Restless Legs Syndrome

Clinical Features and Treatment

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"wherefore, in some, whilst they would indulge sleep in their beds, immediately follow leapings up of the tendons in their arms and legs, with cramps and such unquietness and flying about of their members, that the sick can no more sleep..."

Willis, 1672: De Animae Brutorum

Restless Legs Syndrome

- 2nd most common sleep disorder
- Mostly unrecognized
- Poor outcome for treatment

An urge to move the legs (focal acathisia)

- A conscious sensation/feeling localized in the legs
- Not unconscious movement habits (foot tapping)
- Persists for a while unless relieved by movement or counter stimulus

Usually accompanied by Unpleasant Limb Sensations

- Lower extremities, distal
- Usually bilateral
- Discomfort often difficult to describe:
  deep seated, creeping, crawling, jittery, tingling, burning, aching, etc, etc…
- Characteristic phrases of patient suggested as
  - Deep in legs, not on surface or skin
  - Dynamic, (something) moving in the leg
- If present, must be linked to the urge to move the legs
- Location and timing generally matches that of urge to move
- Pain may be reported, but not often
- Generally no physical sign of symptoms

Aggravated by rest, relief by activity

- Quiescegenic: Rest starts or worsens the RLS symptoms
  - Longer the period of rest the more the RLS
  - Greater the confinement limiting movement the more likely RLS starts or gets worse
- Temporary relief by activity
- Rest or inactivity involves both:
  - Decreased movement
  - Decreased mental alertness
- Aggravated by Rest and not by a specific fixed body position

Compelling Motor Restlessness

- Relief from movement must occur, but other activities may also relieve the RLS symptoms
- Relief may be total or only partial
- Relief persists - as long as the movement continues
- Relief usually occurs almost immediately or very soon after movement starts.

Circadian variation

- Symptoms worse in the evening or at night
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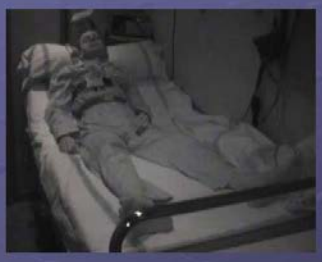
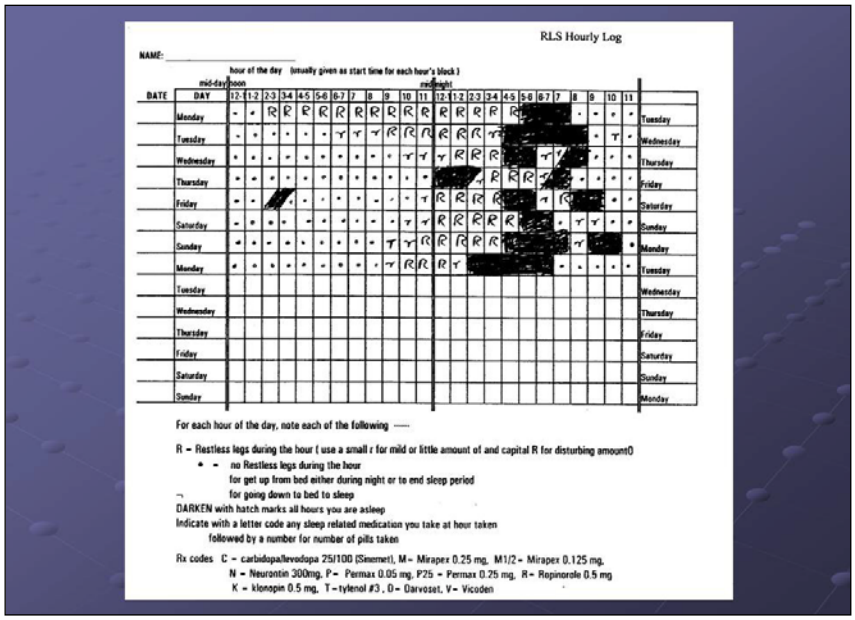
- If present in the morning, usually more prominent later in the day
- Nocturnal - Strong circadian cycle
  - Evening or night: RLS is worse or only occurs at this time
  - Morning (8 -10 AM) “protected period”; No or few RLS symptoms

Additional features

- Sleep disturbance
- Periodic leg movements (PLMs) during sleep
- Involuntary limb movements while awake
- Normal neurological examination
- Family history
- Age of onset

RLS: A trivial disorder?





