

# SLEEP AND PARKINSON'S DISEASE

Bridget Ollesch, MD

# Overview

Describe the difference between fatigue and sleepiness

## Fatigue

- Review potential causes of fatigue
- Discuss treatment options

## Sleep

- The importance of sleep
- Review the most common sleep disorders
- Discuss treatment options

Wrap-up & questions

# Fatigue or Sleepiness?

Sleepiness: Tendency or ability to fall asleep

Fatigue

- No universal definition of fatigue specific to PD
- Excessive tiredness associated with mental or physical exertion
- Other terms: Exhausted, drained, lack of energy

# Fatigue

## Peripheral

- Measurable loss of muscle strength with repetition

## Central

- A state of feeling exhausted
- Mental or physical

PD patients often have both. Peripheral fatigue tends to improve with levodopa

# Causes of Fatigue

- Depression
- Sedating effects of medication
- Poor sleep (Insomnia, frequent urination, sleep apnea, sleep disorders)
- Dementia
- Anemia
- Orthostatic hypotension
- Thyroid disorders
- Progression of the disease itself

# Treatment of fatigue



## Energy management

Budget energy  
over the day

Utilize best times

Power naps



## Exercise



## Maintain a stimulating environment



## Removal of sedating medications



## The use of stimulants is unclear

# Sleep Disorders

Why is sleep important?

