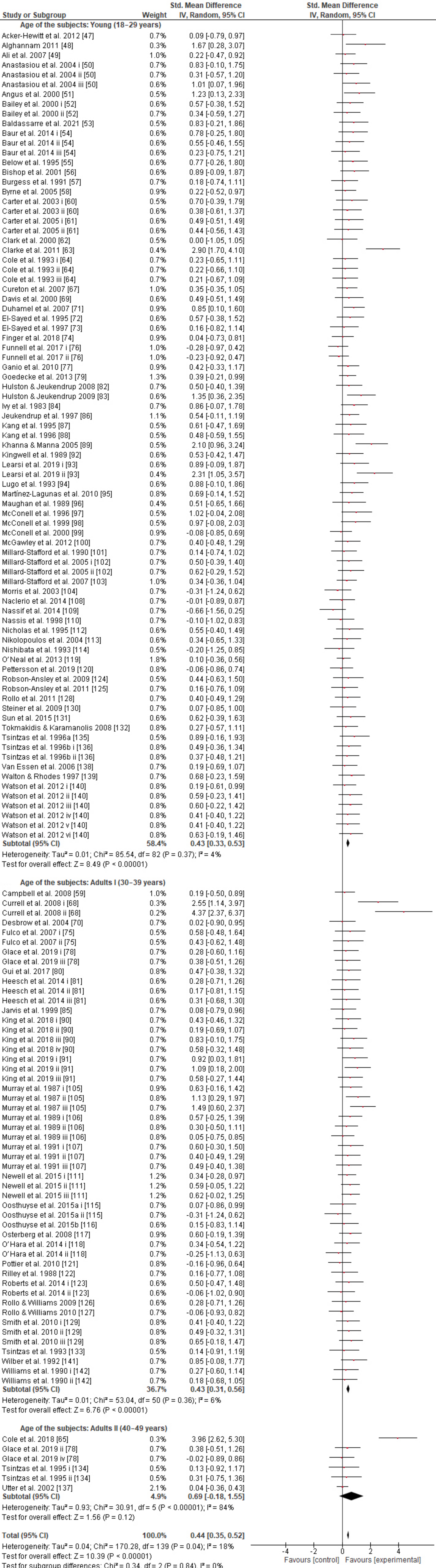


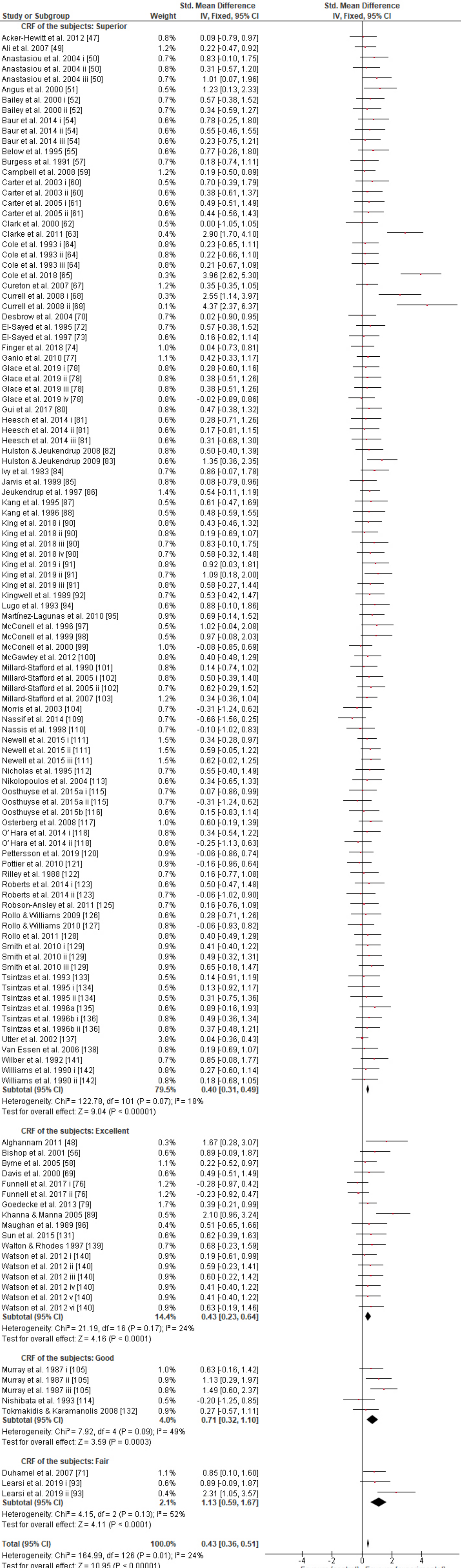
**Figure S2:** Forest plot shows the effects of experimental carbohydrate supplementation as compared to control on exercise outcome for 142 interventions. Subgroup analyses show the results with regard to the subjects' characteristics in three gender groups (Male, Female, Mixed). The black diamond symbol at the subgroups and at the bottom of the figure represents the standardized mean difference with the 95% confidence intervals for all interventions following random-effect meta-analyses. Studies or trials that provided insufficient data for subgroup classification were not included. Abbreviations: CI, confidence interval; IV, inverse variance; SD, standard deviation; Std, standardized; i-vi denote different intervention arms (trials) within the same study



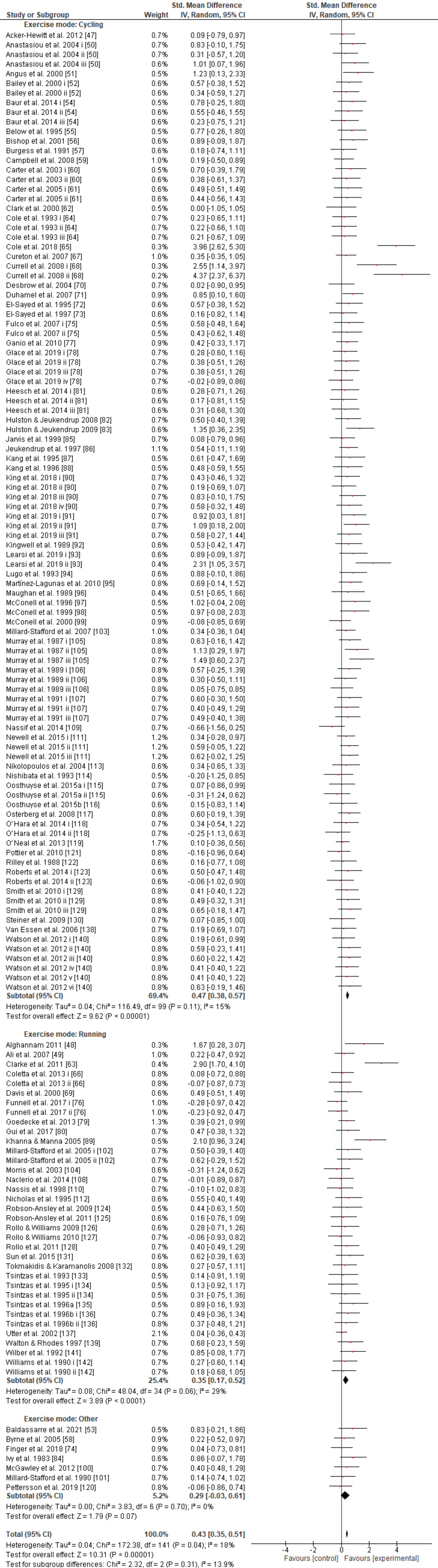


**Figure S3:** Forest plot shows the effects of experimental carbohydrate supplementation as compared to control on exercise outcome for 140 interventions. Subgroup analyses show the results with regard to the subjects’ characteristics in three age groups [Young (18–29 years), Adults I (30–39 years), Adults II (40–49 years)]. The black diamond symbol at the subgroups and at the bottom of the figure represents the standardized mean difference with the 95% confidence intervals for all interventions following random-effect meta-analyses. Studies or trials that provided insufficient data for subgroup classification were not included. Abbreviations: CI, confidence interval; IV, inverse variance; SD, standard deviation; Std, standardized; i-vi denote different intervention arms (trials) within the same study

