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# Differences in children's dietary intake on weekdays vs. weekend days

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**Objective.** To investigate differences in children's dietary intake on weekdays (Monday through Thursday), Fridays, and weekend days.

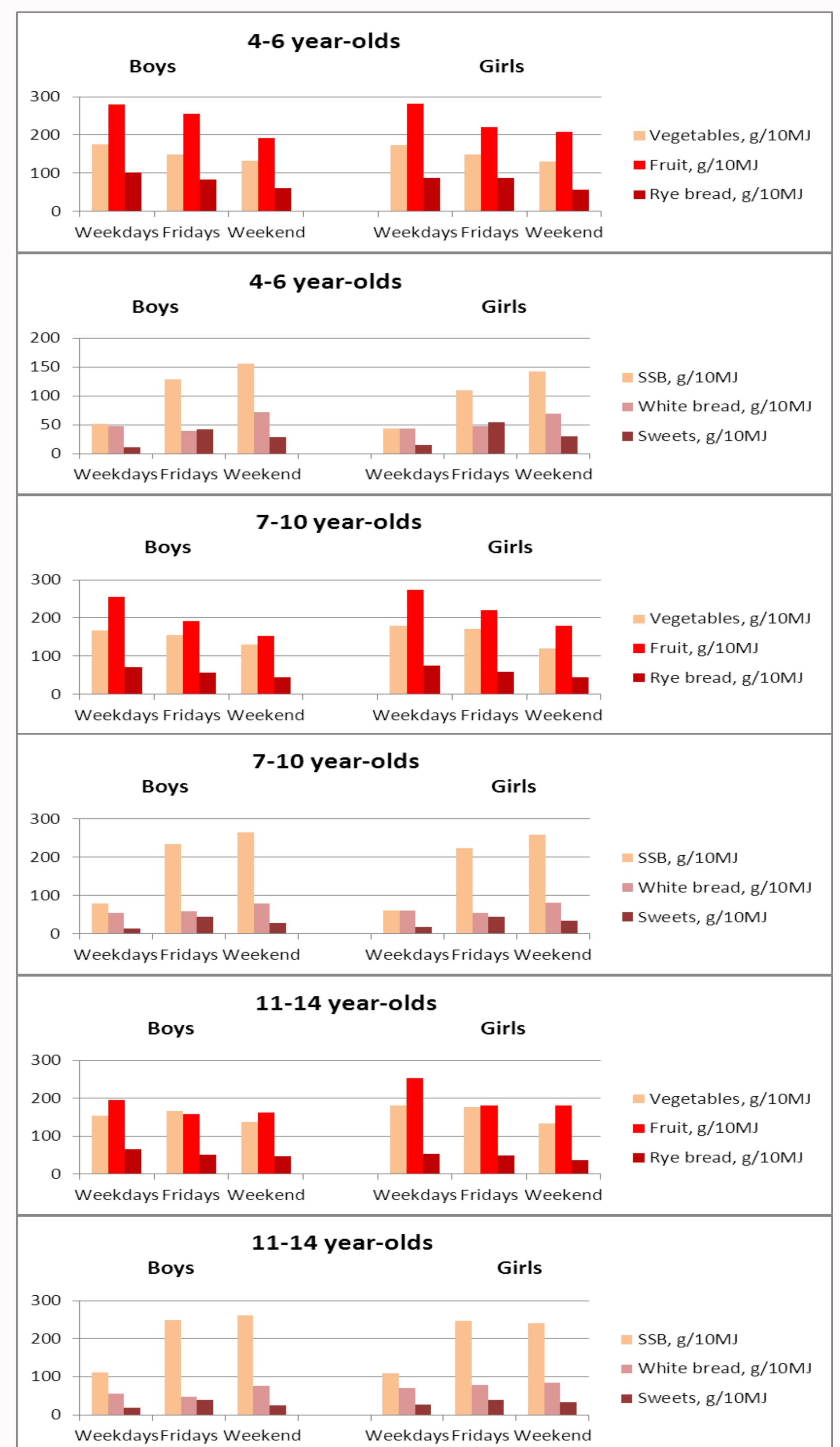
**Methods.** Data from the Danish National Survey of Dietary Habits and Physical Activity 2003-08 were used. A total of 784 children (response rate 61%), aged 4-14 years, completed a pre-coded food diary for 7 consecutive days. Mean intake of energy, macronutrients and a number of food items were compared between weekdays, Fridays, and weekend days. Data were analysed using Tobit regression analysis, for each gender in three age groups (4-6, 7-10, and 11-14 years).

