(r = .65, p < .001), feeling un-refreshed (r = -.53, p < .001), and general health rating (r = .44, p < .001). Classification accuracy for insomnia symptoms was also high (AUC = .84).
Conclusions: The GSS-13 is psychometrically sound, correlated well with sleep, health, and daytime functioning, and can be used to identify good sleepers for research. Future work will test relationships with other sleep measures.

O010

THE ROLE OF DYSFUNCTIONAL BELIEFS AND ATTITUDES ABOUT SLEEP IN THE ASSOCIATION BETWEEN DAILY SLEEP AND AFFECT IN ADOLESCENTS AND EMERGING ADULTS

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Introduction: Sleep and affect are closely related. Late adolescence and emerging adulthood are associated with unique sleep patterns and risk for mood disturbances. This daily study examined whether dysfunctional beliefs and attitudes about sleep (DBAS), a modifiable cognitive vulnerability factor, moderated daily sleep-affect associations.
Methods: 421 community adolescents (n=205, 54.1% females, M±SDage=16.9±0.87) and emerging adults (n=216, 73.1% females, M±SDage=21.31±1.73) self-reported sleep and affect (adapted 12-item PANAS) and wore an actigraphy device for 7–28 days, providing >5000 daily observations. Linear mixed models tested whether DBAS moderated daily associations between self-reported and actigraphic sleep duration (total sleep time), sleep efficiency, and next-day affect on between and within-person levels. Both valence (positive/negative) and arousal (high/low) dimensions of affect were examined. Covariates included age, gender, ethnicity, day of week, and previous-day affect.
Results: DBAS significantly moderated associations between average sleep and next-day positive, but not negative, affect. Individuals with higher DBAS had significantly lower high arousal positive affect as average sleep duration (actigraphic: p=.002; self-reported: p=.014) and efficiency (actigraphic: p=.014) decreased. Similar moderation was found for average self-reported sleep duration and low arousal positive affect (p=.032). No significant results emerged on the within-person level. Previous-day affect significantly predicted next-day affect across models and outcomes (all p<.001).
Discussion: Adolescents and emerging adults with more negative views about sleep may experience dampened positive affect in shorter, or poorer, sleep periods. DBAS may constitute a modifiable factor increasing affective vulnerability on a global but not day-to-day level, and a therapeutic target for sleep-related affect disturbances in youths.

O011

ASSOCIATIONS BETWEEN SLEEP AND ALZHEIMER'S DISEASE BIOMARKERS WITHIN THE EPAD COHORT

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Background: Changes in sleep quality are common in Alzheimer's Disease (AD) and may contribute to the onset and accumulation of disease. However, in preclinical stages, it is unclear whether sleep quality or sleep disturbance relate to disease pathology after controlling for known AD risk factors. This study aimed to determine if self-reported sleep quality is associated with AD biomarkers after accounting for such factors.
Method: Data were obtained from the European Prevention of Alzheimer's Disease (EPAD) Longitudinal Cohort Study (LCS; v1500.0). CSF samples were collected for measurement of β-amyloid (Aβ42) and phosphorylated tau (p-tau). Self-reported sleep quality was assessed by the PSQI. Linear regression was used to determine whether p-tau/Aβ42 was associated with PSQI component scores when controlling demographics, ApoE4, depressive symptoms, BMI, vascular risks, smoking status, use of psychotropics, white matter lesions, and hippocampal volume. PSQI component scores of 2 or 3 were combined due to small numbers of component scores of 3.
Results: A total of 1239 participants were included (mean age=65.30 years, SD=7.11; mean PSQI total score=5.31, SD=3.38). After adjustment for all covariates, higher p-tau/Aβ42 was found to be associated with longer sleep latency (component score of 1: β=0.16, p=0.007; component score of 2/3: β=0.12, p=0.134) and better sleep efficiency (component score of 1: β=-0.22, p=0.04; component score of 2/3: β=-0.31, p=0.009)
Conclusion: These findings contribute to growing evidence suggesting sleep is an important early marker of underlying neurodegeneration. Longitudinal assessment of EPAD-LCS participants will allow for evaluation of self-reported sleep as a predictive marker of neurodegeneration.

