

dependent on the changes in the heart rate and thus cannot provide reliable data.

**Objectives:** We introduced a novel, heart rate independent variability parameter, which is the normalized variability, and we contrasted it with the consensus-based parameters (RMSSD: root mean square of successive differences between normal heartbeats; SDNN: standard deviation of normal-to-normal interbeat intervals).

**Methods:** We tested the normalized variability parameter in two studies. During the first study, the work-related stress among professionals in the frontlines of healthcare was reduced during the work-shift via either heart rate variability-biofeedback training or through achieving a relaxed state by allowing the subjects of the test during breaks to relax in their own usual manner. Consequently, the sample of Study 1 was categorized into the heart rate variability biofeedback group (N = 21) and the habitual recreation group (N = 21). Comparatively, Study 2 was concluded on healthy students, where the subject sample consisted of N = 9 participants. In this case, stress response was triggered by one of two laboratory stress induction methods. This meant the application of either the Socially Evaluated Cold Pressor Test (SECPT) or, a novel stress induction procedure, the Socially Evaluated Stroop Test (SEST). Furthermore, we used the Kolmogorov-Smirnov test to compare the distribution of heart rate variability parameters, mean heart rate, logRMSSD, logSDNN, and normalized variability before, during, and after the stress-inducing and the stress-alleviating interventions.

**Results:** According to our results, on the one hand, logRMSSD and logSDNN did not change significantly throughout the stress alleviation and stress inducing states; on the other hand, the distribution of normalized variability significantly changed during and after both stress decreasing methods ( $p \leq 0.01$ ) and between the period that preceded recreation and during the process of habitual recreation itself ( $p = 0.03$ ). Normalized variability during and after the SECPT ( $p = 0.05$ ) significantly changed as well; however, the heart rate did not change significantly under and during the test.

**Conclusions:** Normalized variability, a heart rate variability parameter that is independent of the heart rate of the patient, can be considered a sensitive stress indicator and suitable for investigating the complexity of the functions of the vegetative nervous system without the confounding effect of the heart rate.

**Disclosure of Interest:** None Declared

## EPV1937

### Different chronotypes are associated with different metabolomics profiles-results from the UK biobank

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**Introduction:** Individuals with an evening chronotype (i.e., a behavioral phenotype related to a preference for eveningness)

commonly display metabolic alterations that predispose to cardiovascular disease and worse cardiometabolic health. While lifestyle habits may partly explain the adverse cardiometabolic findings, underlying independent biological mechanisms may also confer higher risk. However, metabolomics signatures associated with chronotype remain to be determined.

**Objectives:** This study aimed to use nuclear magnetic resonance (NMR) metabolomics and phenotype data from the UK Biobank to characterize the metabolomics signatures of different chronotypes.

**Methods:** The population included approximately 245,000 participants with plasma metabolomics and questionnaire data on chronotype, both collected at the first assessment (2006-2010). The levels of 237 metabolites were compared in individuals with morning vs. more morning than evening vs. more evening than morning vs. evening chronotype via univariable and multivariable linear regression models adjusted by fasting time, age, sex, body mass index, economic status, physical activity and smoking status. The False Discovery Rate was applied to account for multiple testing. This research has been conducted using the UK Biobank Resource under application number 99811.

**Results:** In unadjusted models, compared to morning types, individuals with more evening (163/237 metabolites, median estimate 0.01 SD) and definitely evening (203/237, -0.01 SD) chronotypes had significantly different profiles, suggestive of higher cardiometabolic risk (higher levels of the inflammation marker glycoprotein acetyls, of triglycerides and lipids in Very-Low-Density-Lipoproteins (VLDL), but lower levels of fatty acid unsaturation and of lipids in High-Density-Lipoproteins (HDL)). On the contrary, more morning than evening types had opposite profiles. After adjustments, the risky profiles of evening and intermediate-evening types attenuated partly, especially with respect to fatty acids. However, irrespective of adjustments, evening types had metabolic profiles characterized by less HDL and more VLDL lipoproteins than morning types, while HDL levels appeared less affected in intermediate-evening types. In adjusted models, intermediate-morning types had similar profiles as morning types.

**Conclusions:** Total or partial preference to eveningness was associated with a metabolic profile suggestive of higher cardiovascular risk. While these associations were partly explained by sociodemographic and lifestyle characteristics, several markers suggestive of higher cardiometabolic risks appeared intrinsic to the chronotype, and more evident in the evening types. Lifestyle habits may induce an even more favorable metabolic profile in intermediate-morning compared to pure morning types.

**Disclosure of Interest:** None Declared

## EPV1938

### Sleep Disorders in Multiple Sclerosis Patients Following Diagnosis: Prevalence, Contributing Factors

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**Introduction:** Sleep disorders are commonly reported among patients diagnosed with multiple sclerosis (MS), particularly in

the period following the disclosure of the diagnosis. The combination of psychological stress and the chronic nature of the disease contributes to significant sleep disturbances. Understanding the prevalence, causes, and implications of these disorders is crucial for improving patient care.