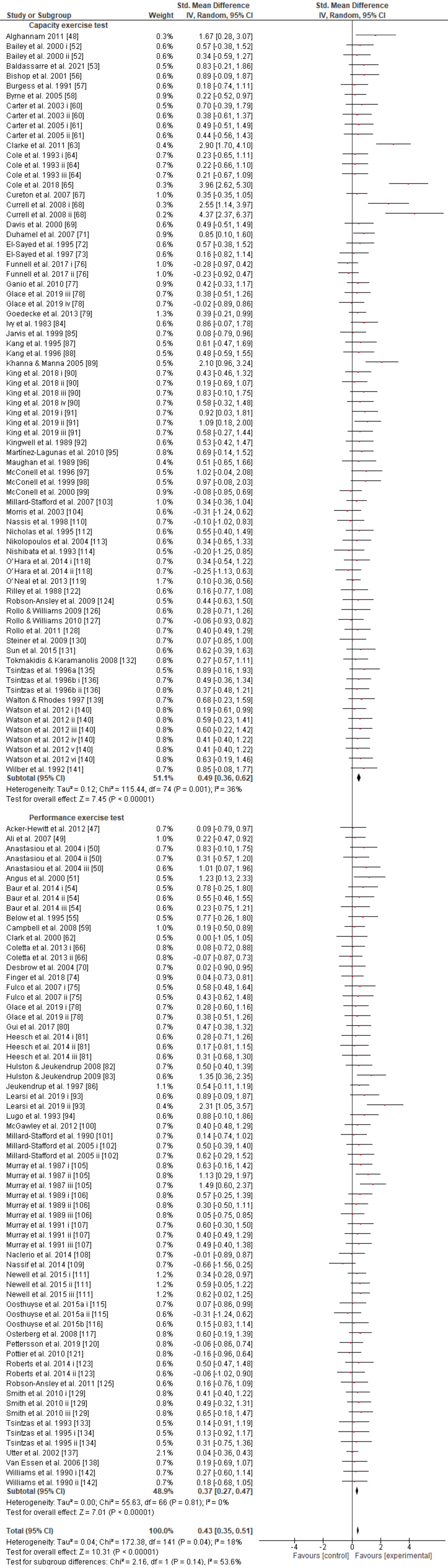




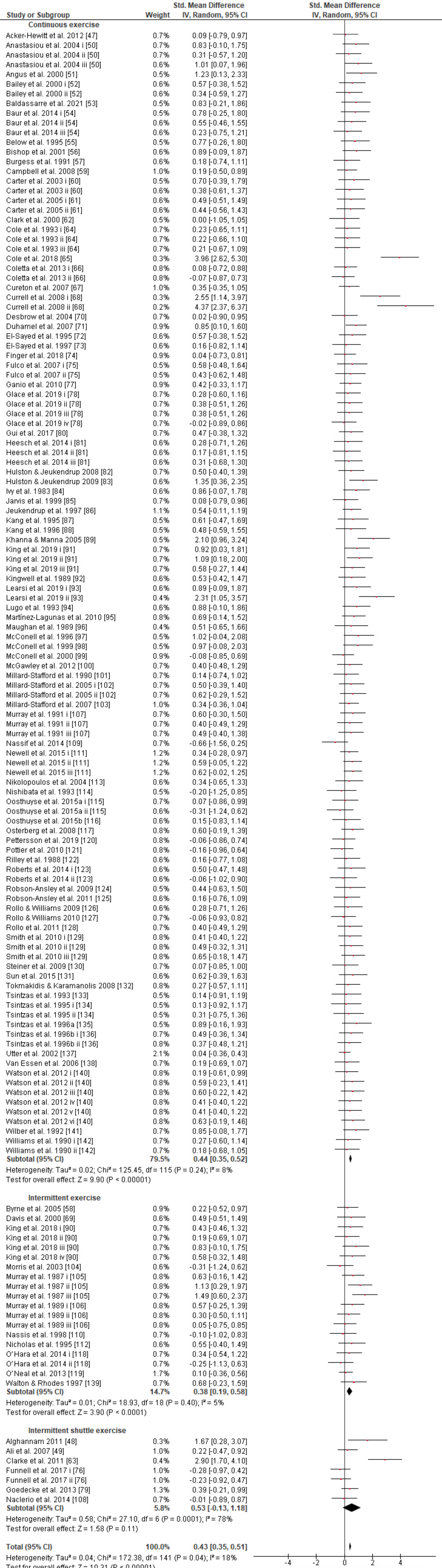






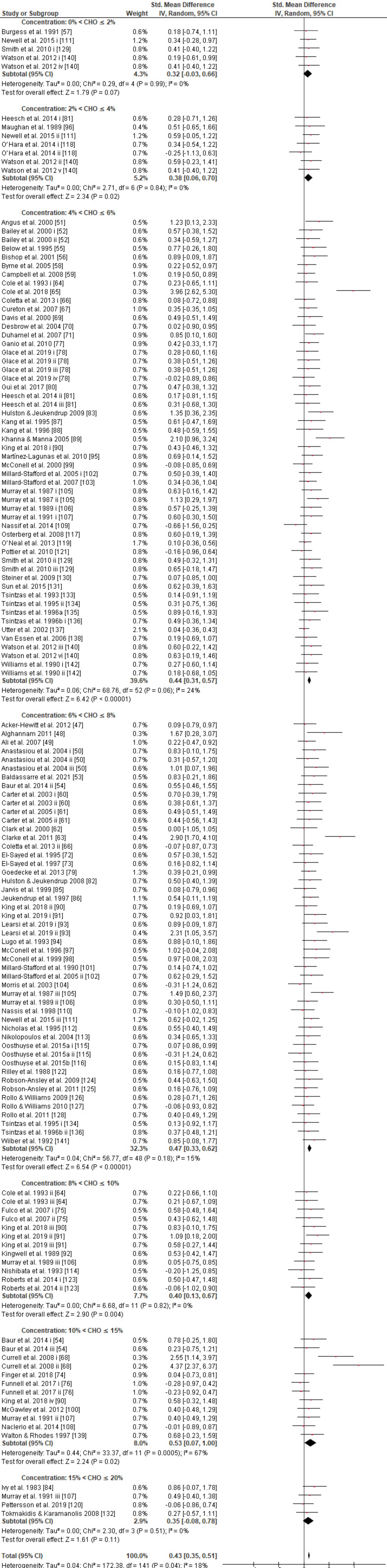






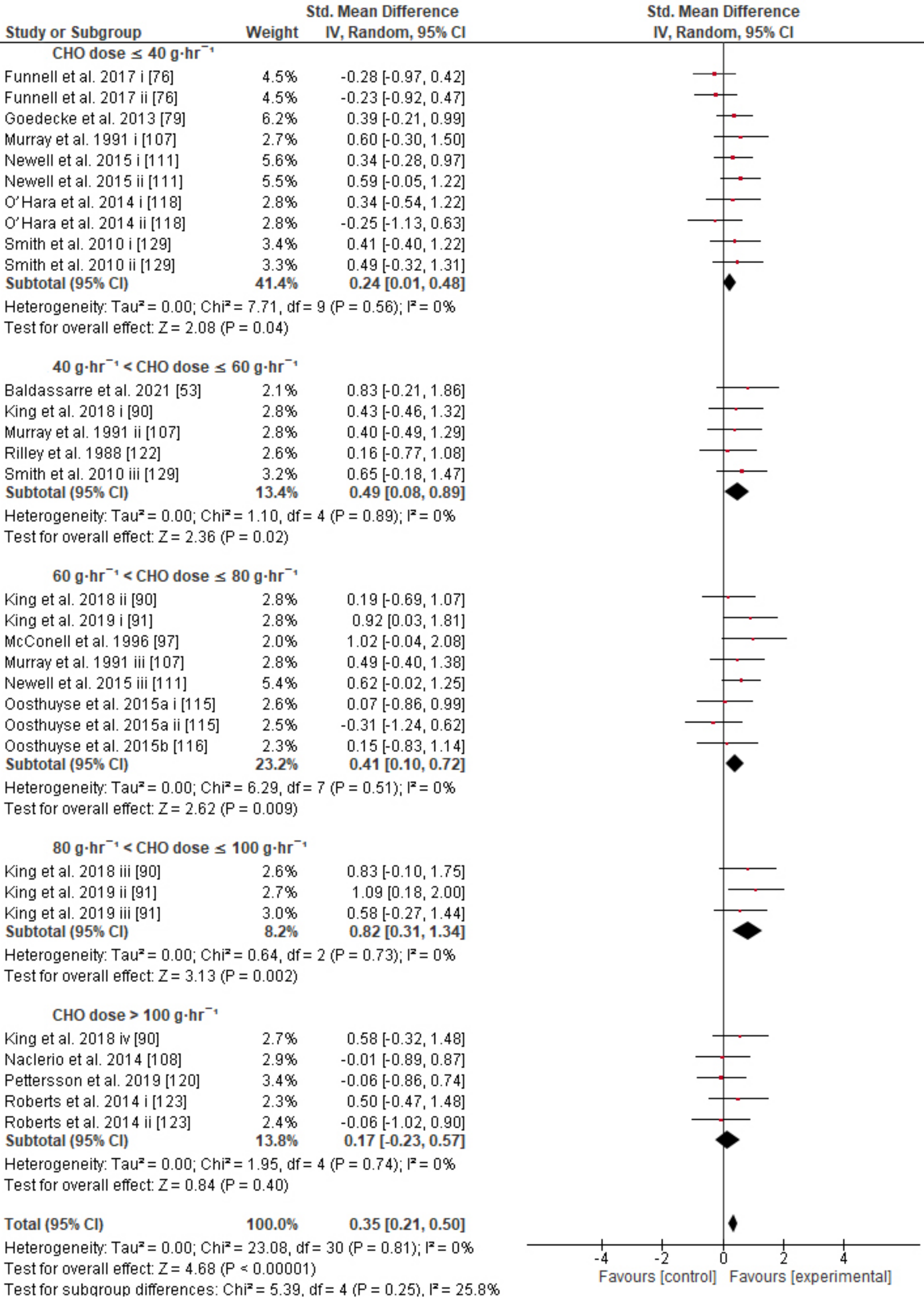
**Figure S7:** Forest plot shows the effects of experimental carbohydrate supplementation as compared to control on exercise outcome for 142 interventions. Subgroup analyses show the results with regard to exercise task in three exercise type groups (Intermittent, Continuous, Intermittent shuttle). The black diamond symbol at the subgroups and at the bottom of the figure represents the standardized mean difference with the 95% confidence intervals at all interventions following random-effect meta-analyses. Studies or trials that provided insufficient data for subgroup classification were not included. Abbreviations: CI, confidence interval; IV, inverse variance; SD, standard deviation; Std, standardized; i-vi denote different intervention arms (trials) within the same study





