



Overview of the Relationship between Sleep Patterns and Parkinson's Disease

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DESCRIPTION

Parkinson's Disease (PD) is a neurodegenerative disorder characterized by the progressive loss of dopamine-producing cells in the brain. While motor symptoms such as tremors, rigidity, and bradykinesia (slowed movement) are the hallmarks of PD, it is increasingly recognized that sleep disturbances are also common in individuals with the condition. Sleep-related problems in Parkinson's disease can significantly impact the overall quality of life for patients and their caregivers.

Insomnia, characterized by difficulty falling asleep or staying asleep, is a prevalent sleep disorder in Parkinson's disease. It is often attributed to the motor symptoms of PD, such as tremors and muscle stiffness, which can make it challenging to find a comfortable sleeping position. Additionally, anxiety, depression, and medication side effects can contribute to insomnia in PD patients.

Excessive Daytime Sleepiness (EDS) is a condition in which many individuals with Parkinson's disease experience excessive daytime sleepiness, which refers to an irresistible urge to sleep or excessive daytime fatigue. EDS can be caused by disrupted nighttime sleep due to motor symptoms, sleep-related breathing disorders (such as sleep apnea), or the effects of medications used to manage PD symptoms. (REM) Sleep Behavior Disorder (RBD) is a specific sleep disorder characterized by the loss of normal muscle atonia during the Rapid Eye Movement (REM) sleep phase. Normally, during REM sleep, the body undergoes temporary paralysis to prevent acting out dreams. However, individuals with RBD can physically act out their dreams, leading to movements, vocalizations, and potentially injurious behaviors. RBD has been recognized as an early marker of Parkinson's disease; as a significant percentage of RBD patients may go on to develop PD or other neurodegenerative disorders.

Restless Legs Syndrome (RLS) is characterized by an unpleasant sensation in the legs, often described as creeping, crawling, or tingling, which is relieved by movement. RLS can be exacerbated in individuals with Parkinson's disease, and it can significantly disrupt sleep initiation and maintenance. Circadian Rhythm Disruptions (CRD) can lead to disturbances in the natural sleep-wake cycle, also known as the circadian rhythm. These disruptions can result in difficulties falling asleep at night and excessive sleepiness during the day. The underlying cause of these circadian rhythm disturbances in PD is not yet fully understood but may involve dysfunction in the brain areas responsible for regulating sleep and wakefulness. It is important to note that sleep disturbances in Parkinson's disease can have a reciprocal relationship, where they can both contribute to and result from the progression of the disease. Parkinson's-related pathology in the brain, particularly in areas involved in sleep regulation may contribute to the development of sleep problems. Conversely, disrupted sleep patterns can exacerbate PD symptoms, including motor dysfunction and cognitive impairment.

Managing sleep disturbances in Parkinson's disease involves a comprehensive approach. This can include optimizing medication regimens, addressing comorbid sleep disorders (such as sleep apnea or RLS), practicing good sleep hygiene, and considering non-pharmacological interventions like physical activity and cognitive-behavioral therapy for insomnia. Close collaboration between neurologists, sleep specialists, and other healthcare professionals is crucial in developing personalized treatment plans to improve sleep quality and overall well-being for individuals with Parkinson's disease.

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