

Hours of sleep and body fat linked for teenage boys, study shows

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Researchers in human nutrition at the University of Otago have found that teenage boys who sleep less have more body fat when compared to girls, whose sleep deprivation has no discernible effect on their body fat ratios.

The paper, just published online in *Nutrition Journal* in the UK, looks at the sleeping habits and height/weight/fat ratios in 386 boys and 299 girls aged between 15 and 18-years drawn from 11 [secondary schools](#) around Otago.

Lead researcher from the Department of Human Nutrition Dr Paula Skidmore says significant results between sleep duration and [body composition](#) were found in boys, but not in girls.

An average-sized 16-year-old boy weighing 69.5kg and measuring 176cm in height, who slept for eight hours a day, would have a [waist circumference](#) that is 1.8cm bigger, and would have 1.6kg (9%) more [body fat](#), compared to the same average-sized boy who slept 10 hours a day.

"The boys who slept eight hours a day would also have 1.8kg more lean (bone and muscle) mass compared to the boys who slept ten hours, but that's only a 1.4% increase, compared to the 9% increase seen in body fat," she says.

"The key aspect to this research is that that we examined adolescents.

Most of the research in this area to date has focused on younger children, whose parents tend to be stricter about bedtimes. Teenagers get more leeway over bedtimes," she says.

"Our results suggest that for older [teenage boys](#), making sure that they get [adequate sleep](#) may help to maintain a healthier a body. It seems to be that, within reason, the more (sleep) the better for boys."

"It was unexpected that we did not find the same result in girls, who may actually be more aware of their diet and more in tune with a healthier lifestyle."

In contrast, the 15 to 18 year-old girls who slept less, or eight hours a day, experienced no discernible change in their body-fat composition or increase in waist circumference compared to other girls who slept for ten hours a day.

In their study, the researchers ruled out the effects of food choice and number of screens, such as televisions, games and consoles, which the teenagers had in their bedrooms. Overall, 19% of the boys in the study, and 22% of girls, were classified as overweight and 8% of the boys and 6% of the girls were obese.

Both boys and girls slept on average for around 9 and a 1/4 hours a day, with 25% of boys and girls sleeping for less than eight and a half hours. Another 25% of boys and girls slept for more than 9 and 3/4 hours. Both boys and girls tended to sleep for an hour more at weekends than on weekdays.

For their calculations, the researchers used Fat Mass Index (FMI) as well as Body Mass Index (BMI), FMI is a measure of body fat, whereas BMI measures excess weight, and not necessarily excess fat, particularly in overweight adolescent boys.

"We also saw a link between BMI and sleep but it was not as strong as the relationship with fat mass. We think that in this group of growing [adolescents](#) that more direct measures of body fat are needed to pick up the subtle changes in your body when you are growing," Dr Skidmore says.

Provided by University of Otago

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