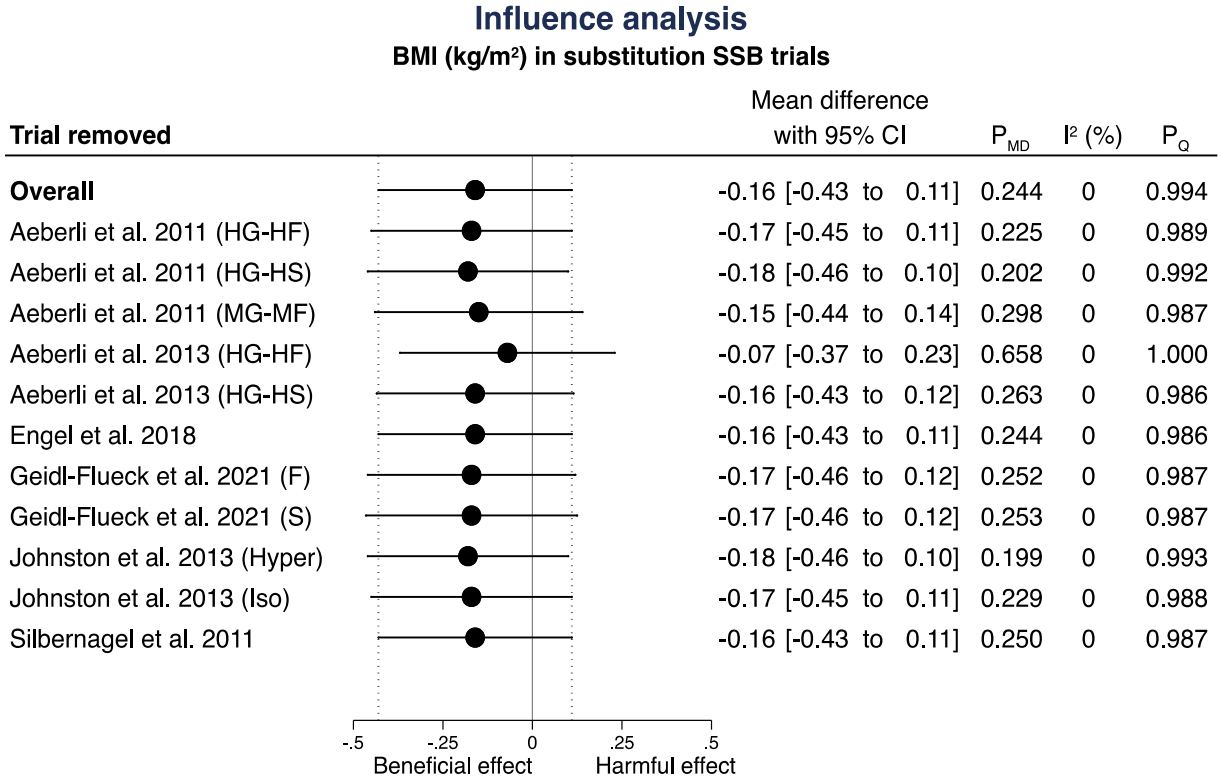
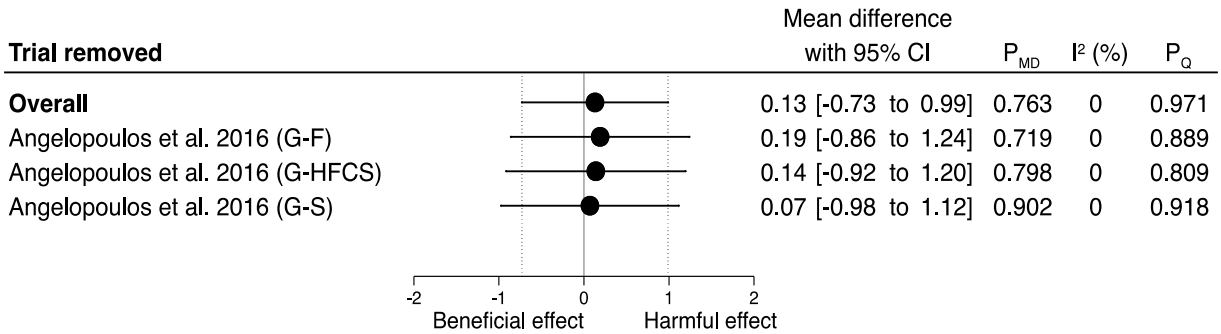
Supplementary Figure 64: Sensitivity analysis of the systematic removal of each trial for the effect of SSBs on BMI (kg/m^2) in substitution trials



Influence analysis: Removal of each trial, one at a time and recalculation of the overall effect and heterogeneity

BMI=body mass index; CI=confidence interval; F=fructose; HF=high fructose; HS=high sucrose; Hyper=hypercaloric diet; Iso=isocaloric diet; MD=mean difference; MF=medium fructose; S=sucrose; SSB=sugars-sweetened beverage.

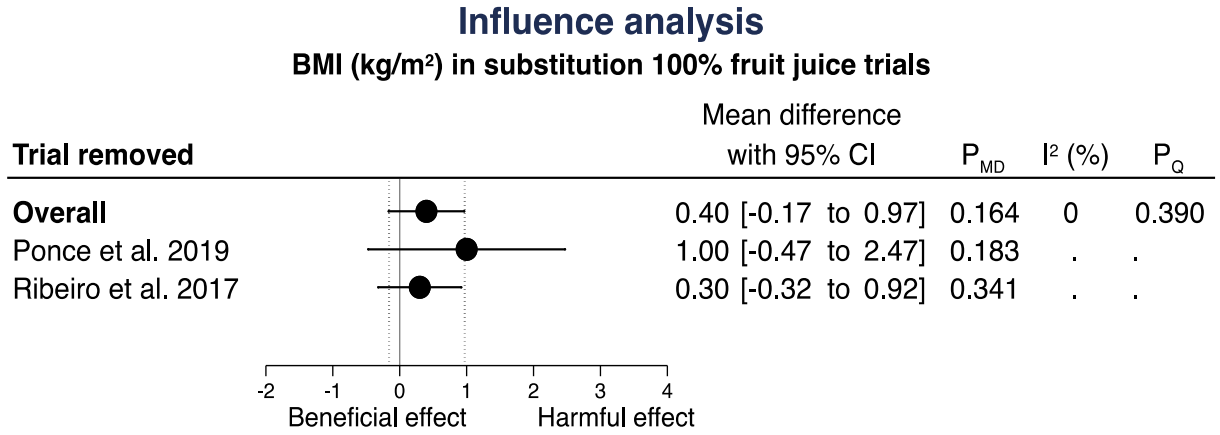
Supplementary Figure 65: Sensitivity analysis of the systematic removal of each trial for the effect of sweetened dairy on BMI (kg/m^2) in substitution trials



Influence analysis: Removal of each trial, one at a time and recalculation of the overall effect and heterogeneity

BMI=body mass index; CI=confidence interval; F=fructose; HFCS=high fructose corn syrup; MD=mean difference; S=sucrose.

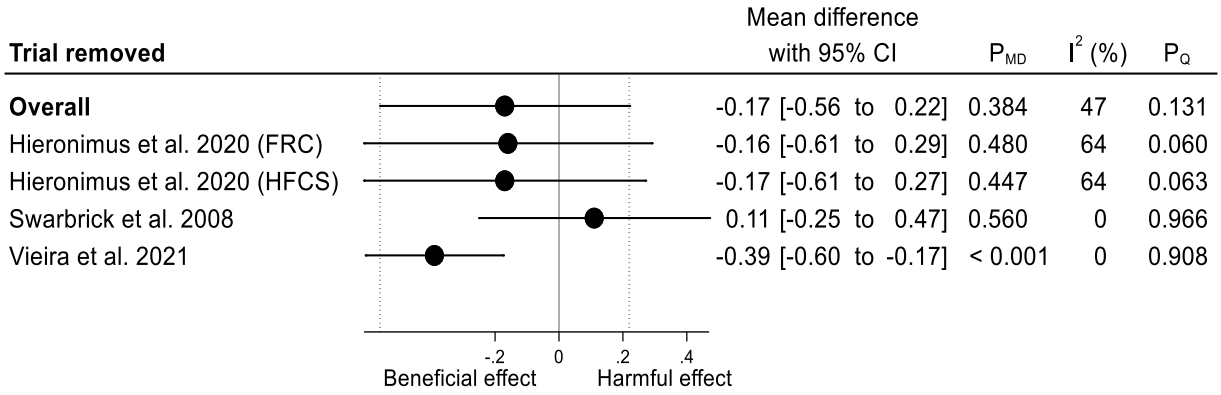
Supplementary Figure 66: Sensitivity analysis of the systematic removal of each trial for the effect of 100% fruit juice on BMI (kg/m^2) in substitution trials



Influence analysis: Removal of each trial, one at a time and recalculation of the overall effect and heterogeneity

BMI=body mass index; CI=confidence interval; MD=mean difference.

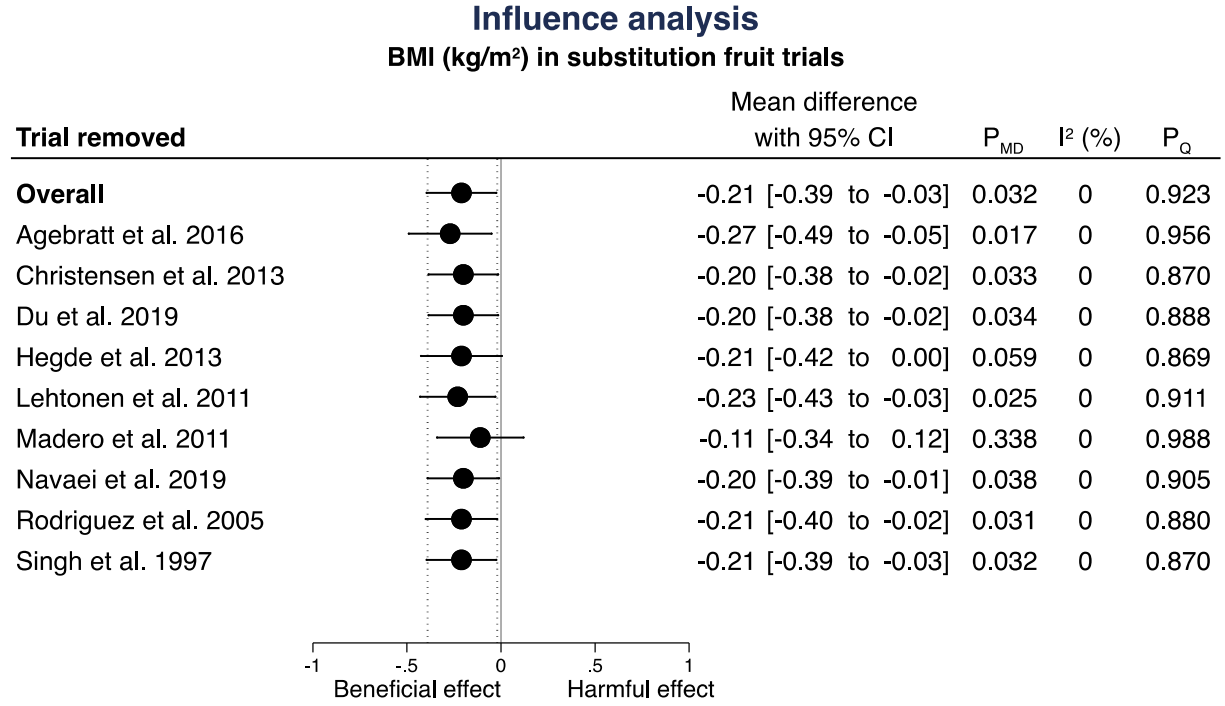
Supplementary Figure 67: Sensitivity analysis of the systematic removal of each trial for the effect of fruit drink on BMI (kg/m^2) in substitution trials



Influence analysis: Removal of each trial, one at a time and recalculation of the overall effect and heterogeneity

BMI=body mass index; CI=confidence interval; FRC=fructose; HFCS=high fructose corn syrup; MD=mean difference.

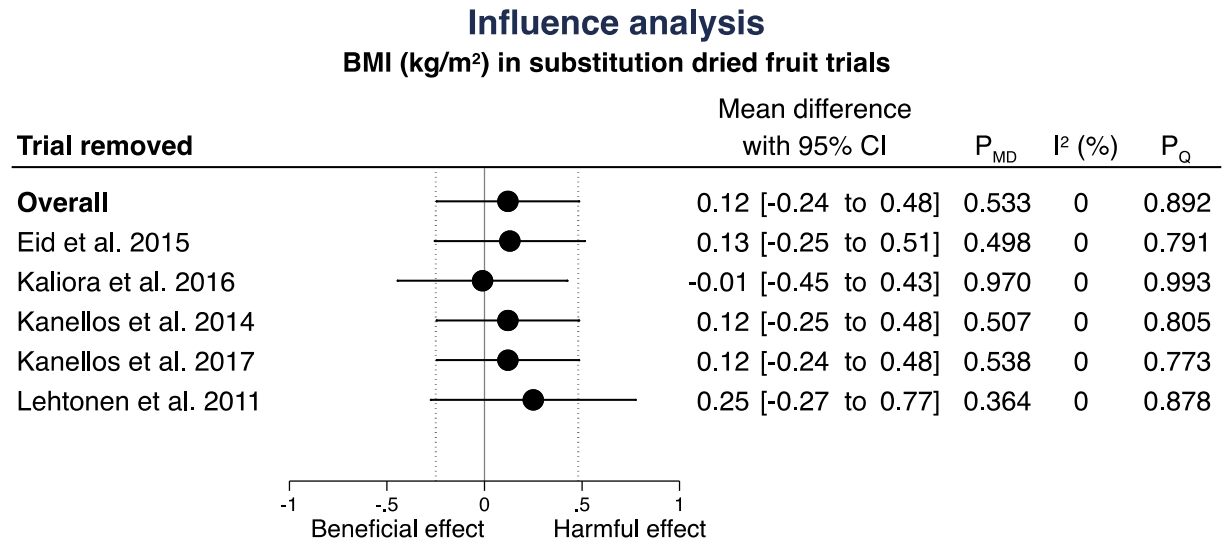
Supplementary Figure 68: Sensitivity analysis of the systematic removal of each trial for the effect of fruit on BMI (kg/m^2) in substitution trials



Influence analysis: Removal of each trial, one at a time and recalculation of the overall effect and heterogeneity

BMI=body mass index; CI=confidence interval; MD=mean difference.

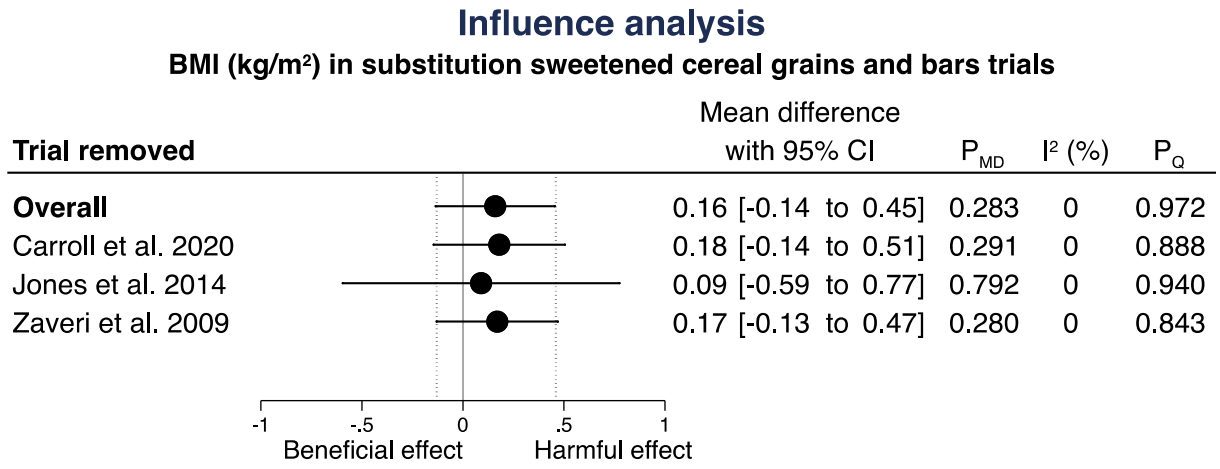
Supplementary Figure 69: Sensitivity analysis of the systematic removal of each trial for the effect of dried fruit on BMI (kg/m^2) in substitution trials



Influence analysis: Removal of each trial, one at a time and recalculation of the overall effect and heterogeneity

BMI=body mass index; CI=confidence interval; MD=mean difference.

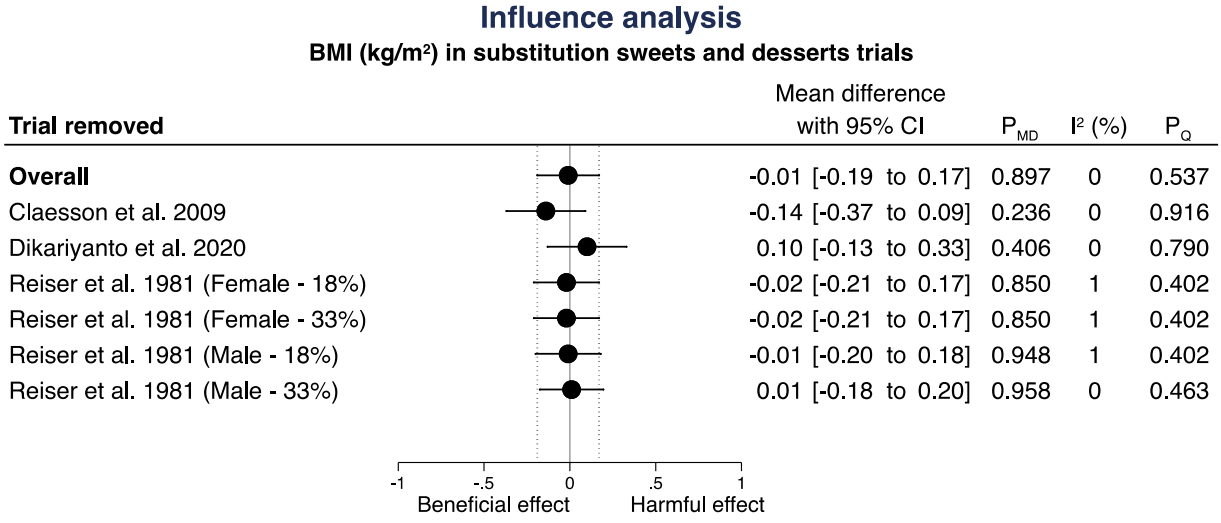
Supplementary Figure 70: Sensitivity analysis of the systematic removal of each trial for the effect of sweetened cereal grains and bars on BMI (kg/m^2) in substitution trials



Influence analysis: Removal of each trial, one at a time and recalculation of the overall effect and heterogeneity

BMI=body mass index; CI=confidence interval; MD=mean difference.

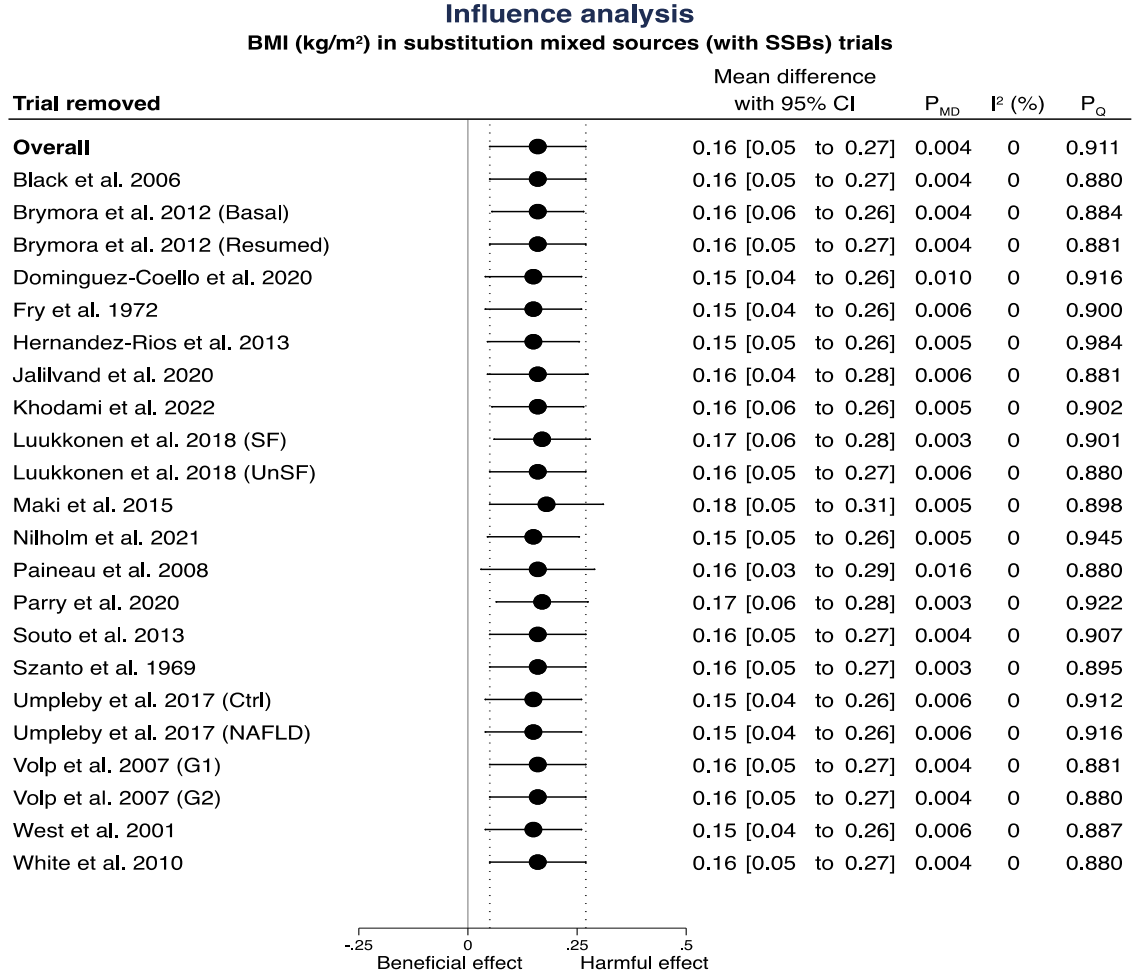
Supplementary Figure 71: Sensitivity analysis of the systematic removal of each trial for the effect of sweets and desserts on BMI (kg/m^2) in substitution trials



Influence analysis: Removal of each trial, one at a time and recalculation of the overall effect and heterogeneity

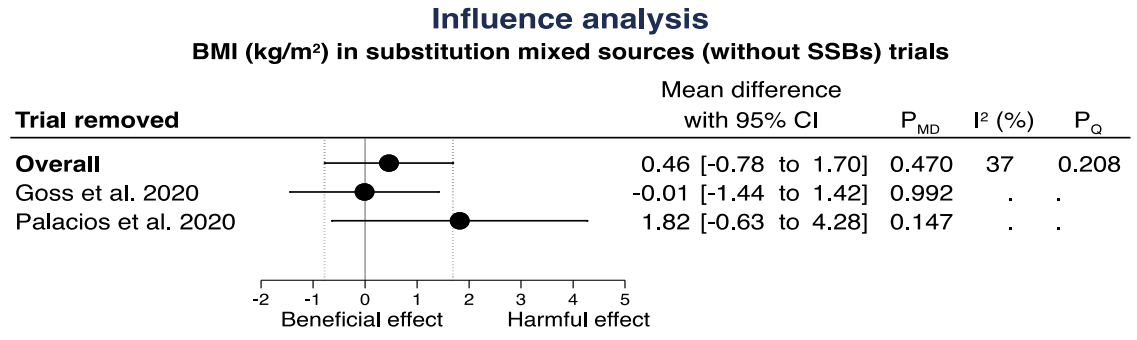
BMI=body mass index; CI=confidence interval; MD=mean difference.

Supplementary Figure 72: Sensitivity analysis of the systematic removal of each trial for the effect of mixed sources (with SSBs) on BMI (kg/m^2) in substitution trials



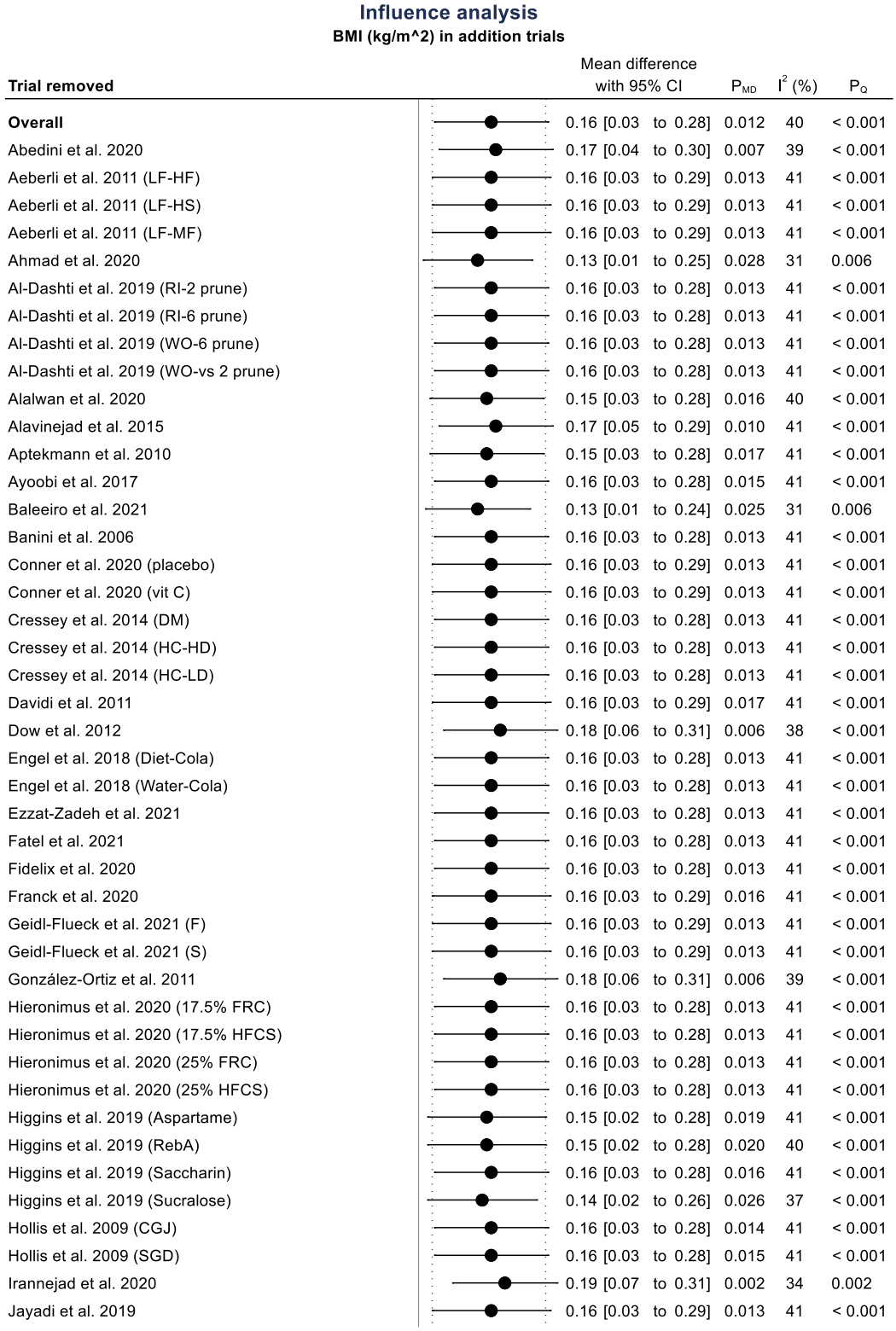
BMI=body mass index; CI=confidence interval; Ctrl=control; G1=group 1; G2=group 2; MD=mean difference; NAFLD=non-alcoholic fatty liver disease; SF=saturated fat; SSB=sugars-sweetened beverage; UnSF=unsaturated fat.

