Supplementary material

Table 1S. Associations between intakes of sugary drinks, water, milk and diet drinks with changes in body weight or BMI z-score over 1.5-year follow-up by intervention status.1

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Intervention (n=162) | | | | | | |  | Control (n=190) | | | | | | |
|  | ΔWeight (kg) | | |  | ΔBMI z-score | | |  | ΔWeight (kg) | | |  | ΔBMI z-score | | |
|  | β | SE | *P* |  | β | SE | *P* |  | β | SE | *P* |  | β | SE | *P* |
| Sugary drinks (100g/d) | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Model 1a | 0.180 | 0.132 | 0.176 |  | 0.134 | 0.060 | 0.028 |  | 0.016 | 0.088 | 0.858 |  | 0.019 | 0.038 | 0.618 |
| Model 2b | 0.189 | 0.135 | 0.167 |  | 0.128 | 0.061 | 0.038 |  | 0.006 | 0.091 | 0.943 |  | 0.012 | 0.040 | 0.771 |
| Model 3c | 0.202 | 0.133 | 0.131 |  | 0.132 | 0.060 | 0.029 |  | 0.015 | 0.087 | 0.967 |  | 0.022 | 0.038 | 0.567 |
| Water (100g/d) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Model 1a | 0.076 | 0.054 | 0.166 |  | -0.007 | 0.025 | 0.790 |  | 0.011 | 0.069 | 0.873 |  | 0.031 | 0.030 | 0.311 |
| Model 2b | 0.079 | 0.055 | 0.157 |  | -0.009 | 0.025 | 0.714 |  | 0.011 | 0.069 | 0.878 |  | 0.031 | 0.030 | 0.312 |
| Milk (100g/d) | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Model 1a | -0.043 | 0.054 | 0.424 |  | -0.009 | 0.025 | 0.720 |  | -0.118 | 0.069 | 0.091 |  | -0.006 | 0.031 | 0.977 |
| Model 2b | -0.034 | 0.062 | 0.588 |  | -0.018 | 0.028 | 0.537 |  | -0.127 | 0.072 | 0.083 |  | -0.006 | 0.032 | 0.842 |
| Model 3c | -0.018 | 0.052 | 0.738 |  | -0.012 | 0.024 | 0.612 |  | -0.117 | 0.068 | 0.088 |  | -0.007 | 0.030 | 0.829 |
| Diet drinks (100g/d) | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Model 1a | -0.089 | 0.224 | 0.692 |  | -0.112 | 0.110 | 0.295 |  | -0.003 | 0.203 | 0.990 |  | -0.088 | 0.089 | 0.326 |
| Model 2b | -0.084 | 0.226 | 0.710 |  | -0.117 | 0.107 | 0.277 |  | -0.006 | 0.205 | 0.977 |  | -0.081 | 0.089 | 0.367 |
| Model 3c | -0.113 | 0.226 | 0.619 |  | -0.111 | 0.106 | 0.300 |  | -0.009 | 0.204 | 0.966 |  | -0.071 | 0.089 | 0.430 |

Table 1S Continued.

1Sugary drinks: carbonated drinks, fruit-flavoured drinks and fruit juices, Δ: change, BMI: body mass index, SE: standard error

a All beverages were include simultaneously in the same model with adjustment for baseline age, BMI z-score, gender, physical activity, whether parents were divorced, number of siblings living with the child, annual income, maternal education level, paternal education level and maternal pre-pregnancy overweight.

b Nutrient residual model included beverage intake residuals with adjustment for total energy intake and confounders in model 1.

c Energy partition model with further adjustment for energy intake from non-beverage sources upon model 1. Water without energy was excluded from the energy partition model.

Table 2S. Regression analysis results for association between substitution of sugary drinks with water, milk and diet drinks (100g/d) at baseline and changes in body weight or BMI z-score over 1.5-year follow-up by intervention status.1

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Intervention(n=162) | | | | | | |  | Control(n=190) | | | | | | |
|  | ΔWeight (kg) | | |  | ΔBMI z-score | | |  | ΔWeight (kg) | | |  | ΔBMI z-score | | |
|  | β | SE | *P* |  | β | SE | *P* |  | β | SE | *P* |  | β | SE | *P* |
| Water (100g/d) | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Model 1a | -0.104 | 0.148 | 0.484 |  | -0.140 | 0.068 | 0.040 |  | -0.005 | 0.119 | 0.969 |  | 0.012 | 0.053 | 0.825 |
| Model 2b | 0.255 | 0.261 | 0.330 |  | 0.097 | 0.112 | 0.393 |  | 0.166 | 0.198 | 0.404 |  | 0.074 | 0.087 | 0.392 |
| Milk (100g/d) | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Model 1a | -0.223 | 0.138 | 0.109 |  | -0.140 | 0.063 | 0.025 |  | -0.134 | 0.107 | 0.212 |  | -0.018 | 0.047 | 0.696 |
| Model 2b | 0.242 | 0.137 | 0.081 |  | -0.160 | 0.061 | 0.009 |  | -0.184 | 0.116 | 0.117 |  | -0.037 | 0.051 | 0.468 |
| Diet drinks (100g/d) | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Model 1a | -0.269 | 0.274 | 0.328 |  | -0.250 | 0.128 | 0.058 |  | -0.018 | 0.226 | 0.936 |  | -0.107 | 0.099 | 0.282 |
| Model 2b | -0.007 | 0.313 | 0.983 |  | -0.070 | 0.142 | 0.638 |  | 0.091 | 0.248 | 0.715 |  | -0.067 | 0.108 | 0.540 |

1Δ: change, BMI: body mass index; SE: standard error

a Substitution model included water intake (100g/d), milk intake (100g/d), diet drink intake (100g/d) and total beverage intake (100g/d), and excluded sugary drink intake from the model (reference category). By keeping the intakes of total beverages, milk and diet drinks constant, a unit increase in water implies a corresponding decrease in sugary drinks. Model adjusted for baseline age, gender, BMI z-score, physical activity, whether parents were divorced, number of siblings living with the child, annual income, maternal education level, paternal education level and maternal pre-pregnancy overweight.

b Adjusted further for energy from beverages upon model 1.

*Supplementary materials continued,*

*Stratified analysis by intervention allocation*

Beverage intakes at both baseline and follow-up were not significantly different (data not shown). Results from the stratified analysis suggested that sugary drink consumption at baseline was more closely associated with change in BMI z-score in the intervention group than in the control group (Supplementary Table 1S). Similarly, the beneficial effects of replacing sugary drinks with beverage alternatives were more apparent in the intervention group than in the control group (Supplementary Table 2S). However, the estimates of the associations for both group were in the same direction, and there was no evidence to suggest the difference between the groups were statistically significant (P for intervention = 0.52). It has to be noted that the baseline beverage intakes were not affected by intervention status. The apparent stronger effects of sugary drinks on BMI z-score in the intervention group relative to the control were likely a result of potentially selective loss of follow-up between the two groups. Consistent with the combined analysis where all participants were analysed together, no evidence of an association between concurrent changes in beverage intakes and changes in body weight was revealed, suggesting that intervention allocation had little impact on the estimated associations (data not shown).