**Results.** Consistently for both genders in all age groups, energy intake was higher on weekend days than on weekdays. Intake of sugar sweetened beverages and white bread was higher, while intake of rye bread was lower, resulting in a higher added sugar-E% and lower fiber intake on weekend days (Table 1, Figure 1). Children aged 4-6 and 7-10 years also had a higher intake of sweets & chocolate, and a lower intake of fruit and vegetables on weekend days (Figure 1). Other findings differed slightly between age groups and gender, however showed same tendency (data not shown). All results were significant at  $P < 0.05$ . Overall, the diet on Fridays appeared as a mix of the diet on weekdays and weekend days.

**Table 1** Energy and nutrient intakes on weekdays (Monday – Thursday), Fridays, and weekend days (mean (SD))

|                                  | Boys                     |                           |                           | Girls                    |                          |                          |
|----------------------------------|--------------------------|---------------------------|---------------------------|--------------------------|--------------------------|--------------------------|
|                                  | Weekdays                 | Friday                    | Weekend                   | Weekdays                 | Friday                   | Weekend                  |
| <b>4-6 years (n=104M,103F)</b>   |                          |                           |                           |                          |                          |                          |
| Energy, MJ/d                     | 7.54 (1.84) <sup>b</sup> | 8.32 (2.57) <sup>a</sup>  | 8.37 (2.68) <sup>a</sup>  | 6.61 (1.42) <sup>b</sup> | 7.19 (2.12) <sup>a</sup> | 7.37 (1.72) <sup>a</sup> |
| Total fat, E%                    | 33 (5) <sup>b</sup>      | 34 (7) <sup>a,b</sup>     | 35 (6) <sup>a</sup>       | 34 (5) <sup>a</sup>      | 32 (7) <sup>b</sup>      | 35 (6) <sup>a</sup>      |
| Carbohydrates, E%                | 52 (5) <sup>a</sup>      | 52 (7) <sup>a</sup>       | 51 (6) <sup>a</sup>       | 51 (5) <sup>b</sup>      | 54 (7) <sup>a</sup>      | 52 (6) <sup>b</sup>      |
| - Sugar, E%                      | 9 (5) <sup>b</sup>       | 14 (8) <sup>a</sup>       | 13 (6) <sup>a</sup>       | 10 (4) <sup>b</sup>      | 15 (8) <sup>a</sup>      | 14 (5) <sup>a</sup>      |
| Fiber, g/10 MJ                   | 25 (6) <sup>a</sup>      | 22 (8) <sup>b</sup>       | 20 (6) <sup>c</sup>       | 25 (6) <sup>a</sup>      | 21 (7) <sup>b</sup>      | 19 (5) <sup>c</sup>      |
| Protein, E%                      | 15 (2) <sup>a</sup>      | 14 (3) <sup>b</sup>       | 14 (3) <sup>b</sup>       | 15 (2) <sup>a</sup>      | 14 (3) <sup>b</sup>      | 13 (2) <sup>c</sup>      |
| <b>7-10 years (n=152M,135F)</b>  |                          |                           |                           |                          |                          |                          |
| Energy, MJ/d                     | 8.44 (1.95) <sup>c</sup> | 9.77 (3.27) <sup>a</sup>  | 9.00 (2.70) <sup>b</sup>  | 7.80 (2.42) <sup>b</sup> | 9.01 (2.86) <sup>a</sup> | 8.57 (2.31) <sup>a</sup> |
