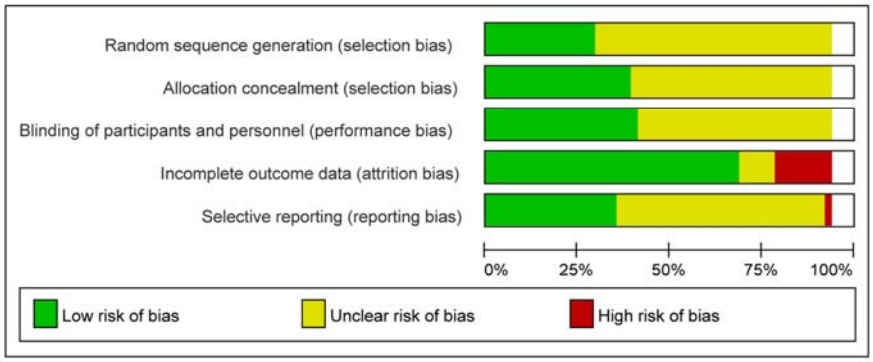
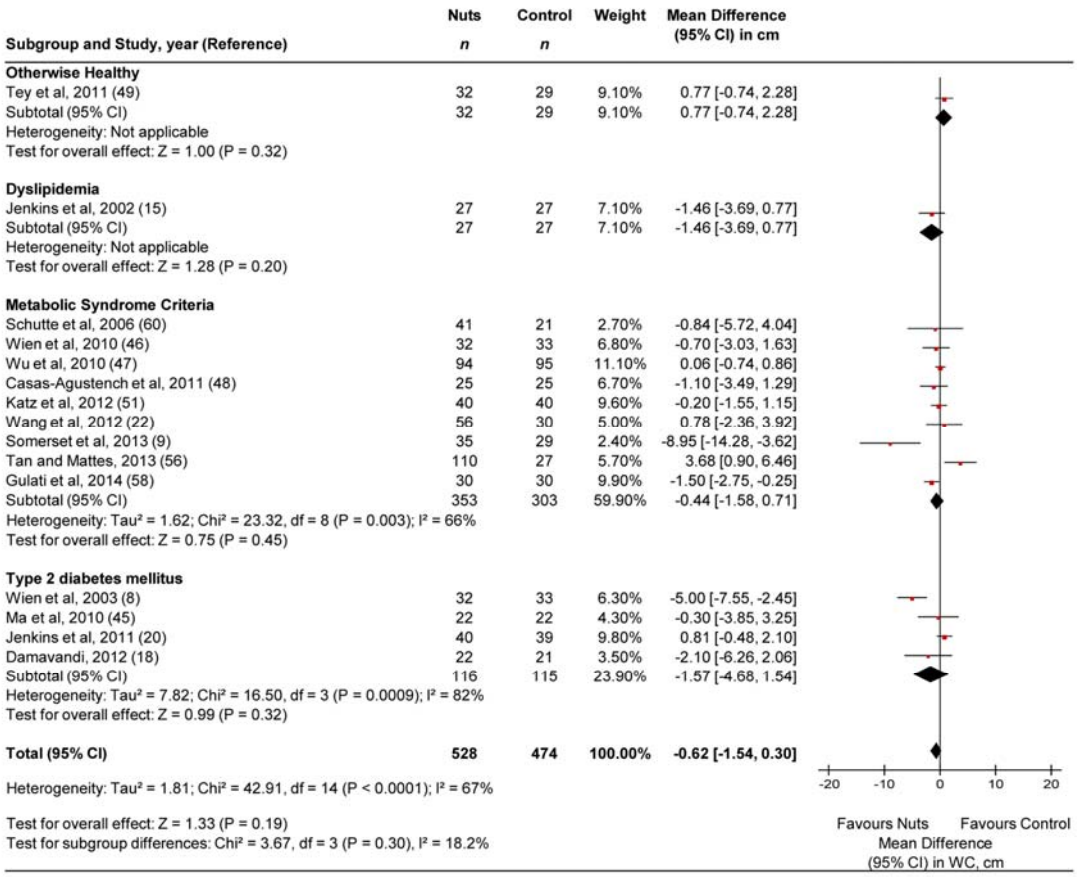
**Appendix Figure 1.** Cochrane risk of bias.