Memory

Energy level

Cognition

Mood

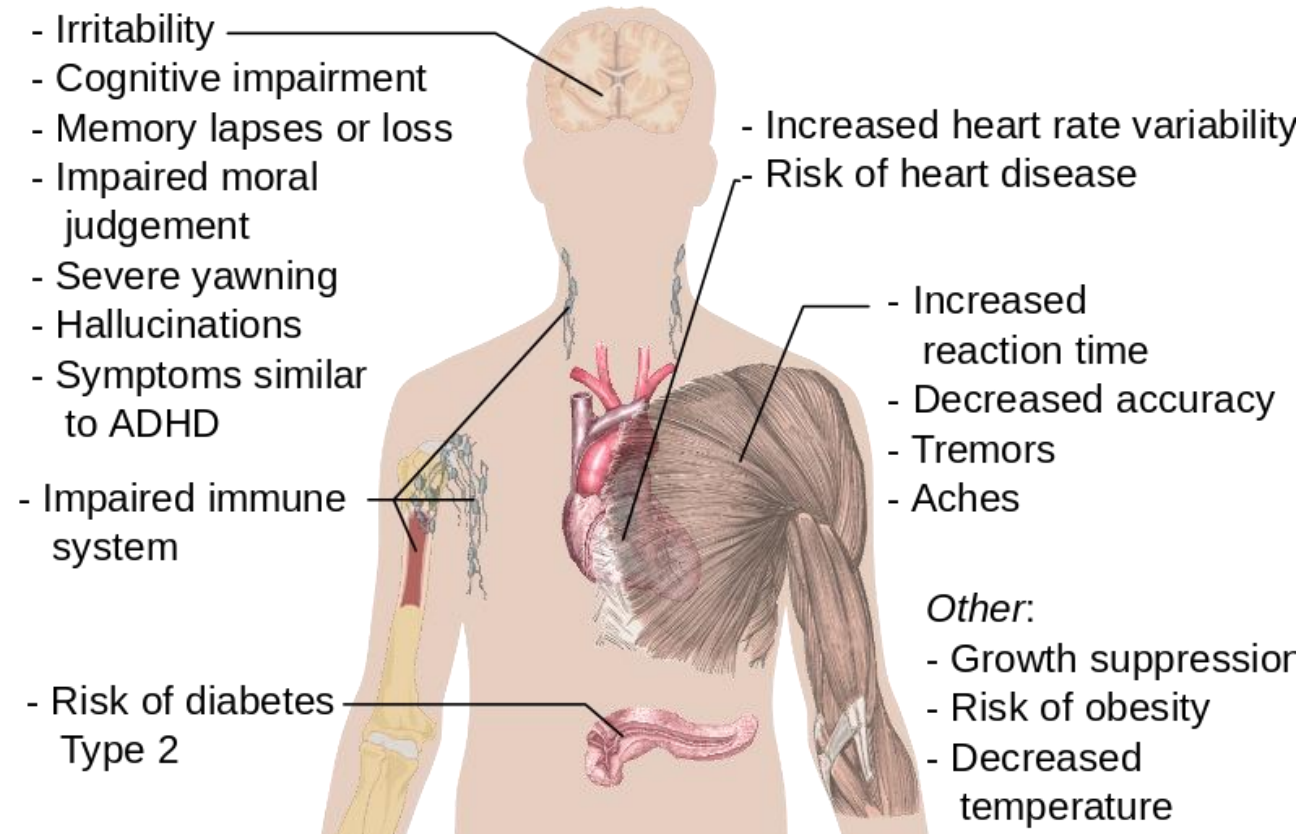
Physical performance

Alertness

Very common in PD – as high as 90% of PD patients may have some form of sleep disorder

Most are treatable!

# Effects of Sleep Deprivation



# REM Sleep Behavior Disorder

Abnormal movements during REM sleep (acting out dreams)

- Normally, muscles are paralyzed during REM sleep

Potential harm to individual with RBD and bed partner

Occurs typically 90 minutes after sleep onset

# REM Sleep Behavior Disorder

Seen in 25-50% of patients with PD

May precede the other symptoms of PD by years to decades

As many as 90% of people who have REM-sleep behavior disorder will develop Parkinson's or other similar conditions

# REM Sleep Behavior Disorder

## Symptoms

- Yelling or talking during sleep
- Having conversations with bed partner
- Movements, often violent or defensive
- Almost never sleepwalking

# Treatment of RBD

## Safety Precautions

- Lower the bed
- Padded side rails; padded floor
- Move away nightstands, furniture
- Sleep in separate beds

# Treatment of RBD

## Medications

### Melatonin

- Natural sleep-promoting hormone

### Clonazepam (Klonopin)

- Anti-seizure / anti-anxiety medication
- Be aware of side effects: drowsiness, falls, poor memory/thinking

# Restless Leg Syndrome

Urge to move or unpleasant sensation

Beginning or worsening during periods of *rest or inactivity*

*Partially or totally relieved* by movement such as walking or stretching, at least as long as the activity continues

*Worse in the evening* or night, or only occur in the evening or night

# Restless Leg Syndrome

Occurs in 15-30% of people with PD

May be associated with low iron, end stage renal disease, neuropathy, kidney disease, and pregnancy

Diagnosis typically made by a physician. In some cases, a sleep study is needed.

# Treatment of RLS

Consider stopping antidepressants, antihistamines

Avoid nicotine, caffeine, alcohol

Exercise or warm bath before bed

Eat an iron-rich diet: enriched breakfast cereals/grains, beans, tofu, seeds (pumpkin, sesame), nuts, broccoli, spinach, beef, chicken, mussels, oysters

Iron therapy (even if iron levels are 'normal')

# Treatment of RLS

Gabapentin (Neurontin, Horizant)

Pregabalin (Lyrica)

- Side effects: sleepiness, grogginess, swelling

# Treatment of RLS

## Dopamine Agonists

- Pramipexole (Mirapex), Ropinerole (Requip), Rotigotine patch (Neupro)
- Side effects

Sleep attacks

Impulse control disorders

Augmentation: worsened RLS symptom: including earlier start of onset, increase intensity, and involvement other body regions

Opiates: Tramadol, Oxycodone, Methadone

# Periodic Limb Movements in Sleep

Repetitive, highly stereotyped limb movements

May occur in healthy individuals

Prevalence increases with age

Associated with several sleep disorders but especially RLS

- Also with heart disease, kidney disease, medication use (antidepressants)

# Periodic Limb Movement Disorder

PLMS index (number of PLMS per hour) 15 or more

Clinical sleep disturbance or daytime fatigue

Treatment: similar to RLS

# Hypnic Jerks/Sleep Starts

Jerky movements usually involving different and isolated body segments

Associated a peculiar feeling of “shock” or “falling into the void”

