

## **CIRCADIAN DISFUNCTION, AS NOVEL FACTOR FOR STRESS-RELATED FUNCTIONAL GASTROINTESTINAL DISEASES OF LIFESTYLE**

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Melatonin is major regulator of circadian rhythmicity (CR). Our previous pre-clinical data has shown that melatonin is potent cytoprotective agent for gastrointestinal tract. Last data suggests disorders of CR is key factor of life style diseases (LSDs) and for prevention the LSDs, it is important to understand how an imbalance of key factors (sedentary life style, diet and environment) and para-mechanisms (including genetic, metabolic, the gut-brain axis, gut microbiota, immune response and so on) results in the development of LSD, related to functional gastrointestinal diseases (fGID).

**Aim:** to investigate the role of CR on health and well-being in medical students (MS).

A cross sectional study using a sleep diary and sleep/health-related questionnaire data were collected at in 70 MS of LNMU (females 37, males 33, aged 18-21), focusing on body weight index (BWI, normal 18.5-24.9), sleep pattern (timing, duration per day, week), manifestations of fGID, included in Rome III Consensus, physical activity (graded to 3 groups: 1-low, 2-regular, 3-intensive), learning performance (graded to A, B, C class), incidences of acute respiratory infections (ARI) per year divided to: low <4 or high >4 times/year.

Physical activity of 1 group was in 42.8%, II-50%, and III-7.2% of total MS. The daily duration of computer work (DCW) > 6 hrs was in 68%; < 6 hrs - 32%. The daily lack of sleep (6 hrs and less) was in 42.85%; sleep for 6-7 hrs - 41.42%, > 7 hrs - 15.73%. The studying performance: A was in 26%, B-56%, C-18% of total population. The incidence of ARI > 4 were in 25.71%; < 4 times/year - 74.29% of MS. Self-estimation of stress confirmed 87% of MS but in male MS - 60.6%. The incidence

of ARI >4 times/year was highest in 1 group (53.3%). MS with moderate and intensive physical activity were sick 3-4 times/year. C academic level had MS, who sleep less than 6 hrs/day (15.71%), all of them had ARI >4 times/year and highest incidence of fGID.

Our data has shown that physical inactivity which resulted in abnormal sleep pattern recognized in 51.4% MS (in female-28.5%, in male 22.9%) are the key factors for fGID.

The results also show the influence of physical inactivity on learning performance of MD. The results support the hypothesis that LSDs affect MS health by fGID.

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