



# Sleep Disorders in Parkinson's Disease

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# Why Sleep?

- u 1/3 of life...comatose!
- u Evolutionary – worms “sleep”
- u Psychosis/Death
  - u THEORIES
    - u 1. Energy conservation
    - u 2. Clean out waste
    - u 3. Plasticity and reconnections: memory , attention span

# What can go wrong in PD?

- u Fragmented sleep
- u Restless leg syndrome, periodic limb movement disorder
- u REM sleep behavior disorder
- u Dystonia (legs or arms)
- u Urinary frequency
- u Sleep walking/parasomnias
- u Sleep apnea
  - u Mini hypoxias
  - u Cardiovascular risk
  - u Stroke risk
  - u Dementia risk

# Sleep Apnea

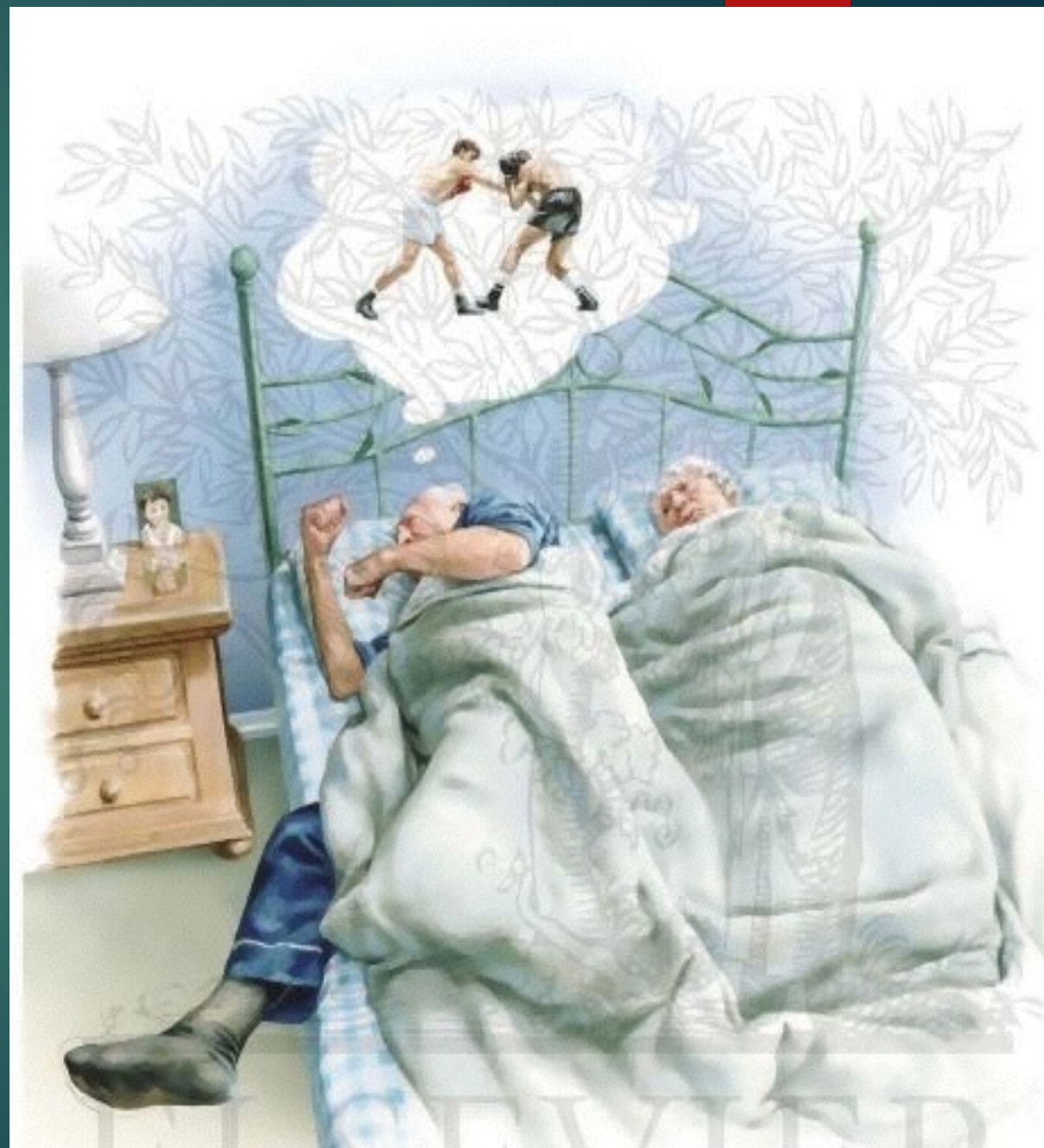
## Not just snoring

- u Micro awakenings
- u Tired the next day
- u Memory problems
- u Fatigue
  
- u And you may not know you have it!