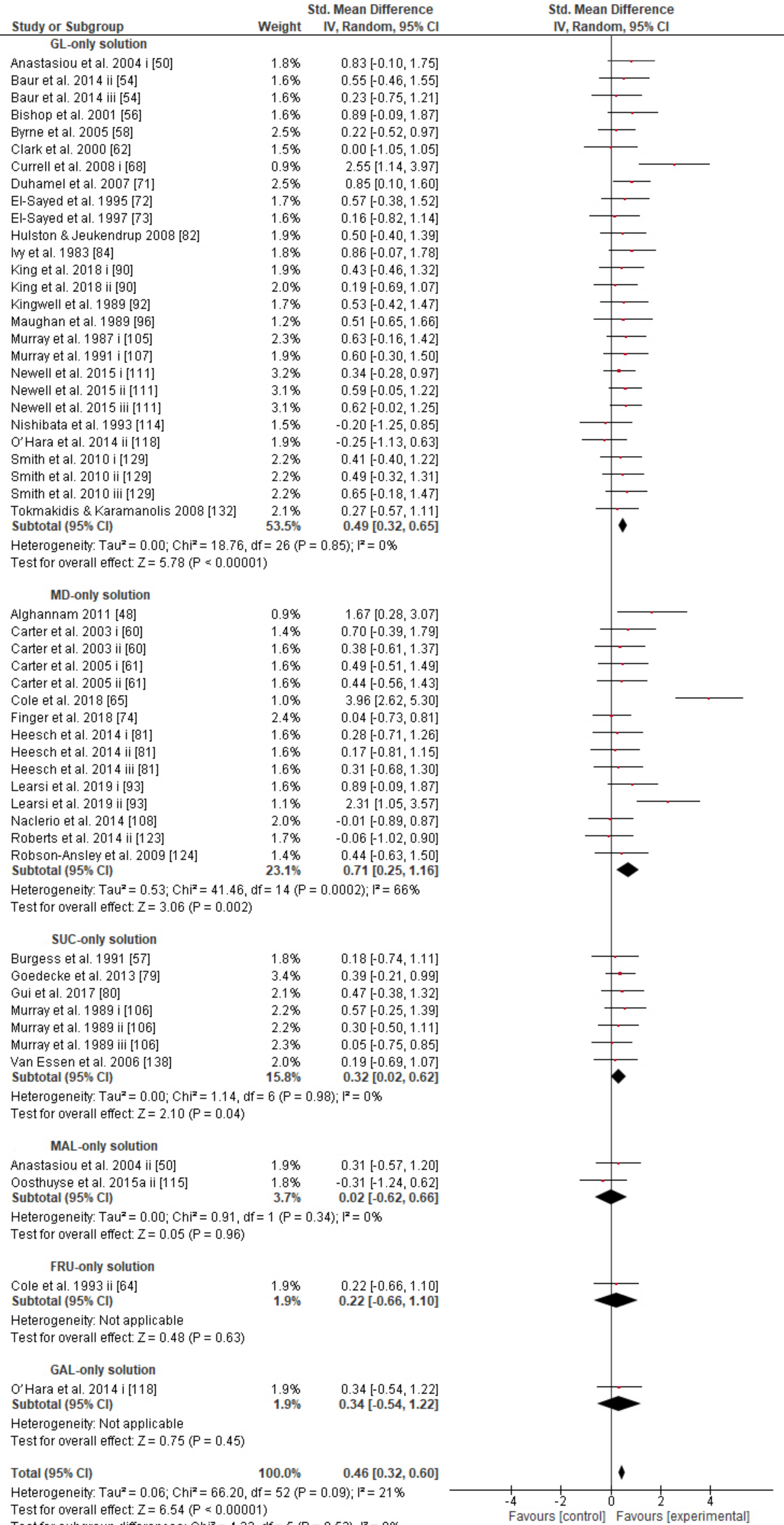
**Figure S8:** Forest plot shows the effects of experimental carbohydrate supplementation as compared to control on exercise outcome for 142 interventions. Subgroup analyses show the results with regard to supplementation in seven carbohydrate concentration groups (0% < CHO ≤ 2%, 2% < CHO ≤ 4%, 4% < CHO ≤ 6%, 6% < CHO ≤ 8%, 8% < CHO ≤ 10%, 10% < CHO ≤ 15%, 15% < CHO ≤ 20%). The black diamond symbol at the subgroups and at the bottom of the figure represents the standardized mean difference with the 95% confidence intervals for all interventions following random-effect meta-analyses. Studies or trials that provided insufficient data for subgroup classification were not included. Abbreviations: CHO, carbohydrate; CI, confidence interval; IV, inverse variance; SD, standard deviation; Std, standardized; i-vi denote different intervention arms (trials) within the same study





**Figure S9:** Forest plot shows the effects of experimental carbohydrate supplementation as compared to control on exercise outcome for 31 interventions. Subgroup analyses show the results with regard to supplementation in five carbohydrate dose groups (CHO dose ≤ 40 g·hr<sup>-1</sup>, 40 g·hr<sup>-1</sup> < CHO dose ≤ 60 g·hr<sup>-1</sup>, 60 g·hr<sup>-1</sup> < CHO dose ≤ 80 g·hr<sup>-1</sup>, 80 g·hr<sup>-1</sup> < CHO dose ≤ 100 g·hr<sup>-1</sup>, CHO dose > 100 g·hr<sup>-1</sup>). The black diamond symbol at the subgroups and at the bottom of the figure represents the standardized mean difference with the 95% confidence intervals for all interventions following random-effect meta-analyses. Studies or trials that provided insufficient data for subgroup classification were not included. Abbreviations: CHO, carbohydrate; CI, confidence interval; IV, inverse variance; SD, standard deviation; Std, standardized; i-vi denote different intervention arms (trials) within the same study