Supplementary Figure 73: Sensitivity analysis of the systematic removal of each trial for the effect of mixed sources (without SSBs) on BMI (kg/m^2) in substitution trials

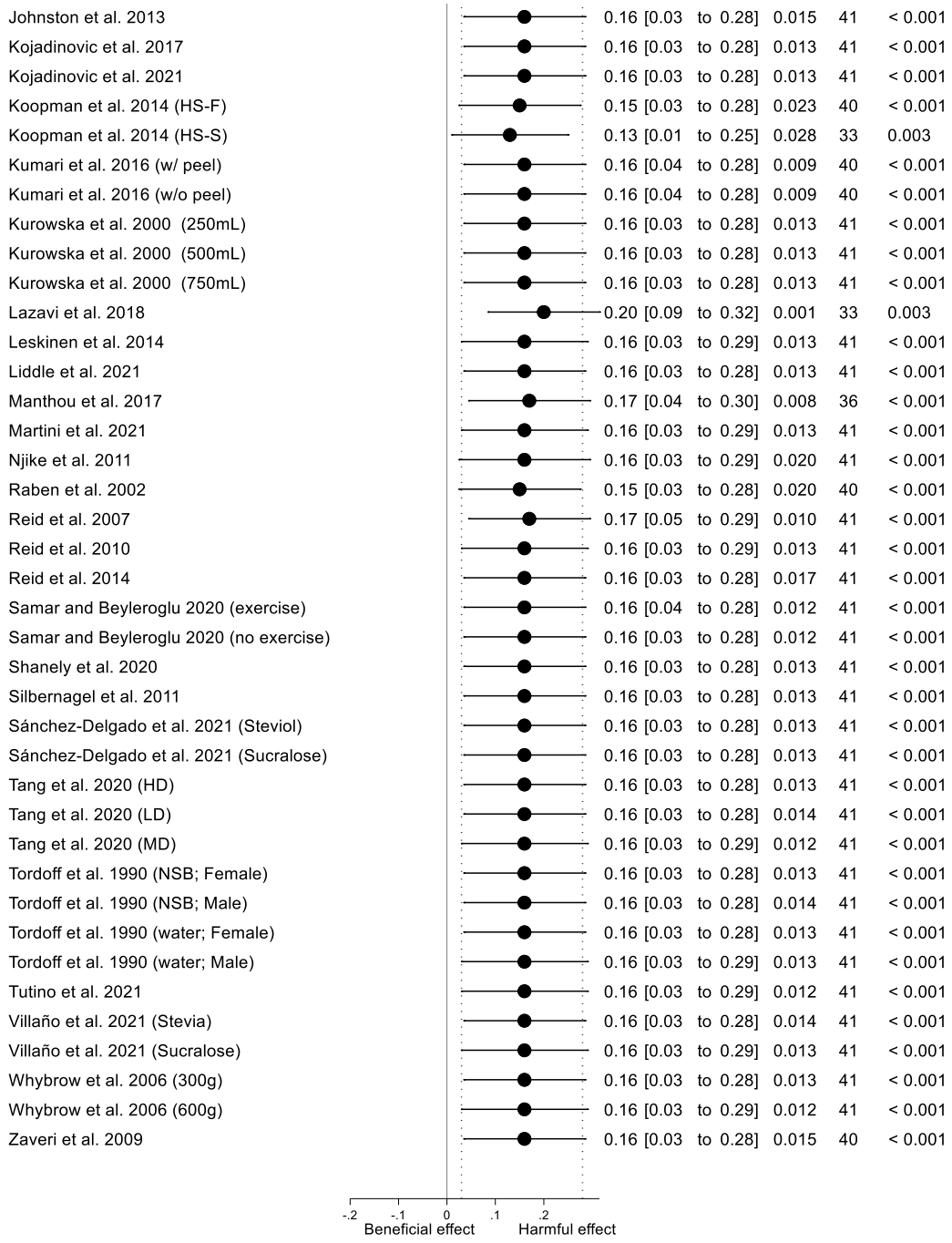


BMI=body mass index; CI=confidence interval; MD=mean difference; SSB=sugars-sweetened beverage.

Supplementary Figure 74 (1 of 2): Sensitivity analysis of the systematic removal of each trial for the effect of important food sources of fructose-containing sugars on BMI (kg/m^2) in addition trials



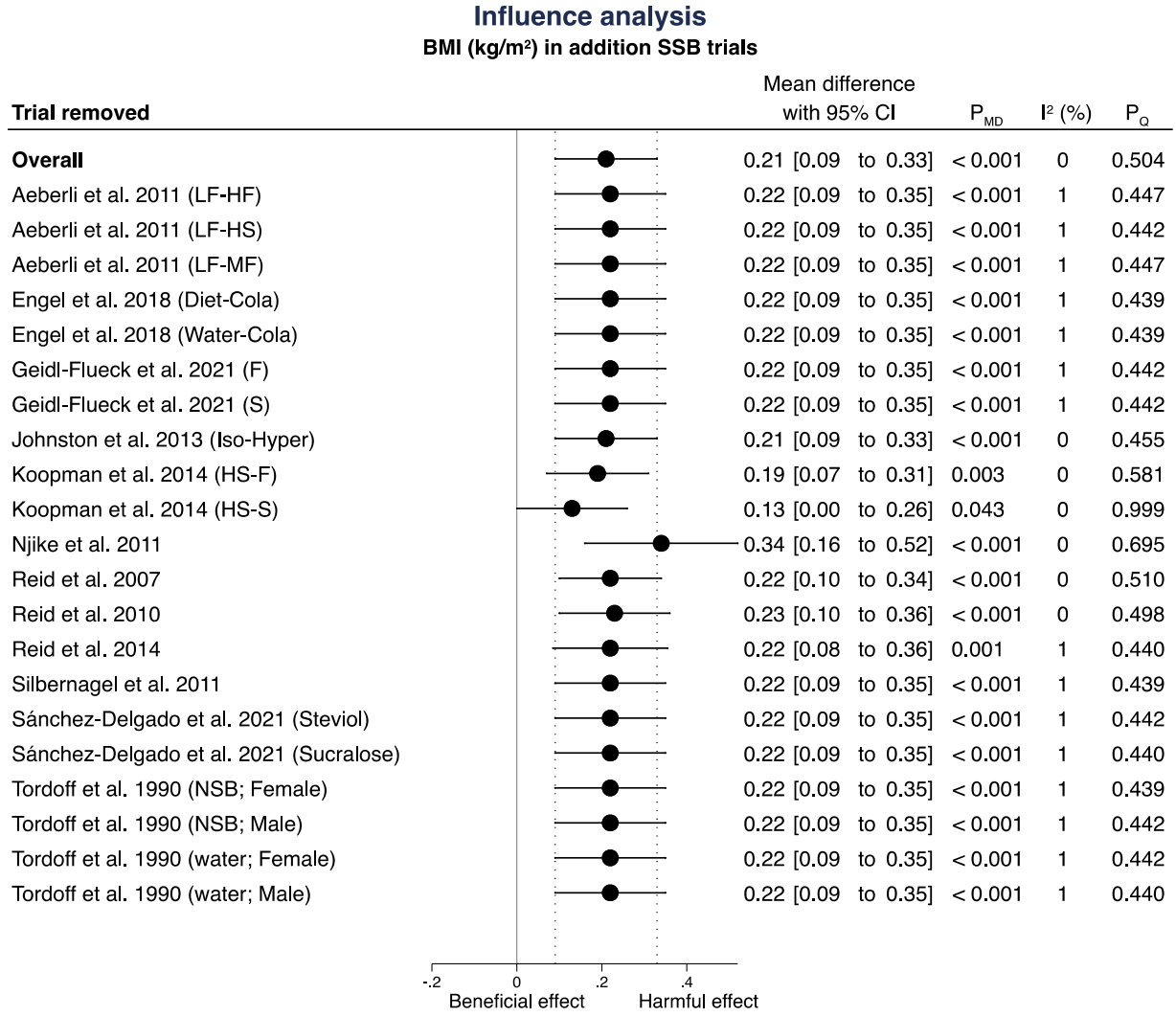
Supplementary Figure 74 (2 of 2): Sensitivity analysis of the systematic removal of each trial for the effect of important food sources of fructose-containing sugars on BMI (kg/m^2) in addition trials



Influence analysis: Removal of each trial, one at a time and recalculation of the overall effect and heterogeneity

BMI=body mass index; CGJ=Concord grape juice; CI=confidence interval; DM=diabetes mellitus; F=fructose; FRC=fructose; HC=hypercholesterolemia; HD=high dose; HF=high fructose; HFCS=high fructose corn syrup; HS-F=high sucrose frequency; HS-S=high sucrose size; HS=high sucrose; Hyper=hypercaloric; Iso=isocaloric; LD=low dose; LF=low fructose; MD=medium dose; MD=mean difference; MF=medium fructose; NSB=non-nutritive sweetened beverage; RebA=rebaudioside A; RI=run-in; S=sucrose; SGD=standard grape juice; vit C=vitamin C; w/=with; w/o=without; WO=washout.

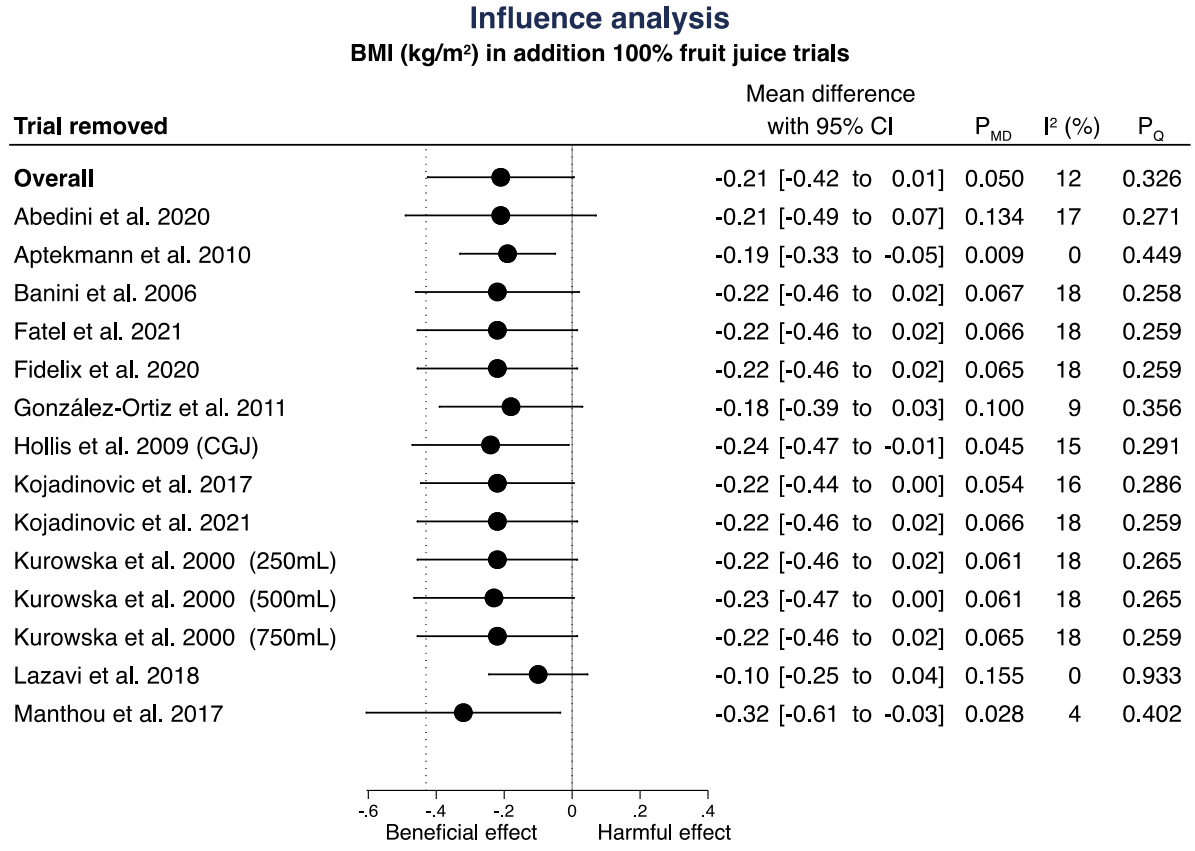
Supplementary Figure 75: Sensitivity analysis of the systematic removal of each trial for the effect of SSBs on BMI (kg/m^2) in addition trials



Influence analysis: Removal of each trial, one at a time and recalculation of the overall effect and heterogeneity

BMI=body mass index; CI=confidence interval; F=fructose; FRC=fructose; HF=high fructose; HFCS=high fructose corn syrup; HS-F=high sucrose frequency; HS-S=high sucrose size; HS=high sucrose; Hyper=hypercaloric; Iso=isocaloric; LF=low fructose; MD=mean difference; MF=medium fructose; NSB=non-nutritive sweetened beverage; RebA= rebaudioside A; S=sucrose; SSB=sugars-sweetened beverage.

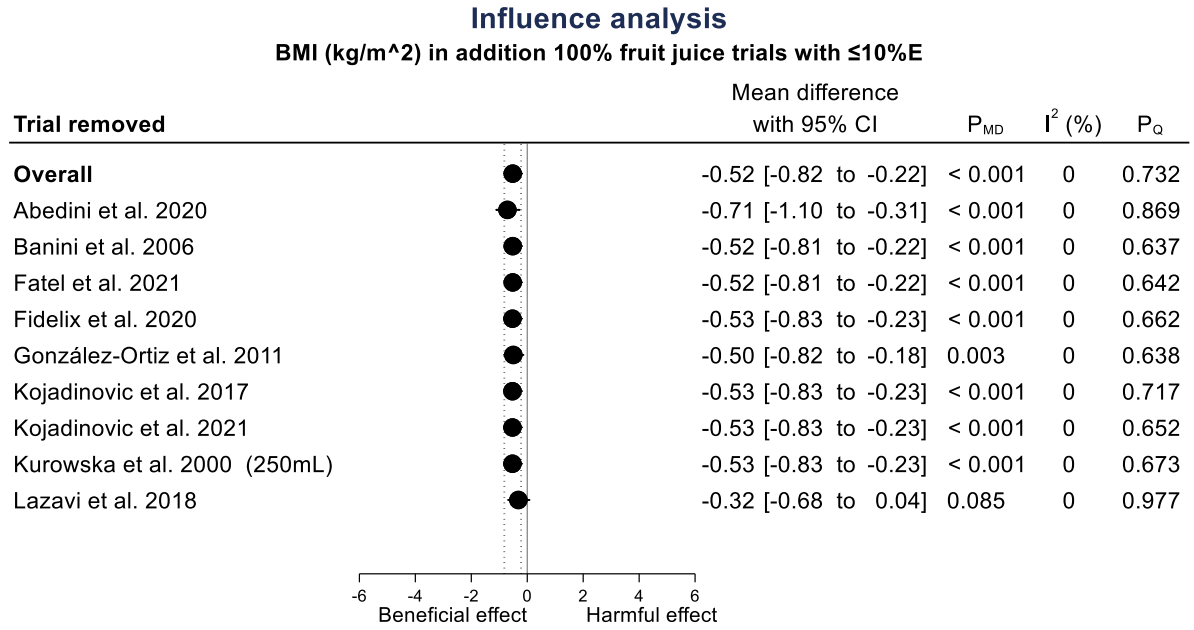
Supplementary Figure 76: Sensitivity analysis of the systematic removal of each trial for the effect of 100% fruit juice on BMI (kg/m^2) in addition trials



BMI=body mass index; CGJ=Concord grape juice; CI=confidence interval; MD=mean difference.

Supplementary Figure 77: Sensitivity analysis of the systematic removal of each trial for the effect of 100% fruit juice on BMI (kg/m^2) in addition trials with ≤10%E or >10%E

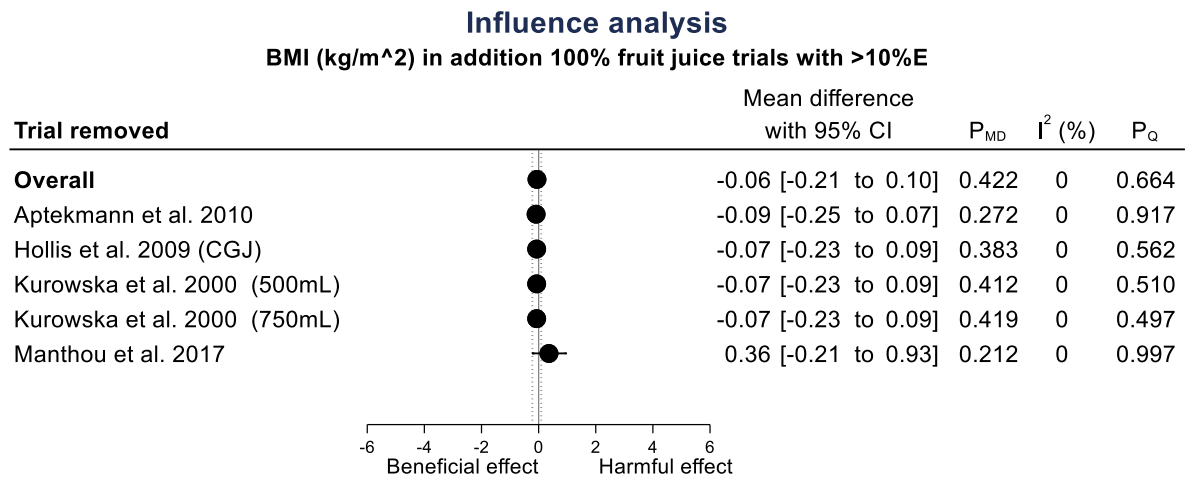
A



Influence analysis: Removal of each trial, one at a time and recalculation of the overall effect and heterogeneity

B

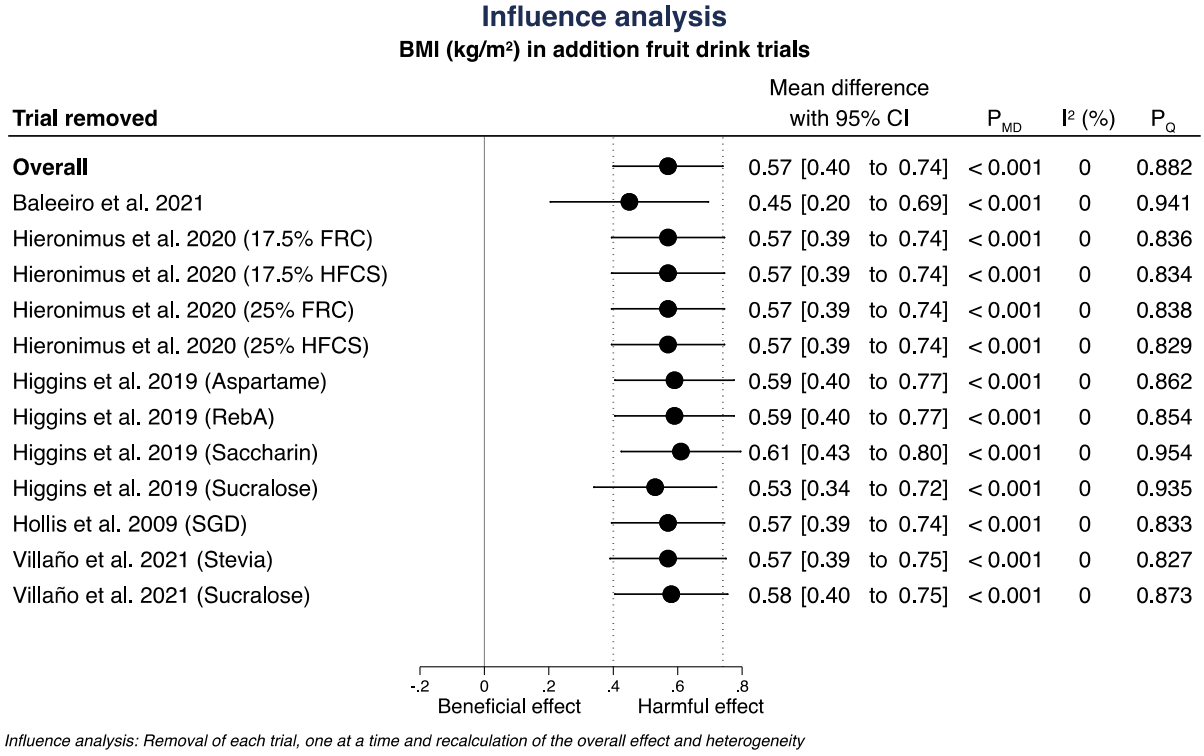
Panel A: addition trials of 100% fruit juice with ≤10%E; B: addition trials of 100% fruit juice with >10%E



Influence analysis: Removal of each trial, one at a time and recalculation of the overall effect and heterogeneity

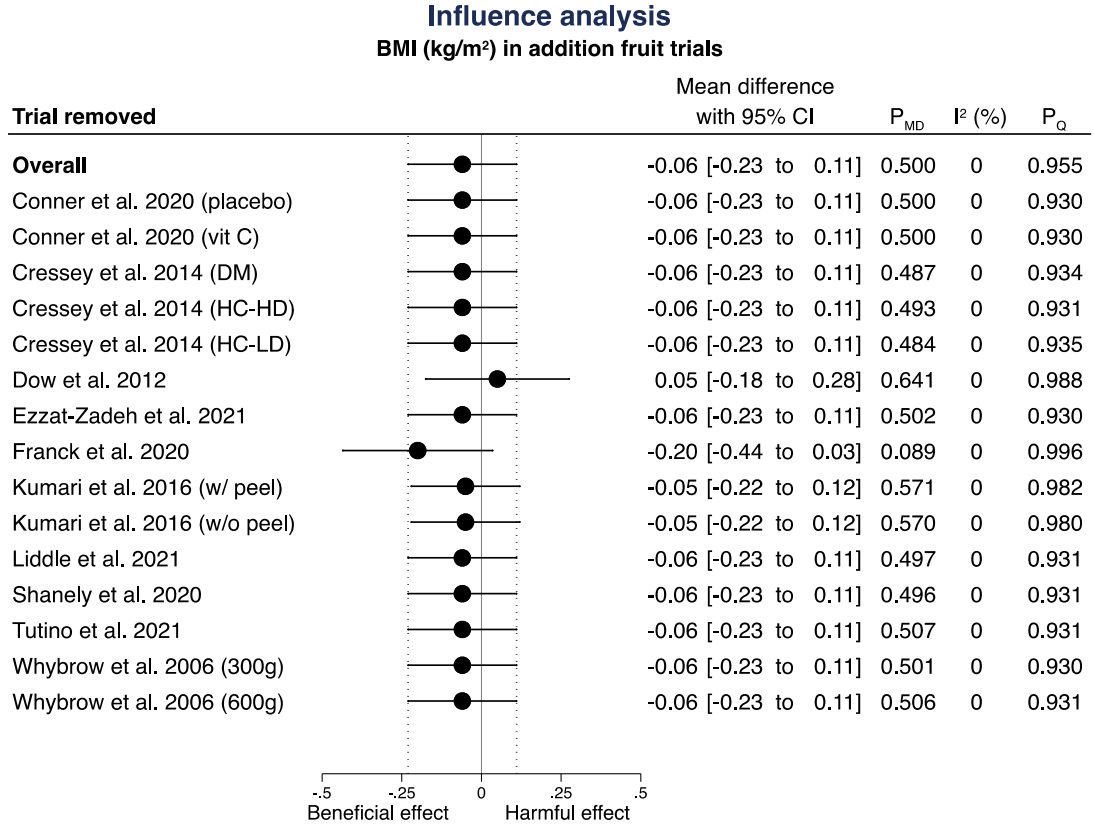
BMI=body mass index; CGJ=Concord grape juice; CI=confidence interval

Supplementary Figure 78: Sensitivity analysis of the systematic removal of each trial for the effect of fruit drink on BMI (kg/m^2) in addition trials



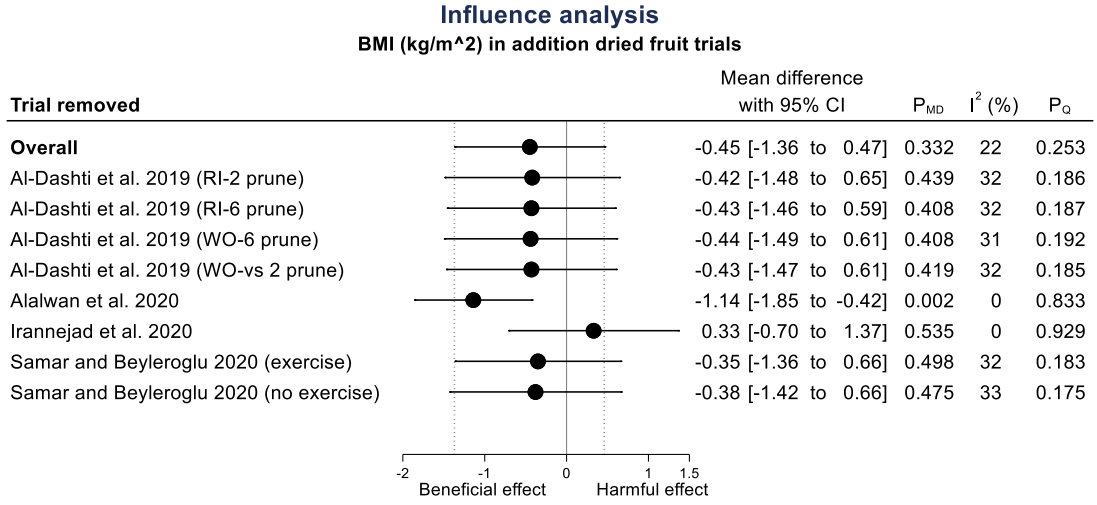
BMI=body mass index; CI=confidence interval; FRC=fructose; HFCS=high fructose corn syrup; MD=mean difference; RebA=rebaudioside A; SGD=substitute grape flavored drink.

Supplementary Figure 79: Sensitivity analysis of the systematic removal of each trial for the effect of fruit on BMI (kg/m^2) in addition trials



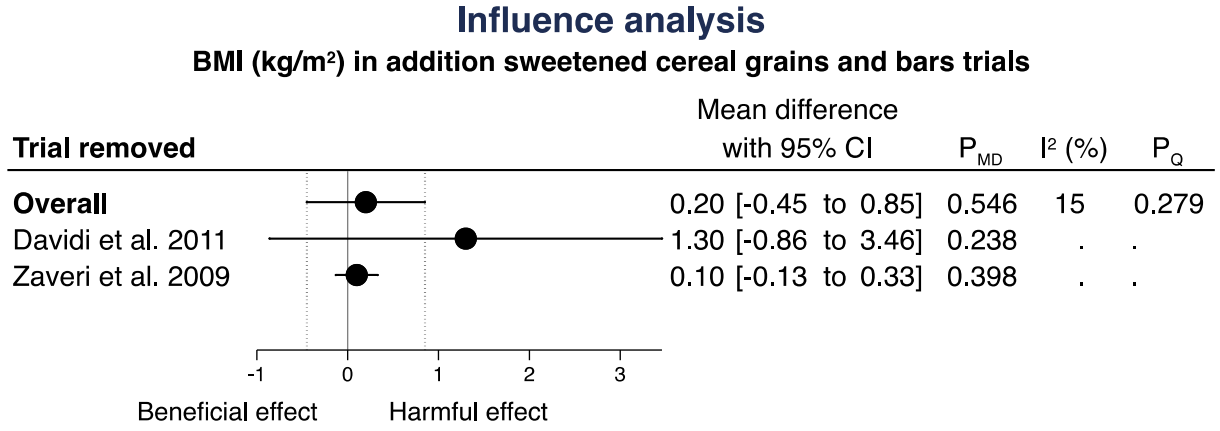
BMI=body mass index; CI=confidence interval; DM=diabetes mellitus; HC=hypercholesterolemia; HD=high dose; MD=mean difference; LD=low dose; vit C=vitamin C; w/=with; w/o=without.

