

EFFECTS OF ACUTE SLEEP LOSS ON LEPTIN, GHRELIN, AND ADIPONECTIN IN ADULTS WITH HEALTHY WEIGHT AND OBESITY EXPERT REVIEW FROM GAIL BRADY



van Egmond, LT ; Meth, EMS ; Engström, J ; et al. Obesity (Silver Spring, Md.). 2023;31(3):635-641

Sleep deprivation may contribute to weight gain and obesity through its effect on the hormonal pathways promoting hunger and satiety. Leptin and ghrelin are hormones involved in the control of food intake. Some research has associated alterations in these hormones following sleep loss, whilst others have not. This randomised crossover design study included n=44 mixed sex participants and aimed to investigate whether biological sex and weight status affect fasting serum levels of leptin, ghrelin and adiponectin following chronic sleep deprivation in a supervised laboratory setting.

Sleep loss was associated with lowered levels of leptin and higher levels of ghrelin. Analysis between biological sexes indicated that there may be a greater decrease in leptin in females. Serum levels of adiponectin were also found to be elevated after sleep deprivation for both sexes with a slightly larger increase in women. These changes may result in increased hunger and food intake and decreased satiety. No significant differences were found between participants of normal weight and those living with obesity.



DOSE-RESPONSE RELATIONSHIP BETWEEN WEIGHT LOSS AND IMPROVEMENTS IN OBSTRUCTIVE SLEEP APNEA SEVERITY AFTER A DIET/LIFESTYLE INTERVENTIONS: SECONDARY ANALYSES OF THE "MIMOSA" RANDOMIZED CLINICAL TRIAL WITH EXPERT REVIEW FROM DR MICHELLE BARROW

Georgoulis, M ; Yiannakouris, N ; Kechribari, I ; et al. Journal of Clinical Sleep Medicine : JCSM : Official Publication of the American Academy of Sleep Medicine. 2022.

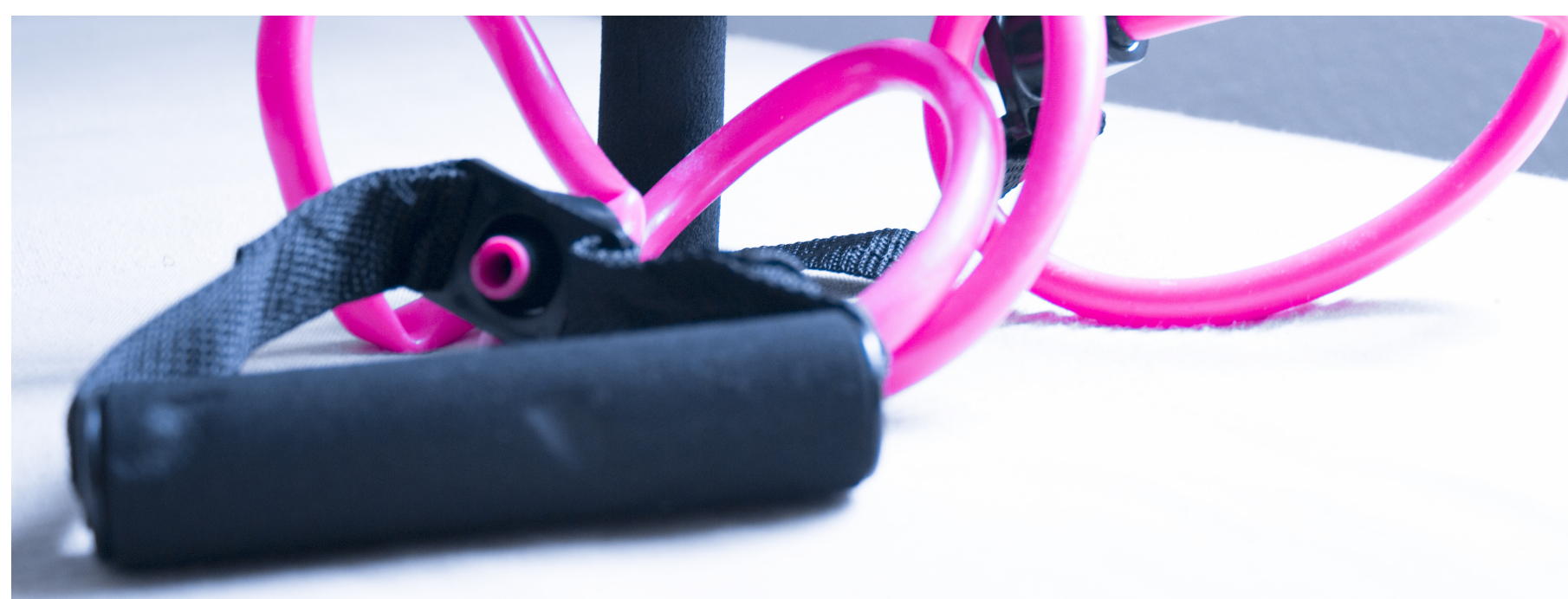
Obstructive Sleep Apnea (OSA) represents one of the most common and serious sleep-related breathing disorders, with a high worldwide prevalence of almost 1 billion people. OSA has numerous well-established cardiometabolic consequences. The aim of this secondary analysis of the Mediterranean diet/lifestyle Intervention for the Management of Obstructive Sleep Apnea (MIMOSA) study was to explore the dose-response relationship between the degree of weight loss and improvements in OSA severity. The clinical trial lasted 6-months and included 180 patients living with overweight/obesity and moderate-to-severe OSA. All patients were prescribed the standard of care continuous positive airway pressure (CPAP) therapy and were randomised to 3 arms: standard care; Mediterranean diet; Mediterranean lifestyle. Results confirm a dose-response relationship between the degree of weight loss achieved through a dietary/lifestyle intervention and improvements in OSA severity. The authors conclude that even a < 5% weight loss was sufficient for improvements in respiratory events and oximetry indices, but the prevalence of severe OSA reduced only after a ≥ 5% weight loss, and patients achieving a ≥ 10% weight loss exhibited the greatest benefits compared to weight-stable/gain patients.