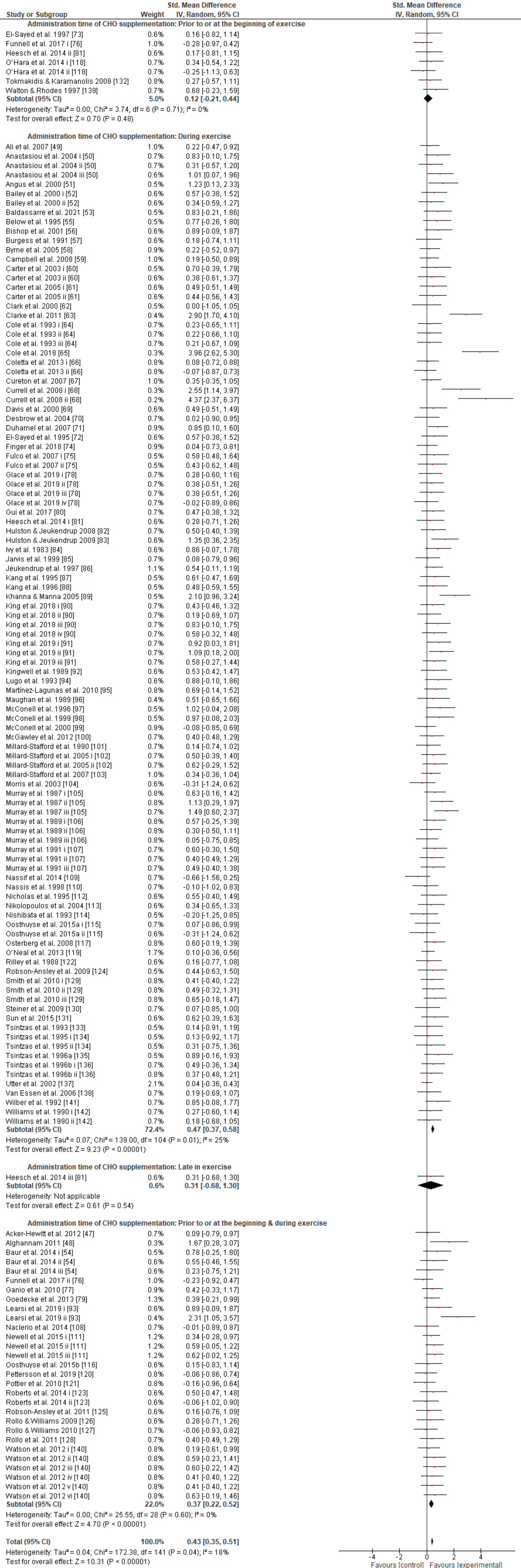




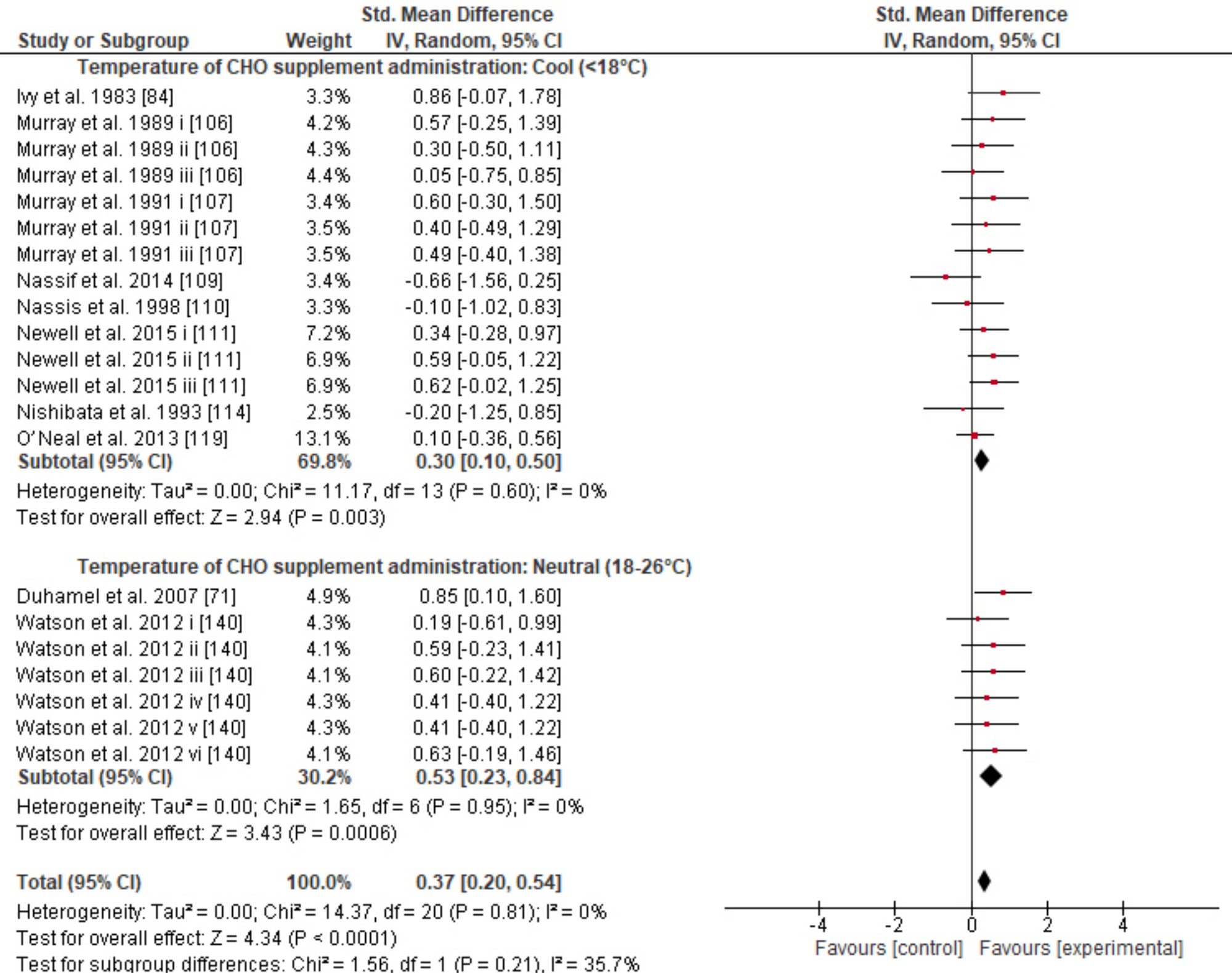






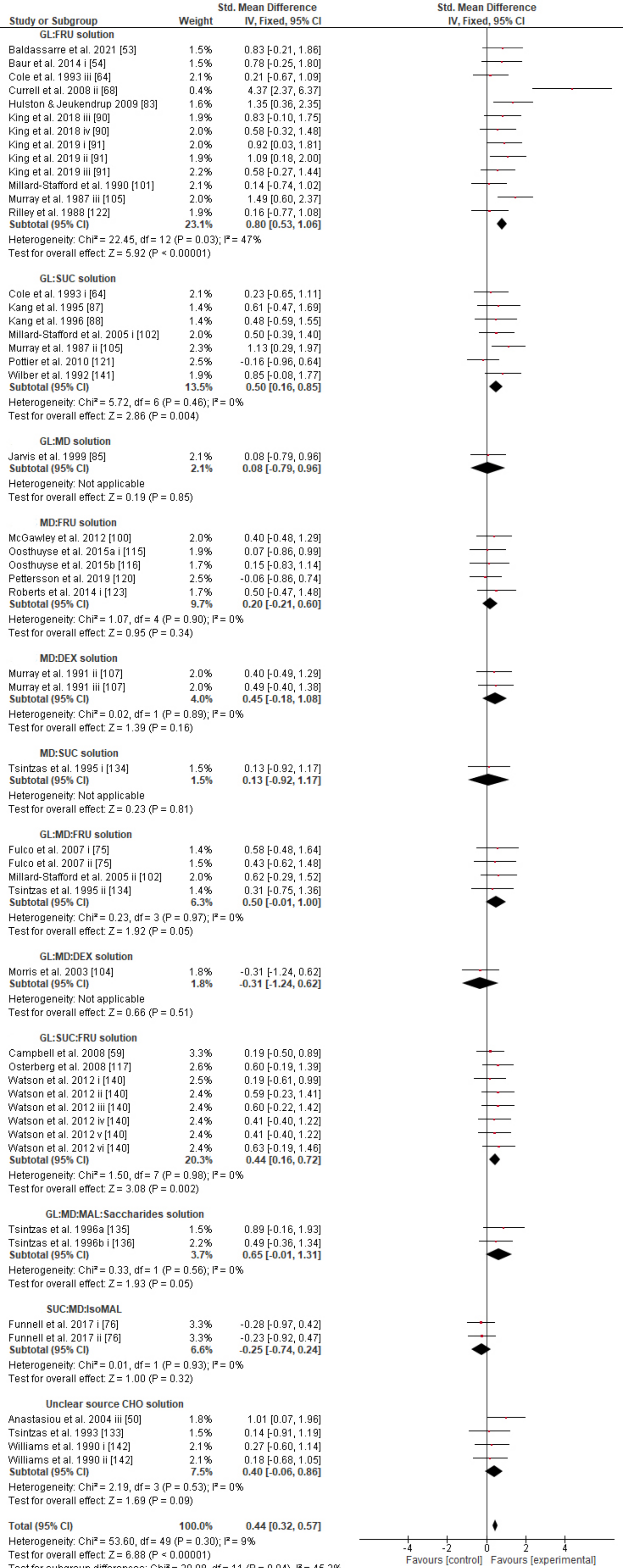






**Figure S13:** Forest plot shows the effects of experimental carbohydrate supplementation as compared to control on exercise outcome for 21 interventions. Subgroup analyses show the results with regard to supplementation in two temperature of supplement administration groups [Cool (< 18°C), Neutral (18-26°C)]. The black diamond symbol at the subgroups and at the bottom of the figure represents the standardized mean difference with the 95% confidence intervals for all interventions following random-effect meta-analyses. Studies or trials that provided insufficient data for subgroup classification were not included. Abbreviations: CHO, carbohydrate; CI, confidence interval; IV, inverse variance; SD, standard deviation; Std, standardized; i-vi denote different intervention arms (trials) within the same study





