

How Experience Shapes Our Health Behaviour

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Summary

The experience of our environment stimulates our perception and our ability to learn. This learning ability is enhanced by the quality and duration of our sleep [1-3]. Recent results have shown that repetitive stimuli influence cortical neuron responses and their mechanisms of synaptic plasticity, as well as their learning and consolidation process during sleep [3]. It is easy to see why sleep disorders such as insomnia, narcolepsy and sleepwalking; are continually associated with cognitive or memory deficits. This reality can occur as much in healthy subjects as in mental health, as in individuals with diagnoses of neurological disorders such as Parkinson's or people with depression [4]. Sleep disorders may be the result of a neurological disorder (anxiety, depression and dementia) or an early stage neurodegenerative disease (Parkinson's disease and Alzheimer disease) [5-8] or be the cause of brain imbalance (cognitive impairment or decreased alertness). Among the sleep disorders that best characterize this cerebral dysfunction, we find insomnia (e.g. frequent awakenings, maintenance of difficult sleep, early awakening) and excessive daytime sleepiness (e.g. sleep attacks, frequent sleepiness during the day). These sleep disturbances have multifactorial and varied causes (e.g. pathophysiology of Parkinson's disease, medication, co-morbidities such as cognitive disorders and psychiatric disorders) [8]. Stress is a determinant of sleep disorders. We distinguish environmental stress, which is the result of exposure to multiple environmental stressors (e.g. housing, income, presence of a caregiver) that varies according to socioeconomic status and psychological stress causing certain disorders mood (anxiety, depression) [8]. In the elderly, the level of exposure to environmental stressors influences psychological stress. Hypothetically, there is thus a strong relationship between environmental stress and sleep disorders, but also between environmental stress and mood disorders such as depression and anxiety. Thus, several external factors (environmental and socio-economic) and psychobiological factors (hormones, circadian cycle, lifestyle, medical history, medication) act on sleep disorders. The literature has recently shown the individual effects of each category of factors mentioned above, on sleep disorders and cognition. But the combined interaction of the two types of factors has been little, or never studied. The current literature also describes several processes and diseases in the elderly population and arising from the influence of psychobiological, environmental and socio-economic factors [8-10]. Yet, there is still a lot of data on cognitive impairment and sleep disorders in young adults, who are subject to the same factors. The prevalence of sleep disorders is significantly higher in the population aged 50 and over. This state of affairs is correlated with the processes accompanying the aging of individuals. The predisposing factors are numerous and contribute to the progressive trajectory of neurodegeneration and co-morbidities in the elderly [11-13]. The lack of favourable terrain in young adults suggests a lack of neurological disorders, or in other words a minimization of the effects of environmental and psychobiological factors on the cognition and somnopathies of young adults. It is therefore important to understand the simultaneous effect of socio-environmental stimulation and psychobiological profile on the evolution of sleep disorders in this young adult population.

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