Supplementary Figure 80: Sensitivity analysis of the systematic removal of each trial for the effect of dried fruit on BMI (kg/m^2) in addition trials



BMI=body mass index; CI=confidence interval; MD=mean difference; RI=run-in; WO=washout.

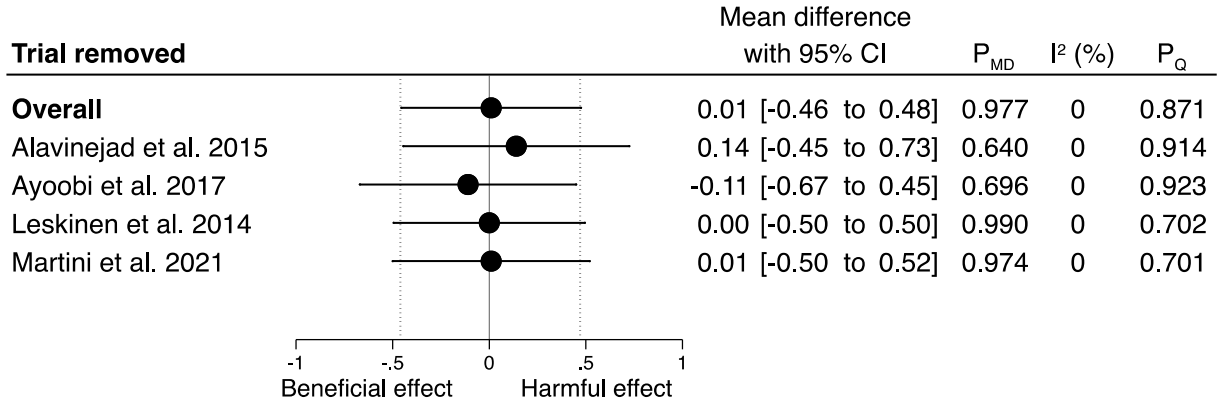
Supplementary Figure 81: Sensitivity analysis of the systematic removal of each trial for the effect of sweetened cereal grains and bars on BMI (kg/m^2) in addition trials



Influence analysis: Removal of each trial, one at a time and recalculation of the overall effect and heterogeneity

BMI=body mass index; CI=confidence interval; MD=mean difference.

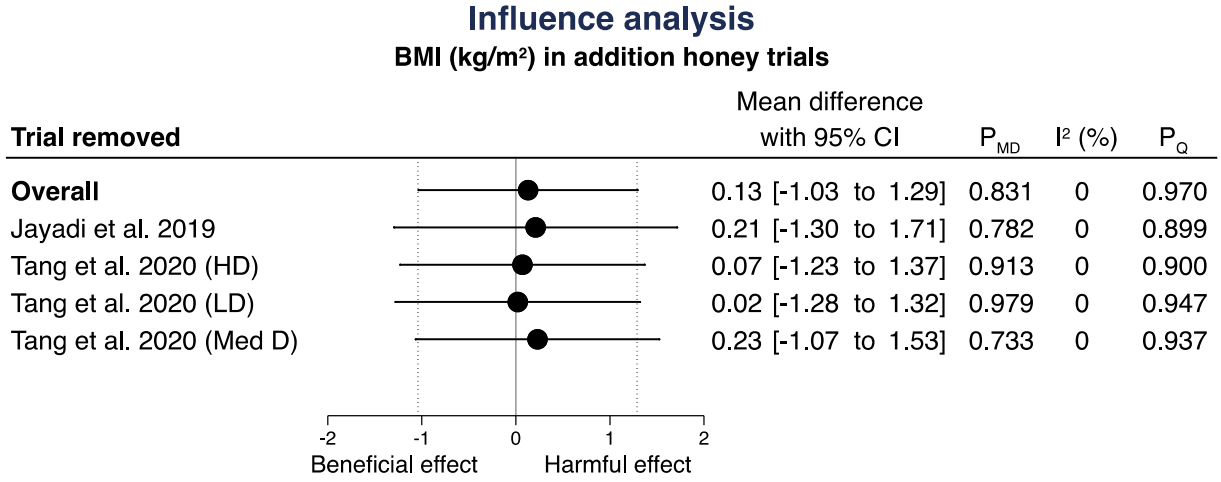
Supplementary Figure 82: Sensitivity analysis of the systematic removal of each trial for the effect of sweets and desserts on BMI (kg/m^2) in addition trials



Influence analysis: Removal of each trial, one at a time and recalculation of the overall effect and heterogeneity

BMI=body mass index; CI=confidence interval; MD=mean difference.

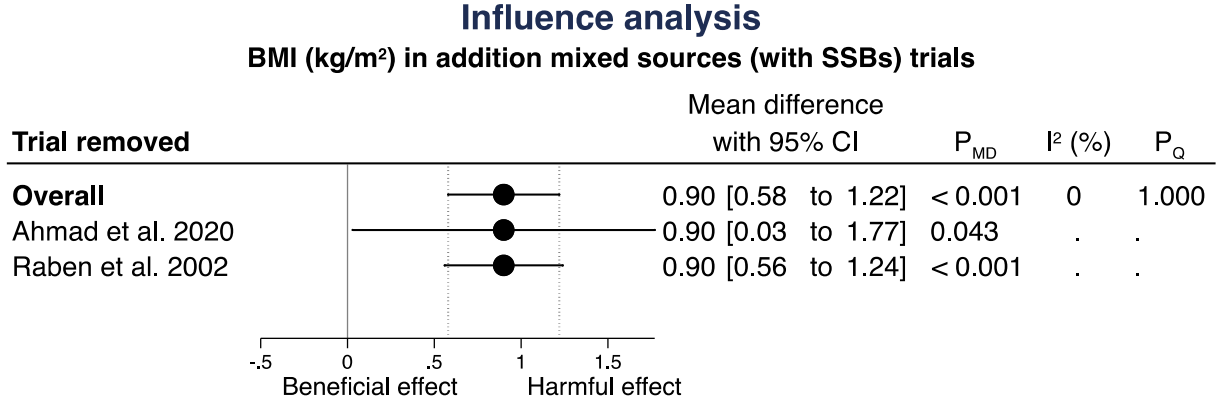
Supplementary Figure 83: Sensitivity analysis of the systematic removal of each trial for the effect of honey on BMI (kg/m^2) in addition trials



Influence analysis: Removal of each trial, one at a time and recalculation of the overall effect and heterogeneity

BMI=body mass index; CI=confidence interval; HD=high dose; MD=mean difference; Med D=medium dose; LD=low dose.

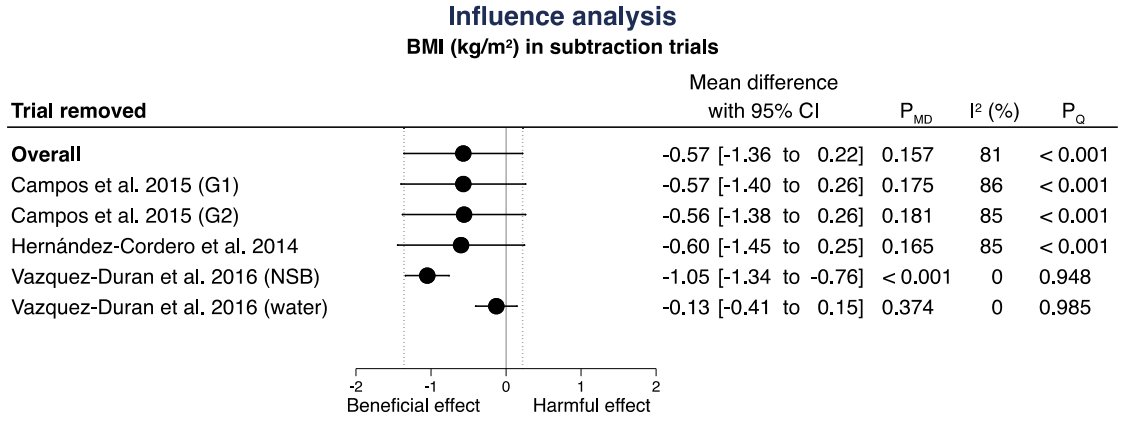
Supplementary Figure 84: Sensitivity analysis of the systematic removal of each trial for the effect of mixed sources (with SSBs) on BMI (kg/m^2) in addition trials



Influence analysis: Removal of each trial, one at a time and recalculation of the overall effect and heterogeneity

BMI=body mass index; CI=confidence interval; MD=mean difference; SSB=sugars-sweetened beverage.

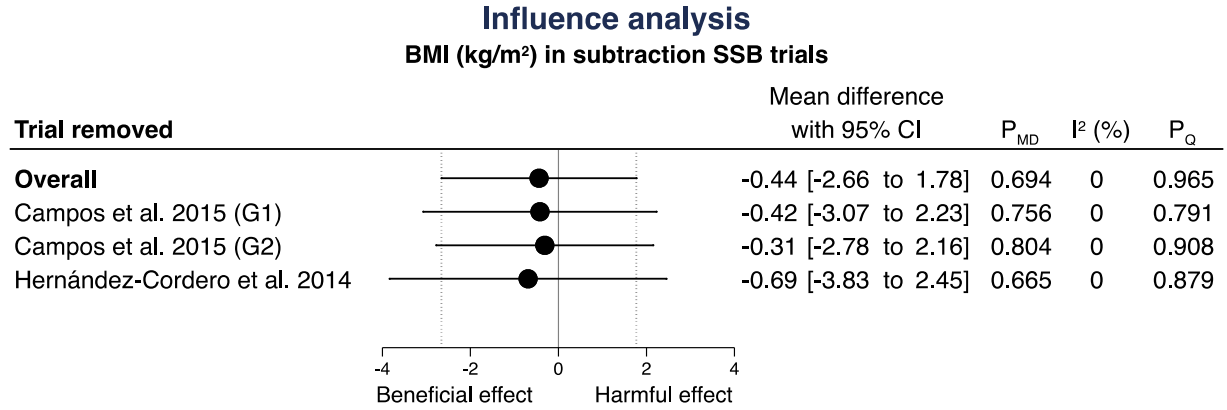
Supplementary Figure 85: Sensitivity analysis of the systematic removal of each trial for the effect of important food sources of fructose-containing sugars on BMI (kg/m^2) in subtraction trials



Influence analysis: Removal of each trial, one at a time and recalculation of the overall effect and heterogeneity

BMI=body mass index; CI=confidence interval; G1=group 1; G2=group 2; MD=mean difference; NSB=non-nutritive sweetened beverage; SSB=sugars-sweetened beverages.

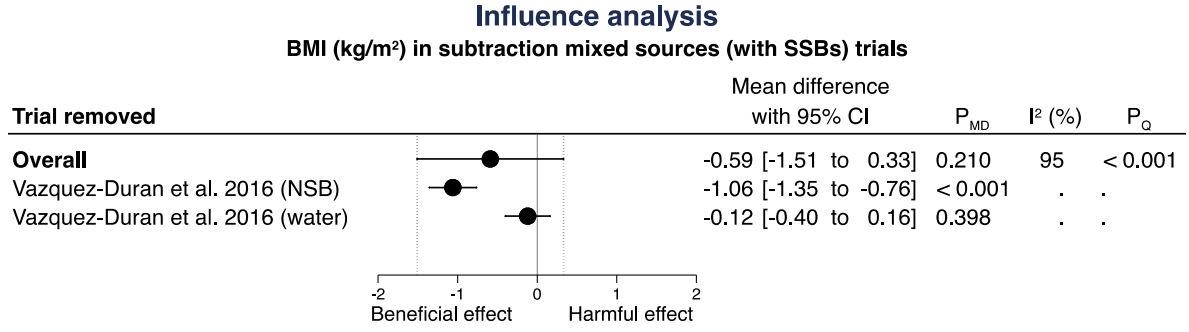
Supplementary Figure 86: Sensitivity analysis of the systematic removal of each trial for the effect of SSBs on BMI (kg/m^2) in subtraction trials



Influence analysis: Removal of each trial, one at a time and recalculation of the overall effect and heterogeneity

BMI=body mass index; CI=confidence interval; G1=group 1; G2=group 2; MD=mean difference; SSB=sugars-sweetened beverages.

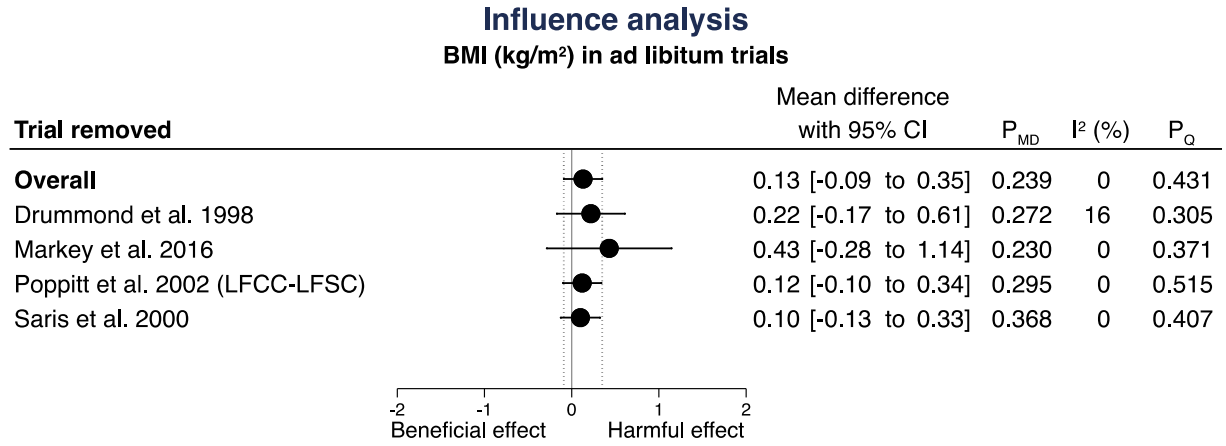
Supplementary Figure 87: Sensitivity analysis of the systematic removal of each trial for the effect of mixed sources (with SSBs) on BMI (kg/m^2) in subtraction trials



Influence analysis: Removal of each trial, one at a time and recalculation of the overall effect and heterogeneity

BMI=body mass index; CI=confidence interval; MD=mean difference; NSB=non-nutritive sweetened beverage; SSB=sugars-sweetened beverage.

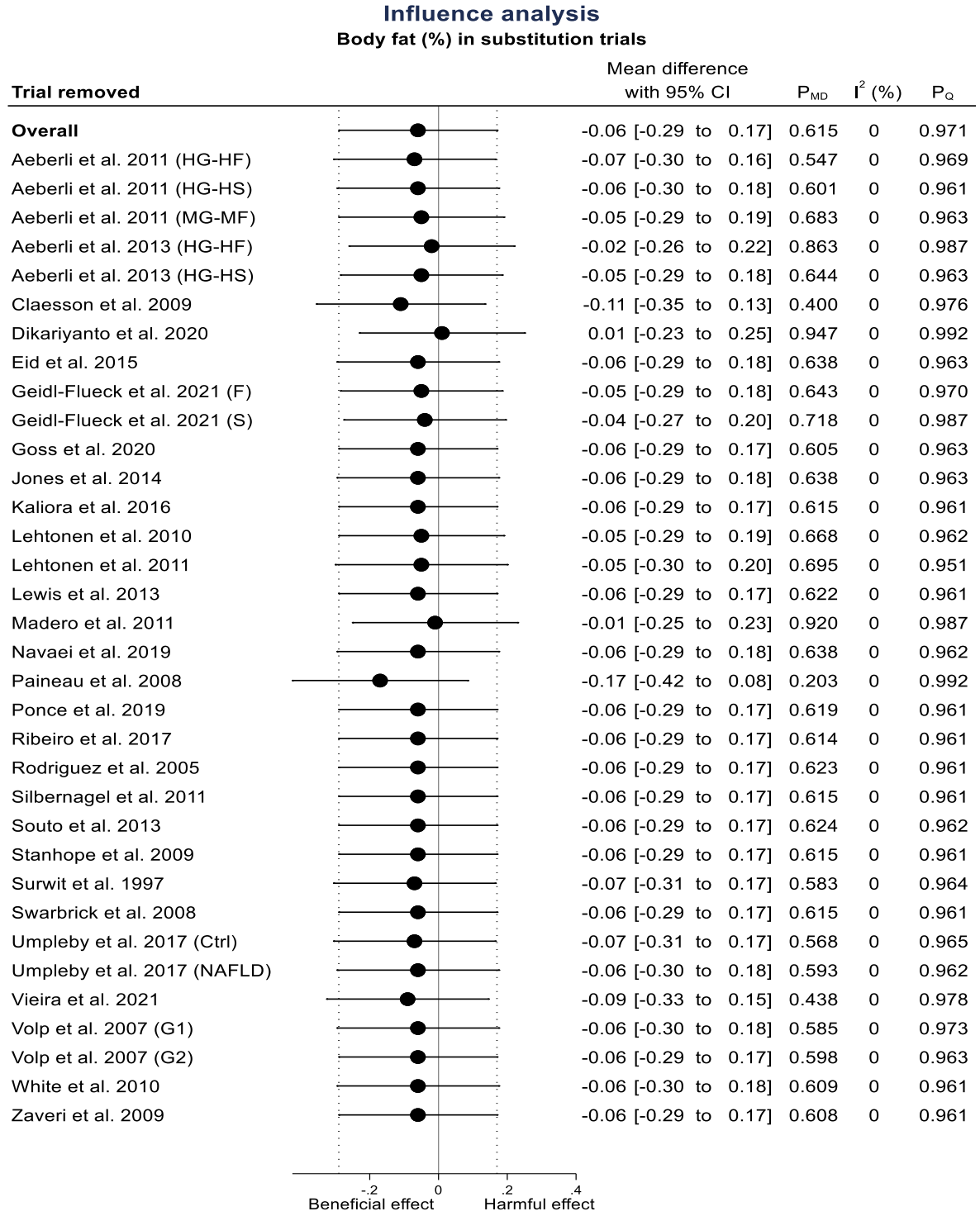
Supplementary Figure 88: Sensitivity analysis of the systematic removal of each trial for the effect of important food sources of fructose-containing sugars on BMI (kg/m^2) in *ad libitum* trials



Influence analysis: Removal of each trial, one at a time and recalculation of the overall effect and heterogeneity

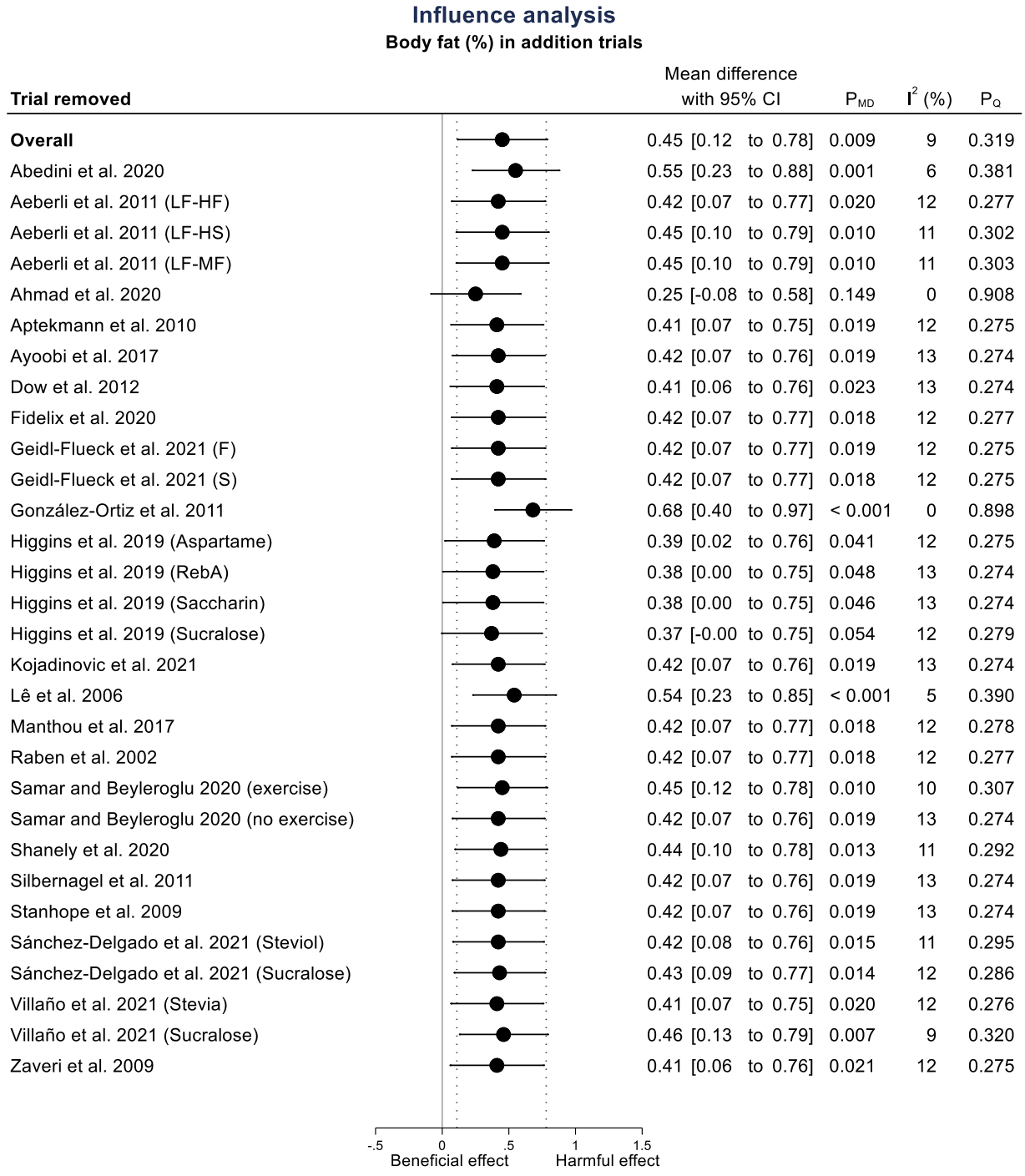
BMI=body mass index; CI=confidence interval; LFCC=low-fat, complex carbohydrate; LFSC=low-fat, simple carbohydrate; MD=mean difference.

Supplementary Figure 89: Sensitivity analysis of the systematic removal of each trial for the effect of important food sources of fructose-containing sugars on body fat (%) in substitution trials



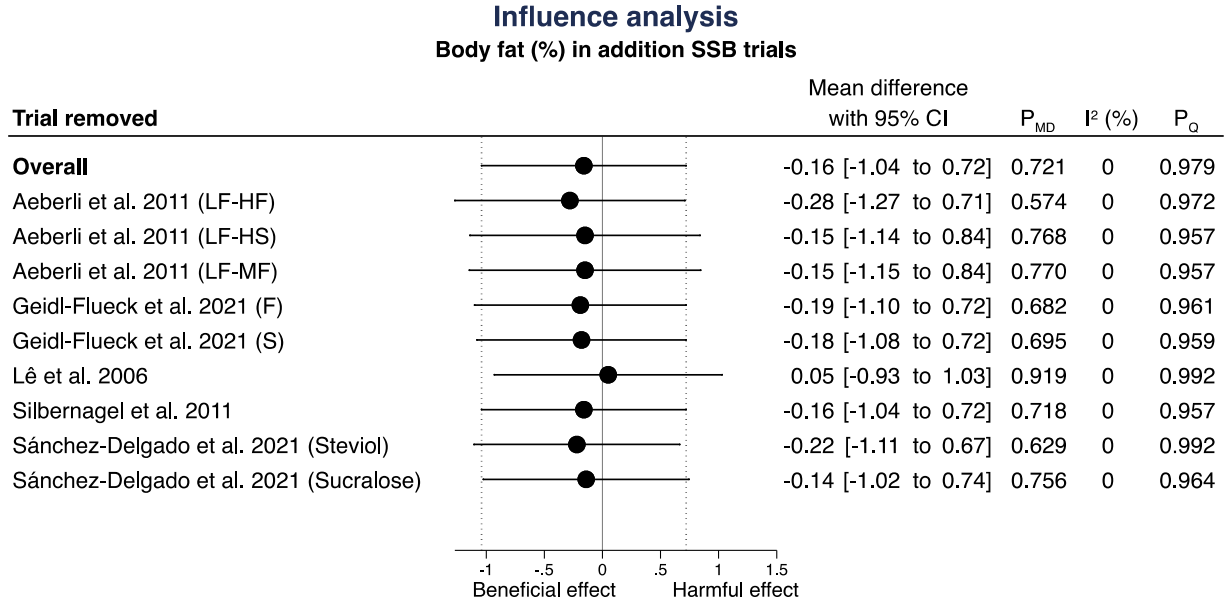
CI=confidence interval; Ctrl=control; F=fructose; G1=group 1; G2=group 2; HF=high fructose; HG=high glucose; MF=medium fructose; MG=medium glucose; NAFLD=non-alcoholic fatty liver disease; S=sucrose.

Supplementary Figure 90: Sensitivity analysis of the systematic removal of each trial for the effect of important food sources of fructose-containing sugars on body fat (%) in addition trials



CI=confidence interval; F=fructose; HF=high fructose; HS=high sucrose; LF=low fructose; MF=medium fructose; RebA=rebaudioside A; S=sucrose.

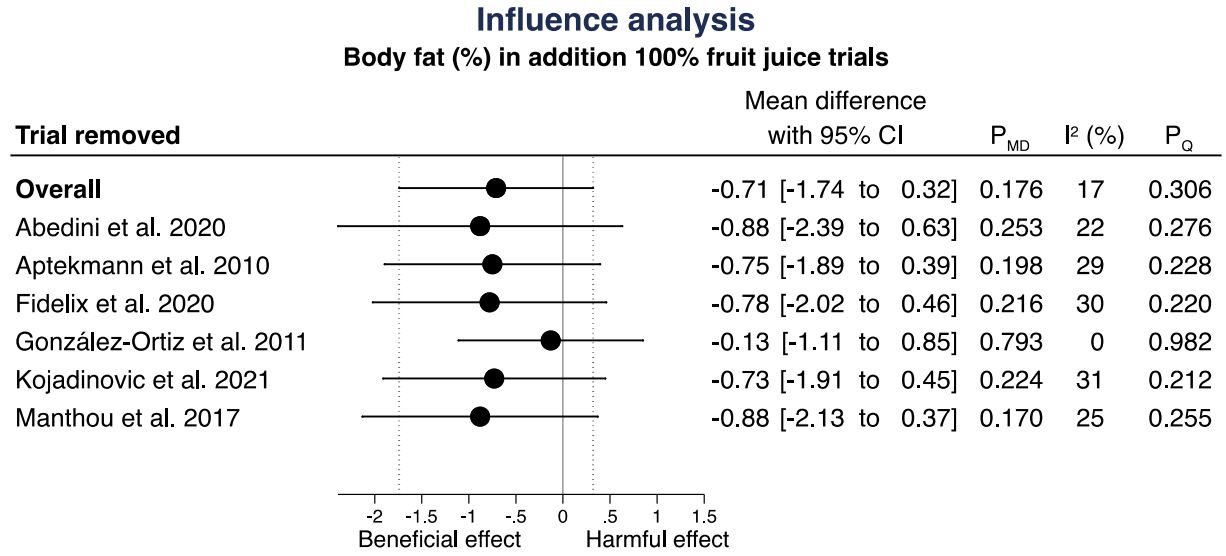
Supplementary Figure 91: Sensitivity analysis of the systematic removal of each trial for the effect of SSBs on body fat (%) in addition trials



Influence analysis: Removal of each trial, one at a time and recalculation of the overall effect and heterogeneity

CI=confidence interval; F=fructose; HF=high fructose; HS=high sucrose; LF=low fructose; MF=medium fructose; S=sucrose; SSB=sugar sweetened beverage.