Triggered by fatigue, stress, sleep deprivation, vigorous exercise, caffeine and nicotine

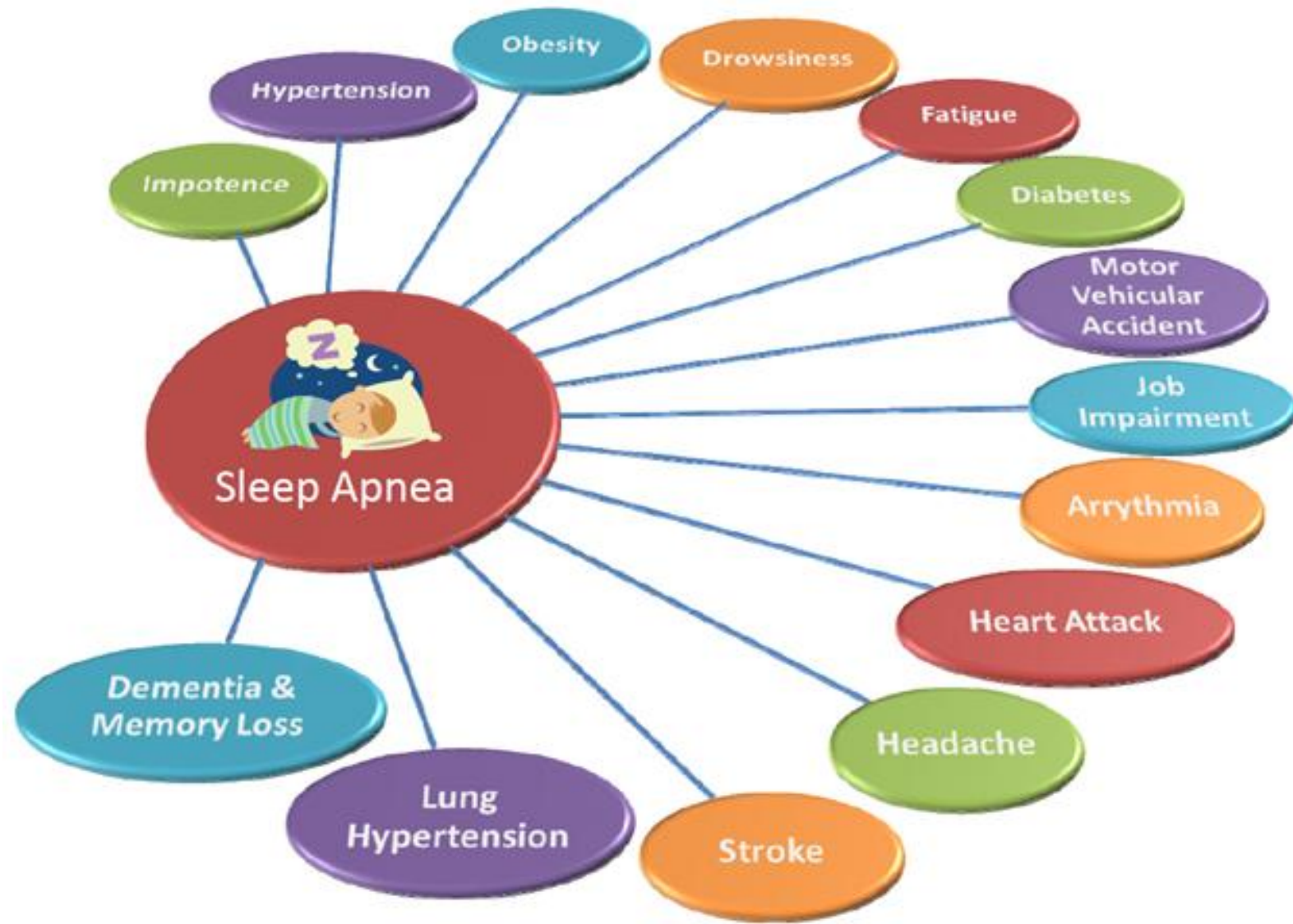
70% of the adult population

# Sleep Apnea

Witnessed breathing interruptions or awakenings due to gasping or choking for air with greater than 5 events/hour

