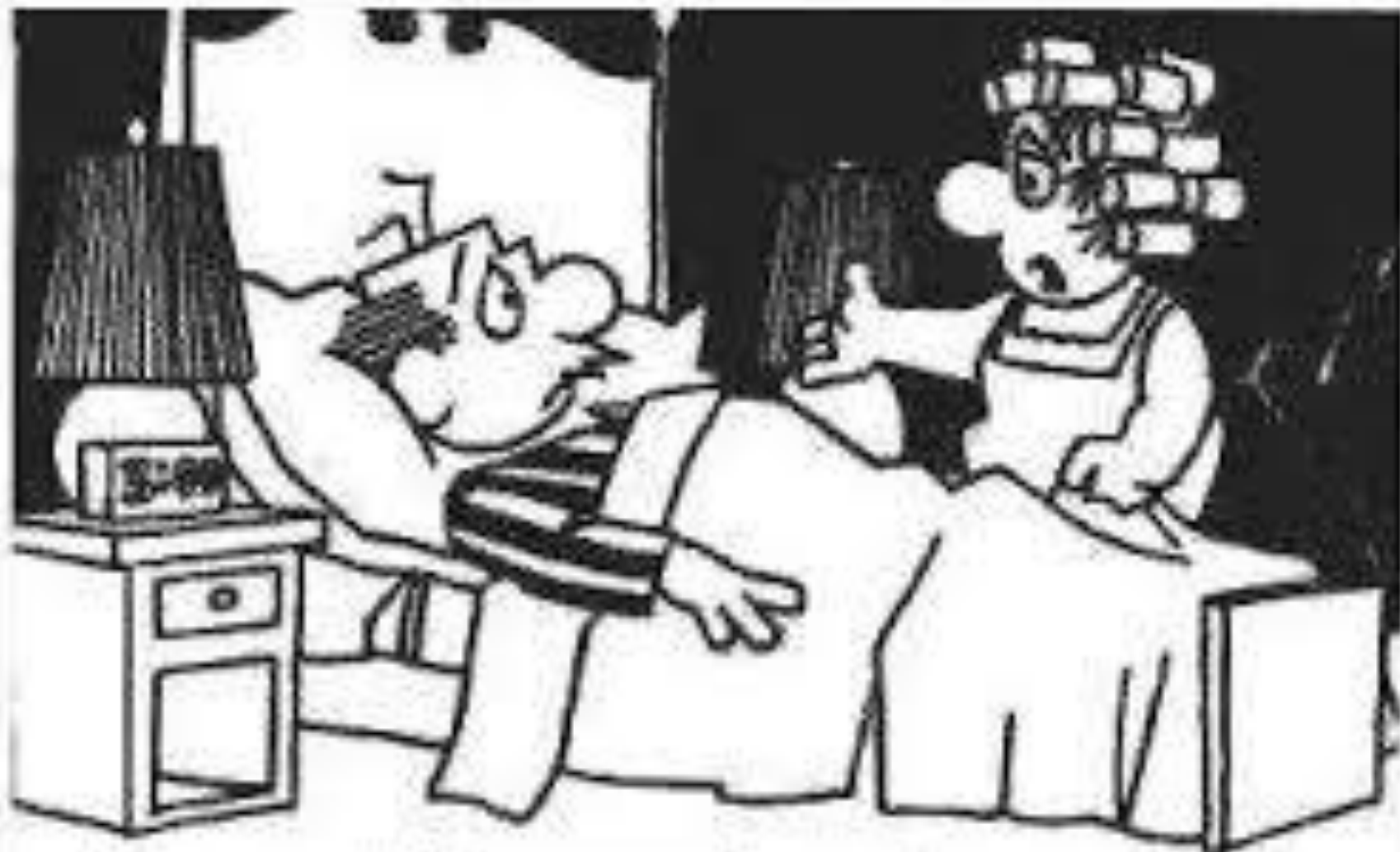


# Sleep in Parkinson's Disease

Dr Claire Hinnell  
Movement Disorder Neurologist  
Director Movement Disorder Clinic  
JPOCSC  
Surrey, BC





"No wonder you have insomnia . . .  
lying there awake all night."

