

Sleep in Parkinson's Disease

Amy Hellman, MD, FAAN

Associate Professor

Department of Neurological Sciences

University of Nebraska
Medical Center



Nebraska
Medicine



Importance of sleep

Insufficient sleep may contribute to many negative outcomes

- Daytime somnolence
- Decreased alertness → poor performance, increased risk of accidents, injury, and death
- Detrimental effects of psychological and physical health
 - Depression/anxiety
 - Cognitive impairment
 - Poor cardiac health
 - Immunosuppression
 - Obesity
- Decreased quality of life



Sufficient sleep

Two dimensions

- Duration (quantity)
- Depth (quality)

Sufficient sleep depends on the number of arousals from sleep, percentage, duration, and type of sleep stages



Sleep and Parkinson's Disease

- Sleep is commonly impacted by Parkinson's Disease (PD)
- PD can cause many different disorders of sleep
 - May start many years before the movement symptoms of PD start
 - Worsen as the disease worsens
- The same sleep disorders occur in people without PD, but they occur more frequently in people with PD



Sleep Disorders in PD

- Insomnia
- Nocturnal akinesia
- Restless leg syndrome (RLS) and Periodic leg movements in sleep (PLMS)
- REM sleep behavior disorder
- Sleep apnea
- Excessive daytime sleepiness



Insomnia

- Effects 80% of people with PD
- Problems falling asleep, staying asleep, or both
- Poor sleep quality
 - Fragmented sleep
 - Less deep, restful sleep
 - Nocturnal tremor
- Can be aggravated by medications to treat motor symptoms of PD



Factors contributing to insomnia

- Nocturnal motor symptoms
- Depression, anxiety, and panic disorder
 - All very common in PD
 - All affect sleep
- Urinary frequency during the night
- Nocturnal leg cramps
- Medications
 - Dopaminergic medications
 - Non-PD medications



Management of Insomnia

- Discuss any contributing factors with your doctor
- Maintain good sleep hygiene
- Cognitive Behavioral Therapy
- Medication options (discuss with your doctor)
 - Melatonin
 - Prescription medications
 - Do NOT take over the counter sleep aids without approval from your doctor



Sleep hygiene

- Regular sleep schedule
 - Go to bed at the same time each night
 - Get the same amount of sleep
 - Wake at the same time each morning
- Exercise daily and regularly but not in the late evening
- Get plenty of exposure to light during the day
- Sleep in a quiet, dark environment
- Avoid looking at screens nearing bedtime
- Avoid caffeine after lunch
- Don't eat a big meal just before bed
- Avoid alcohol within 3 hours of bedtime
- Do not smoke, especially in the evening/night
- Do something relaxing before bedtime
- Associate your bed with sleep



Stretch to prevent leg cramps



Stand facing the wall, feet together, about 24 inches from the wall. With the heels firmly on the floor and the body aligned straight at the hips and knees, lean forward to the wall, stretching the back of the leg. Hold this position for 10 to 30 seconds. Repeat five times per session, at least two sessions daily.

uptodate.com



Nocturnal Akinesia

- Trouble turning over in bed or getting up to go to the bathroom
- Most often seen in later stages of PD
- Often associated with nocturnal tremor
- Management
 - Increase nighttime dose of PD medication
 - Long-acting carbidopa/levodopa or dopamine agonist
- If this is not effective, continuous medication may be useful
- Deep brain stimulation may have favorable impact on sleep



Restless Leg Syndrome

- Unpleasant crawling or deep aching sensation in the legs or arms
- Relieved temporarily by moving the legs, sometimes requiring a person to get up and walk around
 - Differentiates from leg restlessness which is a common "wearing off" phenomenon
- Worse in the evening, interfering with sleep
- Can be treated with PD medications if motor symptoms are also occurring
- Other medications may be a better choice



REM Sleep Behavior Disorder

- Acting out of dreams
- Movements
 - Thrashing, hitting, kicking, falling out of bed
- Vocalizations
 - Screaming, laughing, singing
- May cause harm to themselves or others
- Not remembered



Management of RBD

- Safe sleeping environment
 - Remove breakable, sharp, or dangerous objects from the bedside
 - Mattress on the floor
- Medications (discuss with your doctor)
 - Melatonin
 - Naturally secreted by the brain to induce sleep
- Clonazepam
 - Sedating, may worsen sleep apnea, gait, cognition
 - Little, if any, tendency to develop tolerance, dependence, abuse, or adverse sleep effects



Sleep Apnea

- Caused by collapse of the airway during sleep
- Snoring, gasping, choking, interrupted breathing
- Poor sleep quality resulting in excessive daytime sleepiness
- Can worsen cognitive function, cause irritability, depression, psychosis
- Associated with other health risks
 - Increased risk of high blood pressure, coronary artery disease, arrhythmias, heart failure, and stroke, among others
- May be worsened by treatment of other sleep disorders



Management of Sleep Apnea

- Diagnosed with a sleep study
- Managed by a primary care provider or sleep specialist
 - Treated the same in people with and without PD
 - Behavior modifications for OSA
 - Weight loss and exercise
 - Avoid alcohol, even during the day
- Continuous positive airway pressure (CPAP)
- Alternative therapies including oral appliances and surgical procedures are available and may be appropriate for some people



Excessive Daytime Somnolence

- Caused by Parkinson's Disease itself and contributed to by medications and the sleep disturbances discussed earlier
- Management
 - Identify treatable causes
 - Improve sleep hygiene
 - Reduce sedative medication
 - Bright light therapy
 - Physical activity and exercise
- If more conservative measures are not effective, stimulating medications may be tried but have variable effects
- Adjust activity to minimize risk



In Summary

- Sleep disorders are common non-motor PD symptoms that have a big impact on a person's life
- Identification and appropriate management of these symptoms is important and has impact on health, safety, and quality of life



HDR © 2017 Dan Schwalm

University of Nebraska
Medical Center



Nebraska
Medicine