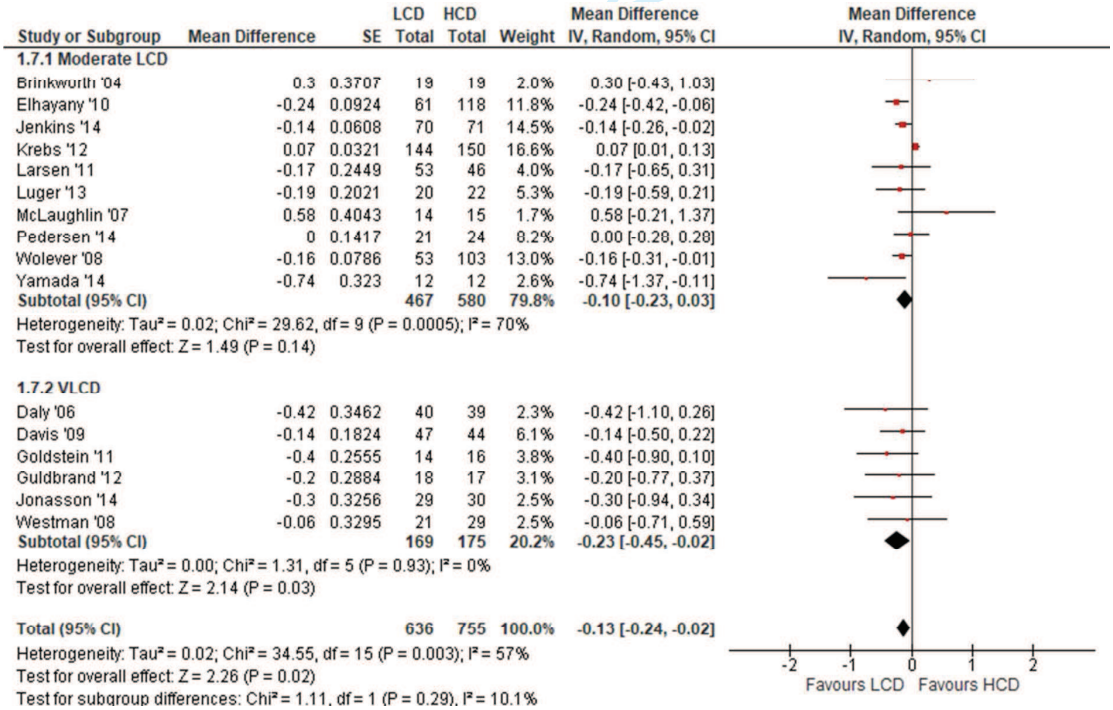
HDL-cholesterol



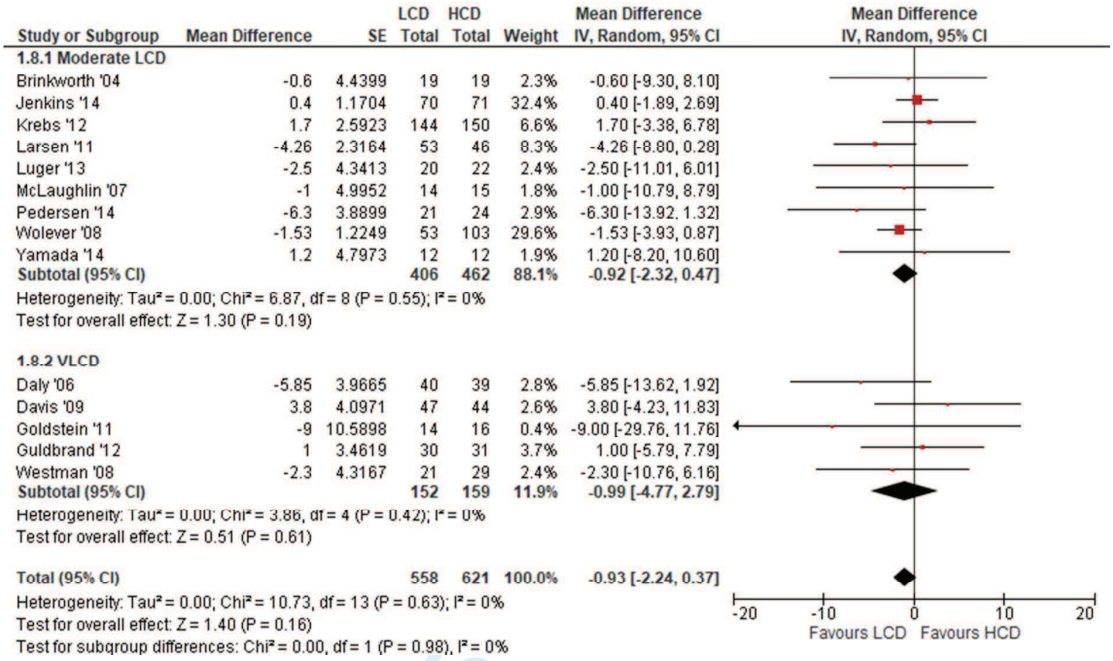
Total cholesterol



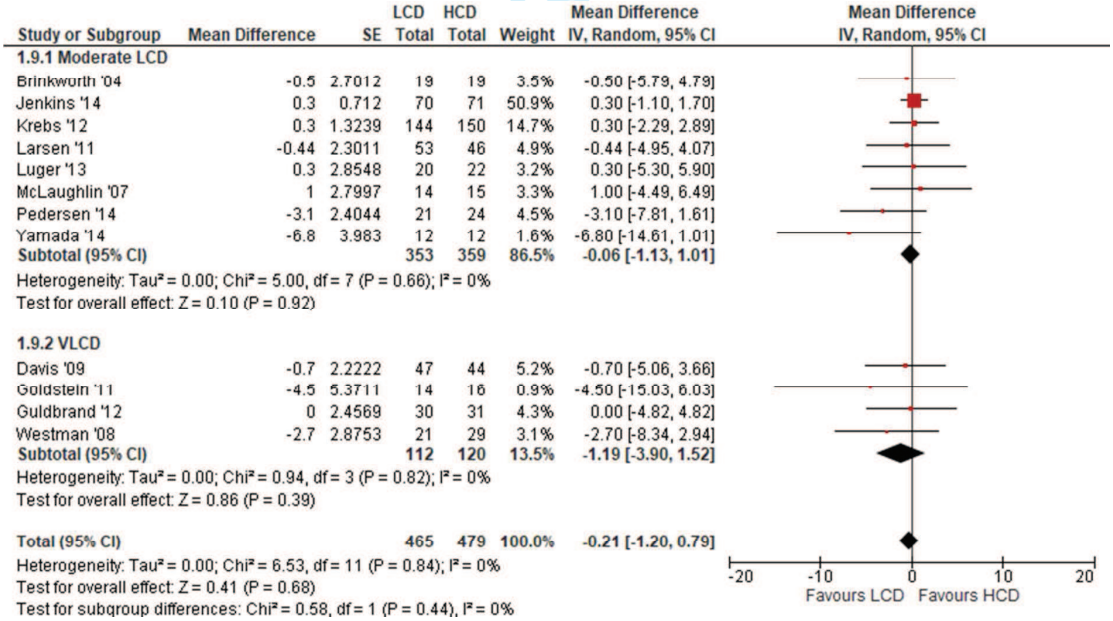
Triacylglycerol



Systolic blood pressure



Diastolic blood pressure



Attrition rate