Restless Leg syndrome

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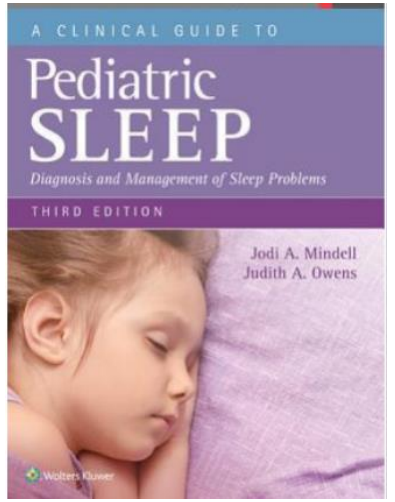
International RLS Study Group Consensus Diagnostic Criteria for RLS (2013)



An urge to move the legs
uncomfortable and unpleasant sensations in the legs
begin or worsen during periods of rest
relieved by movement
worse in the evening or night
significant distress or impairment

chronic-persistent RLS
Intermittent RLS

TABLE 16.1. International RLS Study Group Consensus Diagnostic Criteria for RLS (2013)

RLS, a neurologic sensorimotor disorder often profoundly disturbing sleep, is diagnosed by ascertaining a syndrome that consists of all of the following features:

1. An urge to move the legs usually but not always accompanied by or felt to be caused by uncomfortable and unpleasant sensations in the legs*†
2. The urge to move the legs and any accompanying unpleasant sensations begin or worsen during periods of rest or inactivity such as lying down or sitting
3. The urge to move the legs and any accompanying unpleasant sensations are partially or totally relieved by movement, such as walking or stretching, at least as long as the activity continues.‡
4. The urge to move the legs and any accompanying unpleasant sensations during rest or inactivity only occur or are worse in the evening or night than during the day**
5. The occurrence of the above features are not solely accounted for as symptoms primary to another medical or a behavioral condition (e.g., myalgia, venous stasis, leg edema, arthritis, leg cramps, positional discomfort, habitual foot tapping).††

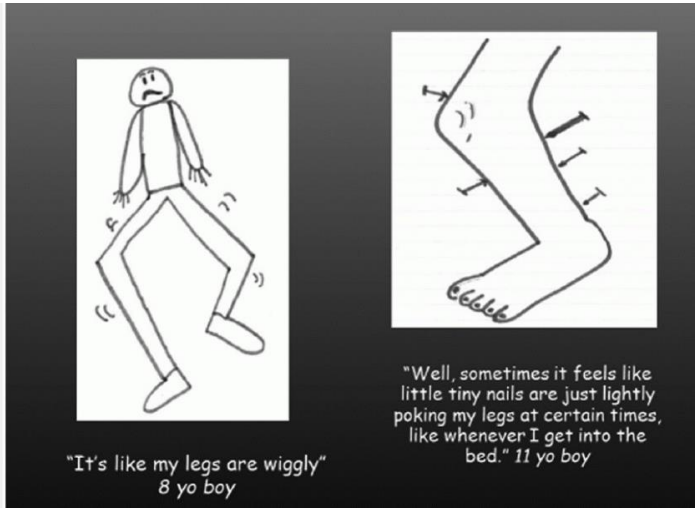
Specifier for clinical significance of RLS: The symptoms of RLS cause significant distress or impairment in social, occupational, educational, or other important areas of functioning by the impact on sleep, energy/vitality, daily activities, behavior, cognition, or mood.

EPIDEMIOLOGY

prevalence rates ranging from 1% to 6%

One-quarter to one-half of these patients had moderate to severe symptoms.

