

# **Sleep & Its Effect on Body Weight & Food Choices**

It seems that we are all getting busier, with less time to reflect and rest. It is almost thought of as being lazy if someone says that he/she is going to get a little "rest and relaxation" while on vacation, which is why we take vacations in the first place! Yet, the brain is another muscle that also needs rest, just like our skeletal muscles need a rest day from working out. I recently read in *The Atlantic* magazine that social scientists have stated that we would be most productive if we worked for 52 minutes and took a 17-minute break, walking away from our work to give our brains a rest and get our blood flowing.

## **SLEEP AND WEIGHT GAIN**

Sleep and health have been studied for some time. It has been reported that lack of sleep can lead to unfavorable health outcomes, like high blood glucose concentrations and obesity. Japas et al. examined men, ages 40 to 60 years, after they retrospectively reported their body weight when they were ages 20 to 40 years. They then analyzed these participants' present lifestyle patterns, including their dietary intake, television watching, physical activity, and sleep practices.

These researchers found that, of the more than 9,000 men studied, those who reported a higher body mass index (BMI) when they were between ages 20 and 40 years typically consumed a non-vegetarian diet, watched television for long durations at a time, had little physical activity, and had shorter sleep durations compared with the men who had a lower BMI. Although a good study, these data are not perfect in several ways. The researchers asked the men to report their body weight when they were between the ages of 20 and 40 years, which some men may have misreported. In addition, these data show associations and not cause and effect. Finally, Japas et al. did not just assess sleep, but many lifestyle factors, with sleep duration being one of them (a positive aspect of the study). Nonetheless, sleep was identified as a factor possibly contributing to the higher BMI in this very large sample size of men.

In a prospective study involving children, Martinez et al. evaluated the effect of sleep on obesity risk in 229 Mexican-American children, aged 8 to 10 years. This was a 2-year study, where the children and their mothers were evaluated for sleep duration at baseline, 12 months, and 24 months. They used accelerometry to assess sleep duration. They also classified the children as "long sleepers" or "short sleepers" using the National Sleep Foundation's definition that the adequate amount of sleep for children aged 5 to 12 years is 10 to 11 hours.

Martinez et al. reported that 82% of the children were classified as "short sleepers" (less than 10 hours of sleep). The children who had less sleep were more likely to have a higher BMI and waist-to-height ratio as well as more weight gain at 24 months, compared with children who had the proper amount of sleep. These findings controlled for weight status, sex, maternal BMI, and maternal occupation. Thus, in this 2-year prospective study in children, less sleep resulted in weight gain when other factors were accounted for statistically.

Although these are only two studies on sleep and weight gain, there is a plethora of research showing that the less sleep a person gets, the more likely he/she will gain weight. Furthermore, we certainly will be more productive and better able to concentrate when we get more sleep.

## **FOOD CHOICES**

Lack of sleep can affect food choices. Kruger et al. studied the effect of sleep duration and food choices in more than 13,000 adolescents from the National Longitudinal Study of Adolescent Health. This was a cross-sectional examination of these data, where the researchers used regression models for two main outcome variables: daily fruit and vegetable intake and the previous week's fast-food intake. They used demographic, as well as social and behavioral, variables within their regression models. The authors reported that habitual short sleep duration of less than 7 hours was associated with decreased fruit and vegetable consumption and increased fast food consumption, even after they adjusted for demographic, social, and behavioral factors. They concluded, "Food choices are significantly associated with sleep duration and may play an important role in the mediation of the association between sleep and health among adolescents".

Pope et al. examined food choices during the holiday season and compared them with food choices during other times of the year. Although these researchers did not measure sleep or food choices with little or no sleep, I thought this study was of interest because they compared food choices during the holiday season, which tends to be a hectic time of the year for many households.

In this study, 207 households participated in a randomized controlled trial at two grocery food chain locations. They recorded item-level transactions during a 7-month time frame (July 2010 through March 2011). They particularly focused on purchases made between Thanksgiving and New Year's and compared them with New Year's through March, using July through Thanksgiving as the baseline measure.

These researchers reported that, from Thanksgiving through New Year's, food expenditures significantly increased by 15% compared with baseline. Of these increased expenditures, 75% were attributed to less healthy food. Conversely, the week after the holiday season (e.g., the first week in January), there was a 28% increase in healthy food sales compared with baseline, with a 19% increase in healthy foods compared with the holiday period. Despite this move toward healthier foods, the number of calories purchased each week after the New Year was 9% higher when compared with the holiday period and 20% higher when compared with baseline, representing 450 and 890 more calories per serving per week, respectively. Thus, less sleep and the stress of the holidays may lead to poor food choices and eventually extra caloric intake for a period.

## **SUMMARY**

Getting the proper amount of sleep is important for our health, and based on the research to date, it seems clear that the proper amount of sleep is associated with maintaining a healthy body weight. Furthermore, lack of sleep can lead to poor food choices and, thus, possibly to weight gain. When we think about health, we need to think about it holistically, with the proper amount of sleep, food, and activity. Hippocrates put it so well when he said, "If we could give every individual the right amount of nourishment and exercise, not too little and not too much, we would have found the safest way to health."

## References

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