**Figure S14:** Forest plot shows the effects of experimental carbohydrate supplementation as compared to control on exercise outcome for 50 interventions. Subgroup analyses show the results with regards to supplementation in twelve MTC groups (GL:FRU, GL:SUC, GL:MD, MD:FRU, MD:DEX, MD:SUC, GL:MD:FRU, GL:MD:DEX, GL:SUC:FRU, GL:MD:MAL:Saccharides, SUC:MD:IsoMAL, Unclear CHO substances mixture). The black diamond symbol at the subgroups and at the bottom of the figure represents the standardized mean difference with the 95% confidence intervals for all interventions following fixed effects meta-analyses. Studies or trials that provided not sufficient data for subgroup classification were not included. Abbreviations: CHO, carbohydrate; CI, confidence interval; DEX, dextrose; FRU, fructose; GAL, galactose; GL, glucose; IV, inverse variance; MD, maltodextrin; MAL, maltose; MTC, multiple transportable carbohydrate; SD, standard deviation; Std, standardized; SUC, sucrose; i-vi denote different in-tervention arms (trials) within the same study



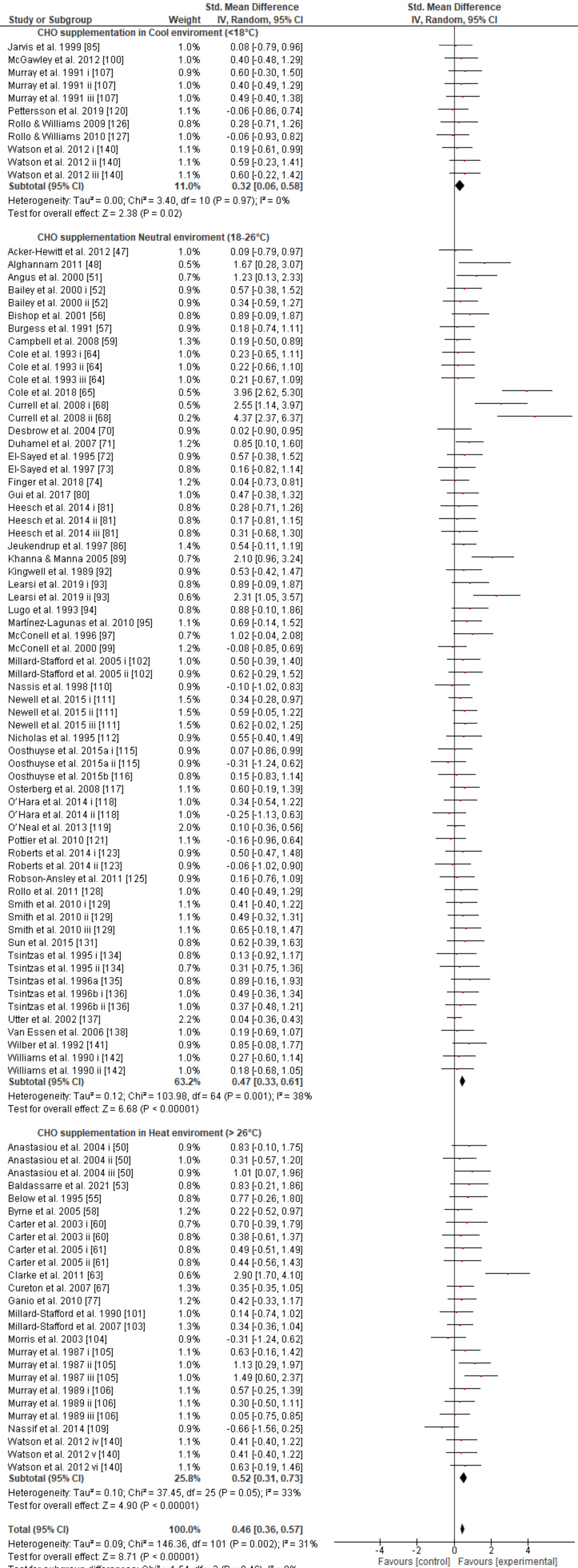


Figure S15: Forest plot shows the effects of experimental carbohydrate supplementation as compared to control on exercise outcome for 102 interventions. Subgroup analyses show the results with regard to ambient conditions in two thermal condition groups [Cool ( $< 18^{\circ}\text{C}$ ), Neutral ( $18\text{--}26^{\circ}\text{C}$ ), Heat ( $> 26^{\circ}\text{C}$ )]. The black diamond symbol at the subgroups and at the bottom of the figure represents the standardized mean difference with the 95% confidence intervals for all interventions following random-effect meta-analyses. Studies or trials that provided insufficient data for subgroup classification were not included. Abbreviations: CHO, carbohydrate; CI, confidence interval; IV, inverse variance; SD, standard deviation; Std, standardized; i, i denote different intervention arms (trials) within the same study.