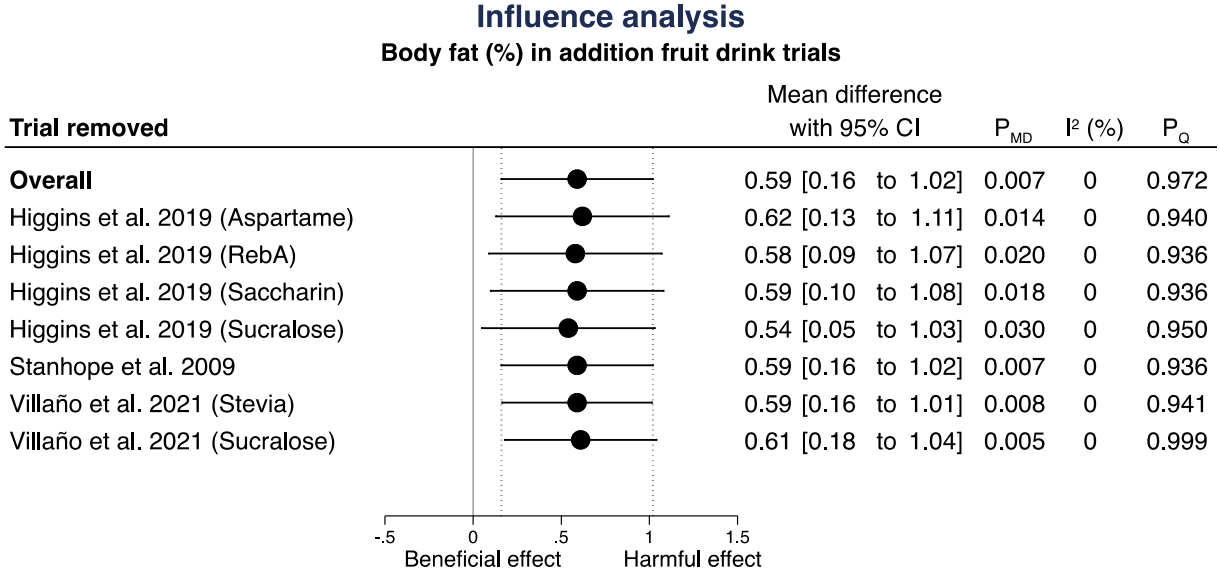
Supplementary Figure 92: Sensitivity analysis of the systematic removal of each trial for the effect of 100% fruit juice on body fat (%) in addition trials



Influence analysis: Removal of each trial, one at a time and recalculation of the overall effect and heterogeneity

CI=confidence interval; MD=mean difference.

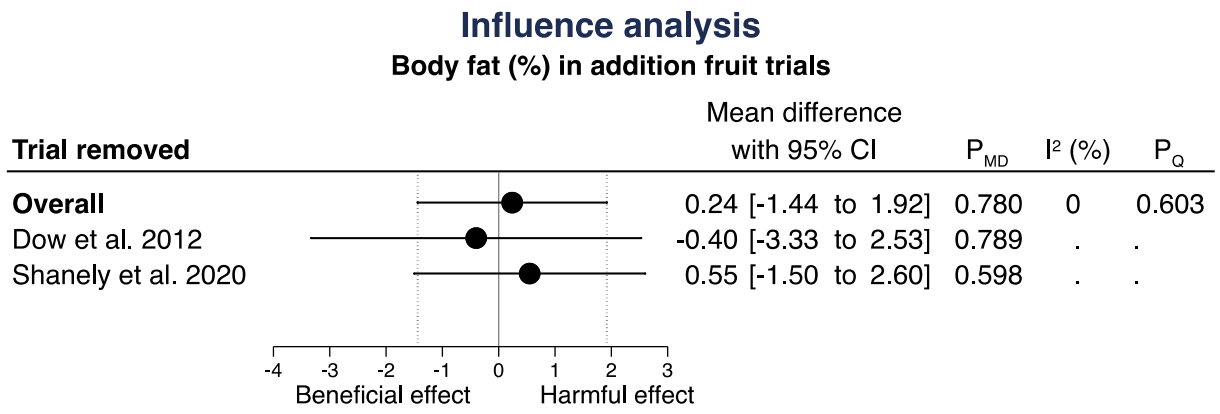
Supplementary Figure 93: Sensitivity analysis of the systematic removal of each trial for the effect of fruit drink on body fat (%) in addition trials



Influence analysis: Removal of each trial, one at a time and recalculation of the overall effect and heterogeneity

CI=confidence interval; MD=mean difference; RebA=rebaudioside A.

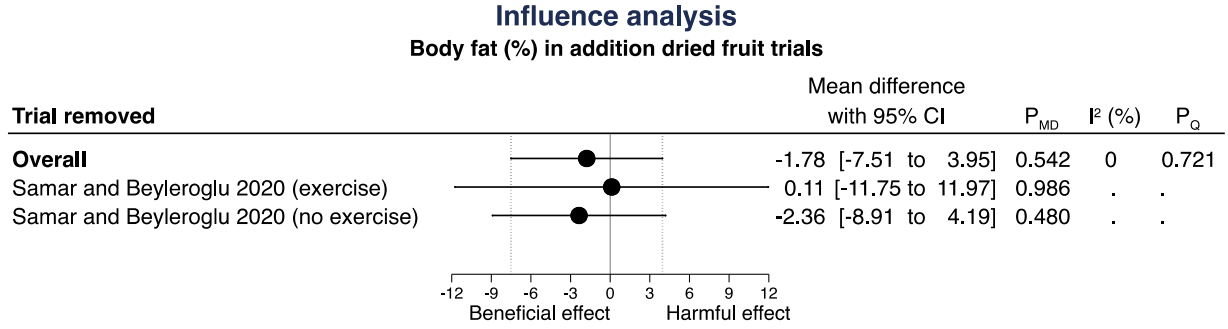
Supplementary Figure 94: Sensitivity analysis of the systematic removal of each trial for the effect of fruit on body fat (%) in addition trials



Influence analysis: Removal of each trial, one at a time and recalculation of the overall effect and heterogeneity

CI=confidence interval; MD=mean difference.

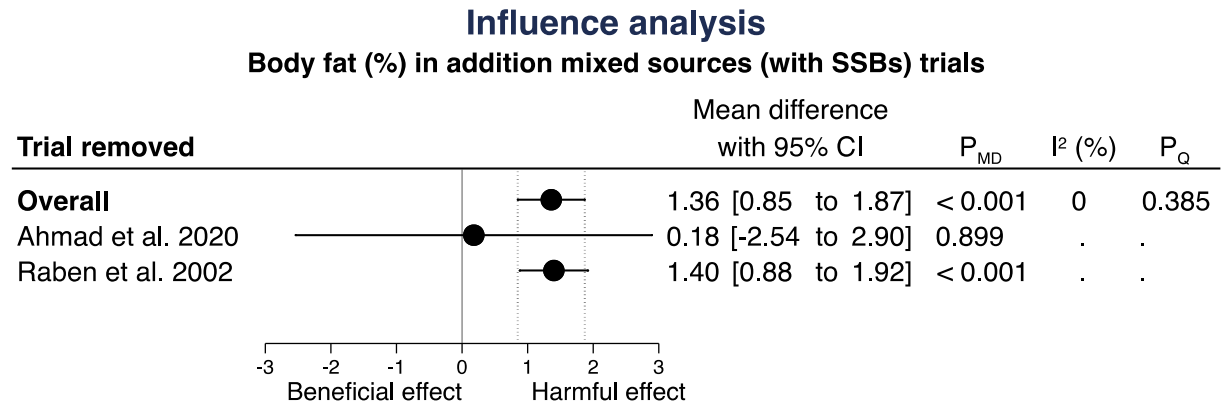
Supplementary Figure 95: Sensitivity analysis of the systematic removal of each trial for the effect of dried fruit on body fat (%) in addition trials



Influence analysis: Removal of each trial, one at a time and recalculation of the overall effect and heterogeneity

CI=confidence interval; MD=mean difference.

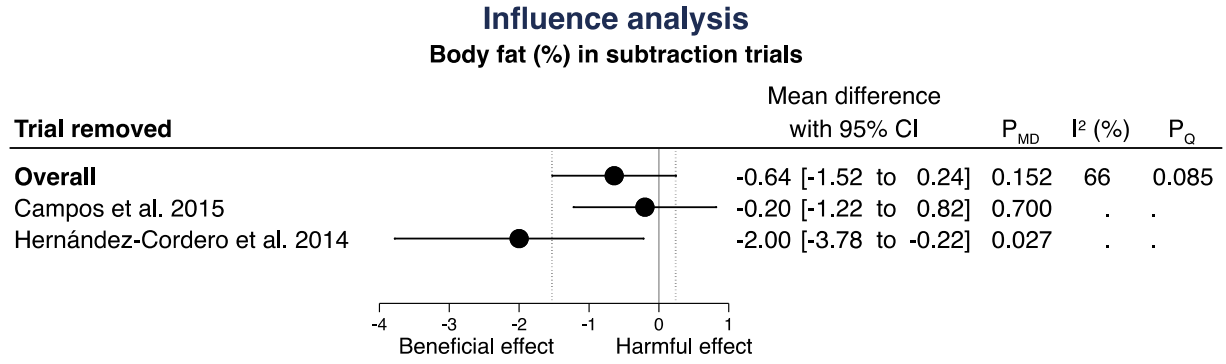
Supplementary Figure 96: Sensitivity analysis of the systematic removal of each trial for the effect of mixed sources (SSBs) on body fat (%) in addition trials



Influence analysis: Removal of each trial, one at a time and recalculation of the overall effect and heterogeneity

CI=confidence interval; MD=mean difference.

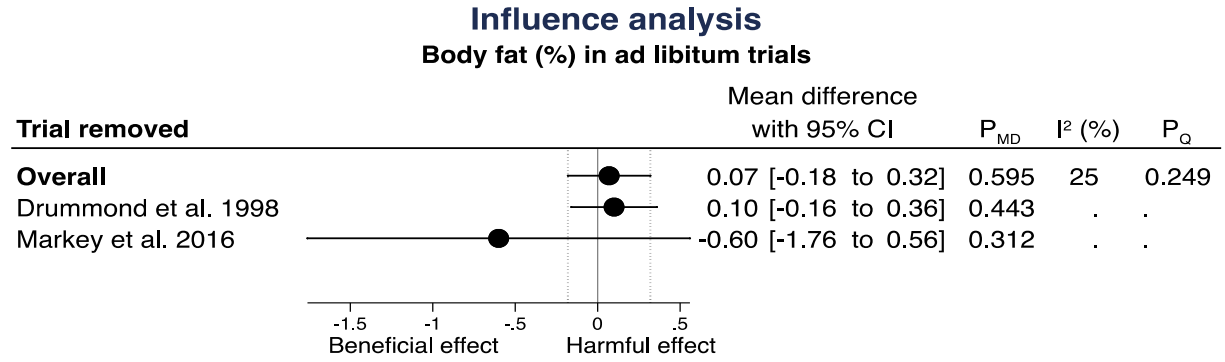
Supplementary Figure 97: Sensitivity analysis of the systematic removal of each trial for the effect of important food sources of fructose-containing sugars on body fat (%) in subtraction trials



Influence analysis: Removal of each trial, one at a time and recalculation of the overall effect and heterogeneity

CI=confidence interval; MD=mean difference.

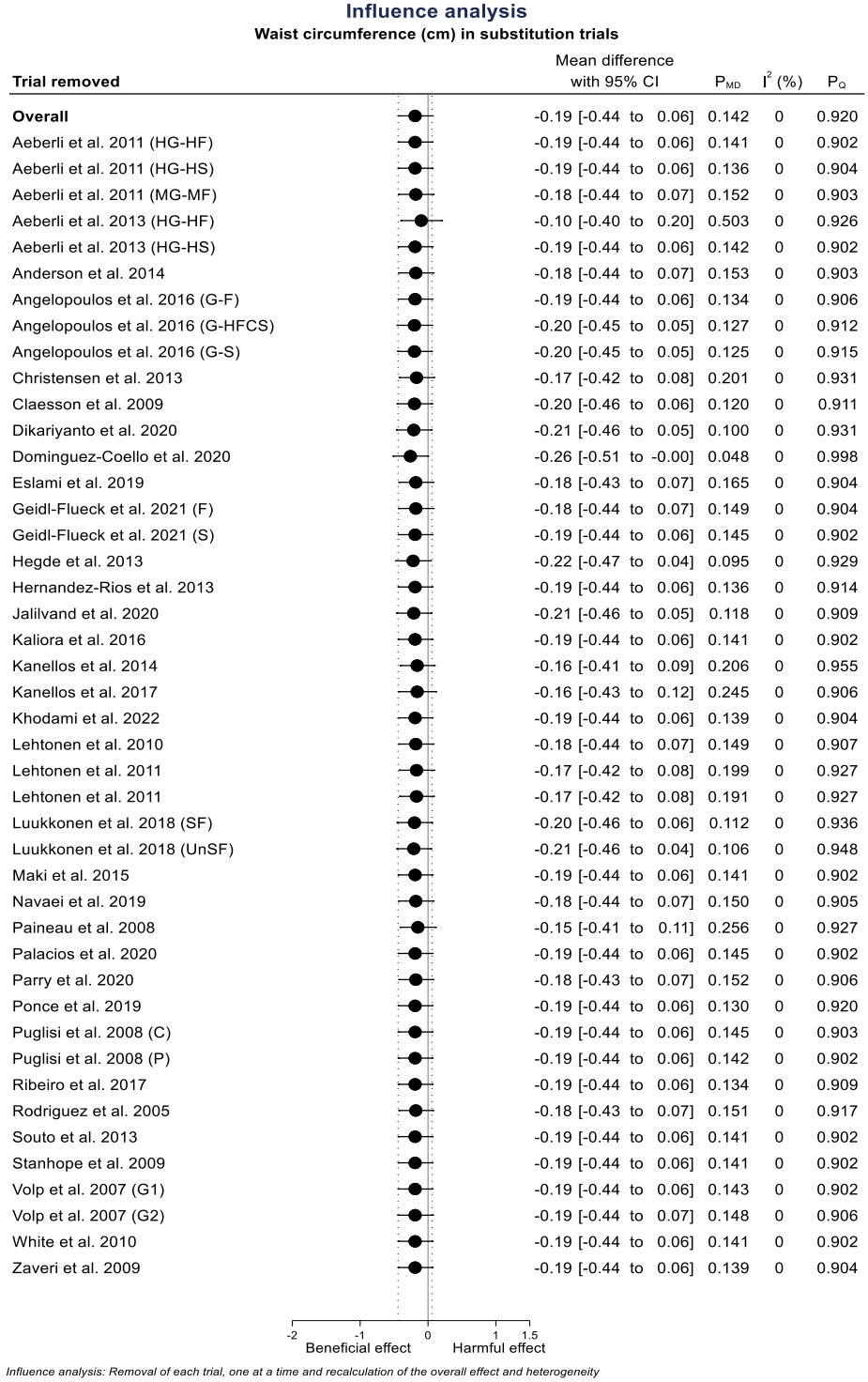
Supplementary Figure 98: Sensitivity analysis of the systematic removal of each trial for the effect of important food sources of fructose-containing sugars on body fat (%) in *ad libitum* trials



Influence analysis: Removal of each trial, one at a time and recalculation of the overall effect and heterogeneity

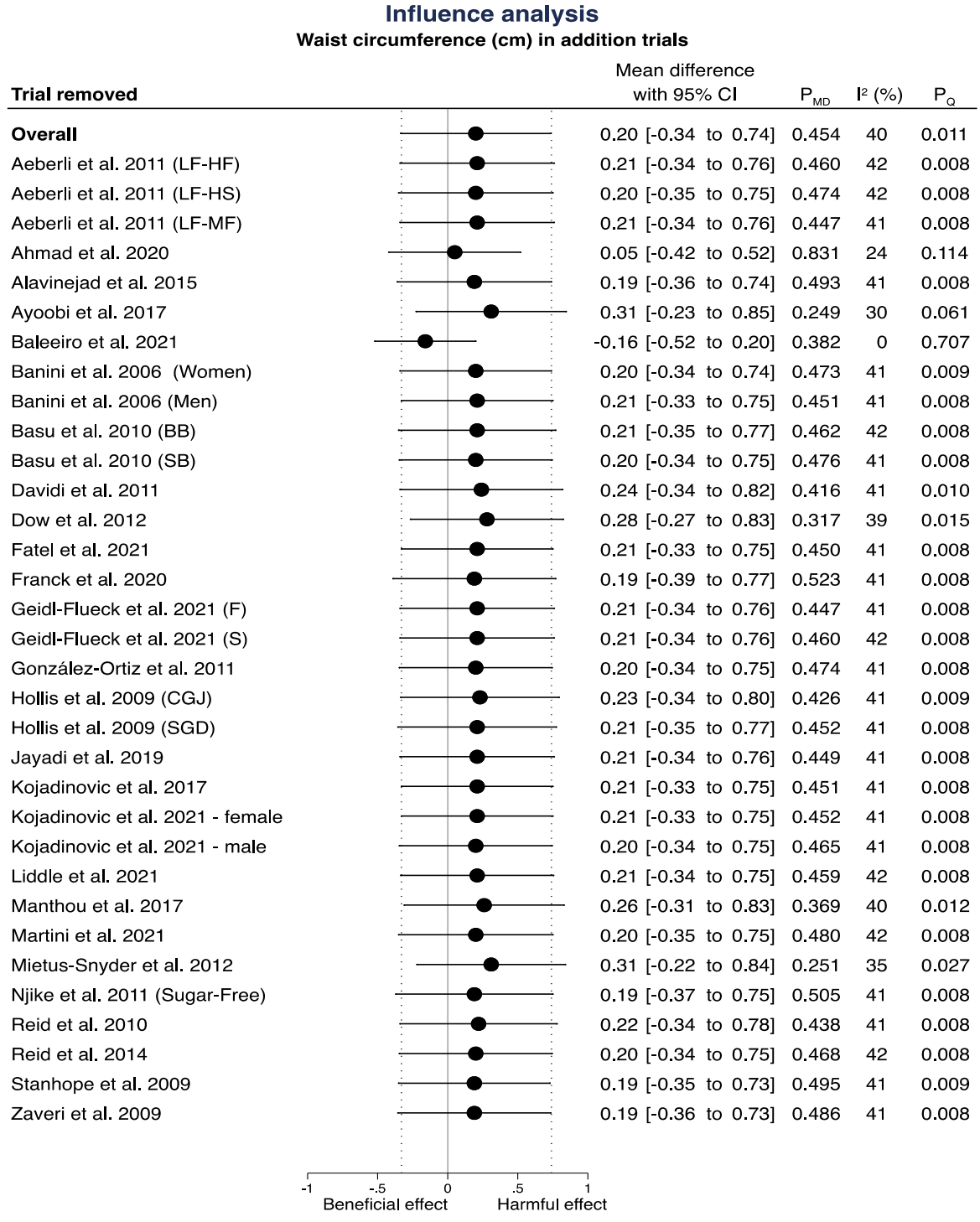
CI=confidence interval; MD=mean difference.

Supplementary Figure 99: Sensitivity analysis of the systematic removal of each trial for the effect of important food sources of fructose-containing sugars on waist circumference (cm) in substitution trials



C=crossover; CI=confidence interval; F=fructose; G=glucose; G1=group 1; G2=group 2; HF=high fructose; HFCS=high fructose corn syrup; HG=high glucose; HS=high sucrose; MD=mean difference; MF=medium fructose; MG=medium glucose; P=parallel comparison; S=sucrose; SF=saturated fat; UnSF=unsaturated fat

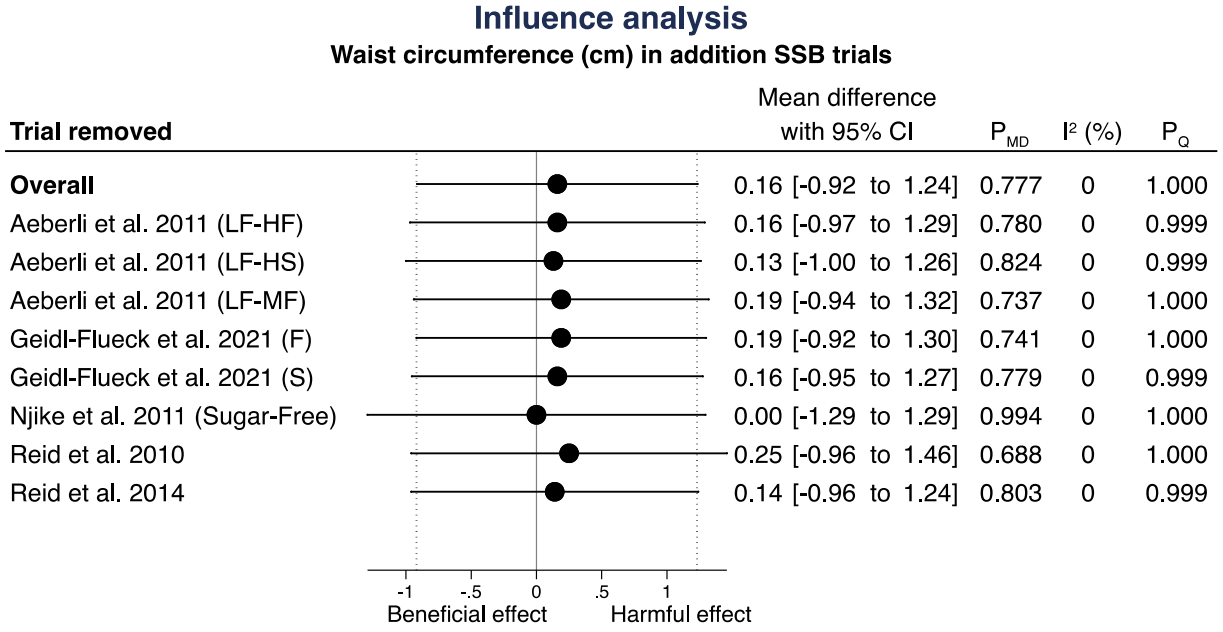
Supplementary Figure 100: Sensitivity analysis of the systematic removal of each trial for the effect of important food sources of fructose-containing sugars on waist circumference (cm) in addition trials



Influence analysis: Removal of each trial, one at a time and recalculation of the overall effect and heterogeneity

BB=blueberry; CGJ=Concord grape juice; CI=confidence interval; F=fructose; HF=high fructose; HS=high sucrose; LF=low fructose; MD=mean difference; MF=medium fructose; S=sucrose; SB=strawberry; SGD=substitute grape-flavored drink.

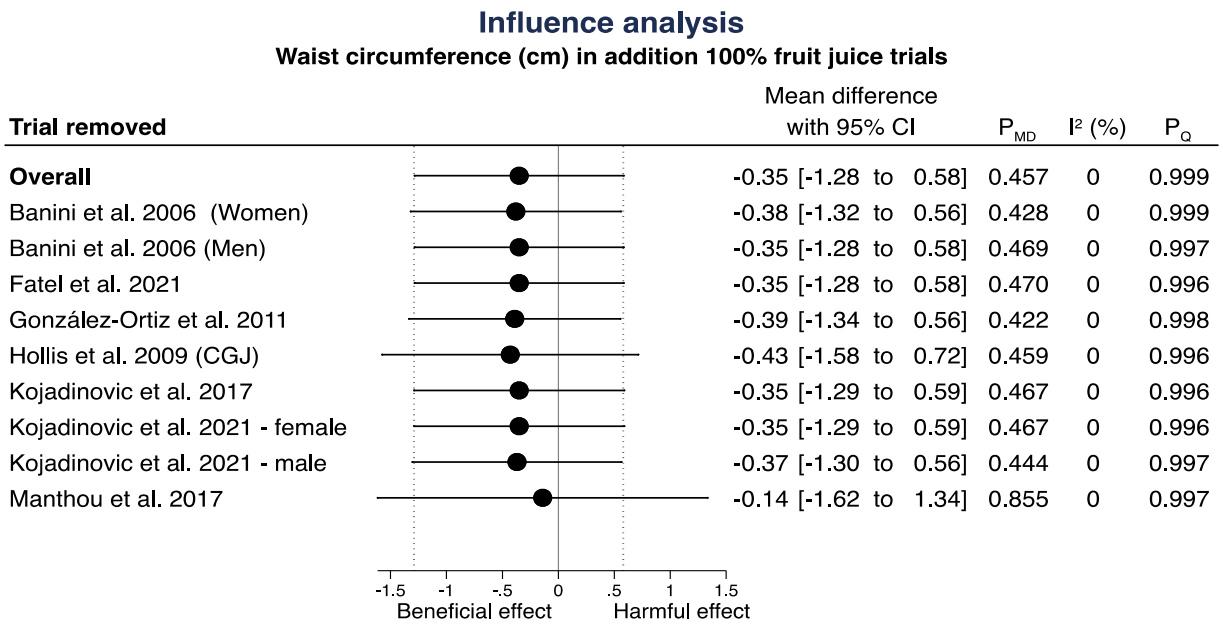
Supplementary Figure 101: Sensitivity analysis of the systematic removal of each trial for the effect of SSBs on waist circumference (cm) in addition trials



Influence analysis: Removal of each trial, one at a time and recalculation of the overall effect and heterogeneity

CI=confidence interval; F=fructose; HF=high fructose; HS=high sucrose; LF=low fructose; MD=mean difference; MF=medium fructose; S=sucrose; SSB=sugars-sweetened beverage.

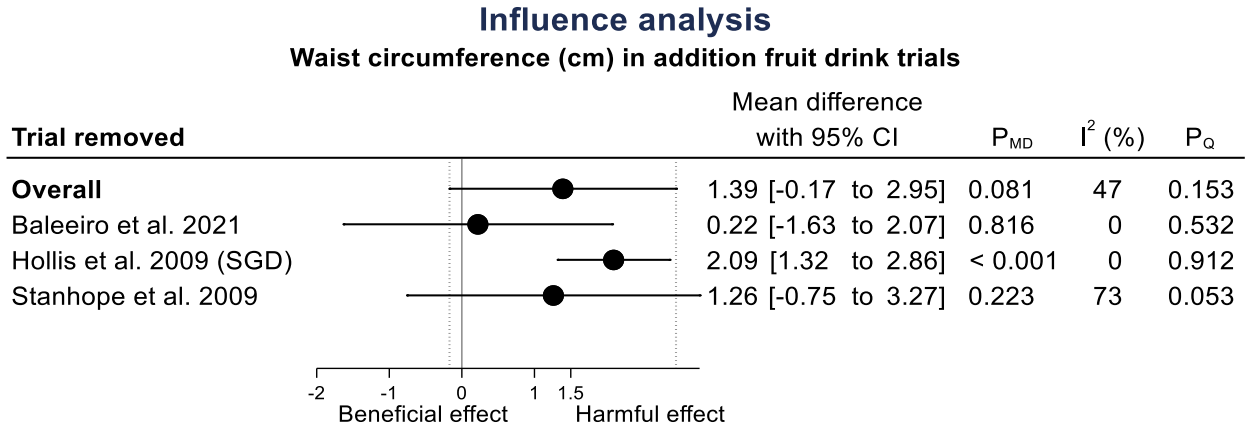
Supplementary Figure 102: Sensitivity analysis of the systematic removal of each trial for the effect of 100% fruit juice on waist circumference (cm) in addition trials



Influence analysis: Removal of each trial, one at a time and recalculation of the overall effect and heterogeneity

CGJ=Concord grape juice; CI=confidence interval; MD=mean difference.

