

Conclusions. People with BPD breathe in smaller volumes, but more frequently compared to the control group, without differences in respiratory flow. The hyperventilation sample highlights the changes in the respiratory pattern of healthy persons compared to people with borderline type personality disorder, probably due to changes in the cortical and subcortical structures that are responsible for the voluntary and involuntary control of breathing.

Key words: Borderline Personality Disorder, respiratory pattern, PID

280. THE IMPORTANCE OF LIGHT AND DARKNESS IN THE DEVELOPMENT OF THE CIRCADIAN RHYTHM

Author: **Teodora Stratu**

Scientific advisers: Vovc Victor, MD, PhD, Professor; Lupușor Adrian, MD, University Assistant, Department of Human Physiology and Biophysics, *Nicolae Testemitanu* State University of Medicine and Pharmacy, Chisinau, Republic of Moldova

Introduction. Currently, in the world, nights are extremely illuminated, whereas during daytime people are exposed to dim light conditions. Exposure to artificial light at night results in a disruption of the circadian system and melatonin suppression associated with an increased prevalence of numerous diseases.

Aim of the study. The aim of this review was to assess the current information regarding the influence of light and dark on the secretion of human melatonin.

Materials and methods. A broad English search was undertaken of the PubMed and Scopus database for the terms "melatonin suppression", "melatonin and light", articles from 2010-2020 were selected.

Results. Studies have shown that light-induced nocturnal melatonin suppression may be affected by intensity (350-1000 lx was sufficient to significantly suppress melatonin levels), wavelength (459 nm to 484 nm), time of exposure (5 seconds-6,5 h), temperature (6500k induced greater suppression). Appropriately timed light exposure has been shown to phase-shift human circadian rhythms. More prolonged exposure to light during the day (summer, bright environment) might reduce melatonin suppression at night, blue light having a more acute preventive impact. Light influences melatonin's functions, increasing the risk for diabetes type 2, heart disease, obesity, some types of cancer, depression, bipolar disorders.

Conclusions. Further research assessing the impact of light on melatonin secretion should be undertaken considering the following factors: alcohol consumption, age, eye color, posture, phase of the menstrual cycle, administration of oral contraceptives, physical exercise, pupil size, sleep pattern and clearly indicating the details of the experimental protocol.

Key words: melatonin suppression, light, circadian rhythm, light at night

281. THE CIRCADIAN RHYTHM – THE MEDICAL AND SOCIAL IMPORTANCE

Author: **Mădălina Cebuc**

Co-authors: Andreea Rotaru, Marinela Secrieru, Janna Orlioglo, Heba Verebcean
Scientific adviser: Vovc Victor, MD, PhD, Professor; Lupușor Adrian, MD, University Assistant, Department of Human Physiology and Biophysics, *Nicolae Testemitanu* State University of Medicine and Pharmacy, Chisinau, Republic of Moldova

Introduction. The circadian rhythms represent endogenously generated rhythms of 24-25 hours ensuring the cyclicity of physiologic and behavioral processes within the body. Their study value resides in a better understanding of the homeostatic activity of the organism as well as how their disturbances induce diverse pathogenetic pathways affecting various systems. A wider knowledge about how everything in our body is synchronized, will ensure us with more efficient treatment schemes and the development of chrono-pharmacotherapy.

Aim of the study. The purpose of this study is to highlight the significance of respecting the circadian rhythms by evaluating the circadian component of the sleep-wake cycle and its impact on the physical and psychological state of first year medical students at the end of the study year.

Materials and methods. At the end of the study year 2018-2019, 55 students from the Faculty of Medicine N°1 of the *Nicolae Testemitanu* State University of Medicine and Pharmacy filled a self-administered questionnaire, which included a general data section and four tests: Pittsburgh Sleep Quality Index, Beck, Hamilton and Dijon. These tests helped in assessing their lifestyle particularities, sleep quality as well as degree of anxiety, depression and physical development.

Results. Among the participants, 11 out of 19 students that use to go to sleep before 00:00 got a PSQI<5, only 13 out of 36 registering a PSQI>5. Those registering a Hamilton score higher than 4 tended to sleep fewer hours scattered other a day (P=0,001). On the other hand, a less depressive state (<9 on Beck scale) was observed in students having an irregular sleep pattern other 24 hours (P=0,0009). Dijon test-based results suggest a higher degree of physical development if they used to get to sleep after midnight.

Conclusions. The study proves disorganized lifestyles modifying the circadian rhythms induce over time alterations in homeostasis affecting both physical and mental state. In order to ensure higher life quality standards and better medical practice, regulated daily habits according the biological rhythms are encouraged.

Key words: Circadian rhythm, sleep-wake cycle, sleep quality

282. SLEEP QUALITY AND SLEEP HABITS IN HIGH SCHOOL STUDENTS

Author: **Mariana Dumitras**

Co-authors: Andreea Rotaru, Madalina Cebuc

Scientific advisers: Vovc Victor, MD, PhD, Professor; Lupușor Adrian, MD, University Assistant, Department of Human Physiology and Biophysics, *Nicolae Testemitanu* State University of Medicine and Pharmacy, Chisinau, Republic of Moldova

Introduction. Good sleep quality is an essential premise for an efficient daily activity. High school students, due to their adolescence age and intensive mental activity, need 8-10 hours of sleep. They also experience some physiological age problems such as late melatonin secretion leading to the difficulty to fall asleep and to wake up in the morning. The overusage of different devices (cell phones, computers, etc.) is known to disturb the process of falling asleep.

Aim of the study. To evaluate the sleep quality and sleep habits of urban high school students.

Materials and methods. The study consisted of an anonymous on-line questioning of high school students (grades 10-12), aged 15-19 years, from 7 lyceums of Chisinau and Balti. The questionnaire included: the Pittsburgh Sleep Quality Index (PSQI), the Epworth Sleepiness Scale (ESS), the Dijon Physical Activity Score (DPAS) and a questionnaire about anthropometric and demographic data.