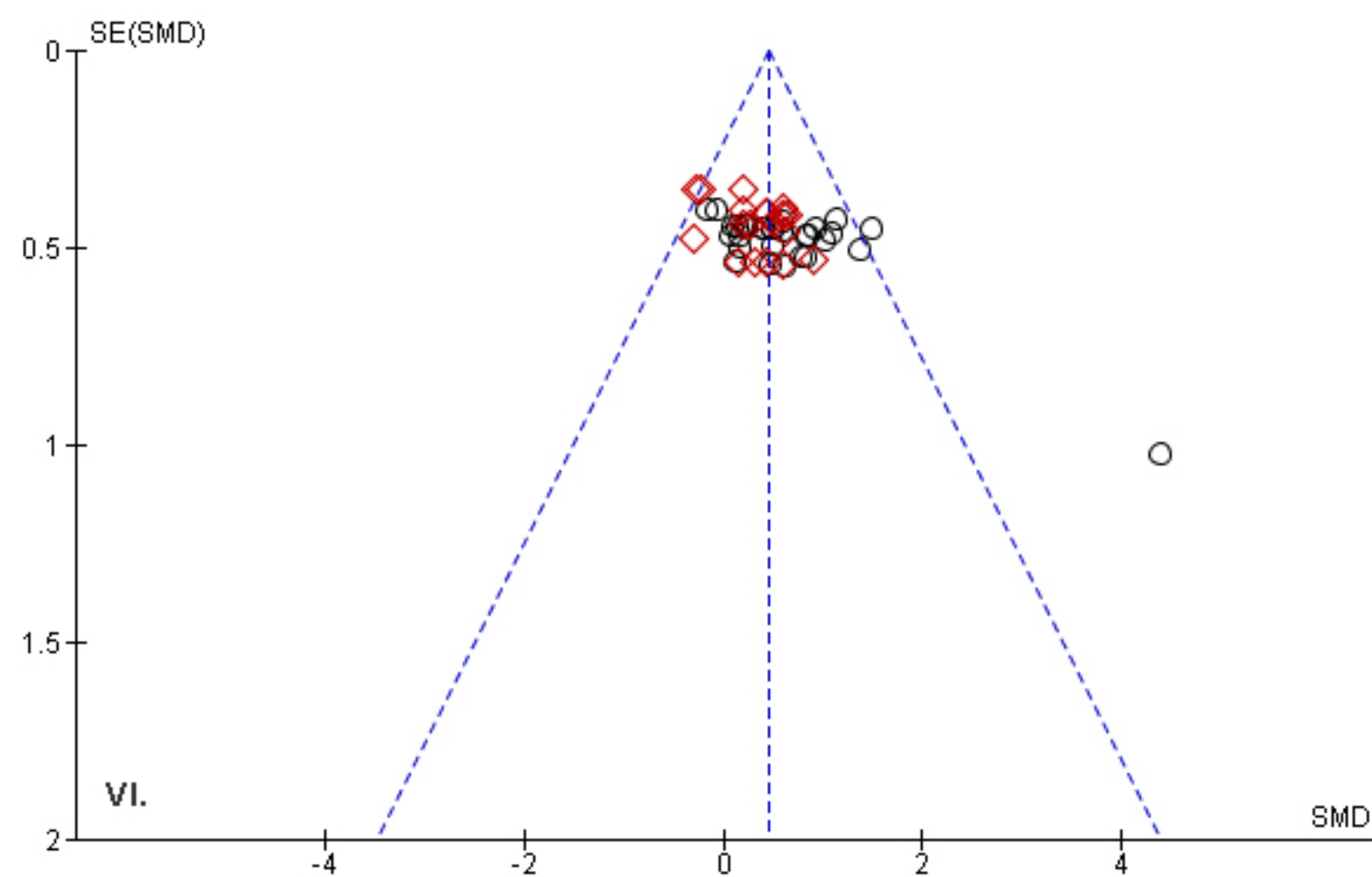
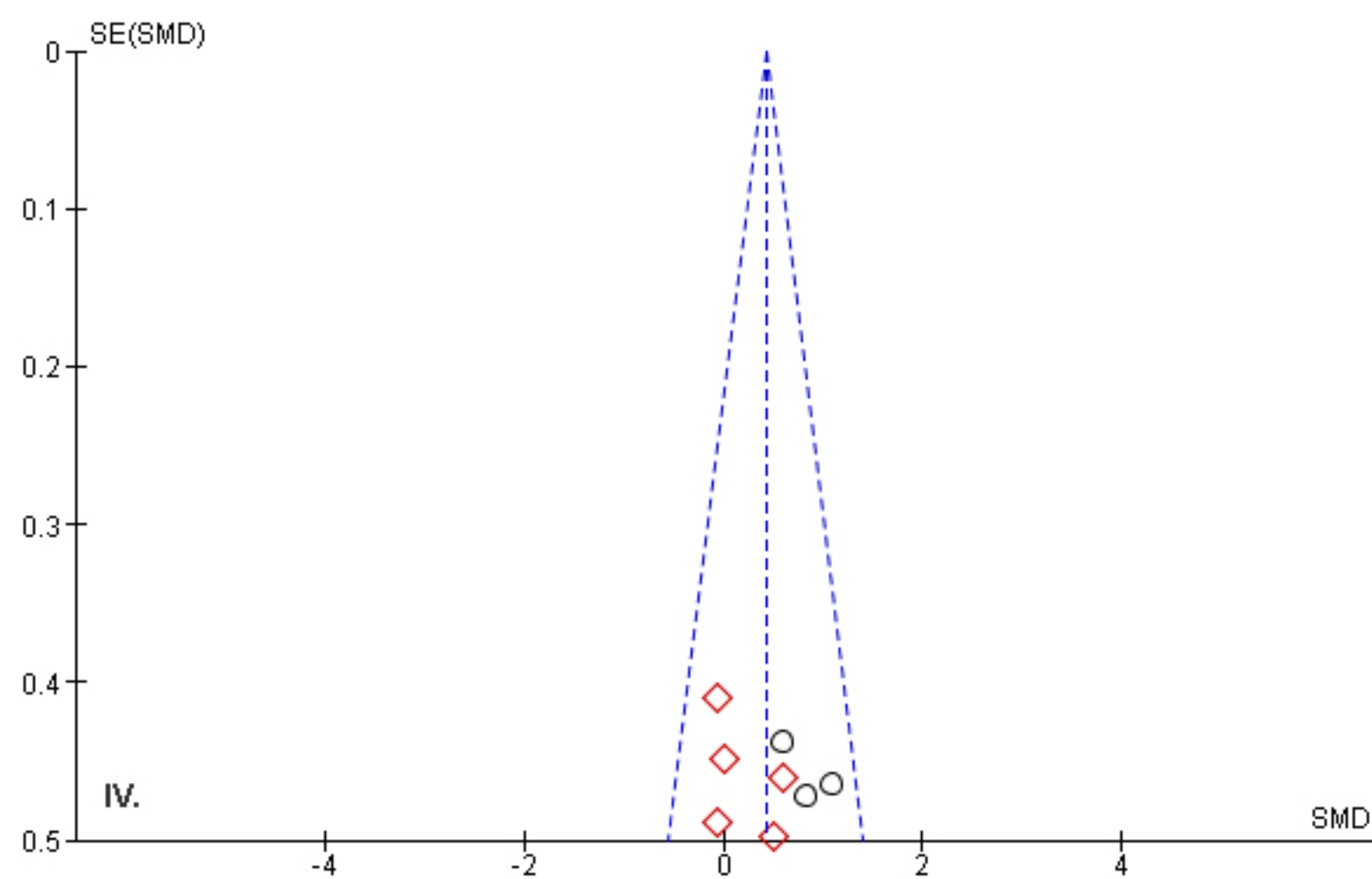
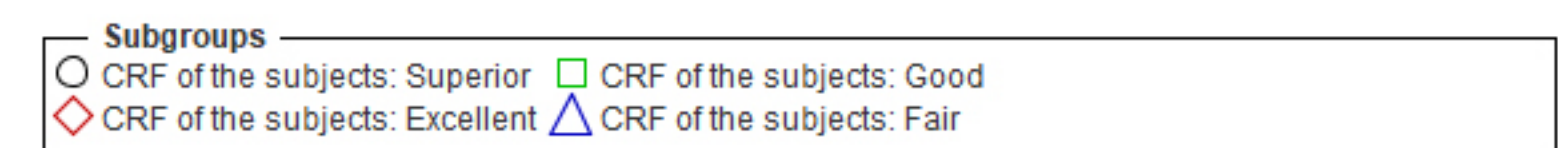
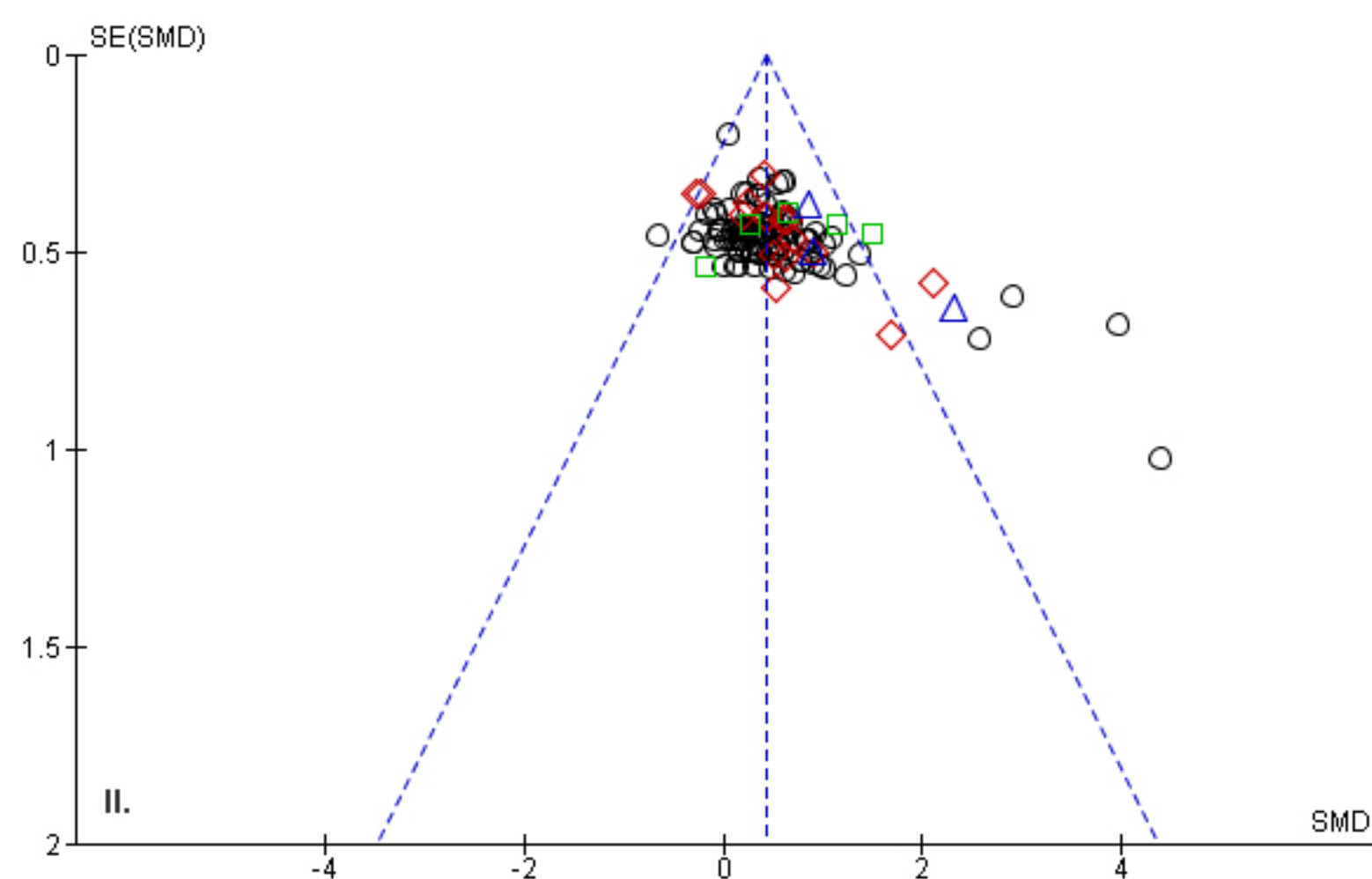