## REM Behaviour Disorder (RBD)

- No muscle atonia during REM sleep
- Ability to act out complex dream behaviour
- Bedpartner often the "victim"
- Age of onset: 50 – 60yrs. Males (90%)
- Usually opposite of waking personality
- Strongly associated with synucleinopathies
  - Parkinsonism/Parkinson's
  - Lewy Body Dementia



# Parasomnias

- u Sleep walking
- u Nightmares
- u Sleep eating

Dystonia can lead to contracture deformities and carpal tunnel syndrome





# Restless leg syndrome

- u Sensory disturbance
- u Need to move legs (or limbs) whilst still
- u Prevents sleep
- u Often associated with PLMD
- u Sometimes assoc. with neuropathy
- u iron deficiency

# RLS: Criteria for Diagnosis

- u *Urge to move* the limbs often with uncomfortable sensations
- u Symptoms are worse or exclusively *at rest* or during periods of inactivity
- u Symptoms are partially or totally *relieved by movement*
- u *Circadian rhythm*: symptoms must be worse or exclusively in the evening or night

# RLS Features

- u Sensory symptoms:
  - u Creepy, crawly, tingly, painful, burning, achy
  - u Like worms or bugs crawling deep in the muscle; Like water running under the skin
- u Usually affects both legs simultaneously
- u May be unilateral or alternating
- u Arms may be involved

# Pathophysiology: Possible Role of Iron

- u CSF: ferritin decreased/transferrin increased suggesting low brain iron stores
- u MRI: decreased iron in SN and putamen
- u Pathology: iron levels decreased in SN

Davis et al. *Eur Neurol* '00 ; Earley et al. *J Neurosci Res* '00; Earley et al. *Neurol* '00; Allen et al. *Neurol* '01 ; Connor et al. *Neurol* '03; Connor et al. *Neurol* '04; Allen *Sleep Med* '04; Early et al. *Sleep* '05; Early et al. *Sleep Med* '06

# Daytime Fatigue and Sleepiness

- u Often due to the above primary sleep disorders
- u BUT! Medications:
  - u Dopamine Agonists – sudden sleep attacks
  - u Sedative hangover
  - u Antipsychotics
  - u Antidepressants (rare)
  - u Blood pressure medications

# How to tell the difference?

- u Tell your doctor
- u Ask you sleep partner
- u Trial and error with the medications
- u Sleep study or sleep specialist
- u Sleep inventory

# What to do if you have any of these?

- u Nap only 30 minutes a day; sleep no more than 7 hours
- u Good sleep hygiene and exposure to real light
- u Urinary frequency – drugs that inhibit the bladder
- u Sleep fragmentation/RBD – clonazepam
- u Sleep apnea – mouth devices, machines, lose weight
- u RLS – dopamine agents/clonazepam; iron
- u Dystonia – BTX injections, dopamine. Don't sleep on curled limbs
- u ?stimulants

# RLS tips

- u Activity before bedtime
- u Avoid caffeine
- u Walk on airplanes/trains
- u Driving breaks
- u Avoid caffeine
- u Ask doctor about antidepressants



# HOME REMEDIES FOR **RESTLESS LEG SYNDROME**



## **HOT AND COLD FOOT SOAKS**

1. Fill one tub with cold water and another with bearable hot water.
2. Put your feet in the hot water for 3 minutes.
3. Then dip them in cold water for 10-60 sec.
4. Repeat 2 or 3 times.



## **APPLE CIDER VINEGAR**

Add 1 tbsp apple cider vinegar to a glass of lukewarm water. Sip it slowly about half an hour before going to bed. Do this daily.

## **EPSOM SALT**



# Driving for sleep disorders PD patients

- u May need to reduce meds or cut DA
- u Use good judgement; don't take sleep causing med 30 minutes before driving
- u Be extra alert at signal stops
- u Never stop on a train track
- u Use a stimulant before driving (??)
- u No THC!
- u We don't have to "turn you in" for this. Tell your doctor!