type of sound on SO and spindles were assessed by analysing the power, area under the curve, amplitude, slopes and event-related potentials.
Results: We observed that all three tested sounds increased amplitude, area under the curve, power and slopes of SO and slow spindles compared to shams. However, pink noise elicited a significant much stronger effect compared to the other sounds, which was explained by a broader topographical recruitment of brain areas.
Conclusion: The present study showed that rich sounds (i.e. pink noise) elicited a stronger SO driving than poor sounds. This type of sound may strongly trigger the simultaneous depolarization of neurons widely distributed over the cortex. Pattern of sequences using this rich sound, potentially in combination with other, have still to be optimized.
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0122

THE EEG CORRELATES OF SLEEP MISPERCEPTION

Lecci S[1], Cataldi J[1], Bernardi G[2], Haba-Rubio J[1], Heinzer R[1], Tononi G[3], Siclari F[1]
[1]University Hospital Lausanne, Lausanne, SWITZERLAND, [2]IMT School for Advanced Studies, Lucca, ITALY, [3]University of Wisconsin, Madison, WI

Introduction: Sleep misperception (SMP), the impression of being awake despite polysomnographically documented sleep, is sometimes observed in healthy individuals and to an extreme degree in patients with paradoxical insomnia. The mechanisms underlying the subjective perception of sleep are not well understood. Here we asked whether high-density (hd) EEG, a technique with a refined spatial resolution, could identify local wake-like brain activity related to SMP.
Methods: 14 healthy subjects (age 33.6 ± 8.5 yrs, 10 females) underwent a serial awakening paradigm in the sleep lab while recorded with hdEEG (256 electrodes). 969 awakenings were performed across all sleep stages. At each awakening, subjects were asked to describe what was going through their mind and to estimate if immediately prior to the awakening they had been asleep or awake.
Results: SMP occurred in 10 subjects (15.92 ± 8.76% per subject, total of n=99 episodes of SMP). 70.83% of SMP episodes occurred in N1, 18.77% in N3, 9.79% in N2 and 3.57% in REM sleep. Only SMP in stages N2 and N3 was further considered. Compared to correct sleep perception (CSP), SMP occurred earlier in the night (147 ± 79 min after lights off vs 231 ± 25 min; p=0.0038). The presence of conscious experiences during sleep did not distinguish SMP from CSP, but experiences associated with SMP tended to be more thought-like and less perceptual compared to CSP (Score: 0.52 ± 1.17 for SMP; -1.00 ± 1.84 for CSP; p=0.076). SMP was associated with increased alpha (8−12 Hz) and sigma power (12−16 Hz) in central and posterior brain regions in the 20s before the awakening. No significant differences were observed for other frequency bands.
Conclusion: The preferential occurrence of SMP early in the night, its quasi-absence in REM sleep and its association with increased alpha power in sensorimotor regions may indicate that the subjective perception of sleep depends on the degree of sleep-related environmental disconnection. Further analyses are needed to determine whether these findings also apply to patients with paradoxical insomnia.
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CORTISOL, SLEEP AND HEART RATE VARIABILITY IN RESTING NEUROTYPICAL AND AUTISTIC ADULTS

Tessier M[1], Pennestri M[2], Godbout R[3]
[1]Hôpital Rivière-des-Praries, Montreal, QC, CANADA, [2]McGill University, Montreal, QC, CANADA, [3]Hôpital Rivière-des-Prairies, Montreal, QC, CANADA

Introduction: Individuals with an autistic spectrum disorder (ASD) are reported to display high sympathetic activity and atypical diurnal cortisol secretion patterns. We compared evening and morning cortisol levels in ASD and typically developing (TD) adults and explored the association between cortisol, sleep and heart rate variability (HRV).
Methods: Sixteen unmedicated ASD adults (22.0 ± 3.7 years, 15M, 1F) without sleep complaints, intellectual disability and psychiatric nor neurological comorbidity were compared to 17 TD healthy participants (21.7 ± 4.0 years, 16M, 1F). Salivary cortisol was sampled in the evening (n=5) and morning (n=2), 20 minutes apart. Sleep latency, nocturnal awakenings, total sleep time and sleep efficiency were assessed by self-reports. The electrocardiogram was recorded in the evening and in the morning to compute low (LF) and high (HF) spectral frequencies. Cortisol and HRV parameters were compared using two-way ANOVAs (ASD vs TD X evening vs morning). Sleep parameters were compared between the 2 groups using independent Mann-Whitney U tests. Pearson correlations between cortisol levels, sleep measures and HRV parameters were calculated.
Results: Groups did not differ on cortisol levels. Compared to the TD group, ASD self-reports showed longer sleep latencies (38.6 ± 12.6 vs 13.3 ± 2.3 minutes; p<0.01), longer nocturnal awakenings (11.6 ± 3.3 vs 2.5 ± 0.8 minutes; p<0.01), lower sleep efficiencies (90.2 ± 3.3 vs 95.3 ± 1.6 %; p=0.01) but same total sleep time (7.9 ± 0.3 vs 8.0 ± 0.2 hours). Morning HF values were higher in ASD than TD (p=0.05). In the TD group, higher evening cortisol levels correlated with longer nocturnal awakenings (r=0.7; p=0.02); higher morning cortisol levels correlated with longer total sleep time (r=0.7; p=0.02), lower morning LF (r=-0.9; p=0.002) and higher morning HF (r=0.9; p=0.002). No significant correlations were found in the ASD group.
Conclusion: Only the TD group showed significant correlations between cortisol levels, sleep and HRV. The lack of significant correlations in the ASD group could reflect the presence of poor self-reported sleep despite the lack of complaints or an alternative coupling between neuronal and endocrine mechanisms of sleep control in ASD.
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0124

SLEEP, MEAL TIMING AND MOTIVATIONS FOR EATING IN AUSTRALIAN FLIGHT ATTENDANTS

Perrin SL[1], Dorrian J[1], Coates AM[2], Gupta CC[1], Centofanti SA[1], Beyne K[1], Marx L[1], Banks S[1]
[1]Behaviour Brain Body Research Centre, University of South Australia, Adelaide, AUSTRALIA, [2]Alliance for Research in Exercise, Nutrition and Activity, University of South Australia, Adelaide, AUSTRALIA

Introduction: Flight attendants' work unusual schedules, travelling over multiple time zones, in confined and controlled spaces. Specific health issues in flight attendants include chronic circadian misalignment and gastrointestinal disease. This study examined flight attendants sleep and meal timing and how their unique working environment impacted eating patterns and behaviors.