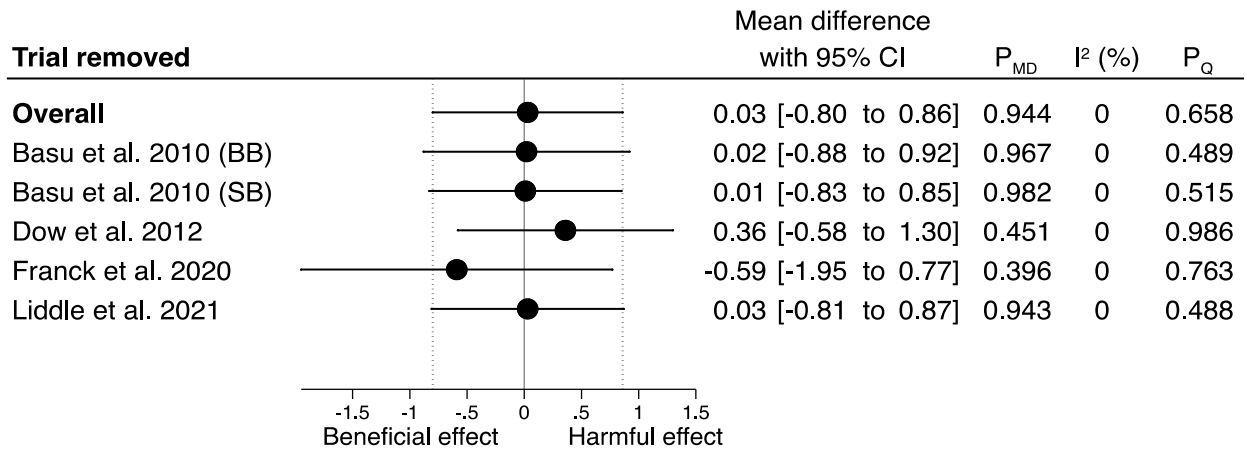
Supplementary Figure 103: Sensitivity analysis of the systematic removal of each trial for the effect of fruit drink on waist circumference (cm) in addition trials



Influence analysis: Removal of each trial, one at a time and recalculation of the overall effect and heterogeneity

CI=confidence interval; MD=mean difference; SGD=substitute grape-flavored drink

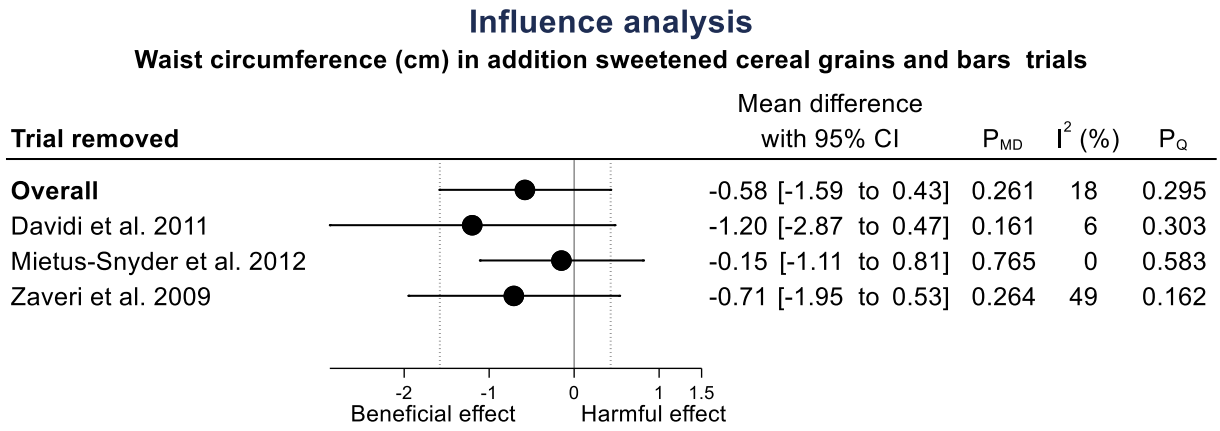
Supplementary Figure 104: Sensitivity analysis of the systematic removal of each trial for the effect of fruit on waist circumference (cm) in addition trials



Influence analysis: Removal of each trial, one at a time and recalculation of the overall effect and heterogeneity

BB=blueberry; CI=confidence interval; MD=mean difference; SB=strawberry.

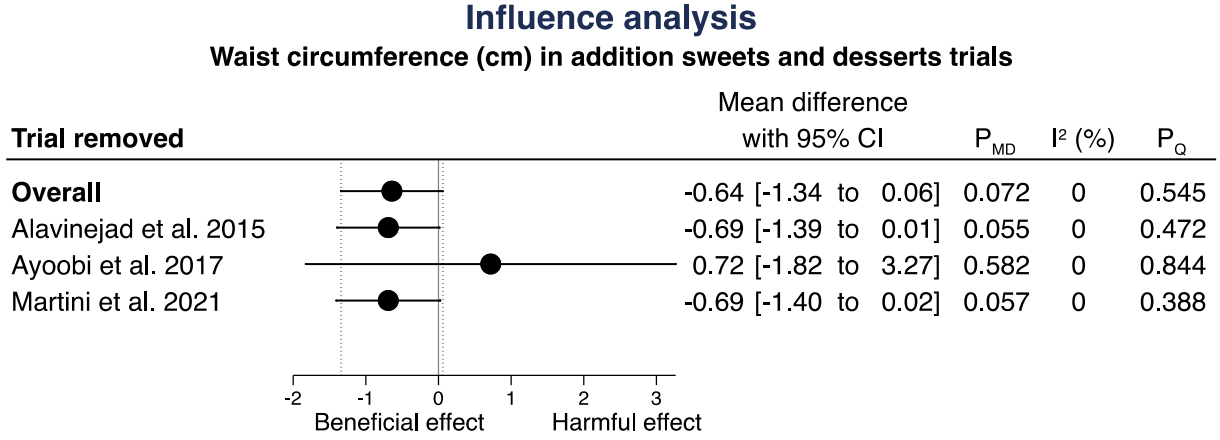
Supplementary Figure 105: Sensitivity analysis of the systematic removal of each trial for the effect of sweetened cereal grains and bars on waist circumference (cm) in addition trials



Influence analysis: Removal of each trial, one at a time and recalculation of the overall effect and heterogeneity

CI=confidence interval; MD=mean difference.

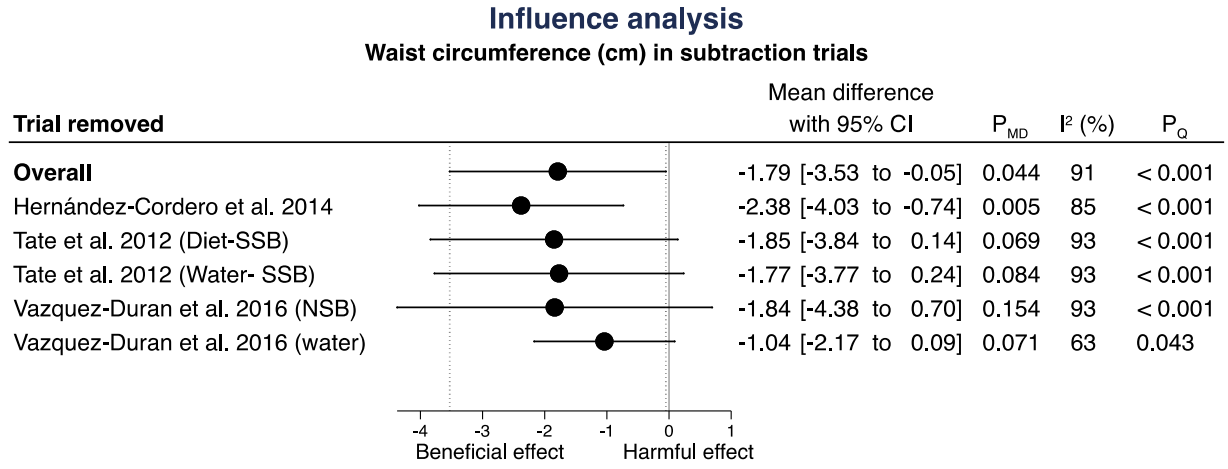
Supplementary Figure 106: Sensitivity analysis of the systematic removal of each trial for the effect of sweets and desserts on waist circumference (cm) in addition trials



Influence analysis: Removal of each trial, one at a time and recalculation of the overall effect and heterogeneity

CI=confidence interval; MD=mean difference.

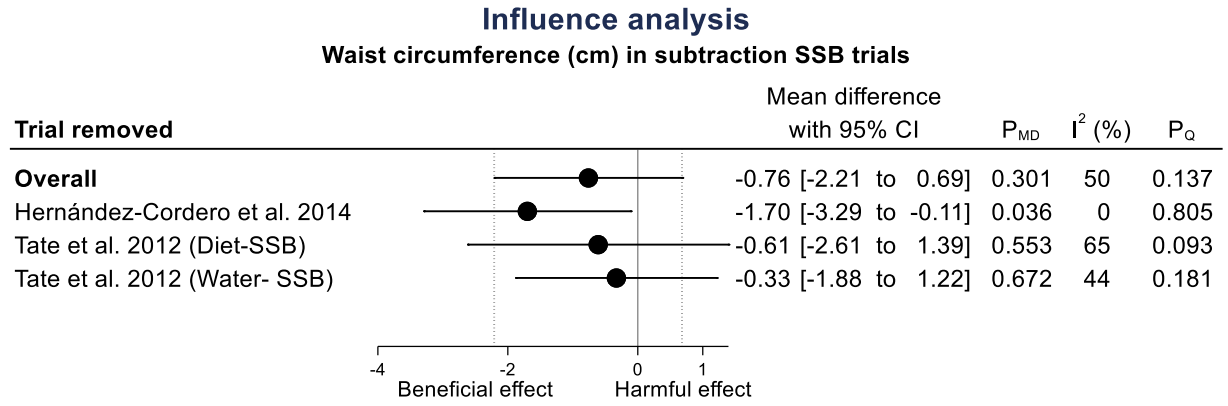
Supplementary Figure 107: Sensitivity analysis of the systematic removal of each trial for the effect of important food sources of fructose-containing sugars on waist circumference (cm) in subtraction trials



Influence analysis: Removal of each trial, one at a time and recalculation of the overall effect and heterogeneity

CI=confidence interval; MD=mean difference; NSB=non-caloric sweetened beverage; SSB=sugars-sweetened beverage.

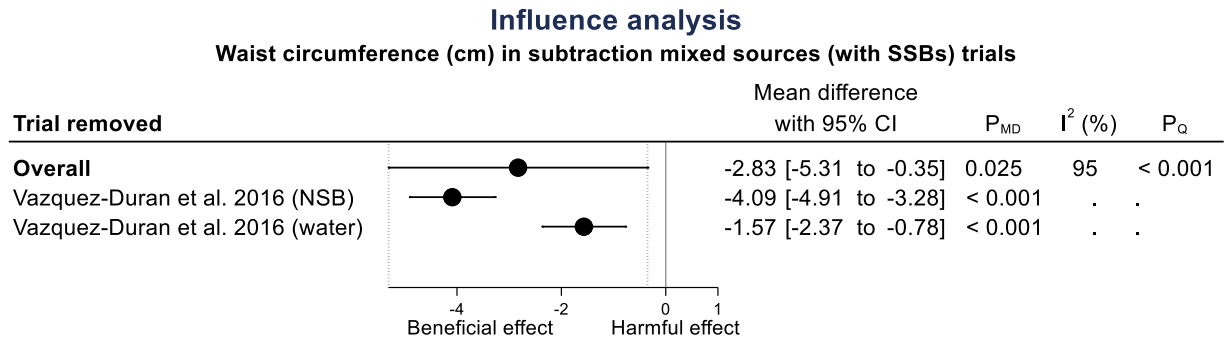
Supplementary Figure 108: Sensitivity analysis of the systematic removal of each trial for the effect of SSBs on waist circumference (cm) in subtraction trials



Influence analysis: Removal of each trial, one at a time and recalculation of the overall effect and heterogeneity

CI=confidence interval; MD=mean difference; SSB=sugar sweetened beverage.

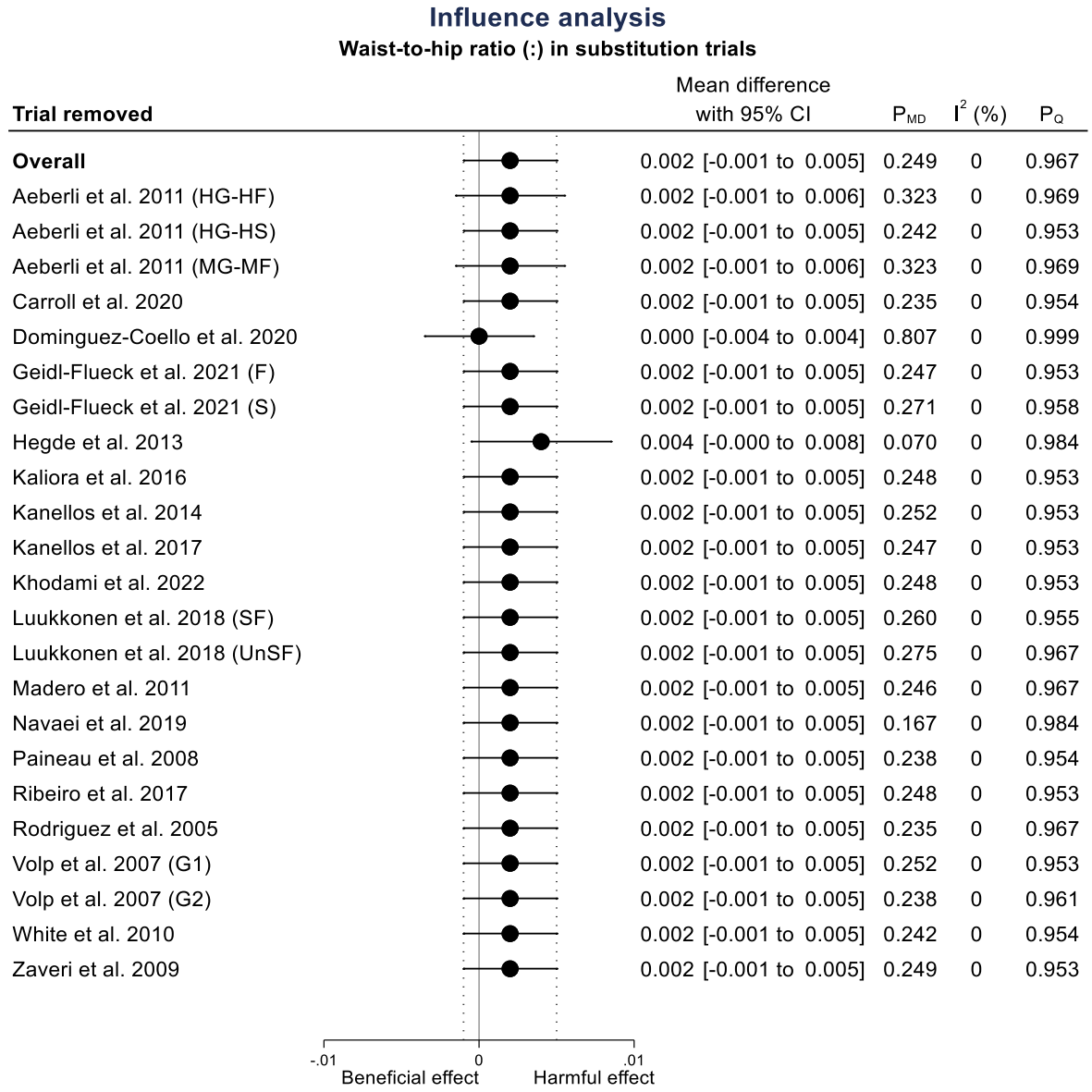
Supplementary Figure 109: Sensitivity analysis of the systematic removal of each trial for the effect of mixed sources (with SSBs) on waist circumference (cm) in subtraction trials



Influence analysis: Removal of each trial, one at a time and recalculation of the overall effect and heterogeneity

CI=confidence interval; MD=mean difference; NSB=non-caloric sweetened beverage; SSB=sugars-sweetened beverage.

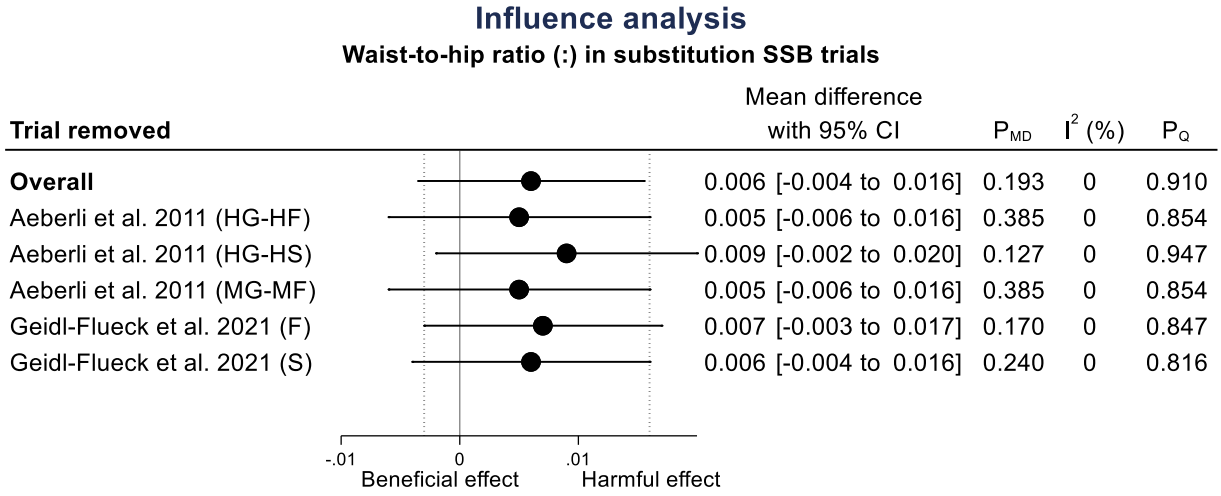
Supplementary Figure 110: Sensitivity analysis of the systematic removal of each trial for the effect of important food sources of fructose-containing sugars on waist-to-hip ratio in substitution trials



Influence analysis: Removal of each trial, one at a time and recalculation of the overall effect and heterogeneity

CI=confidence interval; F=fructose; G1=group 1; G2=group 2; HF=high fructose; HG=high glucose; HS=high sucrose; MD=mean difference; MF=medium fructose; MG=medium glucose; S=sucrose; SF=saturated fat; UnSF=unsaturated fat.

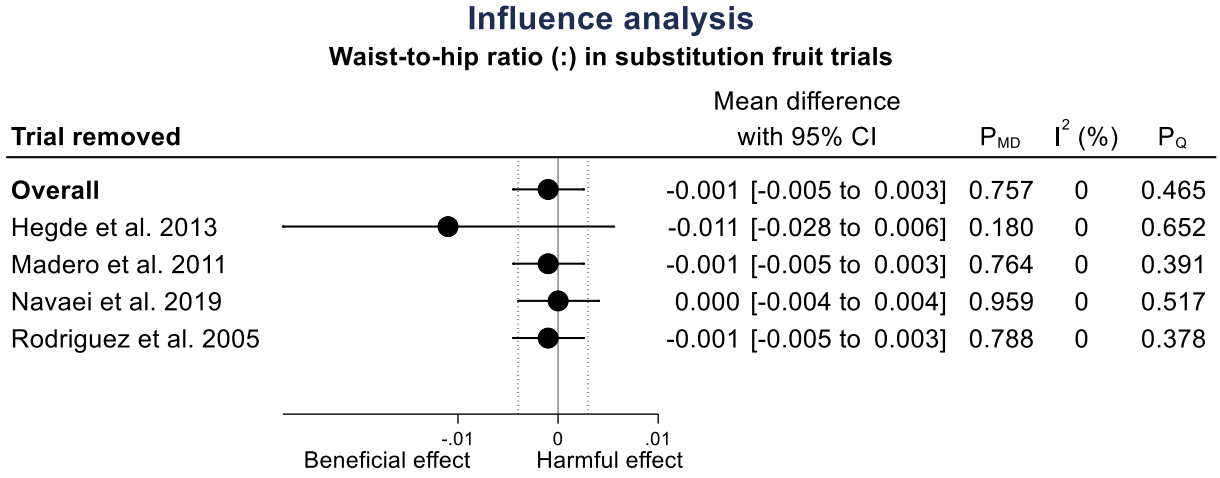
Supplementary Figure 111: Sensitivity analysis of the systematic removal of each trial for the effect of SSBs on waist-to-hip ratio in substitution trials



Influence analysis: Removal of each trial, one at a time and recalculation of the overall effect and heterogeneity

CI=confidence interval; F=fructose; HF=high fructose; HG=high glucose; HS=high sucrose; MD=mean difference; MF=medium fructose; MG=medium glucose; S=sucrose; SSB=sugars-sweetened beverage.

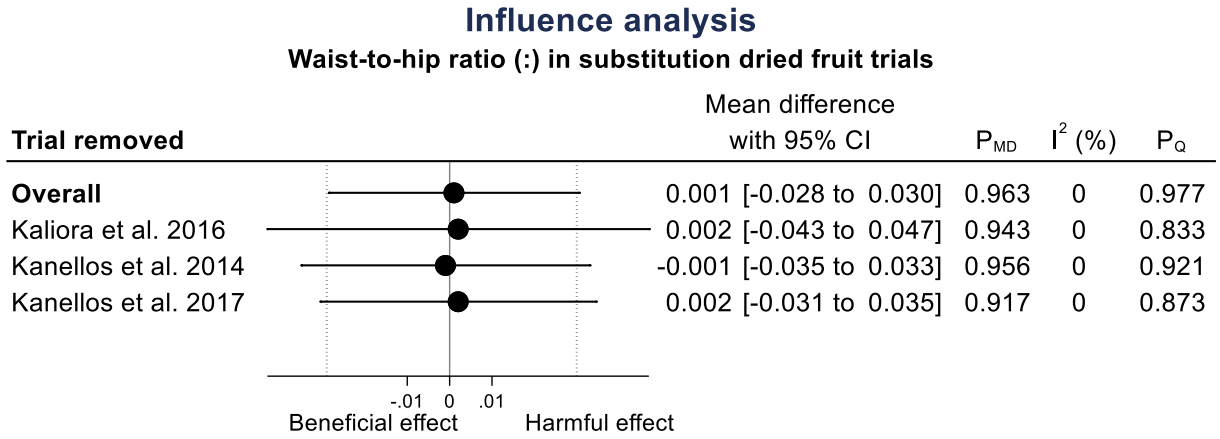
Supplementary Figure 112: Sensitivity analysis of the systematic removal of each trial for the effect of fruit on waist-to-hip ratio in substitution trials



Influence analysis: Removal of each trial, one at a time and recalculation of the overall effect and heterogeneity

CI=confidence interval; MD=mean difference.

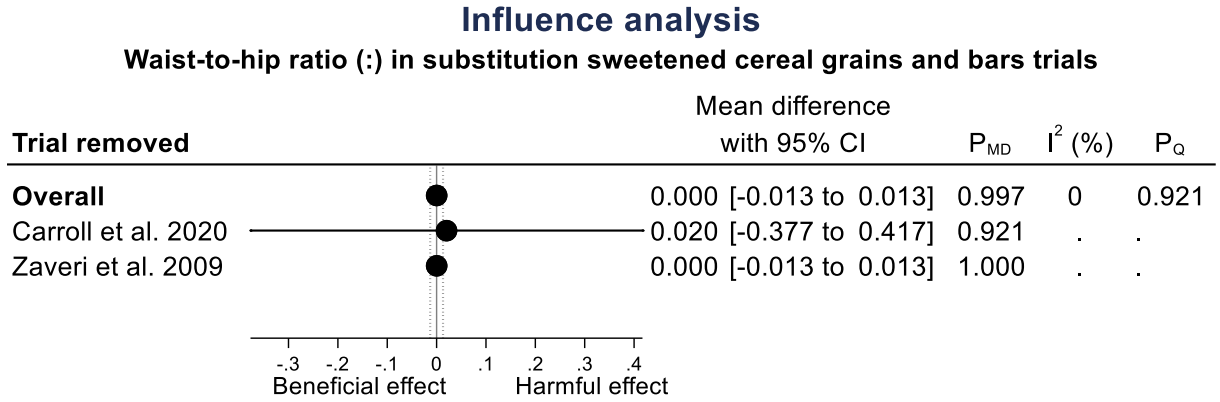
Supplementary Figure 113: Sensitivity analysis of the systematic removal of each trial for the effect of dried fruit on waist-to-hip ratio in substitution trials



Influence analysis: Removal of each trial, one at a time and recalculation of the overall effect and heterogeneity

CI=confidence interval; MD=mean difference.

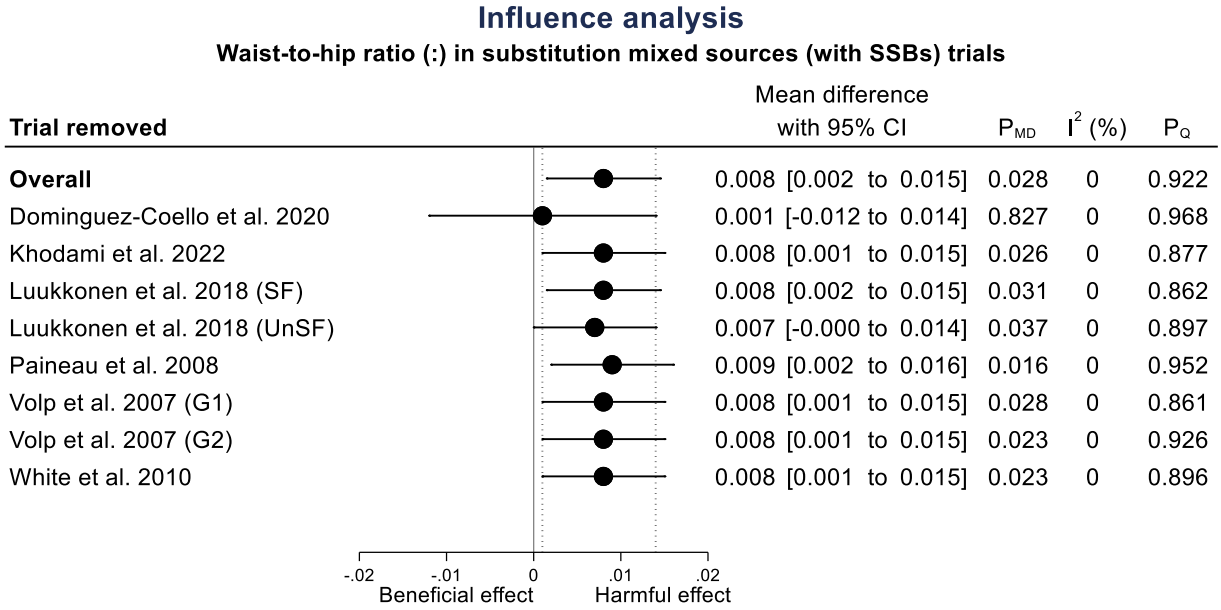
Supplementary Figure 114: Sensitivity analysis of the systematic removal of each trial for the effect of sweetened cereal grains and bars on waist-to-hip ratio in substitution trials



Influence analysis: Removal of each trial, one at a time and recalculation of the overall effect and heterogeneity

CI=confidence interval; MD=mean difference.