RLS Hourly Log

NAME: _____

hour of the day (usually given as start time for each hour's block)

mid-day noon midnight

DATE	DAY	12-1	1-2	2-3	3-4	4-5	5-6	6-7	7	8	9	10	11	12-1	1-2	2-3	3-4	4-5	5-6	6-7	7	8	9	10	11	
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For each hour of the day, note each of the following ----

R – Restless legs during the hour (use a small r for mild or little amount of and capital R for disturbing amount)

• – no Restless legs during the hour

for get up from bed either during night or to end sleep period

¬ for going down to bed to sleep

DARKEN with hatch marks all hours you are asleep

Indicate with a letter code any sleep related medication you take at hour taken

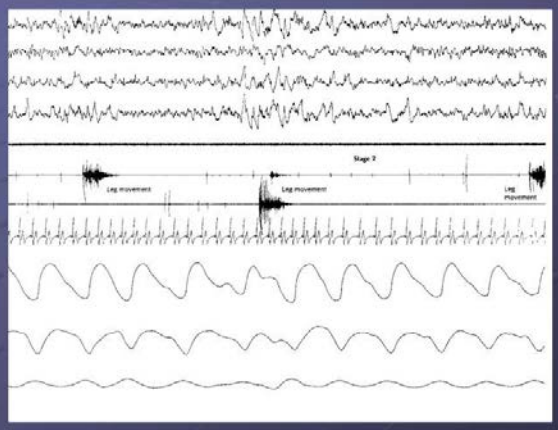
followed by a number for number of pills taken

Rx codes C – carbidopa/levodopa 25/100 (Sinemet), M – Mirapex 0.25 mg, M1/2 – Mirapex 0.125 mg, N – Neurontin 300mg, P – Permax 0.05 mg, P25 – Permax 0.25 mg, R – Ropinorole 0.5 mg K – klonopin 0.5 mg, T – tylenol #3 , D – Darvoset, V – Vicoden

PLMs in RLS

- Periodic Limb Movements during Sleep
- Periodic Limb Movements while Awake

Periodic Limb Movements



Differential Diagnosis

- Peripheral neuropathy
- Akathisia
- Lumbosacral radiculopathy
- Nocturnal pain syndrome
- Hypnogenic myoclonus (sleep starts)
- anxiety
- Nocturnal leg cramps
- Venous/Arterial Insufficiency
- "Painful legs and moving toes syndrome"
- Vesper´s curse
- Burning feet syndrome
- Leg and feet dystonias
- Sleep onset