PRESENTATION AND SYMPTOMS



Sleep Symptoms

- Bedtime resistance and behavior problems
- Difficulty falling asleep
- Restless sleep and nighttime awakenings

Motor Symptoms

- Walking, pacing, or running about at bedtime
- Increased leg movements and/or restlessness at bedtime, during sleep, and with long periods of inactivity

Sensory Symptoms

- Leg pain or discomfort in the evening or during the night with periods of prolonged inactivity

Daytime Symptoms

- Excessive daytime sleepiness or fatigue, including difficulty waking in the morning, falling asleep in school or at inappropriate times, and increased need for naps
- Mood changes, such as irritability, low frustration tolerance, mood swings, and depression and anxiety
- Acting out behaviors, including aggression, hyperactivity, oppositional or defiant behavior, and impulsivity
- ADHD symptoms: inattention, poor concentration, distractibility, academic problems

RLS symptoms in his or her own words
Sleep Symptoms
Motor Symptoms
Sensory Symptoms
Daytime Symptoms

ETIOLOGY AND RISK FACTORS

- Genetic link
- Iron deficiency
- Medical disorders
- Sickle cell disease
- Migraine headaches
- Pregnancy
- Insufficient sleep
- Medications
- Caffeine

lower-than-normal ferritin levels (defined as <50ng/mL) are found in some 70% to 75% of children with RLS.

Diagnosis

- ***The diagnosis of RLS is based solely on clinical history,***
- ***PSG is not strictly required,***
- ***Laboratory tests:***
- ***A serum ferritin <50 ng/mL is associated with RLS symptoms***
- ***low serum 25-hydroxyvitamin D levels (deficiency defined as <50 nmol/L)***

TABLE 16.7. Differential Diagnosis of Pediatric RLS

Common Mimics	Less Common Mimics
Positional discomfort	Leg cramps
Sore leg muscles	Arthritis
Ligament sprain/tendon strain	Other orthopedic disorders
Positional ischemia (numbness)	Peripheral neuropathy
Dermatitis	Radiculopathy
Bruises	Myelopathy
Growing pains	Myopathy
	Complex regional pain syndrome
	Fibromyalgia
	Drug-induced akathisia
	Sickle cell disease

Treatment Strategies

Healthy sleep practices
Nonpharmacologic treatments
Substances to avoid
Iron supplementation:3 to 6 mg/kg/day for a duration of at least 3 months
Medication:
Dopaminergic agents
Levodopa and carbidopa (Sinemet)
Dopamine agonists
Pramipexole (Mirapex)
Ropinirole (Requip)
Clonidine
Clonazepam
Codeine and other opiates
Gabapentin

Treatment Strategies

- **Healthy sleep practices:** It is recommended that children with RLS maintain consistent bedtimes and waketimes on weekdays and weekends, have a bedtime routine, and obtain adequate nighttime sleep, especially since fatigue may exacerbate the symptoms of RLS.

P.167

- **Nonpharmacologic treatments:** Moderate exercise up to a few hours before bedtime may suppress symptoms. Walking, stretching, massaging the affected area, and applying hot or cold packs may be helpful. Biofeedback and relaxation techniques may alleviate symptoms as well as reduce stress. Keeping mentally occupied, especially during long periods of inactivity, should also be encouraged, although this may be counterproductive at bedtime in terms of sleep onset.
- **Substances to avoid:** Caffeine, alcohol, antihistamines, cold or sinus preparations, and antiemetics are known to exacerbate symptoms of RLS. In adults, drugs that worsen the symptoms of RLS include those that increase thyroid hormone activity. In addition, drugs that alleviate RLS symptoms inhibit thyroid hormone activity, possibly through alteration of the CYP4503A4 isoform.
- **Iron supplementation:** Oral iron supplements are a reasonable choice as a first-line treatment for RLS and PLMs if serum ferritin levels are low (<50 ng/mL). Although data are limited, the recommended dose is typically in the range of 3 to 6 mg/kg/day for a duration of at least 3 months, followed by increased dietary iron intake once an appropriate ferritin level is reached. In a recent study of almost a hundred children diagnosed with RLS, the majority of whom were between the ages of 5 and 11 years and 70% of

I wish I could sleep like a baby