# Benefit of good sleep

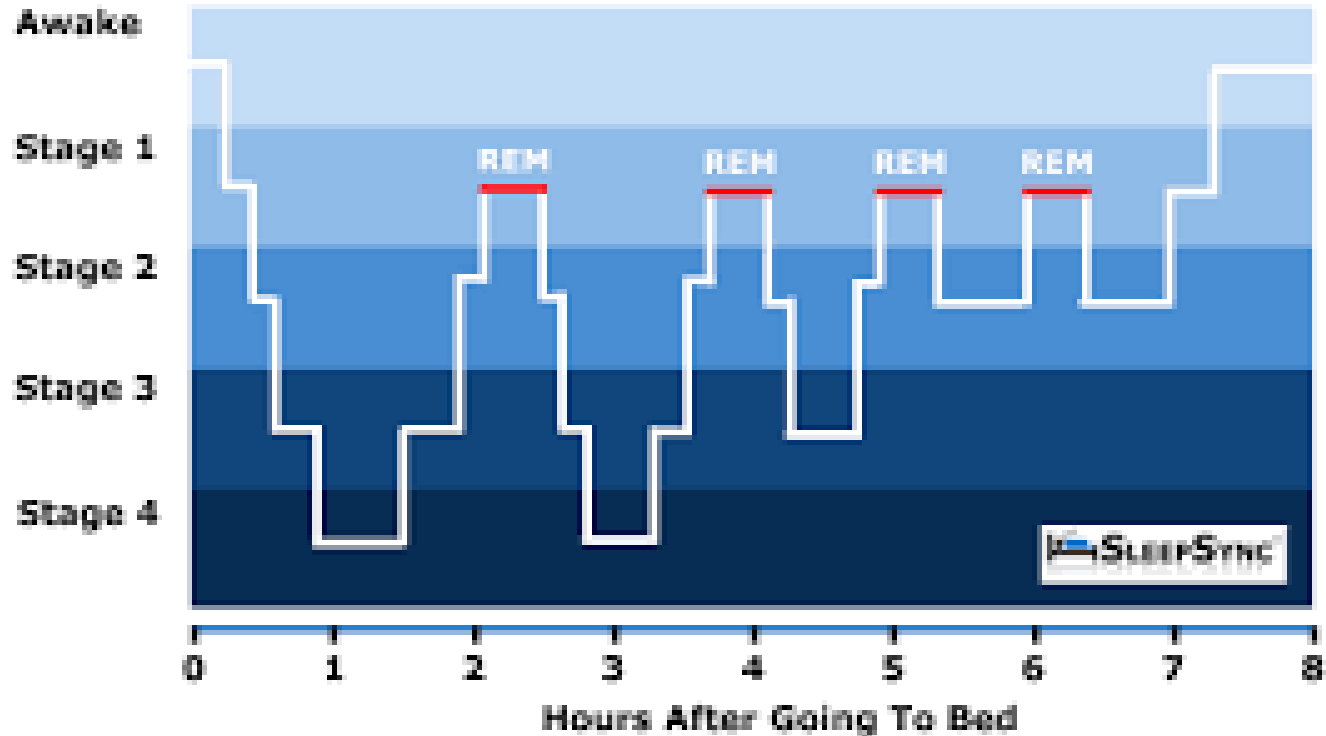


- ◆ better quality of life ratings
- ◆ improved mood
- ◆ clearer cognition
- ◆ reduced severity of daytime parkinsonism
- ◆ reduced daytime sleepiness

# Outline

- ◆ Physiology of sleep
- ◆ Patient experience
- ◆ **Causes of sleep problems in PD...and what might help**
- ◆ Patient experience reviewed
- ◆ Summary