Very short awakenings; usually not noticeable

Snoring is NOT normal in sleep



# Sleep Apnea

Diagnosis: Polysomnography (a sleep study)

Treatment:

- Positive pressure ventilation (CPAP)
- Oxygen
- Devices to pull jaw forward

# Insomnia

## Definition

- Inability to fall asleep within 30 minutes
- Long periods of wakefulness during the night
- Waking up too early in the morning

Most common sleep disorder in PD (37-88%)

# Causes of Insomnia

Going to bed too early

Naps

Anxiety, depression

Inconsistent schedule

Restless legs

Sleep apnea

Medication side effects

Pain

Nighttime urination

Worsened Parkinson's symptoms: rigidity/wearing off, discomfort from decreased movement

## Sleep Hygiene

### Exercise

Avoid caffeine and alcohol after 4:00pm

Avoid late evening meals

Minimize napping

Establish bedtime routine

If unable to sleep within 15 min, get out of bed

Make the bedroom comfortable

# Medical Treatment of Insomnia

Melatonin

Trazodone

Mirtazapine

Eszopiclone (Lunesta)

Long-acting Carbidopa/Levodopa

Deep brain stimulation

- May improve sleep time and quality, though results are somewhat mixed

# Excessive Daytime Sleepiness

Good sleep is about quantity, quality, and timing

If none of the above are problematic, also consider:

- Medication side effects (Dopamine agonists)
- Mental health issues
- Seeing a sleep specialist

# Treatment of Daytime Sleepiness

Strategic napping

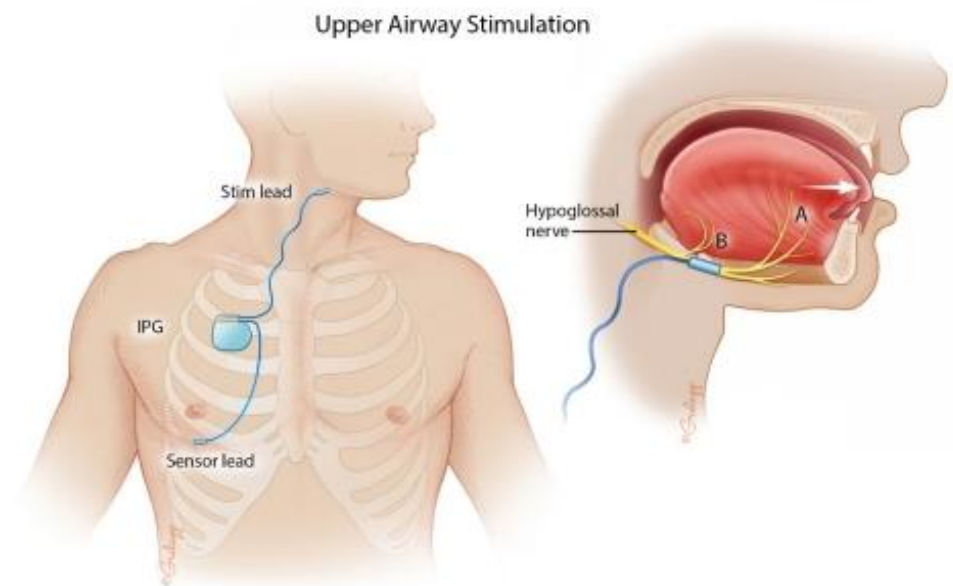
Caffeine

Modafinil (Provigil): A stimulant with similar efficacy as caffeine, minimal side effects

# What's New?

## Treatment of Sleep Apnea: Hypoglossal Nerve Stimulation

Not recommended for all patients



# Summary

Sleep and fatigue are different, but there is a lot of overlap

Most sleep problems are treatable

Common sleep issues in PD

- REM sleep behavior disorder
- Restless leg syndrome / Periodic limb movement disorder
- Insomnia
- Daytime sleepiness
- Sleep apnea

Still sleepy? See a sleep specialist

Thank you!