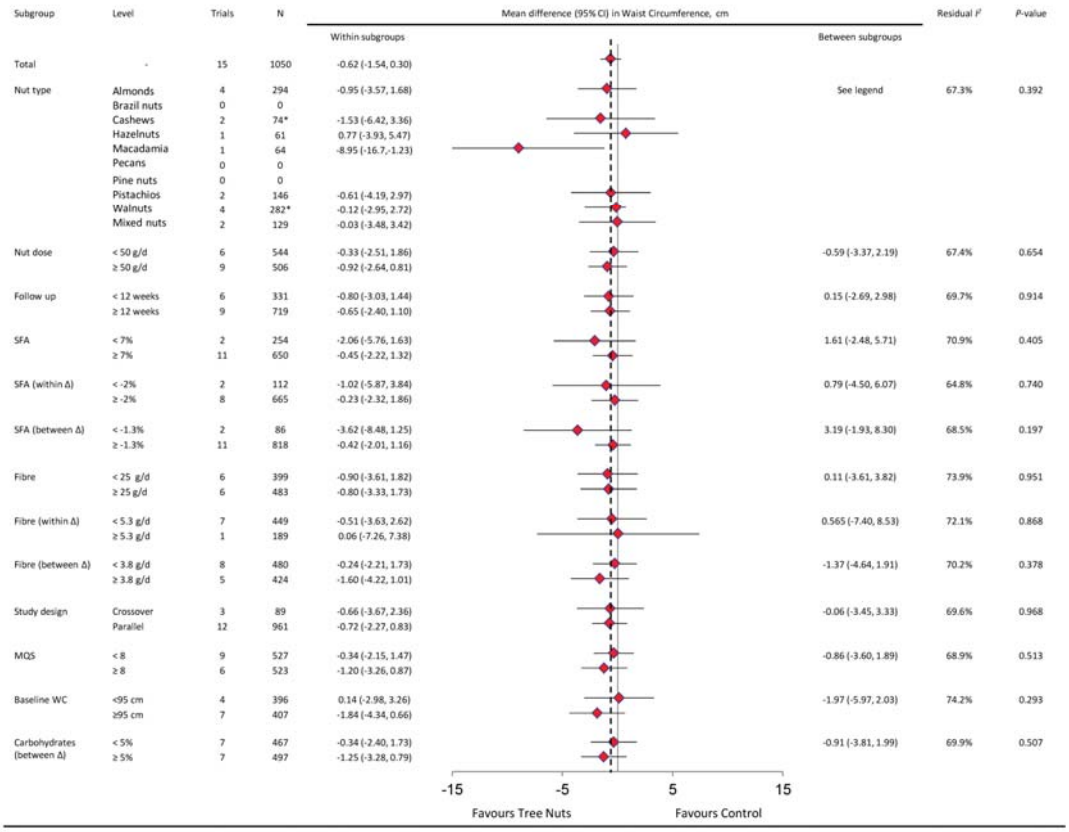

Review authors' judgements about each risk of bias item presented as percentages across all included studies.

**Appendix Figure 2.** Forest plot of the RCTs of the effect of Tree Nuts on Waist Circumference




Pooled effect estimates are shown as diamonds, one each for trials conducted in otherwise healthy, dyslipidemia, metabolic syndrome criteria, diabetes and their combination (total). Paired analyses were applied to all crossover trials (3). Data are expressed as mean differences (MD) with 95% CI, using generic inverse-variance random-effects models. Interstudy heterogeneity was tested by using the Cochrane's Q statistic ($I^2$) at a significance level of $P < 0.10$ and quantified by $I^2$, levels ≤ 50% represent moderate heterogeneity, ≥ 50 % represent substantial heterogeneity and ≥ 75%, considerable heterogeneity. WC = waist circumference, cm = centimeters.