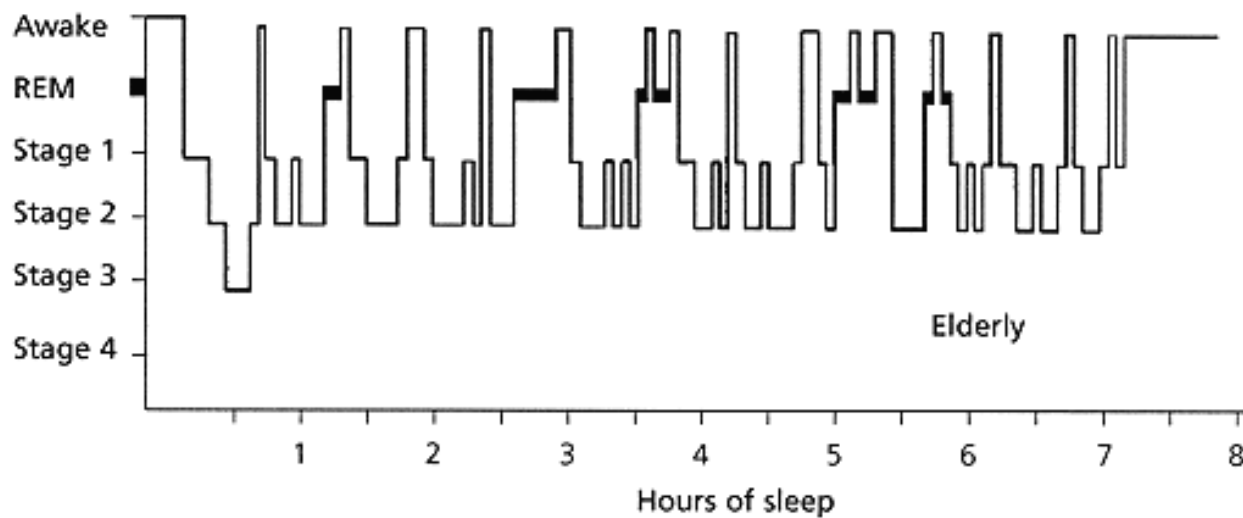
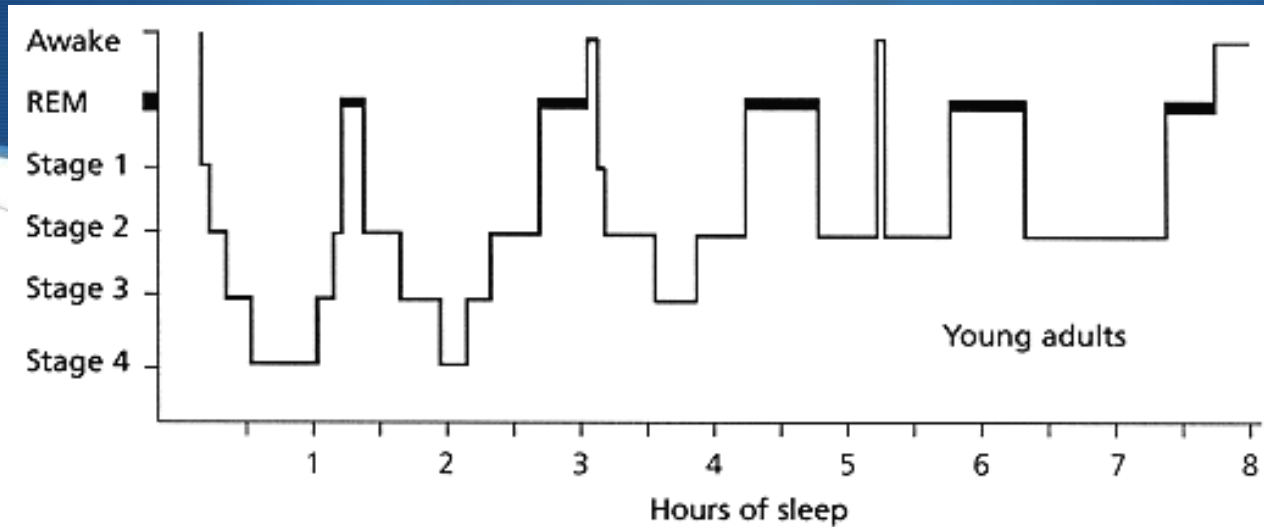
# A Typical 8 Hour Sleep Cycle



- Circadian rhythms
  - sleep, body T, hormones
  - affected by internal clock
  - clock affected by age, time zones, exercise, melatonin, light-dark (strongest)

- NREM
  - stage 1, 2, 3
  - 1<sup>st</sup> third of night
- REM sleep
  - last third of night
  - muscle atonia

