



Lay summary: Consistent sleep onset and maintenance of body weight after weight loss: An analysis of data from the NoHoW trial

Reference: Consistent sleep onset and maintenance of body weight after weight loss: An analysis of data from the NoHoW trial, Larsen, S.. et al.. *PLOS Medicine*(2020). DOI: 10.1371/journal.pmed.1003168

Why was this study done? Weight loss maintenance is the greatest challenge in successful treatment of obesity. While several studies have suggested that reduced sleep duration and quality are associated with an increased risk of obesity, the role of sleep in long-term weight loss maintenance has not been thoroughly examined.

What did we do? This study included a total of 967 men and women who had achieved a clinically significant weight loss ($\geq 5\%$) during the last 12 months and had a BMI of ≥ 25 kg/m² prior to their weight loss. Sleep duration, sleep duration variability, sleep onset and sleep onset variability were assessed across 14-days close to baseline examinations using the Fitbit Charge 2 device, and changes in body weight, composition and obesity related metabolic markers were followed up after 12-months.

What did we find? While no associations were found between sleep duration, sleep duration variability or sleep onset and subsequent weight loss maintenance, participants with a more variable sleep onset at baseline regained more weight and had a higher increase in body fat percentage during the 12-month follow-up period.

What do these findings mean? Our results suggest that maintaining a consistent sleep onset may be associated with improved weight loss maintenance and body composition. Due to the observational design, the study cannot confirm whether this relationship is causal, or a reflection of different personality traits related to sleep onset variability and energy balance behaviours.