**Appendix Figure 3.** Forest plot of subgroup analyses for categorical variables for Waist Circumference

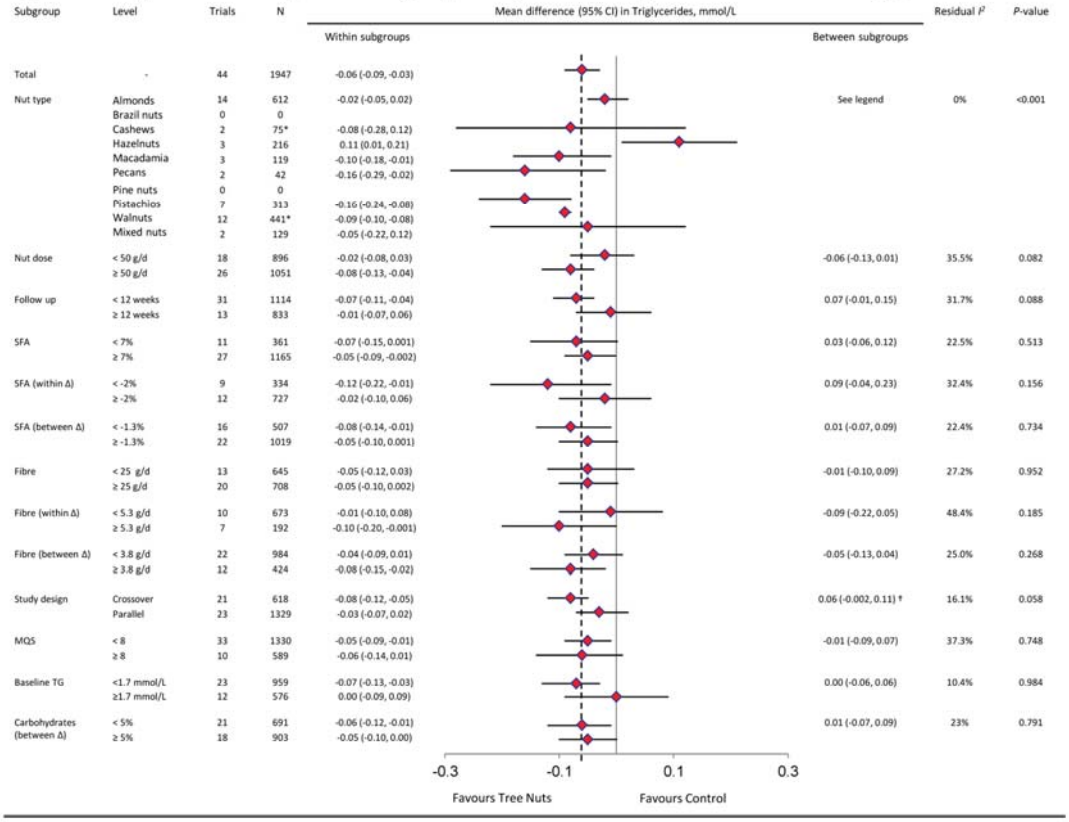



Point estimates for each subgroup level are the pooled effect estimates and are represented by diamonds. The dashed line represents the pooled effect estimate for the overall analysis. The residual $I^2$ value indicates the interstudy heterogeneity unexplained by the subgrouping. Pairwise between-subgroup mean differences (95% CIs) for nut type are not shown due to lack of statistical significance between groups. SFA = Saturated Fatty Acids, SFA (within Δ) = change within the tree nut diet for SFA, SFA (between Δ) = difference between the tree nut and control diets for SFA, Fibre (within Δ) = change within the tree nut diet for fibre, Fibre (between Δ) = difference between the tree nut and control diets for fibre, MQS = Heyland Methodological Quality Score, WC = waist circumference, Carbohydrates (between Δ)= difference between the tree nut and control diets for carbohydrates.

* Both nut types were studied within the same trial, for the sole purposes of number of participants, the control group was divided in half.

† Statistically significant pairwise subgroup effect modification by meta-regression analysis ($P < 0.05$)