# Sleep in the older person



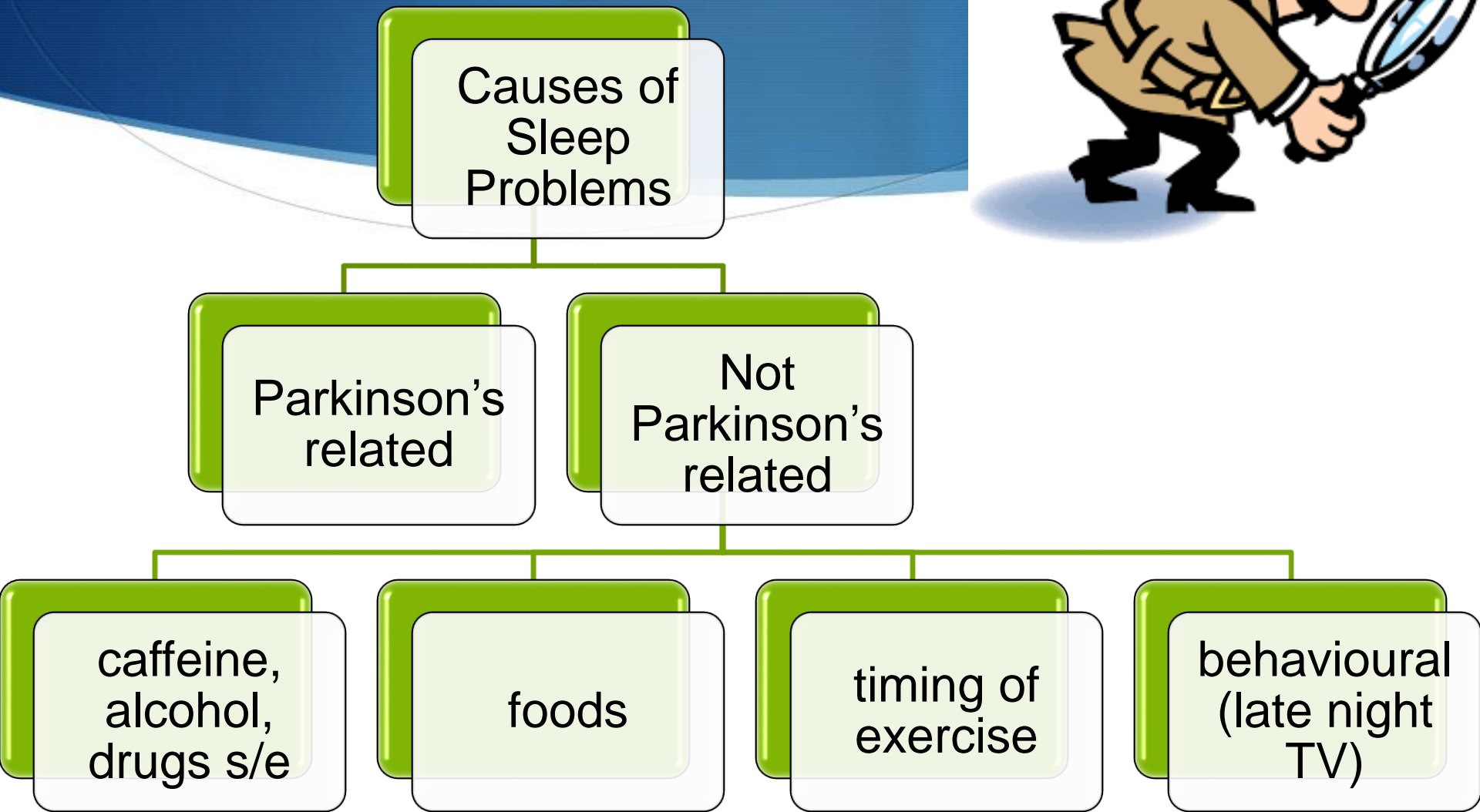
# Sleep in PD

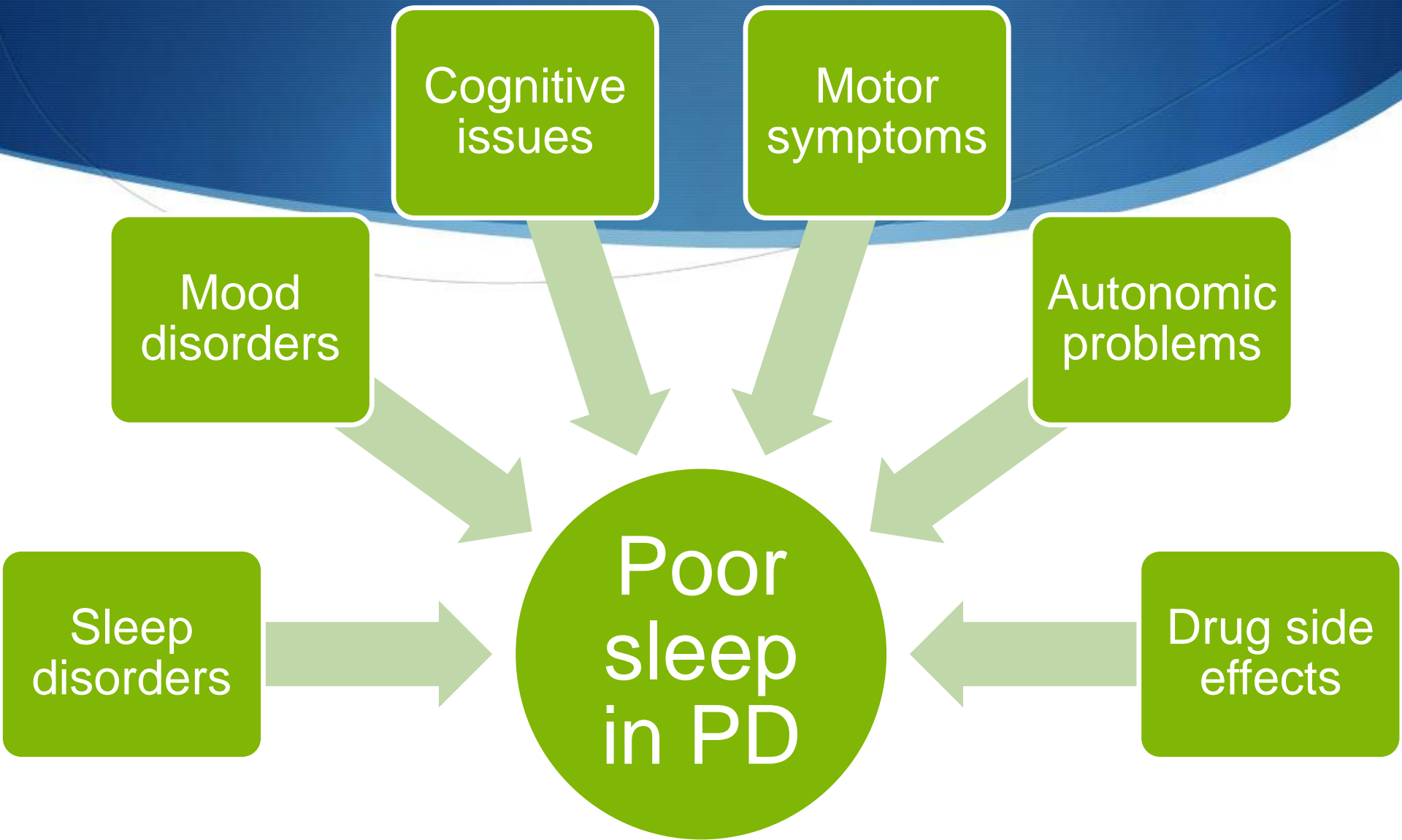
- ◆ more fragmented than in same age without PD
- ◆ difficulty sleeping through the night
- ◆ difficulty getting back to sleep
- ◆ may get to sleep but wake after a few hours
- ◆ can get reversal of sleep-wake cycle with sundowning

# Patient experience

- ◆ 67 yo gentleman reported trouble sleeping
- ◆ his legs started bothering him later in the evening and he had to walk around for 20-30 minutes til they felt better and he could finally get to sleep
- ◆ he woke up several times a night and had trouble getting back to sleep
- ◆ he woke up unrefreshed in the morning and struggled through til mid morning when he finally 'got going'
- ◆ he had a nap the later afternoon as he couldn't make it til bedtime
- ◆ wife slept in a separate room as his sleep was disrupting her
- ◆ he was becoming more irritable and having problems with his short term memory







# Sleep disorders



REM sleep  
disorder

Sleep  
apnea

Periodic  
limb  
movements

Restless  
leg  
syndrome

# Mood disorders



- ◆ Anxiety
- ◆ Depression
- ◆ very common cause of disrupted sleep so critical to try and address