| Total fat, E%                    | 33 (5) <sup>b</sup>      | 32 (7) <sup>b</sup>       | 34 (6) <sup>a</sup>       | 33 (5) <sup>a</sup>      | 32 (6) <sup>a</sup>      | 33 (6) <sup>a</sup>      |
| Carbohydrates, E%                | 52 (6) <sup>b</sup>      | 55 (7) <sup>a</sup>       | 52 (7) <sup>b</sup>       | 52 (5) <sup>b</sup>      | 55 (7) <sup>a</sup>      | 53 (6) <sup>a,b</sup>    |
| - Sugar, E%                      | 11 (5) <sup>b</sup>      | 15 (8) <sup>a</sup>       | 15 (7) <sup>a</sup>       | 10 (4) <sup>b</sup>      | 16 (8) <sup>a</sup>      | 16 (7) <sup>a</sup>      |
| Fiber, g/10 MJ                   | 23 (7) <sup>a</sup>      | 21 (8) <sup>b</sup>       | 18 (6) <sup>c</sup>       | 24 (6) <sup>a</sup>      | 21 (7) <sup>b</sup>      | 18 (5) <sup>c</sup>      |
| Protein, E%                      | 15 (2) <sup>a</sup>      | 14 (3) <sup>b</sup>       | 14 (3) <sup>b</sup>       | 15 (2) <sup>a</sup>      | 13 (3) <sup>b</sup>      | 13 (3) <sup>b</sup>      |
| <b>11-14 years (n=135M,155F)</b> |                          |                           |                           |                          |                          |                          |
| Energy, MJ/d                     | 8.96 (2.76) <sup>b</sup> | 10.35 (4.61) <sup>a</sup> | 10.31 (3.77) <sup>a</sup> | 7.42 (2.01) <sup>b</sup> | 8.12 (3.35) <sup>a</sup> | 8.21 (2.47) <sup>a</sup> |
| Total fat, E%                    | 33 (6) <sup>a</sup>      | 32 (8) <sup>a</sup>       | 34 (7) <sup>a</sup>       | 31 (5) <sup>a</sup>      | 31 (9) <sup>a</sup>      | 32 (6) <sup>a</sup>      |
| Carbohydrates, E%                | 52 (6) <sup>a</sup>      | 54 (9) <sup>a</sup>       | 52 (7) <sup>a</sup>       | 54 (6) <sup>a</sup>      | 55 (9) <sup>a</sup>      | 54 (7) <sup>a</sup>      |
| - Sugar, E%                      | 11 (6) <sup>b</sup>      | 15 (10) <sup>a</sup>      | 14 (8) <sup>a</sup>       | 11 (5) <sup>b</sup>      | 14 (9) <sup>a</sup>      | 15 (7) <sup>a</sup>      |
| Fiber, g/10 MJ                   | 23 (7) <sup>a</sup>      | 20 (9) <sup>b</sup>       | 19 (6) <sup>b</sup>       | 23 (7) <sup>a</sup>      | 21 (8) <sup>b</sup>      | 18 (6) <sup>c</sup>      |
| Protein, E%                      | 15 (3) <sup>a</sup>      | 14 (3) <sup>b</sup>       | 14 (3) <sup>b</sup>       | 15 (2) <sup>a</sup>      | 14 (4) <sup>b</sup>      | 14 (3) <sup>b</sup>      |

<sup>a,b,c</sup>Mean values within a column with unlike superscript letters were significantly different ( $P < 0.05$ )



**Figure 1.** Mean dietary intakes on weekdays (Monday – Thursday), Fridays, and weekend days (SSB; sugar sweetened beverages)

**Conclusions.** Significant and characteristic differences were found in children's dietary intake during week days, Fridays and weekend days. The data show the need to focus more on the higher energy intake, especially from sugar rich foods and beverages, on Fridays and weekend days in future dietary monitoring and in public health promotion in the prevention of overweight.