**Appendix Figure 4.** Forest plot of subgroup analyses for categorical variables for Triglycerides.

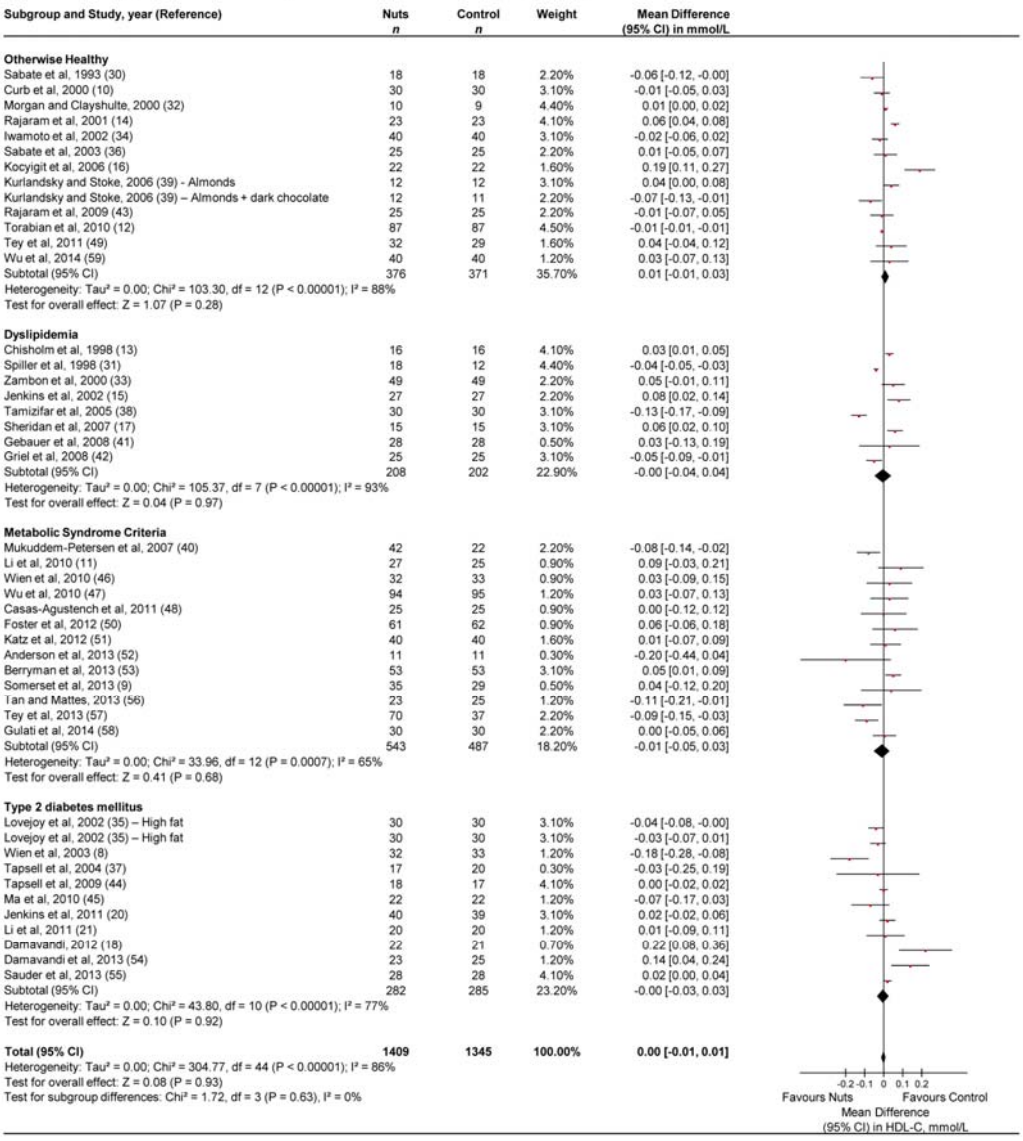



Point estimates within each subgroup level are the pooled effect estimates and are represented by diamonds. The dashed line represents the pooled effect estimate for the overall analysis. The residual $I^2$ value indicates the interstudy heterogeneity unexplained by the subgrouping. Significant pairwise between-subgroup mean differences (95% CIs) for nut types as follows: almonds vs. walnuts -0.07 mmol/L (-0.11, -0.04 mmol/L)†, almonds vs. pistachio -0.14 mmol/L (-0.23, -0.05 mmol/L)†, almonds vs. pecan -0.14 mmol/L (-0.27, -0.001 mmol/L)†, almonds vs. hazelnuts 0.13 mmol/L (0.02, 0.23 mmol/L)†, walnuts vs. hazelnuts -0.20 mmol/L (-0.30, -0.10 mmol/L)†, macadamia vs. hazelnuts -0.20 mmol/L (-0.33, -0.07 mmol/L)†, pistachio vs. hazelnuts -0.27 mmol/L (-0.40, -0.14 mmol/L)†, pecan vs. hazelnut -026 mmol/L (-0.43, -0.10 mmol/L)†, all others non-significant ($P > 0.05$). SFA = Saturated Fatty Acids, SFA (within Δ) = change within the tree nut diet for SFA, SFA (between Δ) = difference between the tree nut and control diets for SFA, Fibre (within Δ) = change within the tree nut diet for fibre, Fibre (between Δ) = difference between the tree nut and control diets for fibre, MQS = Heyland Methodological Quality Score, TG = Triglycerides, Carbohydrates (between Δ)= difference between the tree nut and control diets for carbohydrates.

* Both nut types were studied within the same trial, for the sole purposes of number of participants, the control group was divided in half.

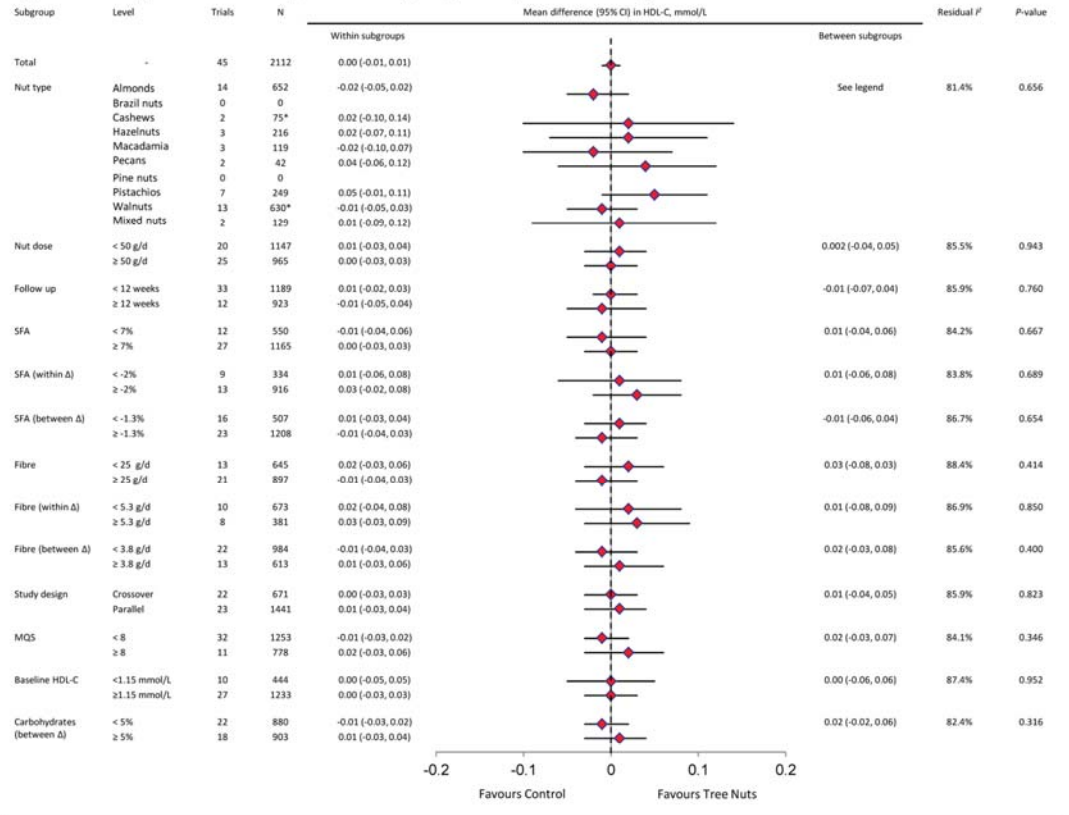
† Statistically significant pairwise subgroup effect modification by meta-regression analysis ($P < 0.05$)

**Appendix Figure 5**. Forest plot of the RCTs investigating the effect of Tree Nuts on HDL-C.




Pooled effect estimates are shown as diamonds, one each for trials conducted in otherwise healthy, dyslipidemia, metabolic syndrome criteria, diabetes and their combination (total). Paired analyses were applied to all crossover trials (21) and one substudy. Data are expressed as mean differences (MD) with 95% CI, using generic inverse-variance random-effects models. Interstudy heterogeneity was tested by using the Cochrane's Q statistic ($I^2$) at a significance level of $P < 0.10$ and quantified by $I^2$, levels ≤ 50% represent moderate heterogeneity, ≥ 50 % represent substantial heterogeneity and ≥ 75%, considerable heterogeneity. HDL-C = High-Density Lipoprotein Cholesterol, mmol/L = millimoles per liter.

