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Daily total fluid intake and changes in body mass index among Hong Kong primary school students

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Background

Sugar-sweetened beverage (SSB) intake has been associated with weight gain.
Emerging evidence has linked non-sugar-sweetened beverage (NSSB, e.g. water, tea, soup) intake to weight loss.
SSB intake has been linked to various unhealthy behaviours.

Methods

Subjects
Data source: Student Health Service (SHS), Department of Health
Sample size: 75,635 Primary 4 students in Hong Kong
Follow-up: 1998-2000
Mean age: 10.0 years (SD 0.7); 50.9% were boys.
BMI was derived from weight and height measured by trained nurses.

Questionnaire
Daily total fluid intake was assessed with the item “My habit of fluid intake (including plain water, tea, squash, milk, soup, etc.) each day is”, with options of <2 cups (reference), 2 to 4 cups, 4 to 6 cups and 6+ cups.
A Primary 4 lifestyle score (ranged from 7 to 28) was calculated based on 7 items (each scored 1 to 4).

Results

Frequency of total daily fluid intake at baseline

In children with healthy lifestyle, greater total fluid intake predicted lower BMI.
In children with moderately healthy lifestyle, total fluid intake was not associated with BMI.
In children with unhealthy lifestyle, greater total fluid intake predicted higher BMI.

Conclusions

In Hong Kong primary school children with healthy (indicating lower SSB intake) and unhealthy (indicating higher SSB intake) lifestyle, greater daily total fluid intake predicted a decrease and increase in BMI, respectively.
Future studies with better measurement of SSB and non-SSB intake are warranted.