O012

A PROSPECTIVE EVALUATION OF THE NATURE AND TIME COURSE OF SLEEP DISORDERED BREATHING AND RESPIRATORY FAILURE IN PATIENTS WITH MOTOR NEURONE DISEASE (MND): THE BREATHEMND-1 STUDY

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Introduction: Sleep disordered breathing (SDB) is a well-recognised but heterogeneous complication in MND and may herald the onset of respiratory failure. This study examined the nature and time course of SDB, sleep disruption and respiratory failure in MND patients.
Methods: The BreatheMND-1 study recruited MND patients for prospective evaluation of muscle strength,supine and prone dyspnea, quality of life, pulmonary function, arterial blood gas and polysomnographic sleep measurements at baseline and, where possible, 3, 6 and 12 months for exploratory analyses.
Results: 35 MND patients completed baseline and 25 at least one follow-up visit (median [IQR] follow-up time 8.7 [7.1–10.2] months). At baseline, patients were aged 64 [55–70] years, 16/35 (46%) female, with reduced FVC (77[59–92] %predicted) but relatively normal BMI (26.2[23.7–27.7] kg/m²) and PaCO2 (38.8[37.0–42.1] mmHg). At baseline and last follow-up, the prevalence of respiratory failure (PaCO2>45 mmHg or HCO3>27 mmol/l) was 9/33

(27%) and 12/27 (44%) respectively (p=0.186). Total sleep time and sleep efficiency were poor at baseline (5.2[4.6–5.9] h and 67.6[63.0–78.8]%) and declined at follow-up (by 1[0.3–1.9] h, p=0.020 and 7.9[-2.3–14.2]%, p=0.017 respectively). AHI was 7.2[2.8–14.6] /h and remained unchanged. In regression model,sleep time and efficiency were not predictive of respiratory failure, but the percentage of deep and REM sleep at last follow-up were (ROC area under curve 0.73±0.11, p=0.048 and 0.84±0.09, p=0.001).

Discussion: Sleep quality in MND is remarkably poor, irrespective of SDB, and could reflect and/or impact MND progression. Thus, further strategies to monitor & improve sleep are clearly warranted in patients with MND.

O013

THE PATHOGENESIS OF OBSTRUCTIVE SLEEP APNEA IN INDIVIDUALS WITH COMORBID INSOMNIA AND OBSTRUCTIVE SLEEP APNOEA (COMISA)

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Obstructive sleep apnea (OSA) and Insomnia are prevalent sleep disorders which are highly comorbid. This frequent co-occurrence suggests a shared etiology may exist. OSA is caused by the interaction of four pathophysiological traits: a highly collapsible upper airway, elevated loop gain, a low arousal threshold, and poor muscle compensation. No study has ascertained whether these traits are influenced by insomnia. We aimed to quantify the four traits which contribute to OSA in individuals diagnosed with comorbid insomnia and OSA (COMISA). We non-invasively determined these traits in 52 COMISA patients (Age: 56±14 years) with mild-to-severe OSA (AHI=21.2±10.63 events/h) using polysomnography. Our results indicated that 83% of COMISA patients had a low arousal threshold and only 2% of patients exhibited a highly collapsible airway using previously defined thresholds. Multiple linear regression revealed the arousal threshold (b=0.24, 95%CI[0.11, 0.37], β=0.47, p<0.001) and loop gain (b=23.6, 95%CI[7.02, 40.18], β=0.33, p<0.01) were the strongest predictors of OSA severity in our sample. There was no significant relationship between the arousal threshold and insomnia severity measured by the insomnia severity index (ISI). Further work is being performed to compare these findings with a matched sample of OSA only participants. Our preliminary findings demonstrate OSA in COMISA is characterized by a mildly collapsible airway/low arousal threshold phenotype and is largely driven by non-anatomical factors including a low arousal threshold and high loop gain. OSA treatments which are effective in patients with mild anatomical compromise and raise the arousal threshold may provide therapeutic benefit in COMISA patients.