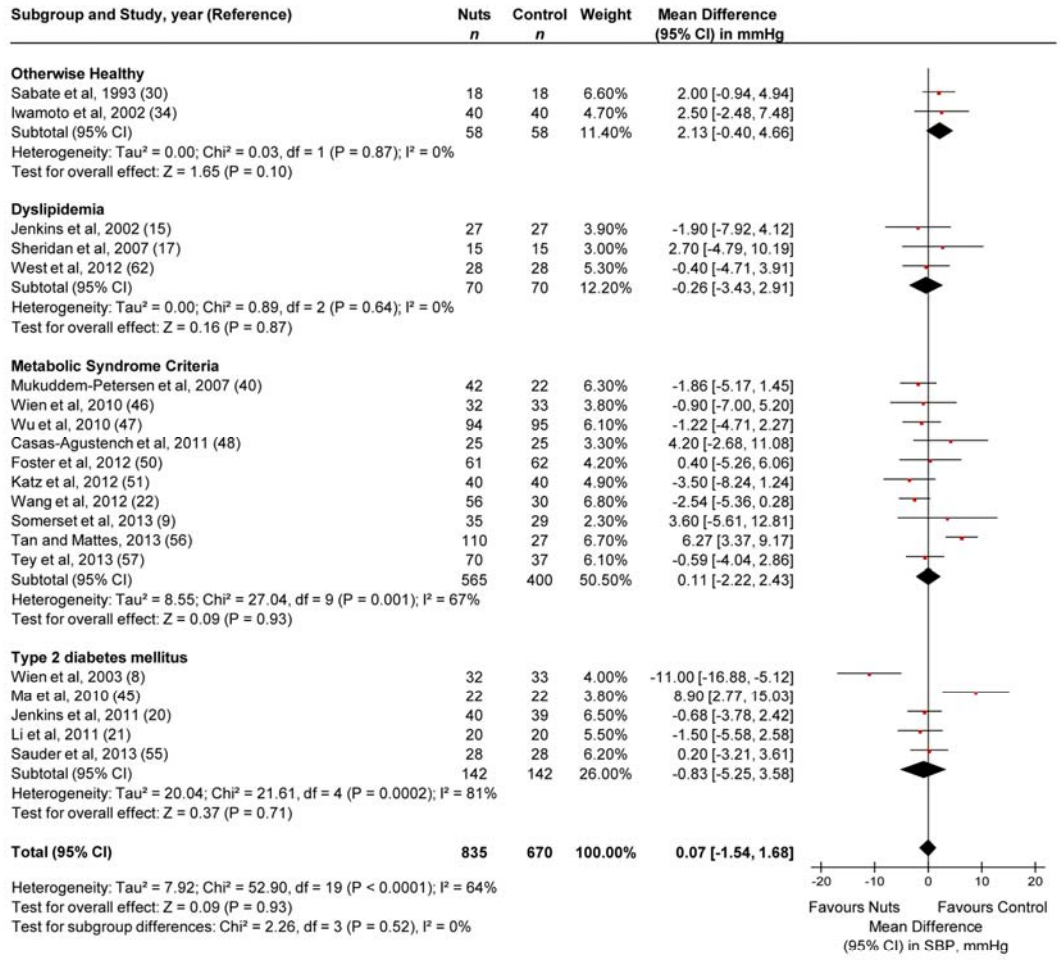
**Appendix Figure 6.** Forest plot of subgroup analyses for categorical variables for HDL-C.




Point estimates for each subgroup level are the pooled effect estimates and are represented by diamonds. The dashed line represents the pooled effect estimate for the overall analysis. The residual $I^2$ value indicates the interstudy heterogeneity unexplained by the subgrouping. Pairwise between-subgroup mean differences (95% CIs) for nut type are not shown due to lack of statistical significance between groups. SFA = Saturated Fatty Acids, SFA (within Δ) = change within the tree nut diet for SFA, SFA (between Δ) = difference between the tree nut and control diets for SFA, Fibre (within Δ) = change within the tree nut diet for fibre, Fibre (between Δ) = difference between the tree nut and control diets for fibre, MQS = Heyland Methodological Quality Score, HDL-C = high-density lipoprotein cholesterol, Carbohydrates (between Δ)= difference between the tree nut and control diets for carbohydrates.