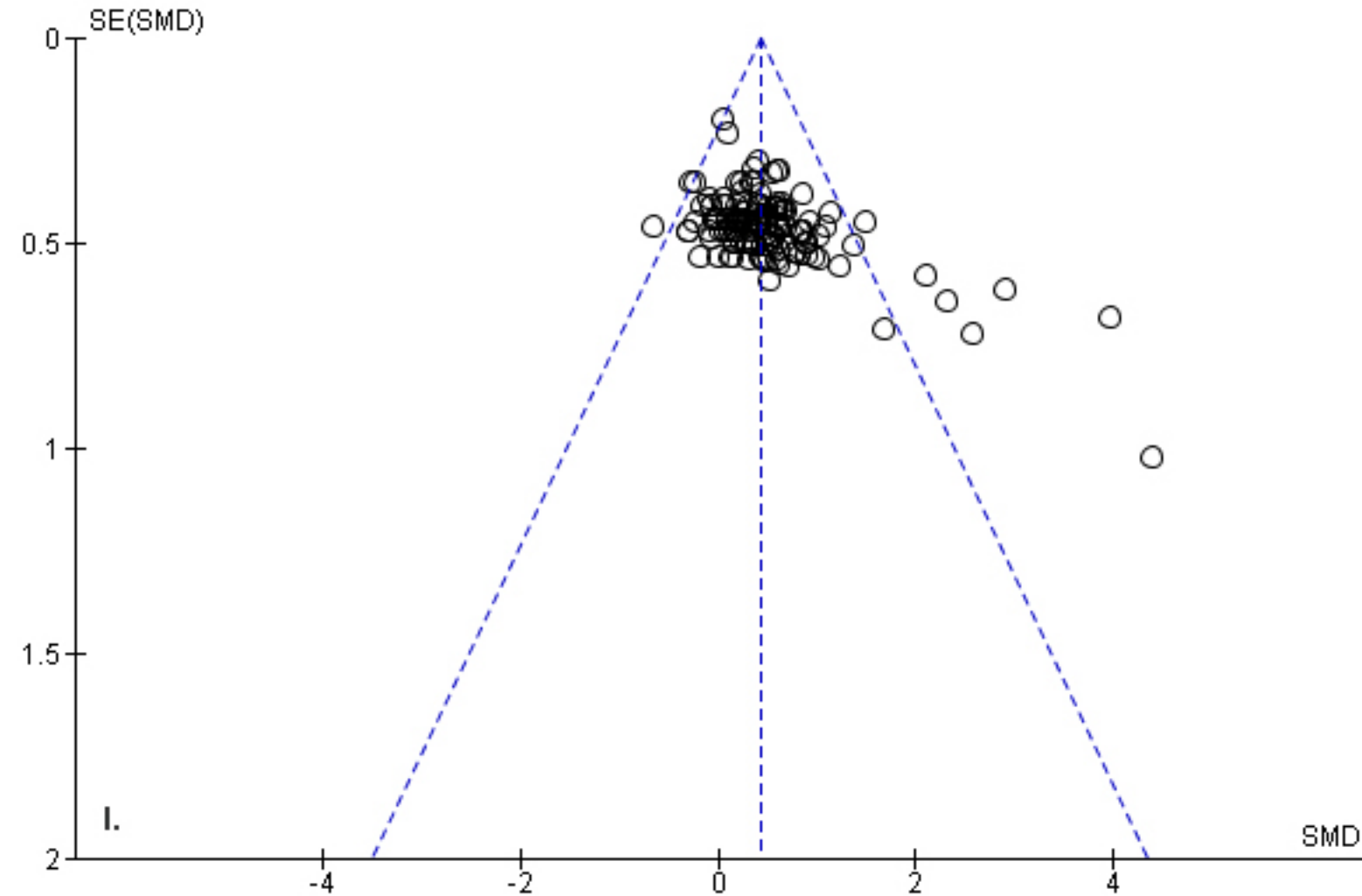


Figure S16: Funnel plot of comparison: I. in all studies (and trials); and II.-VII. in classes of different subgroups analysis

