

I.F. Briefing 5

## Sleep Habits and Dietary Intake

**Monica Hunsberger (University of Gothenburg, Sweden)**  
[monica.hunsberger@gu.se](mailto:monica.hunsberger@gu.se)

The number of children and adolescents with overweight and obesity has increased worldwide in the past three decades and this has received a great deal of public attention. It is generally accepted that what a person eats and physical inactivity are the main reasons for this.<sup>1</sup>

However, it could be that other lifestyle factors are also influencing childhood overweight, such as how much time a child spends sitting or sleeping. The amount of sleep or sleep duration is believed to be related to a person's weight. In fact, sleep is thought to be essential to the development, growth and health of children and as an important contributing factor for both physical and mental health in people of all ages.<sup>2</sup>

So it may not be surprising that getting too little sleep has been associated with several things, such as feeling tired and poor immune function and other things, such as feeling irritated or performing poorly in school.<sup>3</sup>

### What we did in the I.Family Study

We asked our participants to report how long they slept during the working week and at the weekends/during vacations. Answers in both cases were provided in hours and minutes per night. In addition, we analysed sleep using a small device worn on the wrist that measures movement. The participants wore the device for 5-7 nights.

We assessed dietary intake with a questionnaire that asks people how often they eat certain foods. We were then able to determine how many of the food choices were healthy foods, how much fatty food children ate, how much sugary food, and how many fruits and vegetables.

### What are children and adolescents eating...?



## What we found in I.Family

**Key finding 1:** We learned that overall only one third of children and adolescents met the recommended sleep guidelines issued by the National Heart, Lung, and Blood Institute. There was no difference between boys and girls.

### Sleep recommendations for different age groups<sup>4</sup>

Age	Recommended amount of sleep / 24hrs
Newborns	16–18 hours
Preschool-aged children	11–12 hours
School-aged children	At least 10 hours
Teens	9–10 hours
Adults (including the elderly)	7–8 hours

**Key finding 2:** Children who met nighttime sleep recommendations ate more vegetables than those not meeting the nighttime sleep recommendations.

**Key finding 3:** Children who met the nighttime sleep guidelines were also more likely to have healthy diets, overall, as compared with those who did not meet the guidelines. We measured this by calculating a healthy diet score based on guidelines to limit the intake of simple sugars, reduce fat intake, especially of saturated fat, choose wholemeal grains instead of refined grains, consume 400-500 grams of fruits & vegetables per day and consume fish 2-3 times per week.

### Why the connection?

Though we did not measure this, some believe that hormonal changes that occur from sleeping too little might trigger unhealthy eating. However, it may simply be that the more time spent awaking gives more time for eating.



### Future research

In our study, only one third of children and adolescents meet suggested sleep guidelines. In the future, using our data, we therefore plan to examine factors that are most important in inhibiting children from obtaining the recommended hours of sleep per night. For example, we will examine if media devices (such as computers or smart phones) are allowed in the child's bedroom and whether using these is keeping youngsters awake at night. So far, the evidence suggests that children are more likely to have a healthy weight status when there is no television in their bedrooms.

<sup>1</sup> Branca, Nikogosian & Lobstein (eds). 2007. *The Challenge of Obesity in the WHO European Region and the Strategies for Response*. Copenhagen: WHO Regional Office for Europe. [http://www.euro.who.int/\\_data/assets/pdf\\_file/0010/74746/E90711.pdf](http://www.euro.who.int/_data/assets/pdf_file/0010/74746/E90711.pdf).

<sup>2</sup> Chaput & Dutil. 2016. Lack of Sleep as a Contributor to Obesity in Adolescents: Impacts on Eating and Activity Behaviors. *International Journal of Behavioral Nutrition and Physical Activity* 13:103.

<sup>3</sup> Khan et al. 2016. Is it Nutrients, Food Items, Diet Quality or Eating Behaviours that are Responsible for the Association of Children's Diet with Sleep? *Journal of Sleep Research* [Epub ahead of print].

<sup>4</sup> National Heart, Lung, and Blood Institute Sleep Guidelines: <https://www.nhlbi.nih.gov/health/health-topics/topics/sdd/howmuch>.