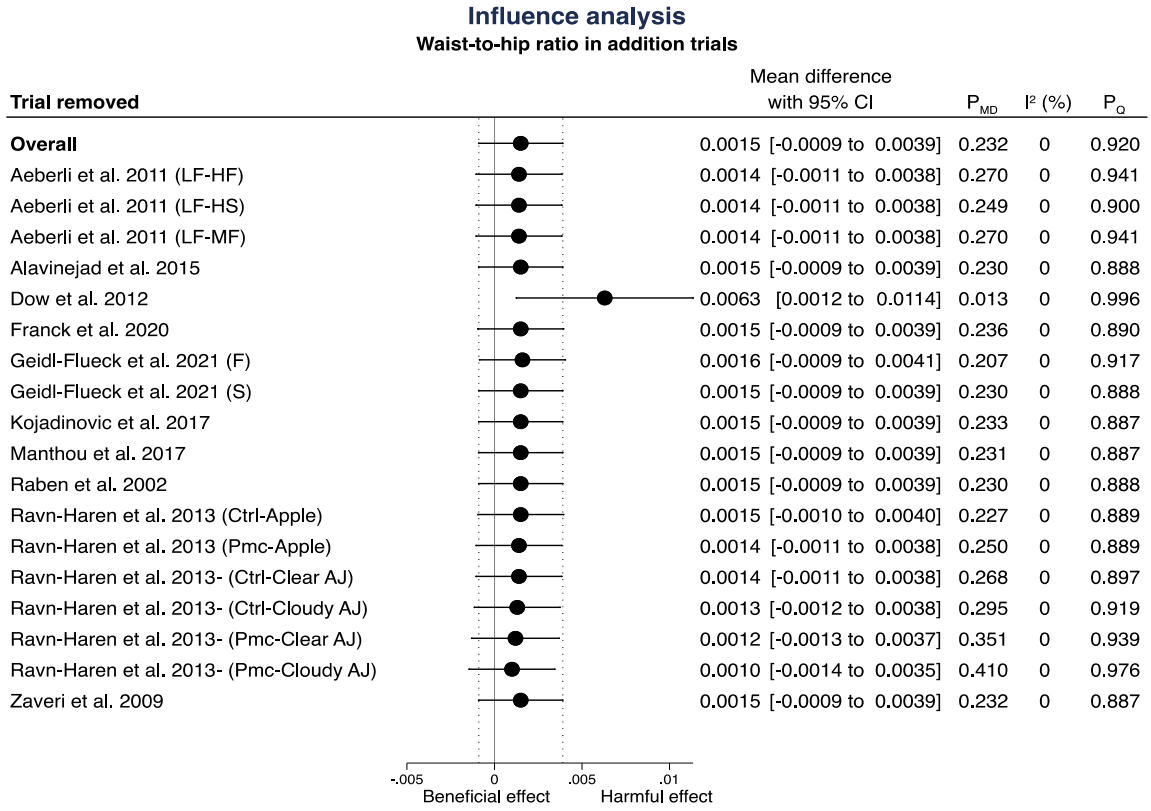
Supplementary Figure 115: Sensitivity analysis of the systematic removal of each trial for the effect of mixed sources (with SSBs) on waist-to-hip ratio in substitution trials



Influence analysis: Removal of each trial, one at a time and recalculation of the overall effect and heterogeneity

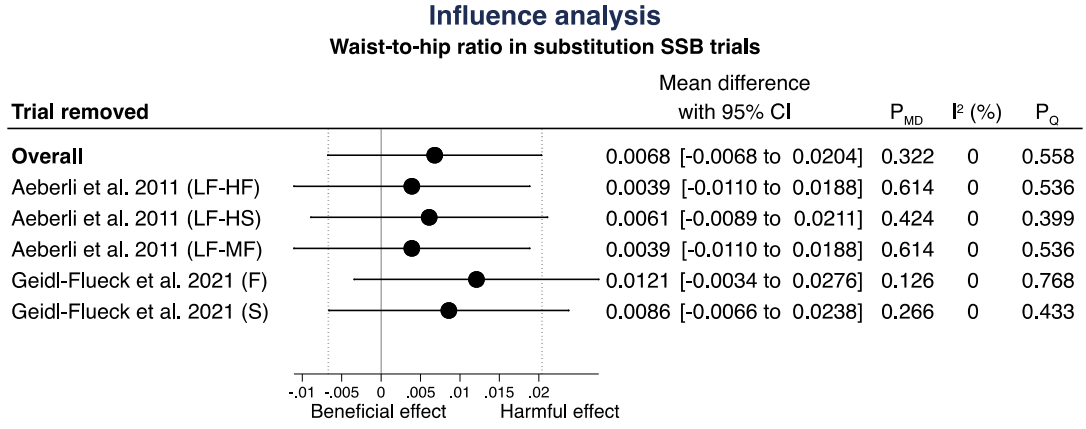
CI=confidence interval; G1=group 1; G2=group 2; MD=mean difference; SF=saturated fat; SSB=sugars-sweetened beverage; UnSF=unsaturated fat.

Supplementary Figure 116: Sensitivity analysis of the systematic removal of each trial for the effect of important food sources of fructose-containing sugars on waist-to-hip ratio in addition trials



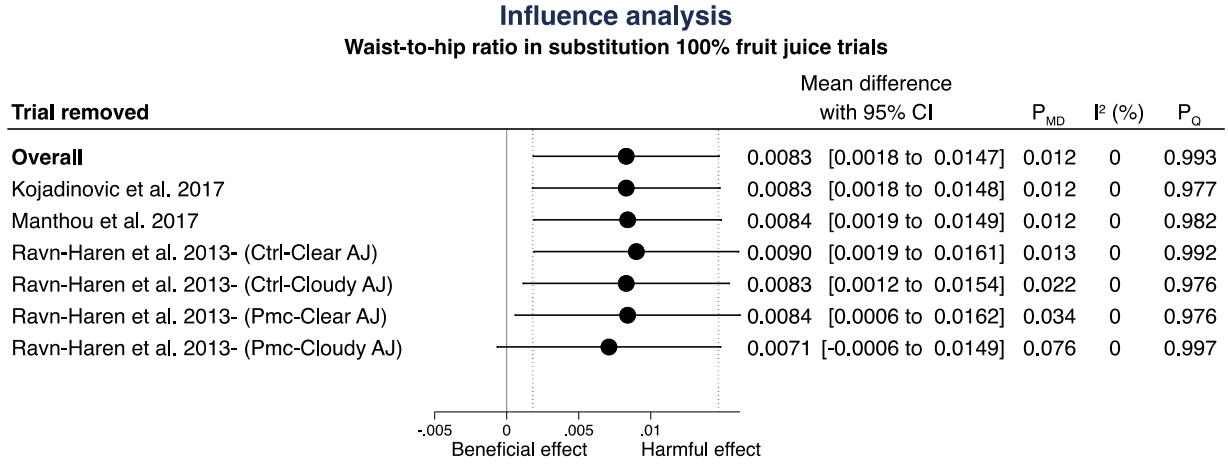
AJ=apple juice; CI=confidence interval; Ctrl=control; F=fructose; HF=high fructose; HS=high sucrose; LF=low fructose; MD=mean difference; MF=medium fructose; S=sucrose; SSB=sugars-sweetened beverage; Pmc=pomace.

Supplementary Figure 117: Sensitivity analysis of the systematic removal of each trial for the effect of SSBs on waist-to-hip ratio in addition trials



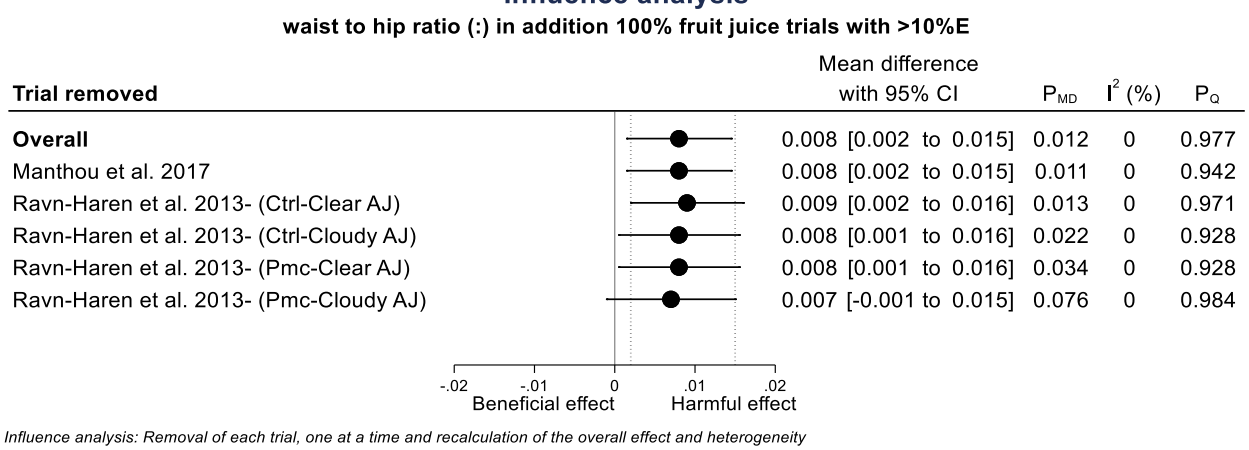
CI=confidence interval; F=fructose; HF=high fructose; HS=high sucrose; LF=low fructose; MD=mean difference; MF=medium fructose; S=sucrose; SSB=sugars-sweetened beverage.

Supplementary Figure 118: Sensitivity analysis of the systematic removal of each trial for the effect of 100% fruit juice on waist-to-hip ratio in addition trials



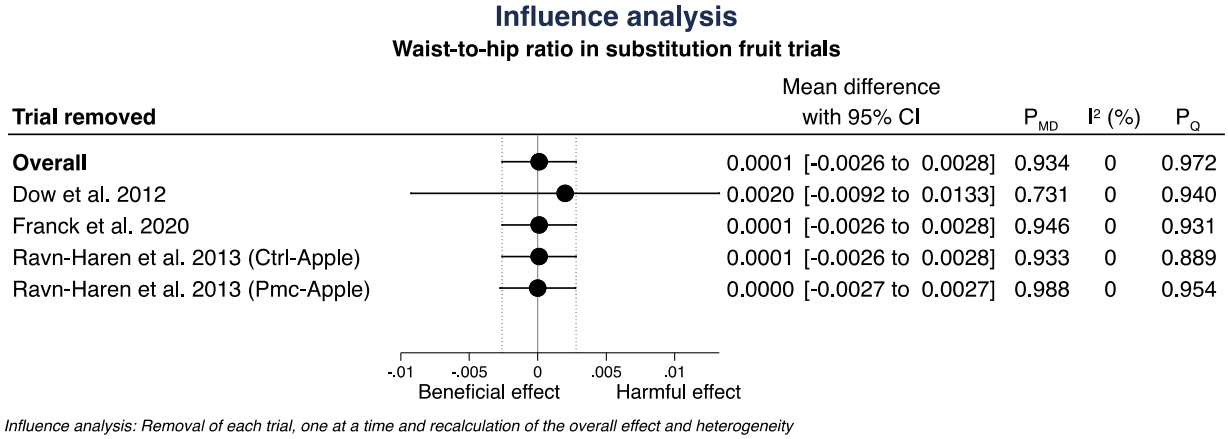
AJ=apple juice; CI=confidence interval; Ctrl=control; MD=mean difference; Pmc=pomace.

Supplementary Figure 119: Sensitivity analysis of the systematic removal of each trial for the effect of 100% fruit juice trials with >10%E on waist-to-hip ratio in addition trials



AJ=apple juice; CI=confidence interval; Ctrl=control; %E=percentage of total energy intake; MD=mean difference; Pmc=pomace.

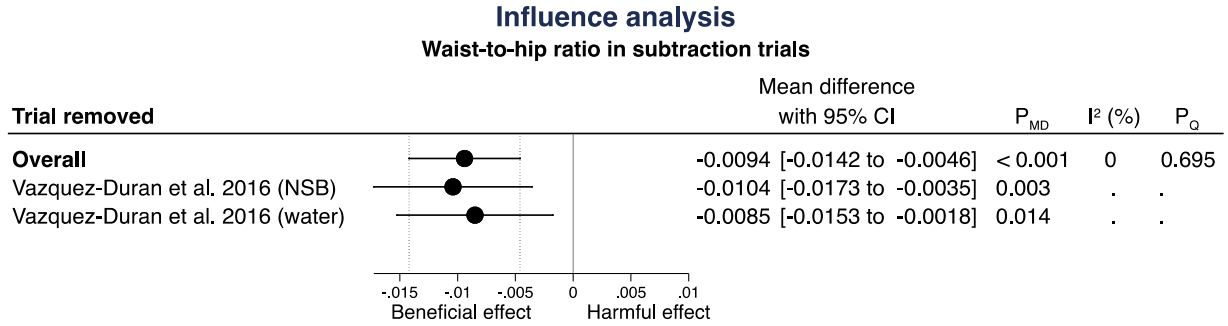
Supplementary Figure 120: Sensitivity analysis of the systematic removal of each trial for the effect of fruit on waist-to-hip ratio in addition trials



Influence analysis: Removal of each trial, one at a time and recalculation of the overall effect and heterogeneity

CI=confidence interval; Ctrl=control; MD=mean difference; Pmc=pomace.

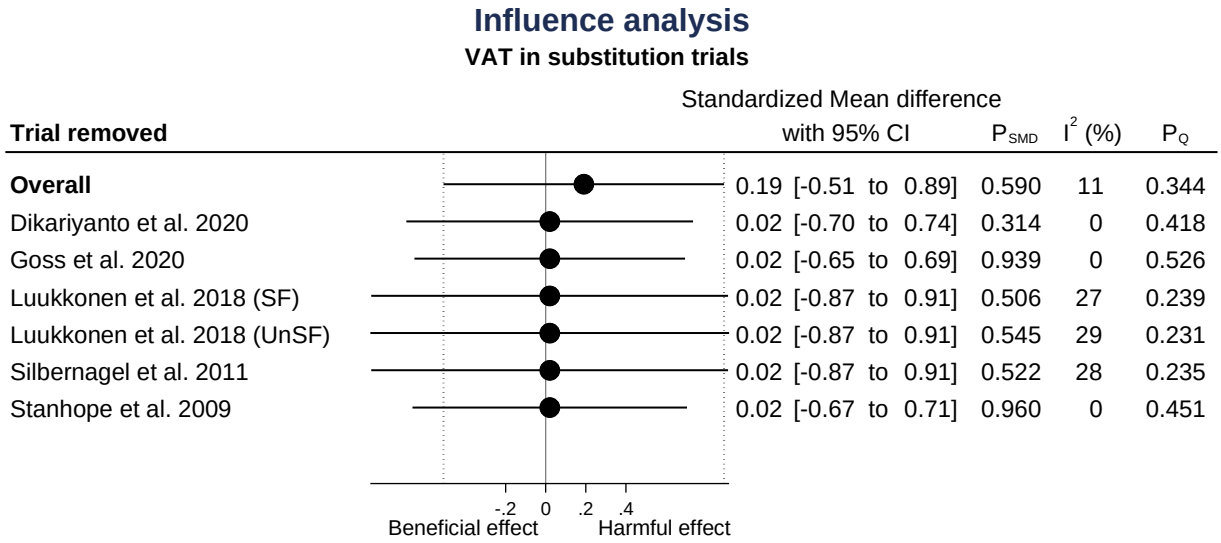
Supplementary Figure 121: Sensitivity analysis of the systematic removal of each trial for the effect of important food sources of fructose-containing sugars on waist-to-hip ratio in subtraction trials



Influence analysis: Removal of each trial, one at a time and recalculation of the overall effect and heterogeneity

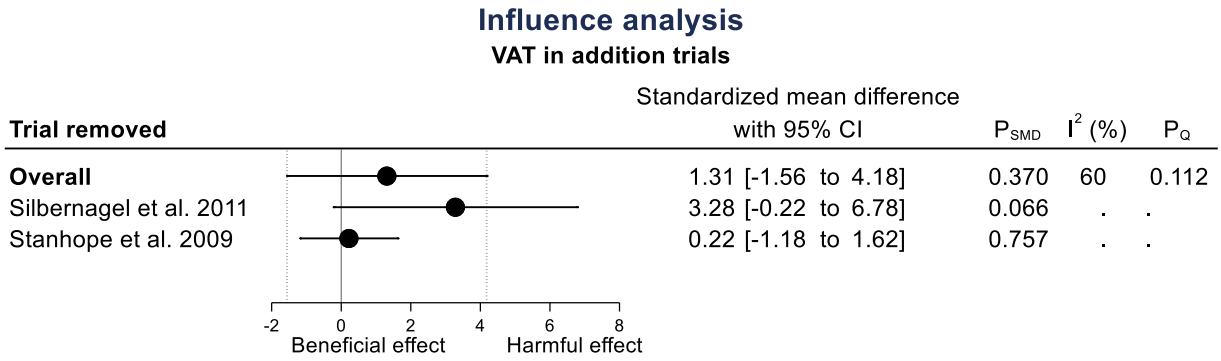
CI=confidence interval; MD=mean difference; NSB=non-caloric sweetened beverage; SSB=sugars-sweetened beverage.

Supplementary Figure 122: Sensitivity analysis of the systematic removal of each trial for the effect of important food sources of fructose-containing sugars on VAT in substitution trials



Influence analysis: Removal of each trial, one at a time and recalculation of the overall effect and heterogeneity

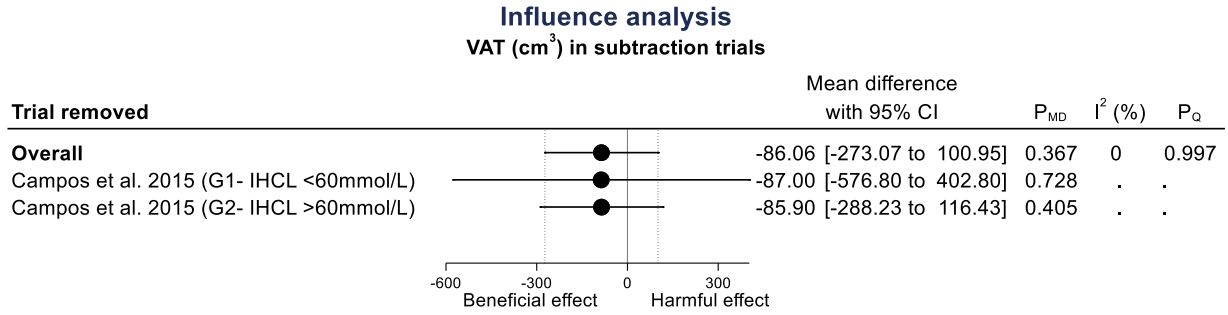
Supplementary Figure 123: Sensitivity analysis of the systematic removal of each trial for the effect of important food sources of fructose-containing sugars on VAT in addition trials



Influence analysis: Removal of each trial, one at a time and recalculation of the overall effect and heterogeneity

CI=confidence interval; SMD= standardized mean difference; VAT=visceral adipose tissue.

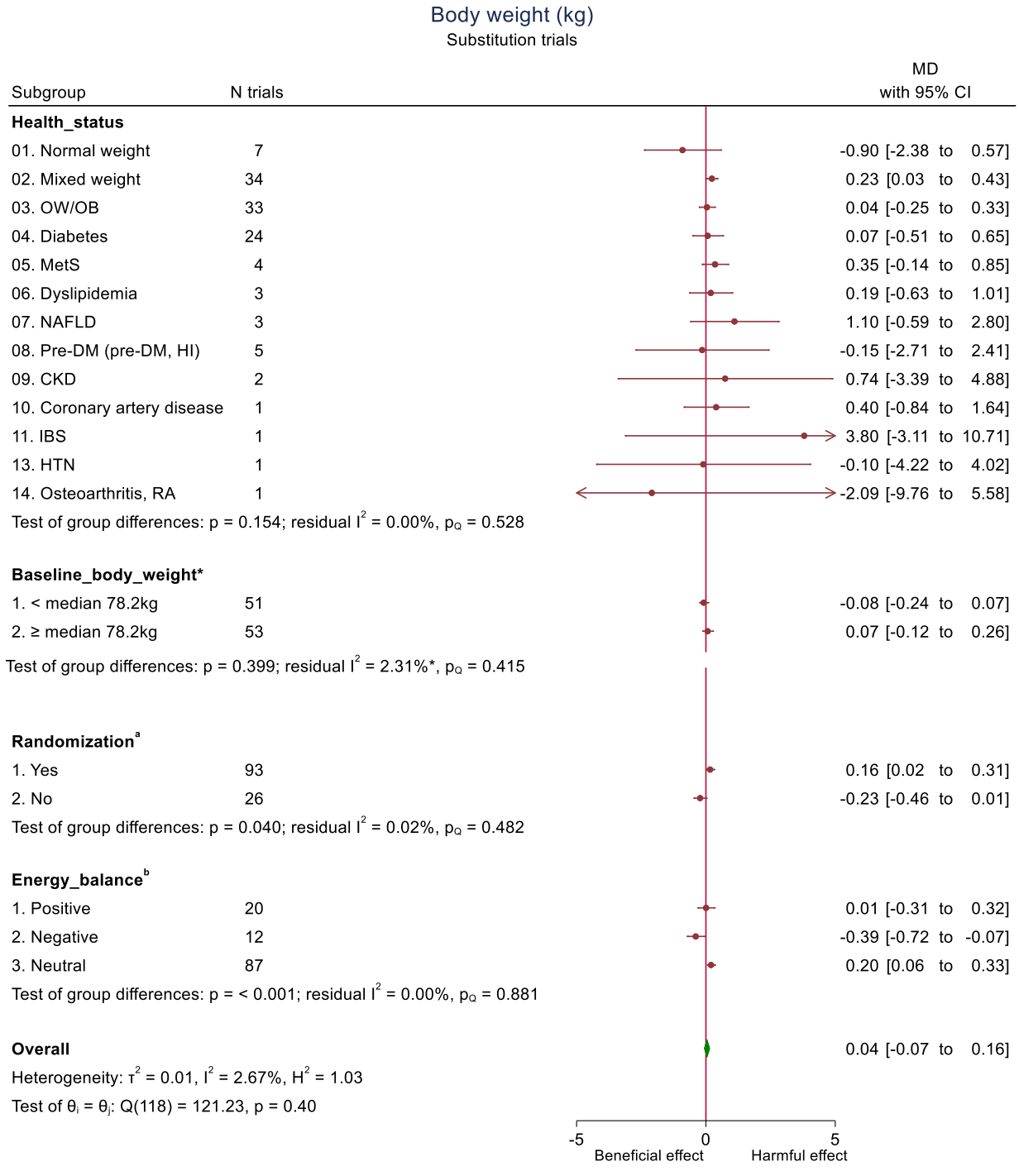
Supplementary Figure 124: Sensitivity analysis of the systematic removal of each trial for the effect of important food sources of fructose-containing sugars on VAT in subtraction trials



Influence analysis: Removal of each trial, one at a time and recalculation of the overall effect and heterogeneity

CI=confidence interval; G1=group 1; G2=group 2; IHCL=intrahepatocellular lipid; MD=mean difference; VAT=visceral adipose tissue.

Supplementary Figure 125 (1 of 3): Subgroup analyses for the effect of important food sources of fructose-containing sugars on body weight (kg) in substitution trials*

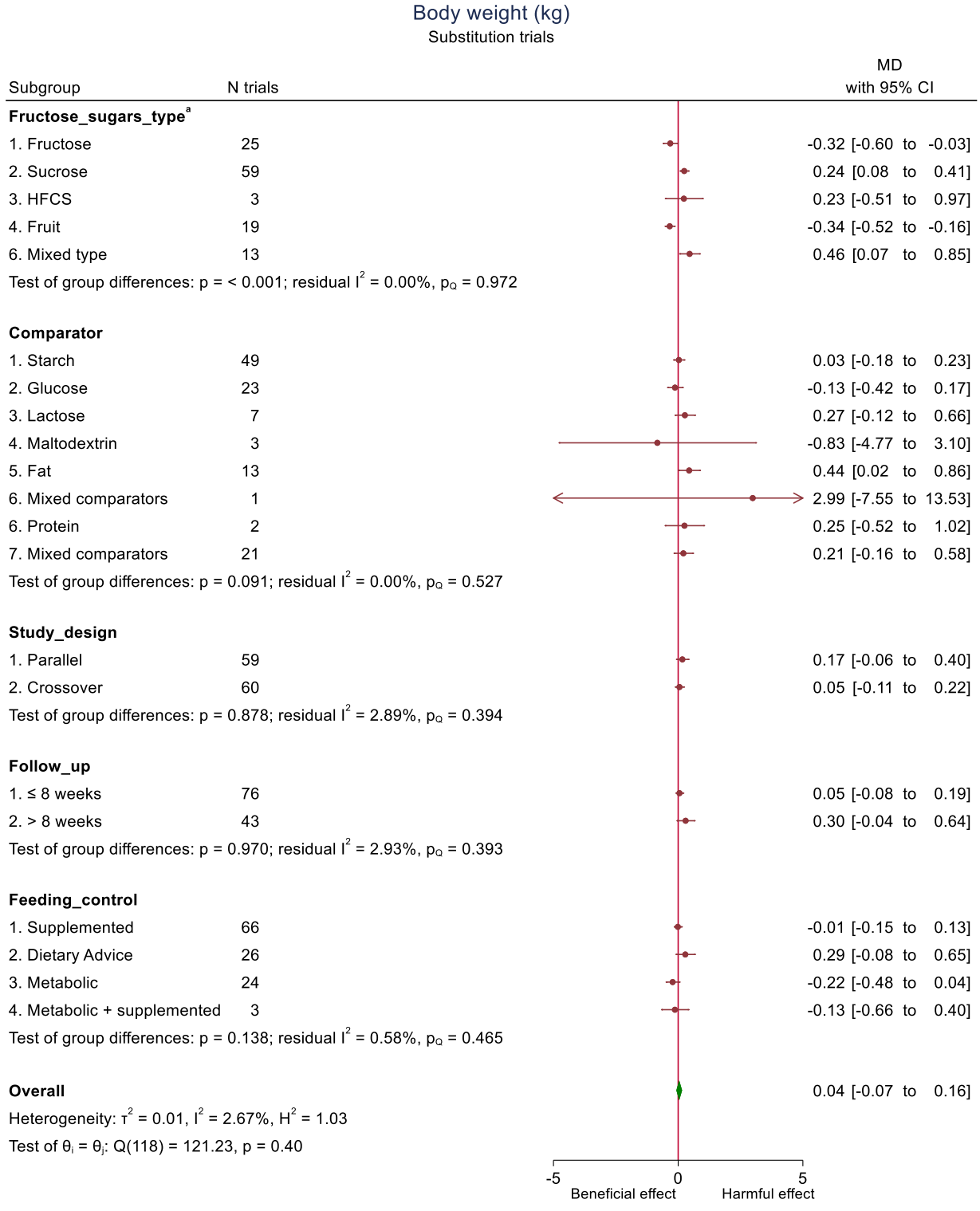


* N=15 trials missing data for baseline body weight.

[a]Pairwise between-subgroup mean differences (95% confidence intervals) for randomization were as follows: (**1 vs. 2**) -0.275kg (-0.538, -0.013 kg).

[b]Pairwise between-subgroup mean differences (95% confidence intervals) for energy balance were as follows: (**1 vs. 2**) -0.368kg (-0.731, -0.004kg), (1 vs. 3) 0.190kg (-0.153, 0.533kg), (**2 vs. 3**) 0.558kg (0.329, 0.786kg).
The green diamond represents the pooled estimate for the overall primary analysis of food sources of fructose-containing sugars. Within subgroup mean differences are the pooled effect estimates represented by a red circle. 95% confidence intervals are represented by the line through the circle. Data are expressed as mean differences with 95% confidence intervals using the generic inverse-variance method and random effects DerSimonian-Laird model. Inter-study heterogeneity was assessed using the Cochrane Q statistic and quantified using the I^2 statistic, with significance set at $P<0.100$ and $I^2 \geq 50\%$ considered to be evidence of substantial heterogeneity. $P<0.050$ indicates that the effect size differed between levels of the subgroup.
CI=confidence interval; CKD=chronic kidney disease; DM=diabetes mellitus; HI=hyperinsulinemia; HTN=hypertension; IBS=irritable bowel syndrome; MD=mean difference; MetS=metabolic syndrome; NAFLD=non-alcoholic fatty liver disease; OB=obese; OW=overweight; RA=rheumatoid arthritis.

