Sleep-Related Movement Disorder
SLEEP-RELATED MOVEMENT DISORDERS

- Restless Leg Syndrome
- Periodic Limb Movement Disorder
- Sleep Related Leg Cramps
- Sleep Related Bruxism
- Sleep Related Rhythmic Movement Disorder
- Due to Drug or Substance
- Due to Medical Condition
Restless Leg Syndrome

A. Patient reports and urge to move the legs, usually accompanied or caused by uncomfortable and unpleasant sensations in the legs

B. The urge to move or unpleasant sensations began to worsen during periods of rest or an activity such as lying or sitting

C. The urge to move or unpleasant sensations are partially or totally relieved by movement such as walking or stretching, at least as long as the activity continues

D. The urge to move or unpleasant sensations are worse, or only occur, and the evening or night
Restless Legs Syndrome

Key Points

NIH criteria

– (1) an urge to move the limbs with or without sensations
– (2) worsening at rest
– (3) improvement with activity
– (4) worsening in the evening or night

Disagreeable leg sensations prior to sleep onset

– Creeping, crawling, tingling, aching or itching
– Feelings abate with leg movement
– Complaints of inability to fall asleep
Restless Legs Syndrome

Key Points
Iron, dopamine and genetics are factors in pathology
  – Serum ferritin levels < 50
PSG: Prolonged sleep latency
PLMS: Occur in 80-90% of patients with RLS
More than 50% of patients with primary RLS report familial pattern
May be precipitated or aggravated by medications
  • Antidepressants (except Wellbutrin), lithium, antipsychotics, anti-emetics and other dopamine-receptor antagonists

Treatment
  – Dopamine agonists such as ropinirole, pramipexole are first line in most cases unless contraindicated
  – Other dopaminergic agents: carbidopa/levodopa or pergolide
  – Opioids such as propoxyphene, oxycodone, or methadone, etc.
  – Benzodiazepines, which often assist in staying asleep and reducing awakenings from the movements
  – Anticonvulsants, which often help people who experience the RLS sensations as painful, such as gabapentin
Periodic Limb Movement Disorder

A. Polysomnography demonstrates repetitive, highly stereotyped movements that are:
   i. 0.5-5 seconds in duration
   ii. amplitude greater than or equal to 25% of toe dorsiflexion during calibration
   iii. In sequence of 4 or more movements
   iv. Separated by an interval of more than 5 seconds and less than 90 seconds (typically there is an interval of 20-40 seconds)

B. PLMS index exceed 5 per hour in children and 15 per hour in adults
Periodic Limb Movement Disorder

Key Points
PLMs ↑ in frequency with ↑ age
   ~ 30-40% of individuals > 50 yo have PLMs;
   ~ 45% of population > 65yo
Iron deficiency may play role (check ferritin levels)
Also seen with RLS, RBD and narcolepsy
Symptoms include leg cramps & insomnia
May be precipitated or aggravated by medications
   Antidepressants (except Wellbutrin), lithium, antipsychotics, anti-emetics and other dopamine-receptor antagonists
Typically only treat if concurrent RLS or symptomatic PLMD

Treatment
   Dopamine agonists such as ropinirole, pramipexole are first line in most cases unless contraindicated
   Other dopaminergic agents: carbidopa/levodopa or pergolide
   Opioids such as propoxyphene, oxycodone, or methadone, etc.
   Benzodiazepines, which often assist in staying asleep and reducing awakenings from the movements
Relationship Between RLS and PLMS

70%-90% of patients with RLS have increased PLMS

Only 30% of patients with PLMS have RLS
Sleep Related Bruxism

A. Patient reports or is aware of tooth grinding sounds or tooth clenching during sleep

B. One or more of the following is present:
   i. Abnormal wear of teeth
   ii. Jaw muscle discomfort, fatigue or pain and jaw lock upon awakening
   iii. Masseter muscle hypertrophy upon voluntary forceful clenching
Sleep Related Bruxism

**Key Points**
- Rhythmical grinding of teeth during sleep; clicking noise in 20% of cases
- Repeated episodes lasting seconds (usually 20-30 sec)
- Severe tooth wear, pain, and TMJ in 5-10%, and another 10-20% have minor sx’s
- Most unaware of symptoms during night and only few have EDS; usually more bothersome to partners and dental dysfnx; masseter muscle hypertrophy & pain
- Occurs during arousals from all stages of sleep (both REM and NREM)
- Most common in kids and adolescence; 20% of general population (up to 88% of kids); effects men:women equally
- Meds that worsen bruxism include:
  - SSRIs
  - Nicotine

**Biologic Basis**
- unknown
- + FH increases risk
- usually associated with anxiety, stress, or depression

**Treatment:**
- no good treatment and most lack scientific basis
- treatments include:
  - Malocclusive devices (although recent literature shows these are not warranted)
  - Psychotherapy/ hypnosis
  - Muscles relaxants (BZDs)
  - NSAIDs