# Cognitive-related issues



- ◆ Dementia
  - ◆ night wandering
  - ◆ sleep-wake reversal, sundowning
  - ◆ tx - cholinesterase inhibitors
- ◆ Psychosis
  - ◆ hallucinations more in dim light/dark
  - ◆ tx - anti-psychotics

# Motor symptoms

- ◆ cramps
- ◆ stiffness, difficulty rolling
- ◆ akathisia, restless
- ◆ tx – bedtime levodopa (CR), overnight levodopa

**THE CRAMPS**



**THE OHIO DEMOS '79**

# Autonomic problems

## 💧 Urination issues

- 💧 minimize drinking liquids x 3 hours before bed
- 💧 go to bathroom right before sleep
- 💧 commode or urinal (reduce effort, arousal, light)
- 💧 condom catheter
- 💧 medications to reduce frequency
- 💧 urologist

# Drug side effects



- ◆ Levodopa-carbidopa and dopamine agonists
  - ◆ sleep attacks
  - ◆ daytime sleepiness
  - ◆ can be alerting at bedtime
  - ◆ provoke vivid dreams





# Daytime sleepiness



- ◆ excessive daytime somnolence
  - ◆ Parkinson's disease itself (more in advanced PD and those with cognitive impairment)
  - ◆ sleep disturbance at night
  - ◆ drug side effects – dopamine, anti-depressants, sedatives
- ◆ stimulants
  - ◆ careful in elderly
  - ◆ controversial

# Patient experience

- ◆ his legs started bothering him later in the evening, had to walk around for 20-30 minutes
  - ◆ **RESTLESS LEGS**
- ◆ he woke up several times a night and had trouble getting back to sleep
  - ◆ **URINARY FREQUENCY, ANXIETY**
- ◆ awoke unrefreshed and struggled through til mid morning when he finally 'got going'
  - ◆ **DRUG SIDE EFFECT (eg: taking high dose of mirtazapine at bedtime)**
- ◆ he had a nap the later afternoon as he couldn't make it til bedtime
  - ◆ **BEHAVIOURAL**
- ◆ wife slept in a separate room as his sleep was disrupting her
  - ◆ **REM SLEEP BEHAVIOUR DISORDER**
- ◆ he was becoming more irritable and have problems with his short term memory
  - ◆ **CAUSED MOOD AND COGNITIVE SYMPTOMS**

# Patient experience

- ◆ **RESTLESS LEGS** – started low dose gabapentin
- ◆ **URINARY FREQUENCY** – reduced fluid intake, had prostate checked, tried solifenacin (vesicare)
- ◆ **ANXIETY** – mindfulness exercises before bed
- ◆ **DRUG SIDE EFFECT** – reduced bedtime dose of mirtazapine
- ◆ **BEHAVIOURAL** – moved nap earlier and made it shorter
- ◆ **REM SLEEP BEHAVIOUR DISORDER** – tried melatonin
- ◆ **MOOD AND COGNITIVE SYMPTOMS** – improved
- ◆ overall improvement in sleep and physical symptoms
- ◆ used zopiclone occasionally for a 'bad' night

# Tips and tricks

- ◆ satin sheets and pjs to make moving in bed easier
- ◆ keep regular sleep schedule
- ◆ bedtime routine – keep same
- ◆ get outside everyday and exercise, in morning, avoid evening
- ◆ if nap, same time every day, < 1 hr, not after 3pm
- ◆ avoid stimulants
- ◆ alcohol can disrupt sleep
- ◆ avoid heavy evening meals
- ◆ sleep in cool dark room
- ◆ bed for sleep and sexual activity only
- ◆ avoid screen time later in evening

# Sleeping pills

- ◆ zopiclone
- ◆ mirtazipine
  - ◆ can increase RBD
- ◆ benzodiazepines (sedatives)
  - ◆ confusion
  - ◆ agitation
- ◆ antipsychotics – low dose quetiapine or clozapine

# Summary

- ◆ Sleep is a common problem in Parkinson's disease
- ◆ Untreated it can significantly affect quality of life
- ◆ Detective work is needed to break the problem down to find the contributing causes that can be treated



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# Resources

- ◆ <http://www.parkinson.ca/site/c.kgLNIWODKpF/b.8744575/>
- ◆ <http://www.parkinson.org/understanding-parkinsons/living-well/activities-of-daily-living/sleep-and-rest>