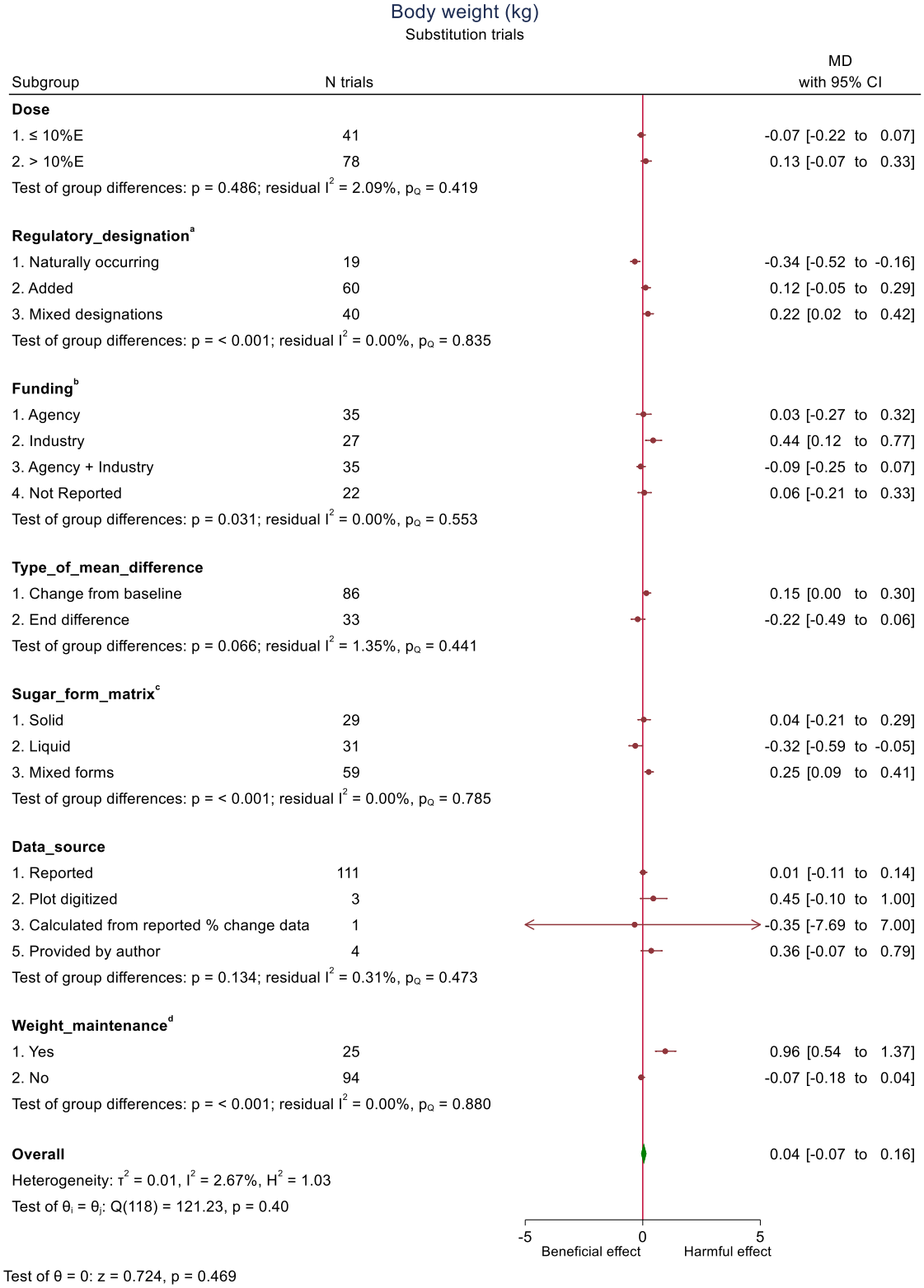
Supplementary Figure 125 (2 of 3): Subgroup analyses for the effect of important food sources of fructose-containing sugars on body weight (kg) in substitution trials



[a]Pairwise between-subgroup mean differences (95% confidence intervals) for fructose sugars type were as follows: (**1 vs. 2**) 0.561kg (0.235, 0.886kg), (1 vs. 3) 0.547kg (-0.246, 1.340kg), (1 vs. 4) -0.021kg (-0.356, 0.315kg), (**1 vs.**

6) 0.750kg (0.318, 1.180kg), (2 vs. 3) -0.014kg (-0.772, 0.743kg), (**2 vs. 4**) -0.582kg (-0.823, -0.340kg), (2 vs. 6) 0.189kg (-0.174, 0.552kg), (3 vs. 4) -0.567kg (-1.330, 0.194kg), (3 vs. 6) 0.203kg (-0.606, 1.010kg), (**4 vs. 6**) 0.770kg (0.398, 1.140kg).
The green diamond represents the pooled estimate for the overall primary analysis of food sources of fructose-containing sugars. Within subgroup mean differences are the pooled effect estimates represented by a red circle. 95% confidence intervals are represented by the line through the circle. Data are expressed as mean differences with 95% confidence intervals using the generic inverse-variance method and random effects DerSimonian-Laird model. Inter-study heterogeneity was assessed using the Cochrane Q statistic and quantified using the I^2 statistic, with significance set at $P<0.100$ and $I^2 \geq 50\%$ considered to be evidence of substantial heterogeneity. $P<0.050$ indicates that the effect size differed between levels of the subgroup.
CI=confidence interval; HFCS=high fructose corn syrup; MD=mean difference.

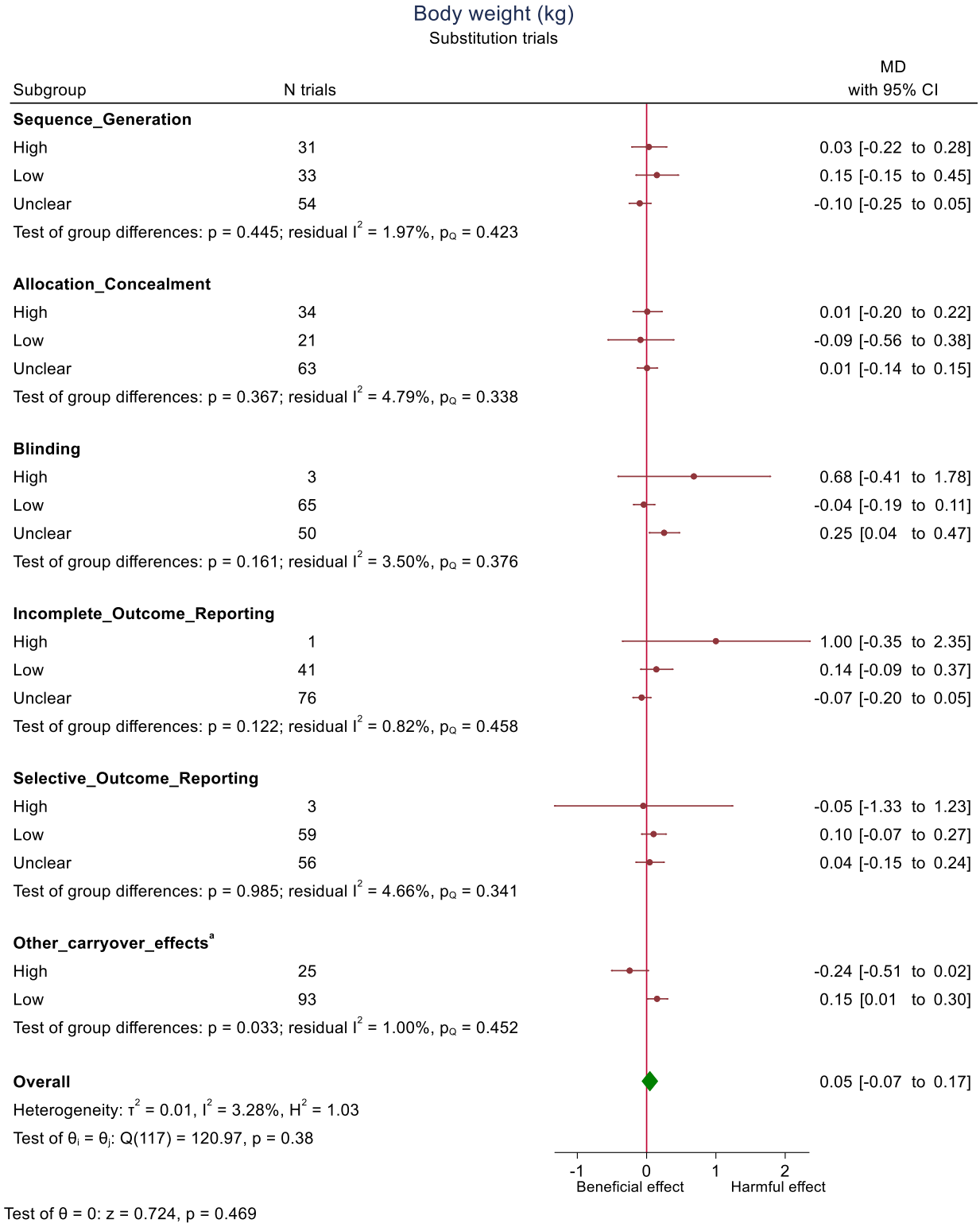
Supplementary Figure 125 (3 of 3): Subgroup analyses for the effect of important food sources of fructose-containing sugars on body weight (kg) in substitution trials



[a]Pairwise between-subgroup mean differences (95% confidence intervals) for regulatory designation were as follows: (**2 vs 1**) 0.458kg (0.211, 0.705kg); (**3 vs 1**) 0.548kg (0.286, 0.811); (3 vs 2) 0.091kg (-0.165, 0.346kg).

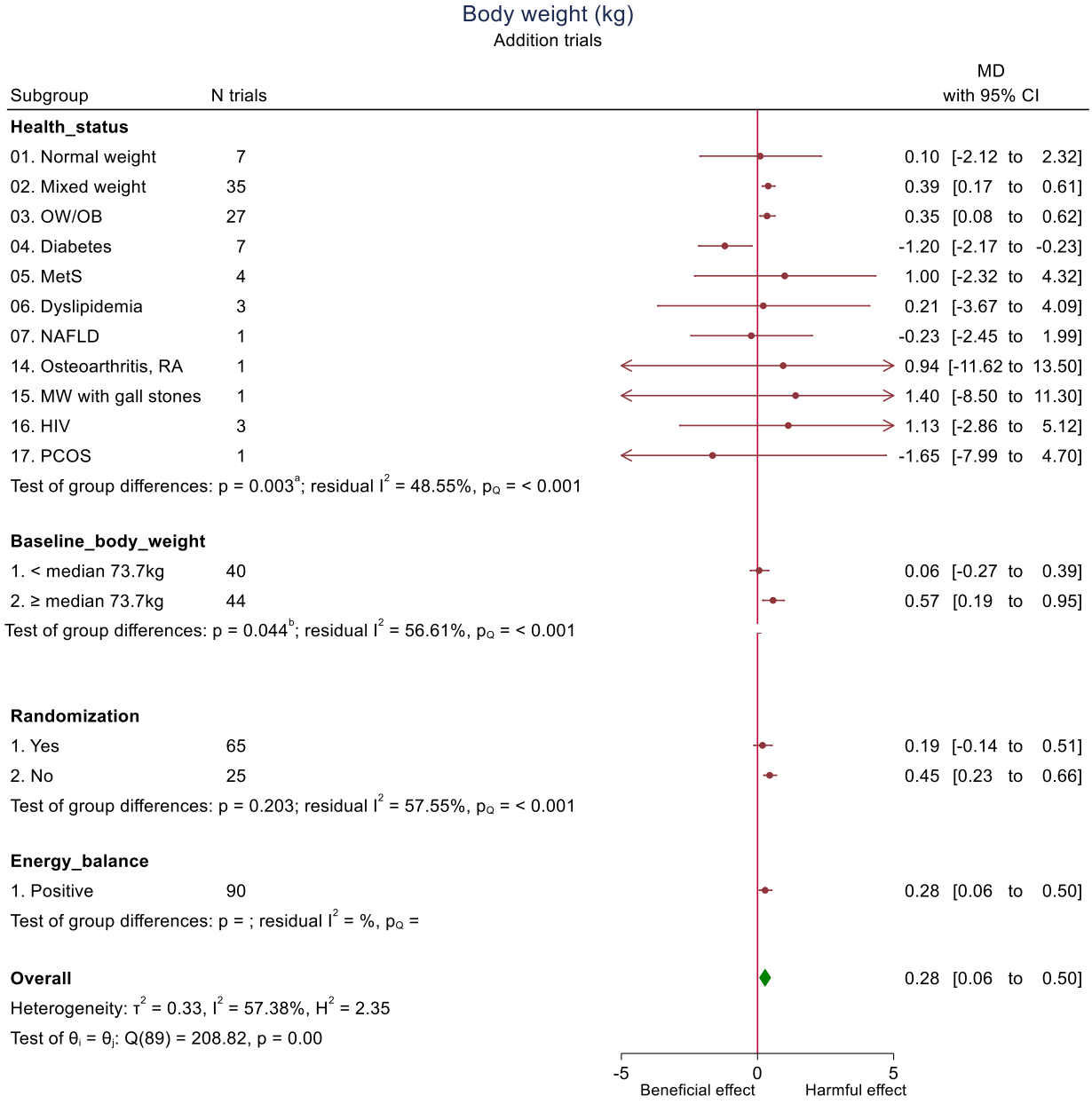
[b]Pairwise between-subgroup mean differences (95% confidence intervals) for funding were as follows: (**2 vs 1**) -0.506kg (0.134, 0.879kg); (3 vs 1) -0.023kg (-0.264, 0.218kg); (4 vs 1) 0.127kg (-0.196, 0.450kg); (**3 vs 2**) -0.529kg (-0.893, -0.166kg); (4 vs 2) -0.379kg (-0.802, 0.043kg); (4 vs 3) 0.150kg ()-0.162, 0.463kg).
[c]Pairwise between-subgroup mean differences (95% confidence intervals) for sugar form matrix were as follows: (2 vs 1) -0.185kg (-0.497, 0.127kg); (**3 vs 1**) 0.386kg (0.162, 0.611kg); (**3 vs 2**) 0.572kg (0.256, 0.888kg).
[d]Pairwise between-subgroup mean differences (95% confidence intervals) for weight maintenance were as follows: (**2 vs 1**) -1.02kg (-1.45, -0.595kg).
The green diamond represents the pooled estimate for the overall primary analysis of food sources of fructose-containing sugars. Within subgroup mean differences are the pooled effect estimates represented by a red circle. 95% confidence intervals are represented by the line through the circle. Data are expressed as mean differences with 95% confidence intervals using the generic inverse-variance method and random effects DerSimonian-Laird model. Inter-study heterogeneity was assessed using the Cochrane Q statistic and quantified using the I^2 statistic, with significance set at $p<0.100$ and $I^2 \geq 50\%$ considered to be evidence of substantial heterogeneity. $p<0.050$ indicates that the effect size differed between levels of the subgroup.
CI=confidence interval; %E=percentage of total energy intake; MD=mean difference.

Supplementary Figure 126: Risk of Bias (using The Cochrane Collaboration Tool) subgroup analysis for the effect of important food sources of fructose-containing sugars on body weight (kg) in substitution trials



[a]Pairwise between-subgroup mean differences (95% confidence intervals) for carry-over effects were as follows: (Low vs High) 0.324kg (0.026, 0.621kg).
The green diamond represents the pooled estimate for the overall primary analysis of food sources of fructose-containing sugars. Within subgroup mean differences are the pooled effect estimates represented by a red circle. 95% confidence intervals are represented by the line through the circle. Data are expressed as mean differences with 95% confidence intervals using the generic inverse-variance method and random effects DerSimonian-Laird model. Inter-study heterogeneity was assessed using the Cochrane Q statistic and quantified using the I^2 statistic, with significance set at $p<0.100$ and $I^2 \geq 50\%$ considered to be evidence of substantial heterogeneity. $p<0.050$ indicates that the effect size differed between levels of the subgroup.
CI=confidence interval; %E=percentage of total energy intake; MD=mean difference.

Supplementary Figure 127 (1 of 3): Subgroup analyses for the effect of important food sources of fructose-containing sugars on body weight (kg) in addition trials



* N=6 trials missing data for baseline body weight.

[a]Pairwise between-subgroup mean differences (95% confidence intervals) for health status were as follows: (2 vs 1) 0.286kg (-1.98, 2.55kg); (3 vs 1) 0.362kg (-1.92, 2.64kg); (4 vs 1) -1.3kg (-3.64, 1.03kg); (5 vs 1) 0.967kg (-1.45, 3.41kg); (6 vs 1) 0.111kg (-4.41, 4.64kg); (7 vs 1) -0.331kg (-3.62, 2.96kg); (15 vs 1) 1.3kg (-8.89, 11.5kg); (16 vs 1) 1.03kg (-3.58, 5.64kg); (17 vs 1) -1.75kg (-8.55, 5.05kg); (3 vs 2) 0.0753kg (-0.385, 0.536kg); (**4 vs 2**) -1.59kg (-2.26, -0.921kg); (5 vs 2) 0.69kg (-0.261, 1.64kg); (6 vs 2) -0.175kg (-4.11, 3.76kg); (7 vs 2)-0.617kg (-3.03, 1.8kg); (15 vs 2) 1.01kg (-8.93, 11kg); (16 vs 2) 0.742kg (-3.29, 4.77kg); (17 vs 2) -2.04kg (-8.45, 4.38kg); (**4 vs 3**) -1.67kg (-2.4, -0.932kg); (5 vs 3) 0.615kg (-0.383, 1.61kg); (6 vs 3) -0.25kg (-4.2, 3.7kg); (7 vs 3) -0.693kg (-3.13, 1.74kg); (15 vs 3) 0.937kg (-9.01, 10.9kg); (16 vs 3) 0.667kg (-3.38, 4.71kg); (17 vs 3) -2.11kg (-8.54, 4.31kg); (5 vs 4) 2.28kg (1.17, 3.39kg); (6 vs 4) 1.41kg (-2.56, 5.39kg); (7 vs 4) 0.972kg (-1.51, 3.45kg); (15 vs 4) 2.6kg (-7.36, 12.6kg); (16 vs 4) 2.33kg (-1.74, 6.4kg); (17 vs 4) -0.447kg (-6.89, 6kg); (6 vs 5) -0.865kg (-4.9, 3.17kg); (7 vs 5) -

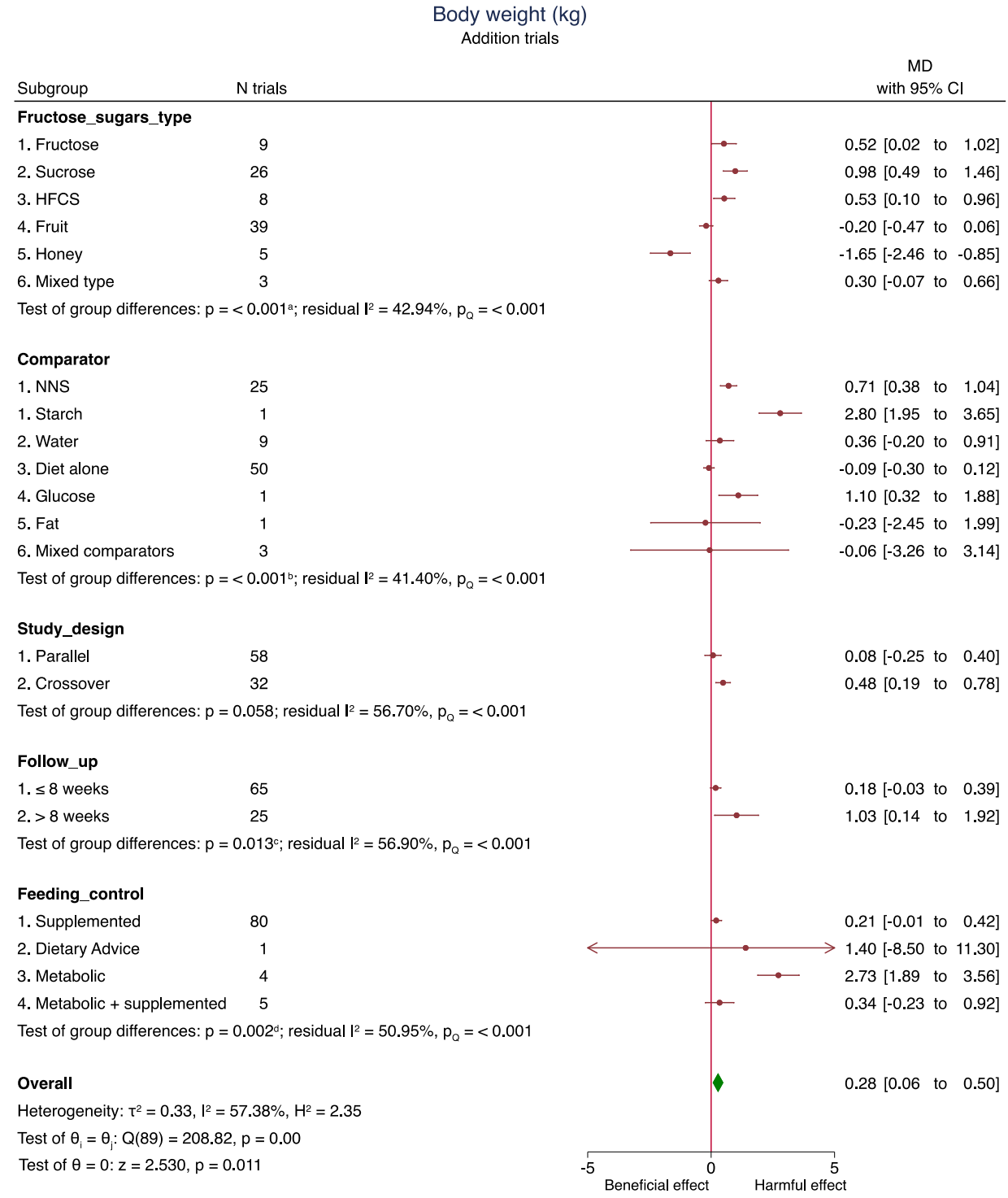
1.31kg (-3.88, 1.27kg); (15 vs 5) 3.23kg (-9.66, 10.3kg); (16 vs 5) 0.0518kg (-4.08, 4.18kg); (17 vs 5) -2.73kg (-9.21, 3.75kg); (7 vs 6) -0.442kg (-5.05, 4.16kg); (15 vs 6) 1.19kg (-9.5, 11.9kg); (16 vs 6) 0.917kg (-4.71, 6.54kg); (17 vs 6) -1.86kg (-9.38, 5.66kg); (14 vs 7) 1.17kg (-11.7, 14kg); (15 vs 7) 1.63kg (-8.6, 14kg); (16 vs 7) 1.36kg (-3.33, 6.05kg); (17 vs 7) -1.42kg (-8.27, 5.43kg); (15 vs 14) 0.458kg (-15.6, 16.5kg); (16 vs 14) 0.187kg (-13, 13.4kg); (17 vs 14) -2.59kg (-16.7, 11.5kg); (16 vs 15) -0.271kg (-11, 10.4kg); (17 vs 15) -3.05kg (-14.9, 8.78kg); (17 vs 16) -2.78kg (-10.3, 4.79).

[b]Pairwise between-subgroup mean differences (95% confidence intervals) for baseline body weight were as follows: **(2 vs 1)** 0.522kg (0.0152, 1.03kg).

The green diamond represents the pooled estimate for the overall primary analysis of food sources of fructose-containing sugars. Within subgroup mean differences are the pooled effect estimates represented by a red circle. 95% confidence intervals are represented by the line through the circle. Data are expressed as mean differences with 95% confidence intervals using the generic inverse-variance method and random effects DerSimonian-Laird model. Inter-study heterogeneity was assessed using the Cochrane Q statistic and quantified using the I^2 statistic, with significance set at $p<0.100$ and $I^2 \geq 50\%$ considered to be evidence of substantial heterogeneity. $p<0.050$ indicates that the effect size differed between levels of the subgroup.

CI=confidence interval; HIV=human immunodeficiency virus; MD=mean difference; MetS=metabolic syndrome; MW=mixed weight; NAFLD=non-alcoholic fatty liver disease; OB=obese; OW=overweight; PCOS=polycystic ovarian syndrome; RA=rheumatoid arthritis.

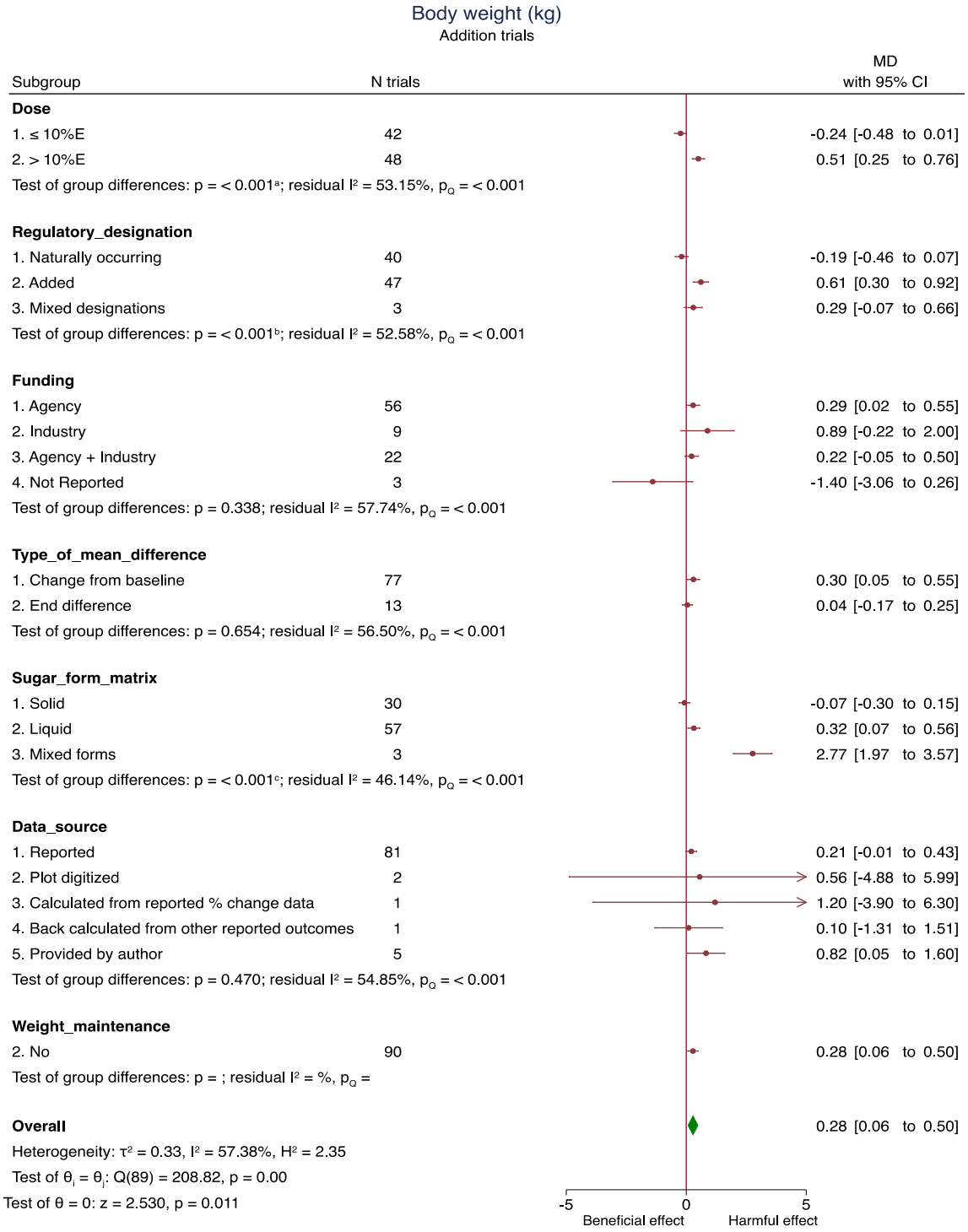
Supplementary Figure 127 (2 of 3): Subgroup analyses for the effect of important food sources of fructose-containing sugars on body weight (kg) in addition trials



[a]Pairwise between-subgroup mean differences (95% confidence intervals) for fructose sugars type were as follows: (2 vs 1) 0.506kg (-0.259, 1.27kg); (3 vs 1) 0.101kg (-0.68, 0.882kg); (4 vs 1) -0.662kg (-1.4, 0.074kg); (5 vs 1) -1.93kg (-3.27, -0.595kg); (6 vs 1) -0.123kg (-1.12, 0.87kg); (3 vs 2) -0.405kg (-0.959, 0.148kg); (4 vs 2) -1.17kg (-1.66, -0.68kg); (5 vs 2) -2.44 (-3.65, -1.22kg); (6 vs 2) -0.629kg (-1.46, 0.197kg); (4 vs 3) -0.763kg (-1.28, -0.25kg);

(5 vs 3) -2.03kg (-3.26, -0.804kg); (6 vs 3) -0.224kg (-1.07, 0.617kg); (5 vs 4) -1.27kg (-2.47, -0.0699kg); (6 vs 4) 0.539kg (-0.261, 1.34kg); (6 vs 5) 1.81kg (0.435, 3.18kg).
[b]Pairwise between-subgroup mean differences (95% confidence intervals) for comparator were as follows: (2 vs 1) -0.333kg (-0.918, 0.251kg); (**3 vs 1**) -0.82kg (-1.18, -0.457kg); (4 vs 1) 0.378kg (-0.701, 1.46kg); (5 vs 1) -0.952kg (-3.29, 1.38kg); (6 vs 1) -0.784kg (-4.02, 2.45kg); (3 vs 2) -0.487kg (-1.03, 0.057kg); (4 vs 2) 0.711kg (-0.441, 1.86kg); (5 vs 2) -0.619kg (-2.99, 1.75kg); (6 vs 2) -0.45kg (-3.71, 2.81kg); (**4 vs 3**) 1.2kg (0.141, 2.25kg); (5 vs 3) -0.132kg (-2.46, 2.19kg); (6 vs 3) 0.037kg (-3.19, 3.26kg); (5 vs 4) -1.33kg (-3.87, 1.21kg); (6 vs 4) -1.16kg (-4.55, 2.22kg); (6 vs 5) 0.169kg (-3.8, 4.14kg).
[c]Pairwise between-subgroup mean differences (95% confidence intervals) for follow-up were as follows: **(2 vs 1)** 0.787kg (0.168, 1.41kg).
[d]Pairwise between-subgroup mean differences (95% confidence intervals) for feeding control were as follows: (2 vs 1) 1.19kg (-8.76, 11.1kg); (3 vs 1) 2.43kg (1.17, 3.7kg); (4 vs 1) 0.143kg (-0.639, 0.926kg); (3 vs 2) 1.24kg (-8.79, 11.3kg); (4 vs 2) -1.05kg (-11, 8.93kg); (4 vs 3) -2.29kg (-3.75, -0.836kg).
The green diamond represents the pooled estimate for the overall primary analysis of food sources of fructose-containing sugars. Within subgroup mean differences are the pooled effect estimates represented by a red circle. 95% confidence intervals are represented by the line through the circle. Data are expressed as mean differences with 95% confidence intervals using the generic inverse-variance method and random effects DerSimonian-Laird model. Inter-study heterogeneity was assessed using the Cochrane Q statistic and quantified using the I^2 statistic, with significance set at $p<0.100$ and $I^2 \geq 50\%$ considered to be evidence of substantial heterogeneity. $p<0.050$ indicates that the effect size differed between levels of the subgroup.
CI=confidence interval; HFCS=high fructose corn syrup; MD=mean difference; NNS=non-nutritive sweetener.

