

**P196****Decreased levels of salivary alpha-amylase are associated with greater driving performance deficits following one night of sleep deprivation**

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**Objective:** Investigate the relationship between salivary  $\alpha$ -amylase (sAA) (a proposed peripheral marker of central noradrenergic activity), subjective sleepiness and driving performance following a night of sleep deprivation.

**Methods:** Following a 10 h baseline sleep opportunity (22:00 h–08:00 h), 12 healthy adults underwent one night of sleep deprivation (40 h sustained wakefulness). Saliva samples, subjective sleepiness via a visual analogue scale, and simulated driving performance were assessed every 3 hr throughout the waking period. Pearson's correlation analysis was used to investigate the strength of associations between variables: change from baseline (average day 1: 14:00 h–23:00 h to average day 2: 14:00 h–23:00 h) in sAA levels, driving performance impairments, and subjective sleepiness.

**Results:** Following one night of sleep loss, changes in sAA were negatively correlated with changes in speed deviation ( $r = -0.69$ ,  $P = 0.028$ ) and catastrophic lane deviation ( $r = -0.65$ ,  $P = 0.042$ ), and reached near significance with change in lane deviation ( $r = -0.62$ ,  $P = 0.054$ ). sAA did not correlate with number of crashes ( $r = -0.44$ ,  $P = 0.20$ ) or ratings of subjective sleepiness ( $r = 0.40$ ,  $P = 0.26$ ).

**Conclusions:** Individuals with decreased levels of sAA demonstrated greater driving performance deficits following one night of sleep loss than individuals with increased levels of sAA, suggesting that sAA may be a suitable peripheral marker of central noradrenergic activity and inter-individual vulnerability to sleep deprivation. sAA assessment may be useful in establishing individually-tailored shift schedules, 'fitness for duty', or ideal times for countermeasures.

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**P197****The effects of chronic and acute sleep deprivation on executive functions and emotion regulation**

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**Objective:** To assess the impact of chronic and acute sleep deprivation on cognitive flexibility, cognitive inhibition and emotion regulation ability.

**Methods:** Twenty young adults (mean age  $23.85 \pm 2.35$ ; 5 males), 10 with chronic insomnia (CI) and 10 good sleepers (GS) completed emotion regulation tasks (ERT) and a task switching (TS) after a night of habitual sleep (HS) and a night of acute sleep deprivation (SD, 5 h of sleep allowed). ERT consisted of three video clips, one neutral, one sad and one sad preceded by Cognitive Reappraisal

(CRA) instructions. Participants rated valence and arousal at baseline and after each clip.

**Results:** CI reported more negative emotions at baseline as compared to GS ( $P < 0.001$ ) after both nights. Mixed design factorial ANOVAs group (GS vs CI)  $\times$  night (HS vs SD)  $\times$  video (neutral, sad, sad with CRA) showed a significant main effect of the video for both valence ( $F_{2,18} = 8.595$ ;  $P < 0.001$ ) and arousal ( $F_{2,18} = 10.077$ ;  $P < 0.001$ ). The sad clips without CRA instructions was rated as more negative than the others, suggesting a good CRA performance after both nights. Results on task switching measures revealed an effect of the night on backward inhibition ( $F_{1,18} = 6.235$ ;  $P < 0.022$ ). The backward inhibition performance did not interact with CRA performance.

**Conclusion:** Current findings suggest that acute sleep loss impairs executive functions but not emotion regulation while chronic sleep deprivation is associated with increased negative emotions.

**Disclosure:** Nothing to disclose.

**P198****Relationship between short sleep duration and cardiovascular risk factors in a multi-ethnic cohort - the HELIUS study**

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**Objectives:** Several studies indicate an association between sleep duration and Cardiovascular disease (CVD) risk factors, but data are lacking among ethnic minority groups. We therefore investigated the association between short sleep duration and hypertension, diabetes, obesity and lipid profile in a multi-ethnic population in Amsterdam, the Netherlands.

**Methods:** Data from the HELIUS study were used including 1795 Ghanaians, 2158 African-Surinamese, 2262 South-Asian Surinamese, 2242 Turks, 2202 Moroccans and 2146 Dutch aged 18–70 years. Comparisons among groups were made using proportions and age-adjusted prevalence ratios (PR).

**Results:** Short sleep was significantly associated with obesity in four out of six ethnic groups, with the socio-demographic adjusted PR of 1.45 (95% CI, 1.07–1.95) in Dutch, 1.21 (1.01–1.44) in South-Asian Surinamese, 1.25 (1.09–1.43) in African Surinamese and 1.16 (1.04–1.29) in Turks. Short sleep was significantly associated with diabetes in African Surinamese (1.45, 1.14–1.84), Turks (1.59, 1.26–2.02), and Moroccan (1.29, 1.02–1.63). In contrast, the association between other CVD risk factors and short sleep were not significant in most ethnic groups, with the exception of the association with hypertension in Dutch and Turks, and reduced high density lipoprotein cholesterol and triglyceride in South-Asian Surinamese and raised total cholesterol in Moroccans. Socioeconomic status (SES) and lifestyle factors contributed little to the observed associations.

**Conclusions:** Our findings indicate that short sleep was associated with obesity in most ethnic groups. Further studies are needed to establish the potential factors that might lead to the observed differences across populations.

**Disclosure:** Nothing to disclose.