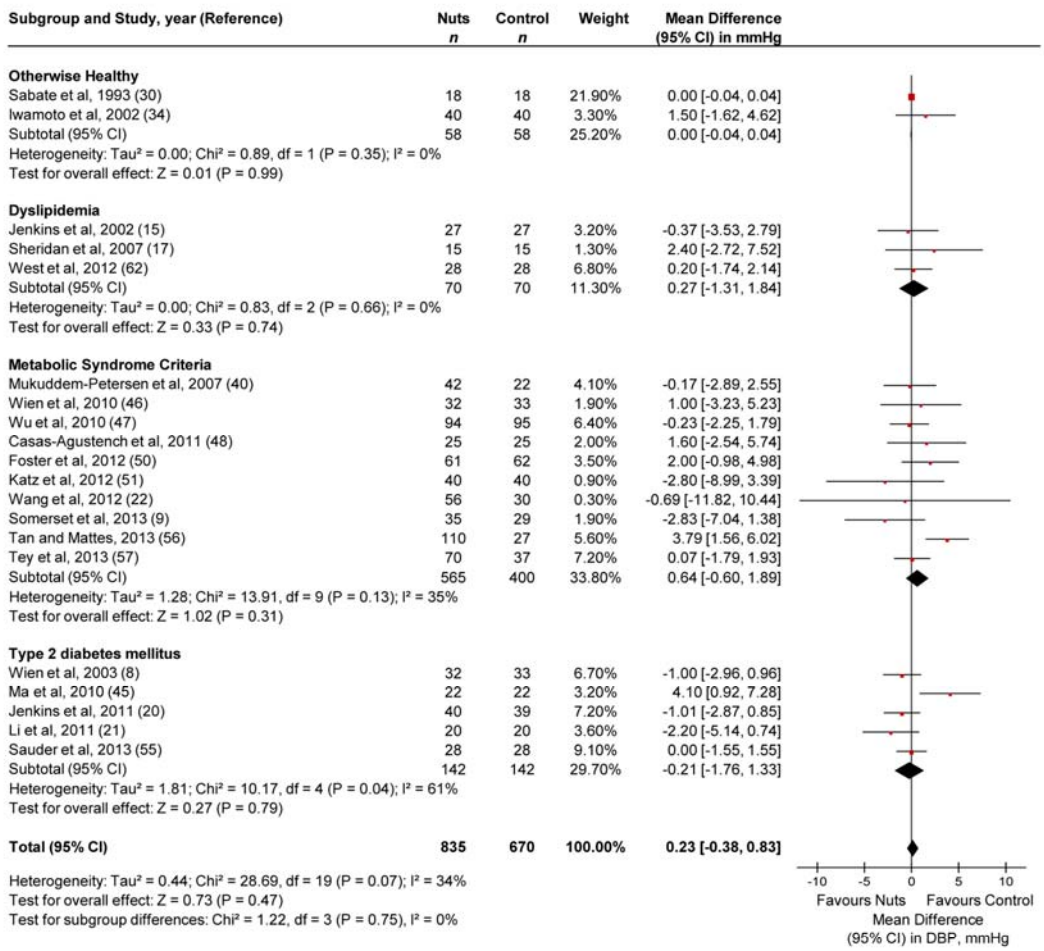
* Both nut types were studied within the same trial, for the sole purposes of number of participants, the control group was divided in half.