Supplementary Figure 127 (3 of 3): Subgroup analyses for the effect of important food sources of fructose-containing sugars on body weight (kg) in addition trials

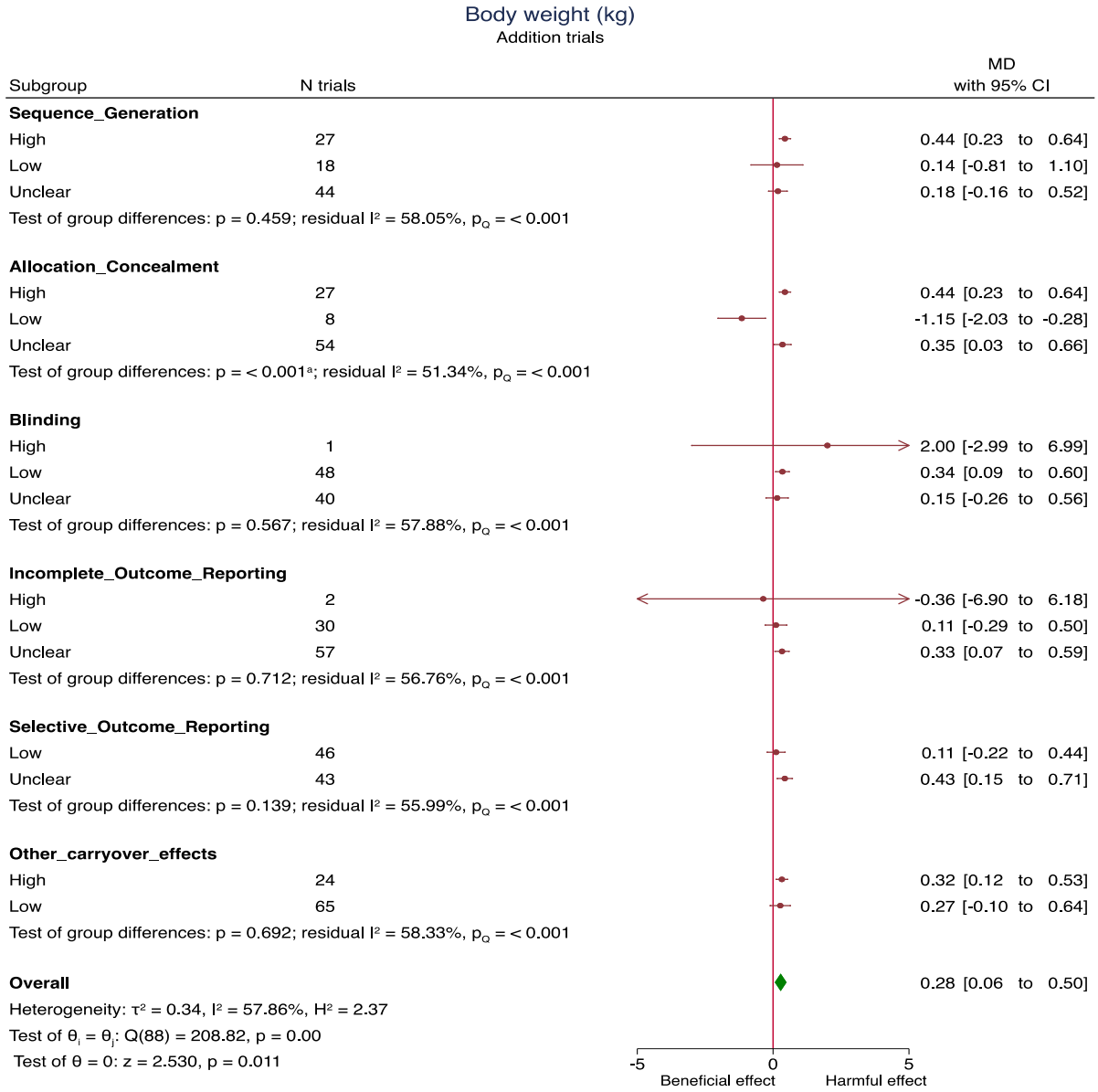


[a]Pairwise between-subgroup mean differences (95% confidence intervals) for dose were as follows: **(2 vs 1)** 0.886kg (0.409, 1.36kg).

[b]Pairwise between-subgroup mean differences (95% confidence intervals) for regulatory designation were as follows: **(2 vs 1)** 0.839kg (0.399, 1.28kg); (3 vs 1) 0.542kg (-0.363, 1.45kg); (3 vs 2) -0.297kg (-1.18, 0.583kg).

[c]Pairwise between-subgroup mean differences (95% confidence intervals) for sugar form matrix were as follows: **(2 vs 1)** 0.457kg (0.0142, 0.9kg); **(3 vs 1)** 2.88kg (1.7, 4.07kg) **(3 vs 2)** 2.42kg (1.28, 3.57kg).
The green diamond represents the pooled estimate for the overall primary analysis of food sources of fructose-containing sugars. Within subgroup mean differences are the pooled effect estimates represented by a red circle. 95% confidence intervals are represented by the line through the circle. Data are expressed as mean differences with 95% confidence intervals using the generic inverse-variance method and random effects DerSimonian-Laird model. Inter-study heterogeneity was assessed using the Cochrane Q statistic and quantified using the I^2 statistic, with significance set at $p<0.100$ and $I^2 \geq 50\%$ considered to be evidence of substantial heterogeneity. $p<0.050$ indicates that the effect size differed between levels of the subgroup.
CI=confidence interval; %E=percentage of total energy intake; MD=mean difference.

Supplementary Figure 128: Risk of Bias (using The Cochrane Collaboration Tool) subgroup analysis for the effect of important food sources of fructose-containing sugars on body weight (kg) in addition trials

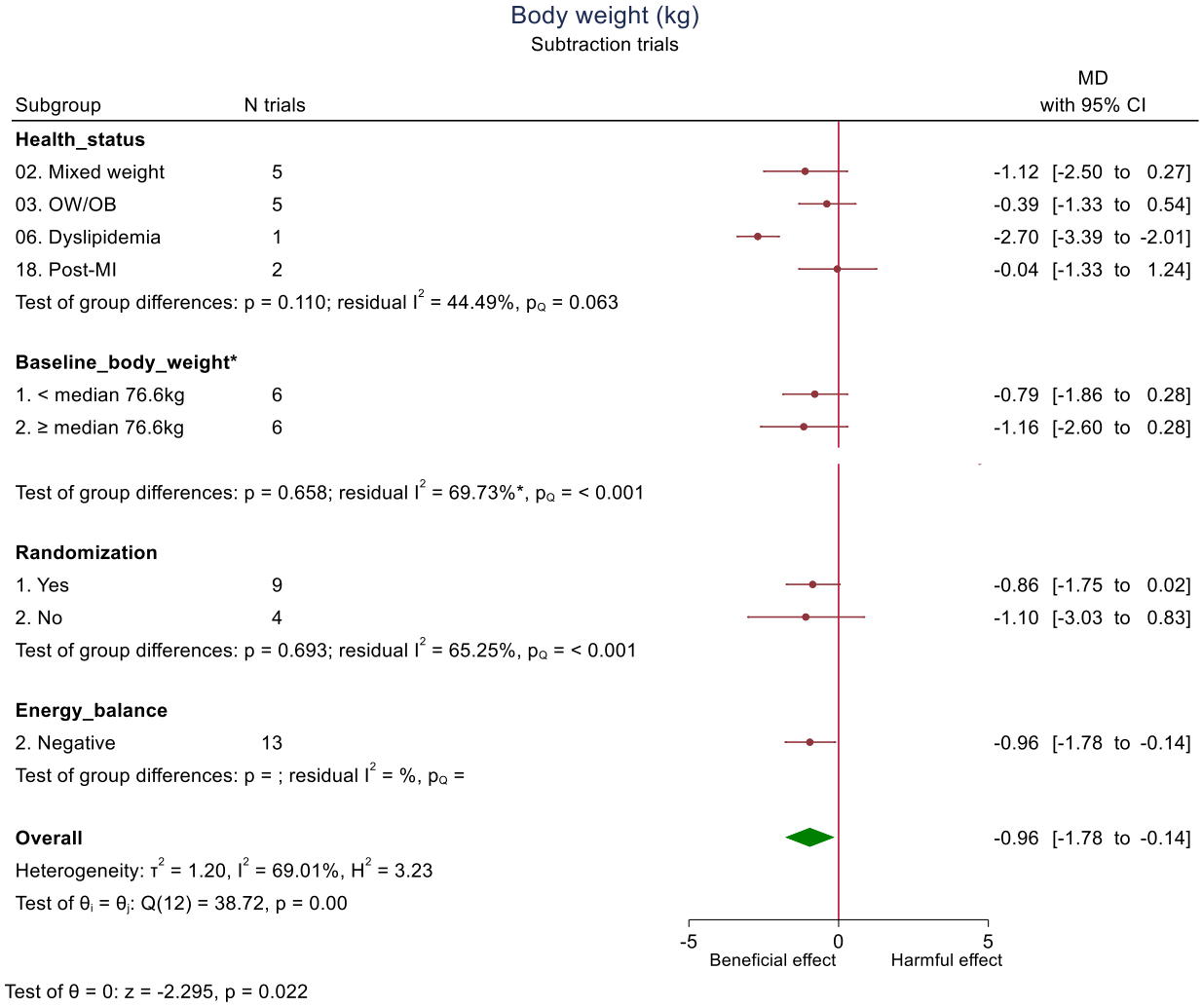


[a]Pairwise between-subgroup mean differences (95% confidence intervals) for allocation concealment were as follows: (**Low vs High**) -1.65kg (-2.51, -0.799kg); (unclear vs high) -0.14kg (-0.569, 0.29kg); **(unclear vs low)** 1.51kg (0.683, 2.34kg).

The green diamond represents the pooled estimate for the overall primary analysis of food sources of fructose-containing sugars. Within subgroup mean differences are the pooled effect estimates represented by a red circle. 95% confidence intervals are represented by the line through the circle. Data are expressed as mean differences with 95% confidence intervals using the generic inverse-variance method and random effects DerSimonian-Laird model. Inter-study heterogeneity was assessed using the Cochrane Q statistic and quantified using the I^2 statistic, with significance set at p<0.100 and $I^2 \geq 50\%$ considered to be evidence of substantial heterogeneity. p<0.050 indicates that the effect size differed between levels of the subgroup.

CI=confidence interval; MD=mean difference.

Supplementary Figure 129 (1 of 3): Subgroup analyses for the effect of important food sources of fructose-containing sugars on body weight (kg) in subtraction trials

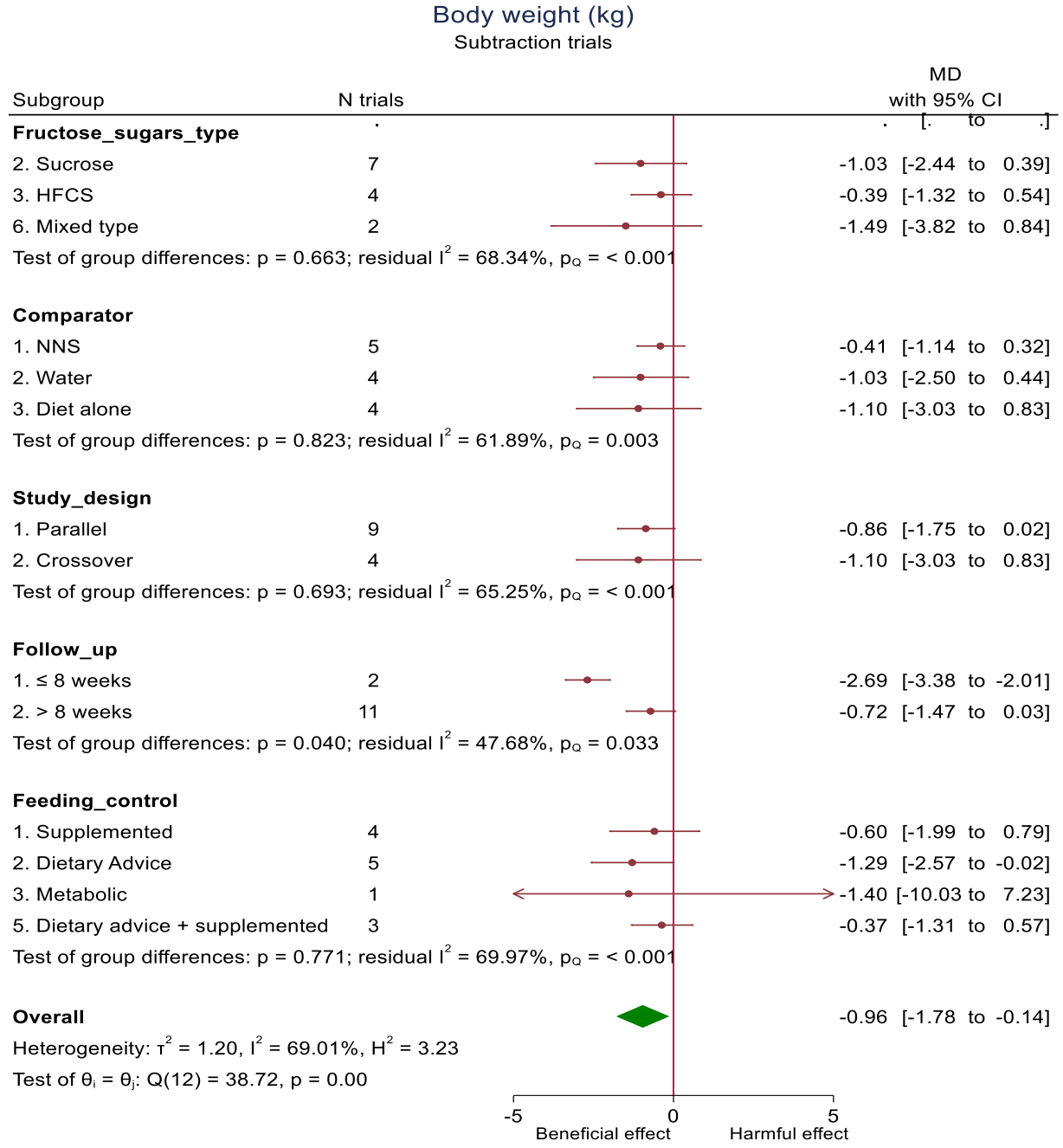


* N=1 trial missing data for baseline body weight.

The green diamond represents the pooled estimate for the overall primary analysis of food sources of fructose-containing sugars. Within subgroup mean differences are the pooled effect estimates represented by a red circle. 95% confidence intervals are represented by the line through the circle. Data are expressed as mean differences with 95% confidence intervals using the generic inverse-variance method and random effects DerSimonian-Laird model. Inter-study heterogeneity was assessed using the Cochrane Q statistic and quantified using the I^2 statistic, with significance set at $p<0.100$ and $I^2 \geq 50\%$ considered to be evidence of substantial heterogeneity. $p<0.050$ indicates that the effect size differed between levels of the subgroup.

CI=confidence interval; MD=mean difference; MI=myocardial infarction; OB=obese; OW=overweight.

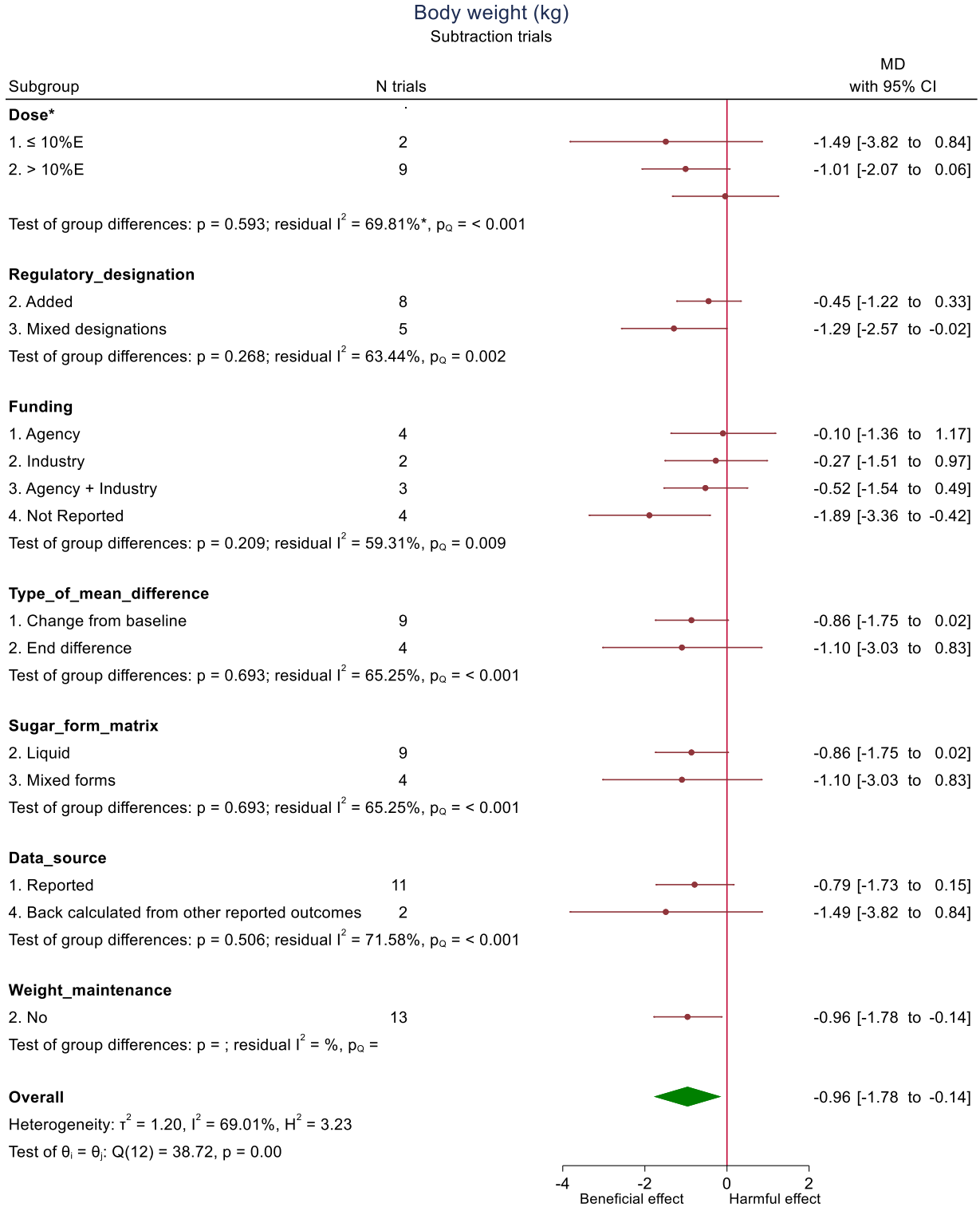
Supplementary Figure 129 (2 of 3): Subgroup analyses for the effect of important food sources of fructose-containing sugars on body weight (kg) in subtraction trials



Test of θ = 0: z = -2.295, p = 0.022

The green diamond represents the pooled estimate for the overall primary analysis of food sources of fructose-containing sugars. Within subgroup mean differences are the pooled effect estimates represented by a red circle. 95% confidence intervals are represented by the line through the circle. Data are expressed as mean differences with 95% confidence intervals using the generic inverse-variance method and random effects DerSimonian-Laird model. Inter-study heterogeneity was assessed using the Cochrane Q statistic and quantified using the I^2 statistic, with significance set at $p<0.100$ and $I^2 \geq 50\%$ considered to be evidence of substantial heterogeneity. $p<0.050$ indicates that the effect size differed between levels of the subgroup.
CI=confidence interval; HFCS=high fructose corn syrup; MD=mean difference; NNS=non-nutritive sweetener.

Supplementary Figure 129 (3 of 3): Subgroup analyses for the effect of important food sources of fructose-containing sugars on body weight (kg) in subtraction trials

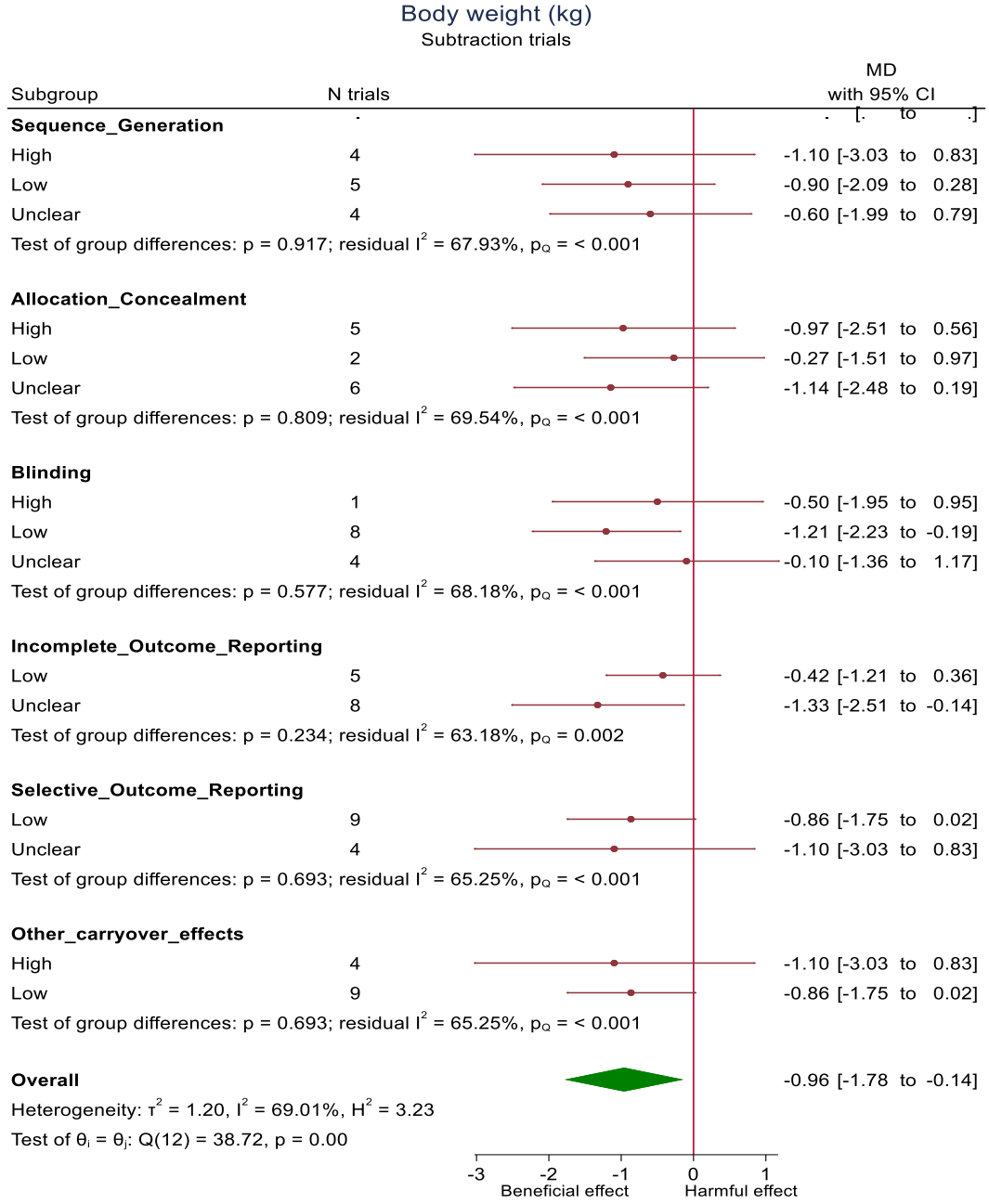


Test of θ = 0: z = -2.295, p = 0.022

*N=2 trials missing data for dose.

The green diamond represents the pooled estimate for the overall primary analysis of food sources of fructose-containing sugars. Within subgroup mean differences are the pooled effect estimates represented by a red circle. 95% confidence intervals are represented by the line through the circle. Data are expressed as mean differences with 95% confidence intervals using the generic inverse-variance method and random effects DerSimonian-Laird model. Inter-study heterogeneity was assessed using the Cochrane Q statistic and quantified using the I^2 statistic, with significance set at $p<0.100$ and $I^2 \geq 50\%$ considered to be evidence of substantial heterogeneity. $p<0.050$ indicates that the effect size differed between levels of the subgroup.
CI=confidence interval; %E=percentage of total energy intake; MD=mean difference.

Supplementary Figure 130: Risk of Bias (using The Cochrane Collaboration Tool) subgroup analysis for the effect of important food sources of fructose-containing sugars on body weight (kg) in subtraction trials



The green diamond represents the pooled estimate for the overall primary analysis of food sources of fructose-containing sugars. Within subgroup mean differences are the pooled effect estimates represented by a red circle. 95% confidence intervals are represented by the line through the circle. Data are expressed as mean differences with 95% confidence intervals using the generic inverse-variance method and random effects DerSimonian-Laird model. Inter-study heterogeneity was assessed using the Cochrane Q statistic and quantified using the I^2 statistic, with significance set at $p<0.100$ and $I^2 \geq 50\%$ considered to be evidence of substantial heterogeneity. $p<0.050$ indicates that the effect size differed between levels of the subgroup.
CI=confidence interval; MD=mean difference.