Ethiology

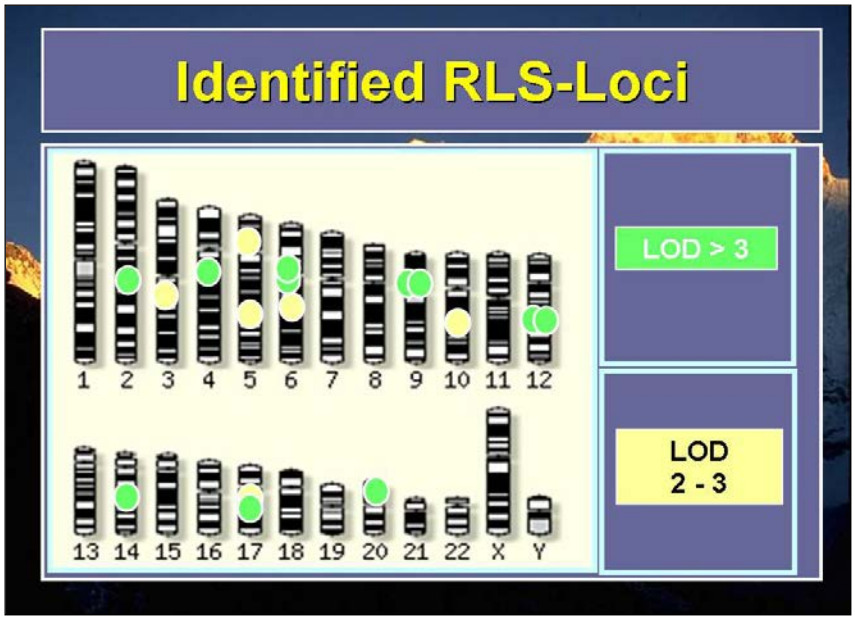
Systemic

- chronic renal failure
- pregnancy
- iron defficiency
- rheumathoid artritis
- Sjögren Syndrome
- folate defficiency
- diabetes
- venous insufficiency
- pharmacologic (DA blockers, SSRIs)

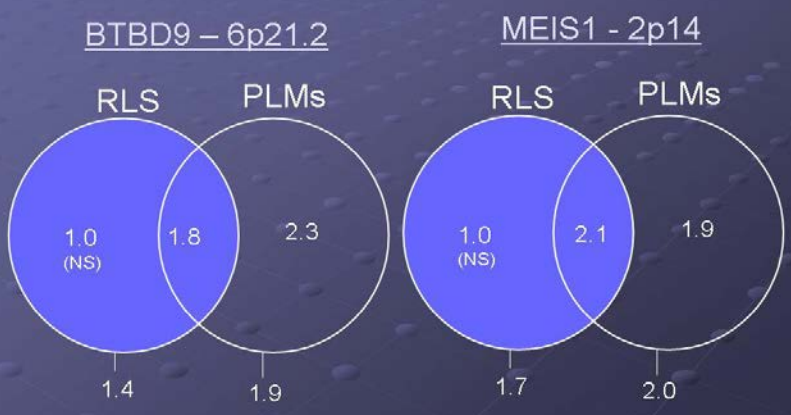
Neurologic:

- peripheral neuropathy
- lumbosacral radiculopathies
- spinal cord disease

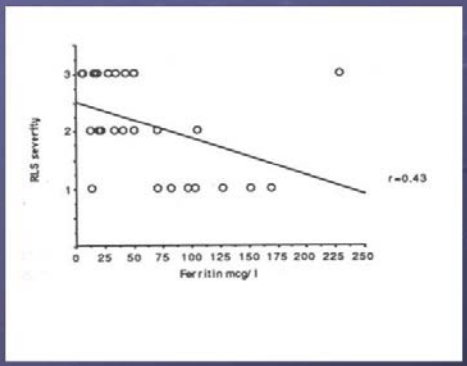
- Idiopathic



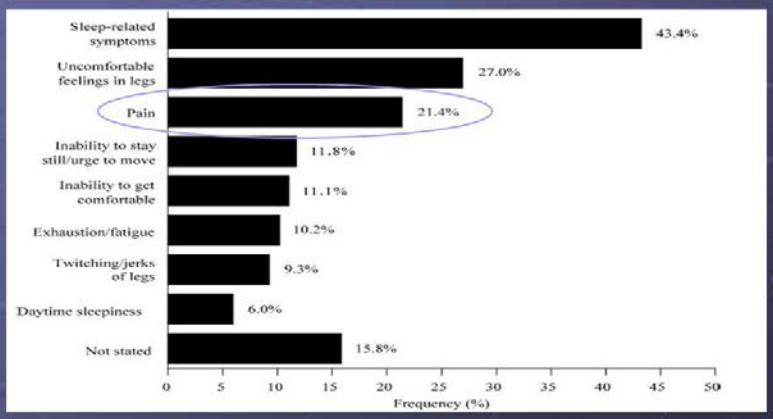
Identified gene variants are associated with PLMs, but not RLS



Serum Ferritin and RLS Severity



RLS is a "sensory-motor" disorder



Is RLS a disorder of central sensitization?