**Objectives:** The aim of this study is to evaluate the prevalence and characteristics of sleep disorders in MS patients following the announcement of the diagnosis and to explore the contributing factors, including psychological and physical symptoms.

**Methods:** A descriptive and analytical cross-sectional study was conducted from March 1, 2023, to January 30, 2024, involving patients diagnosed with multiple sclerosis (MS) who were observed in the neurology department at Habib Bourguiba University Hospital in Sfax. We evaluated sleep disorders using the **insomnia severity index scale** which included 7 items to investigate sleep disturbance.

**Results:** A total of 100 patients, with a mean age of 38 years  $\pm$  10 years, were included, with a strong majority of women (73%). No psychiatric history was noted. The median disease duration was 7.38 years (3-10.75). Among our patients, 64(64%) had attained a university level of education. In addition, 40(40%) were married, and 60 (60%) were single, divorced, or widowed.

The median Insomnia Severity Index was 5 (1-10.75). More than half of our patients (62%) did not suffer from insomnia. However, 9% had a mild subclinical form of insomnia, 10% had moderate clinical insomnia, and 19% suffered from severe clinical insomnia. Primary education level was correlated significantly with mild sleep disorders  $n=33.3$  (33.3%), ( $p=0.044$ ). On the other hand, those with a higher education level showed a lower prevalence of mild sleep disorders  $n=22.2$  (22.2%) ( $p=0.01$ ). However, a lower prevalence of severe sleep disorders was noted among married individuals (10.5%  $p=0.004$ ), while a higher frequency was observed in divorced individuals (15.8%,  $p=0$ ). Only refusal of the diagnosis upon its initial announcement was significantly associated with severe sleep disorders (63.2%,  $p=0.012$ ).

**Conclusions:** Addressing sleep disorders in MS patients requires a holistic approach that incorporates both psychological and symptom management strategies. Early interventions targeting anxiety, depression, and physical discomfort are essential for improving sleep quality and overall well-being in this patient population. Further research is needed to develop tailored therapeutic approaches that address the unique challenges faced by MS patient's post-diagnosis.

**Disclosure of Interest:** None Declared

## EPP259

### Relationship between sleep disorders and impairments in the language development process in cases of ASD

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**Introduction:** Autism Spectrum Disorder is characterized by persistent deficits in communication and social interaction in multiple contexts, including deficits in social reciprocity, in nonverbal communication behaviors used for social interaction and in skills to develop, maintain and understand relationships, in addition to repetitive patterns of activity. Individuals with Autism Spectrum Disorder (ASD) present a wide variety of cognitive profiles, with

levels of symptom severity that differ between those with the same diagnosis. In language development, there are individual differences, both in the acquisition process and in speed and quality. Sleep is an important parameter for child development and its relevance has been associated with healthy physical, cognitive and behavioral development, as well as cognitive functions in children and adolescents. Researchers estimate that between 40% and 80% of children with ASD have sleep disorders.

**Objectives:** To relate sleep disorders frequently present in cases of ASD to delays in language development in children with ASD.

**Methods:** The research was approved by the USP ethics committee. To investigate sleep disorders, the Cognitive Speech Therapy Protocol aimed at ASD was used, an accessible and understandable instrument for parents or guardians. To identify language disorders, the ADL2 Language Development Assessment was used. 40 parents and/or guardians of children with ASD, aged between 2 and 12 years, participated in the research. A logistic regression analysis was performed to evaluate the relationship between sleep disturbances and language delay in children with ASD. The sample included 32 children, 28 of whom reported sleep disorders and all of whom had language delays

**Results:** The results showed that children with sleep disorders are 2.3 times more likely to have delays in receptive and/or expressive language compared to those without sleep disorders. This association is statistically significant, indicating that sleep disorders are a relevant risk factor for language delays in children with ASD.

**Conclusions:** Sleep disorders can impact the development of expressive language in several ways, such as by reducing the time available for language and interaction practices or by direct effects on cognitive and neurological processes. Therefore, sleep quality should be considered an important factor to be addressed to improve both receptive and expressive language in children with ASD. Therefore, sleep quality should be considered an important factor to be addressed to improve both receptive and expressive language in children with ASD.

**Disclosure of Interest:** None Declared

## Suicidology and Suicide Prevention

### EPV1940

#### Epidemiology of patients with suicidal intent in the emergency department at the University Hospital of Salamanca

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**Introduction:** Suicide represents a serious public health problem. Suicidal gestures make up a significant proportion of the psychiatric emergencies treated in Emergency Services.

**Objectives:** The study aimed to identify which of the total emergency visits were related to suicidal ideation or suicide attempts, and to analyze the epidemiology of these patients in terms of age and gender.