**Appendix Figure 7A**. Forest plot of the RCTs investigating the effect of Tree Nuts on Systolic Blood Pressure.



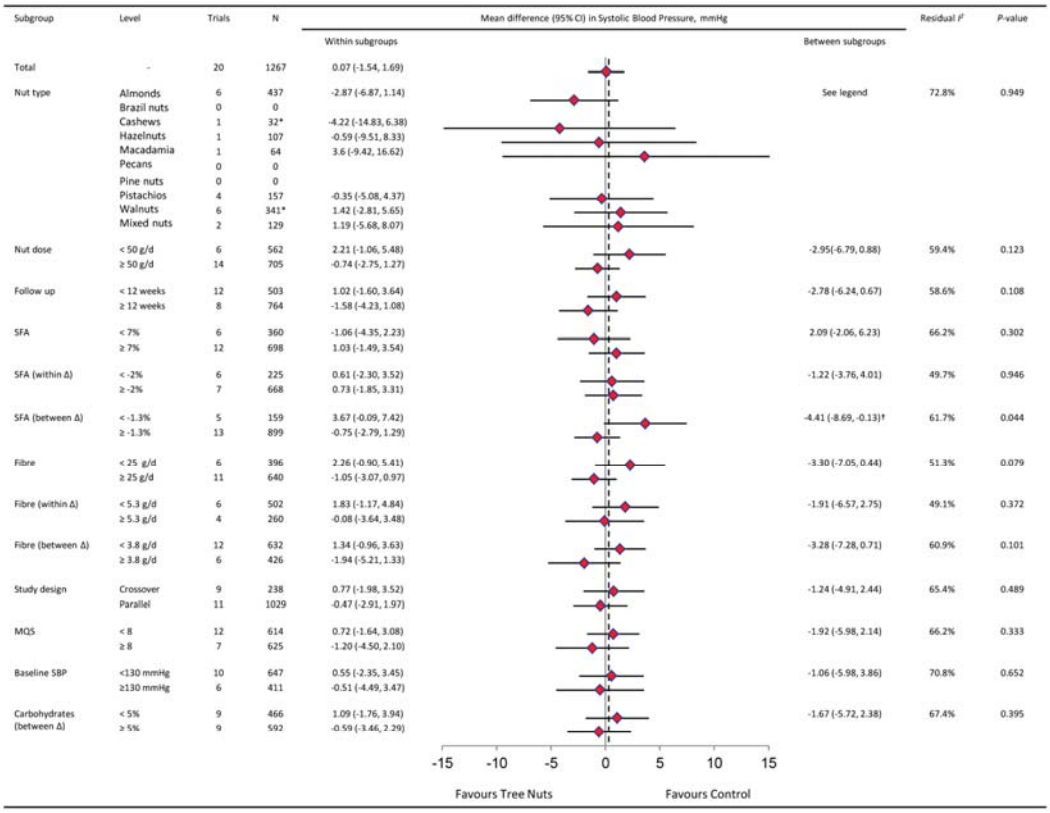

Pooled effect estimates are shown as diamonds, one each for trials conducted in otherwise healthy, dyslipidemia, metabolic syndrome criteria, type 2 diabetes mellitus and their combination (total). Paired analyses were applied to all crossover trials (9). Pooled effects are mean differences (MD) with 95% CI, using generic inverse-variance random-effects models. Interstudy heterogeneity was tested by using the Cochrane's Q statistic ($Chi^2$) at a significance level of $P < 0.10$ and quantified by the $I^2$ statistic. SBP = Systolic Blood Pressure, mmHg = millimeters of mercury.

**Appendix Figure 7B**. Forest plot of the RCTs investigating the effect of Tree Nuts on Diastolic Blood Pressure.




Pooled effect estimates are shown as diamonds, one each for trials conducted in otherwise healthy, dyslipidemia, metabolic syndrome criteria, type 2 diabetes mellitus and their combination (total). Paired analyses were applied to all crossover trials (9). Pooled effects are mean differences (MD) with 95% CI, using generic inverse-variance random-effects models. Interstudy heterogeneity was tested by using the Cochrane's Q statistic ($Chi^2$) at a significance level of $P < 0.10$ and quantified by the $I^2$ statistic. DBP = Diastolic Blood Pressure, mmHg = millimeters of mercury.

**Appendix Figure 8A.** Forest plot of subgroup analyses for categorical variables for Systolic Blood Pressure.

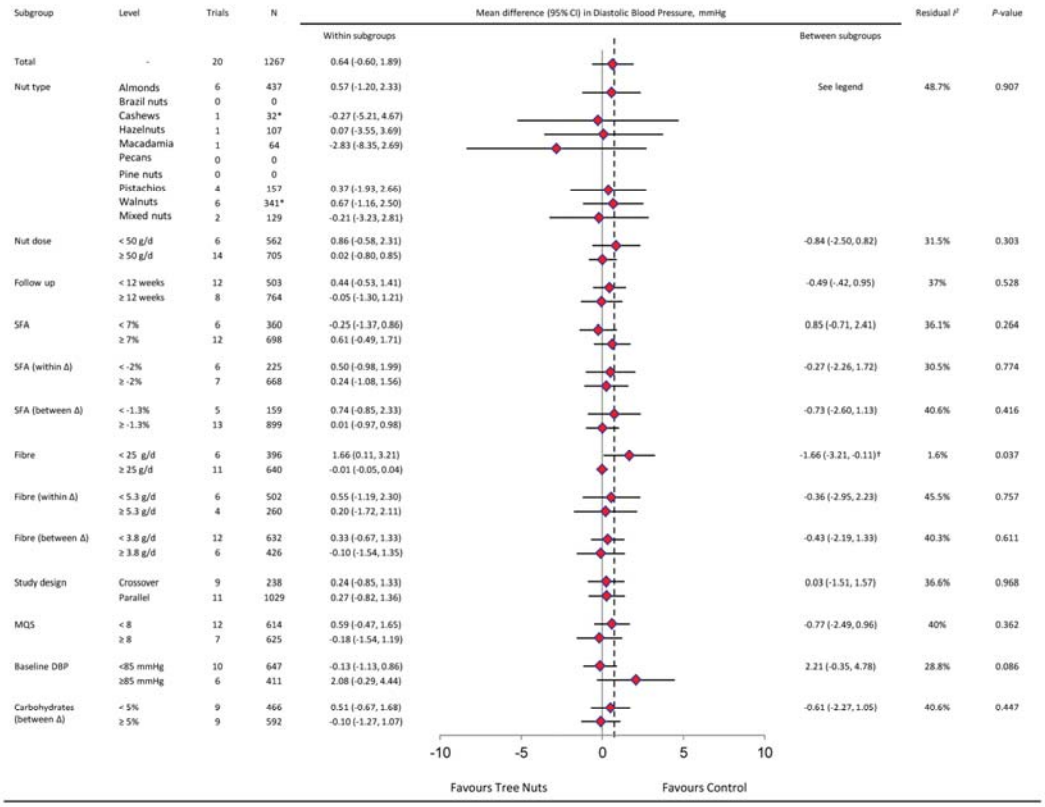



Point estimates for each subgroup level are the pooled effect estimates and are represented by diamonds. The dashed line represents the pooled effect estimate for the overall analysis. The residual $I^2$ value indicates the interstudy heterogeneity unexplained by the subgrouping. Pairwise between-subgroup mean differences (95% CIs) for nut type are not shown due to lack of statistical significance between groups. SFA = Saturated Fatty Acids, SFA (within Δ) = change within the tree nut diet for SFA, SFA (between Δ) = difference between the tree nut and control diets for SFA, Fibre (within Δ) = change within the tree nut diet for fibre, Fibre (between Δ) = difference between the tree nut and control diets for fibre, MQS = Heyland Methodological Quality Score, SBP = systolic blood pressure, Carbohydrates (between Δ)= difference between the tree nut and control diets for carbohydrates.