ENERGY DRINKS AND SLEEP AMONG ADOLESCENTS

Tomanic, M ; Paunovic, K ; Lackovic, M ; et al. Nutrients. 2022;14(18)

Sleep deprivation is a common problem among adolescents. There has been an increase in the consumption of energy drinks among adolescents in recent years. It is well known that energy drinks contain caffeine, sugar, and amino acids such as taurine, B vitamins, Ginseng, and guarana, which have psychoactive properties and disrupt the circadian rhythm. Insufficient sleep can affect genes involved in circadian rhythm and serotonin pathways, resulting in a higher risk of developing mental health problems. Therefore, researchers accessed the data from a population-based cross-sectional study to evaluate the effect of an energy drink on sufficient sleep in male and female adolescents.

This study found that high energy drink consumption negatively affected sufficient sleep in male and female adolescents, with boys consuming energy drinks more frequently. The intake of vegetables and water, as well as regular physical activity, were positively correlated with adequate sleep in male adolescents. Physical activity and sufficient sleep were positively correlated in girls. Girls who used sedatives were less likely to get sufficient sleep. In order to determine how the different ingredients of energy drinks affect the sleep quality and neurodevelopment of adolescents individually and synergistically, further robust studies are required.



RESISTANCE TRAINING IMPROVES SLEEP AND ANTI-INFLAMMATORY PARAMETERS IN SARCOPENIC OLDER ADULTS: A RANDOMIZED CONTROLLED TRIAL

de Sá Souza, H ; de Melo, CM ; Piovezan, RD ; et al. International journal of environmental research and public health. 2022;19(23)

Sleep is a behavioural state that is characterised by relative immobility and reduced responsiveness and can be distinguished from coma or anaesthesia by its rapid reversibility. Sleep has a number of functions, which include metabolism modulation and the repair of organic tissue. The aim of this study was to investigate the effects of a 12-week resistance exercise training (RET) protocol on subjective and objective sleep parameters in older individuals with sarcopenia and the possible role of inflammation status in this process. This study was a randomised, placebo-controlled, parallel-group study. Participants were randomly assigned to one of the two groups; RET group or control group. Results showed that a 12-week RET protocol simultaneously improved muscle strength. In addition to the increase in overall subjective sleep quality, there was also a reduction in sleep latency, apnoea-hypopnea index, and insomnia severity, as well as an increase in deeper stage 3 sleep (slow-wave sleep) in the RET group in comparison with the CTL group. Authors conclude that future studies are necessary to elucidate how different age groups and genders, with and without sarcopenia, can present specific muscle and sleep responses to potentially anti-inflammatory interventions, such as physical exercise.