* Both nut types were studied within the same trial, for the sole purposes of number of participants, the control group was divided in half.

† Statistically significant pairwise subgroup effect modification by meta-regression analysis ($P < 0.05$).

**Appendix Figure 8B.** Forest plot of subgroup analyses for categorical variables for Diastolic Blood Pressure.

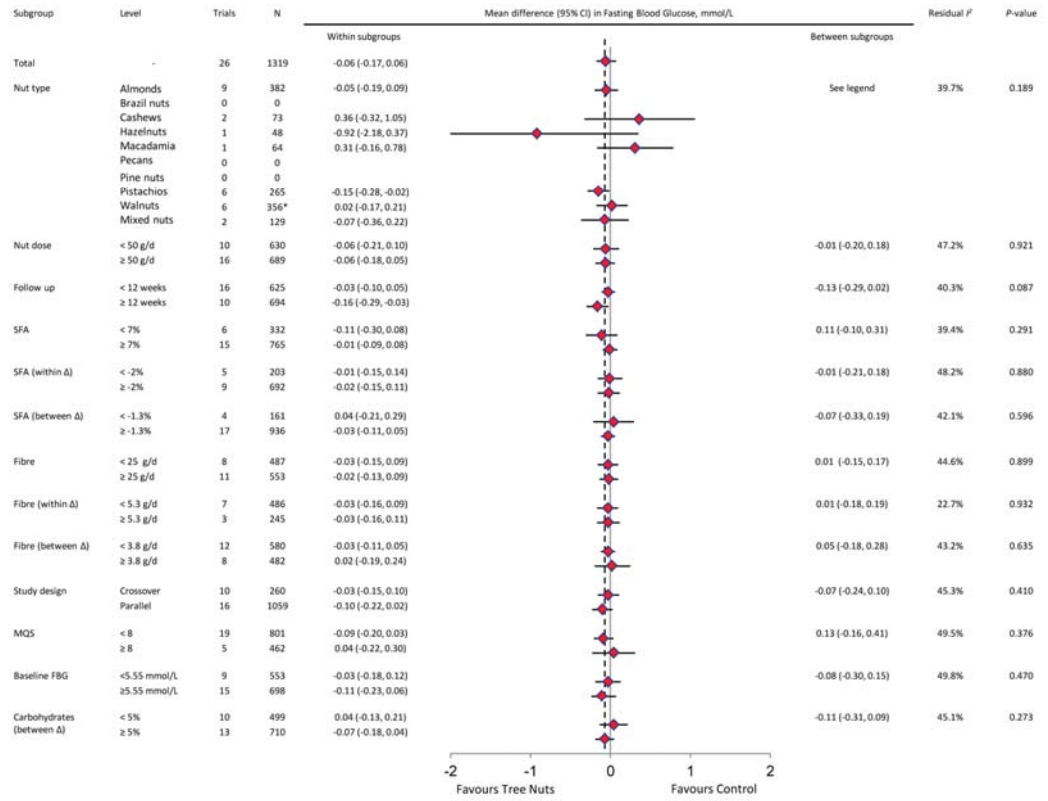



Point estimates for each subgroup level are the pooled effect estimates and are represented by diamonds. The dashed line represents the pooled effect estimate for the overall analysis. The residual $I^2$ value indicates the interstudy heterogeneity unexplained by the subgrouping. Pairwise between-subgroup mean differences (95% CIs) for nut type are not shown due to lack of statistical significance between groups. SFA = Saturated Fatty Acids, SFA (within Δ) = change within the tree nut diet for SFA, SFA (between Δ) = difference between the tree nut and control diets for SFA, Fibre (within Δ) = change within the tree nut diet for fibre, Fibre (between Δ) = difference between the tree nut and control diets for fibre, MQS = Heyland Methodological Quality Score, DBP = diastolic blood pressure, Carbohydrates (between Δ)= difference between the tree nut and control diets for carbohydrates.

* Both nut types were studied within the same trial, for the sole purposes of number of participants, the control group was divided in half.

† Statistically significant pairwise subgroup effect modification by meta-regression analysis ($P < 0.05$).

**Appendix Figure 9.** Forest plot of subgroup analyses for categorical variables for Fasting Blood Glucose.




Point estimates for each subgroup level are the pooled effect estimates and are represented by diamonds. The dashed line represents the pooled effect estimate for the overall analysis. The residual $I^2$ value indicates the interstudy heterogeneity unexplained by the subgrouping. Pairwise between-subgroup mean differences (95% CIs) for nut are not shown due to lack of statistical significance. SFA = Saturated Fatty Acids, SFA (within Δ) = change within the tree nut diet for SFA, SFA (between Δ) = difference between the tree nut and control diets for SFA, Fibre (within Δ) = change within the tree nut diet for fibre, Fibre (between Δ) = difference between the tree nut and control diets for fibre, MQS = Heyland Methodological Quality Score, FG = fasting glucose, Carbohydrates (between Δ)= difference between the tree nut and control diets for carbohydrates.

* Both nut types were studied within the same trial, for the sole purposes of number of participants, the control group was divided in half.

**Appendix Figure 10.** Funnel plots for evidence of publication bias.