

# Restless Leg Syndrome

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**Abstract— Restless legs syndrome (RLS) is a common sensorimotor disorder which cause strong urge to move the legs at rest. It is a brain, nerve and sleep condition which cause irresistible urge to move the legs which is relieved by movement and is associated with uncomfortable sensation in legs like throbbing or aching in the leg. It interferes with the ability to relax or fall asleep due to the urge of shaking the legs. The problem get worsen while sitting or lying specially at night time and gets relieved by walking, stretching or moving the legs. This usually happens on both sides of the body and less commonly affect the arms. The Incidence rate of RLS is reported to be 11.1 in one study.**

## I. INTRODUCTION

Restless legs syndrome can affect anyone, including children, adolescents and adults. It's more common to affect people after age 50. Symptoms tend to get worse with age.

Types of Restless Legs Syndrome RLS can either be

- primary RLS (idiopathic) where symptoms are developed at a significantly younger age ( $\leq 35$  years), tend to have positive family history and have slower progression of symptoms
- secondary RLS which is associated with other factors, occur at later age but progress very fast.

RLS can also be classified into

- Early onset RLS: when RLS is diagnosed before age 35
- Late onset RLS: when RLS is diagnosed after age 45

Causes

There's no known cause for restless legs syndrome. However, Researchers suspect that following condition may lead to RLS

- Imbalance of the brain chemical called dopamine

- Heredity/Genetics

Risk Factors

Certain conditions predispose or increases the risk of RLS

- Pregnancy: Some women gets RLS during pregnancy due to hormonal changes in the body especially during the last trimester. However, symptoms usually disappear after delivery.
- Peripheral neuropathy. When due to chronic diseases such as diabetes and alcohol use disorder there is damage to the nerves in the hands and feet it increases the risk of RLS
- Iron deficiency: Iron deficiency, can cause or worsen RLS. People who have a history of bleeding from the stomach or bowels, who used to have heavy menstrual periods or who often donate blood are at risk of having RLS.
- Kidney failure: When kidneys don't function properly, iron stores in the blood decreases which changes the body chemistry. This also increases the risk of RLS
- Spinal cord conditions. Damage or injury of the spinal cord has been linked to RLS. Having anesthesia to the spinal cord, such as a spinal block, also increases the risk of developing RLS.
- Parkinson's disease. People who have Parkinson's disease and take medicines called dopaminergic agonists have an increased risk of developing RLS.
- Consumption of medications like antihistamine, antidepressant, antiemetics etc increases the risk of RLS
- Consumption of alcohol, caffeine and nicotine may cause RLS
- Stress and lack of sleep is another risk factor of RLS

When a person experienced these triggers or use/take them before rest or go to bed, they're more likely to set off the symptoms.

### Symptoms

- The chief symptom of restless legs syndrome is an urge to move the legs.
- Uncomfortable sensations in legs that begins while resting.
- A feeling in the legs typically begins after lying down or sitting for an extended time in car, airplane or movie theatre.
- Relief of discomfort (at least temporarily) when legs are moved
- Nighttime leg twitching.
- unpleasant feelings in the legs or feet.
- Twitchy legs or leg jerks in the evening and during sleep.
- The sensations of Crawling, Creeping, Pulling, Throbbing, Aching, Itching, Electric within the leg

Symptoms of restless legs syndrome can affect sleep which cause:

- Sleep disruptions, difficulty falling asleep or staying asleep.
- The urge to get out of bed to stretch or move your legs.
- Fatigue or daytime sleepiness.
- Behavior or mood changes.
- Difficulty paying attention, remembering things or concentrating.
- Depression and Anxiety



### Diagnosis

The International Restless Legs Syndrome Study Group (IRLSSG) has described 4 mandatory clinical features to establish the diagnosis of RLS, namely:

(i) an urge to move the legs, usually accompanied or caused by uncomfortable and unpleasant sensations in the legs;

- (ii) these symptoms begin or worsen during periods of rest or inactivity such as lying or sitting;
- (iii) are partially or totally relieved by movement; and
- (iv) symptoms are worse in the evening or nighttime.

Diagnostic Evaluation performed are

- History taking about symptoms
- Physical and a neurological exam
- Blood tests, particularly for iron deficiency, may be ordered to rule out other possible causes of your symptoms.

### Treatment

Symptoms of restless legs syndrome sometimes go away after treating an underlying condition like

- Correcting an iron deficiency with help of iron supplement
- lifestyle modification

If therapeutic measures are not found to be effective then healthcare professional may prescribe medicines. Several medicines are used to reduce the restlessness in the legs.

1. Medicines that increase dopamine in the brain. These medicines affect levels of the chemical messenger dopamine in the brain. Rotigotine (Neupro), pramipexole (Mirapex ER) and ropinirole are approved by the Food and Drug Administration for the treatment of moderate to severe RLS.
2. People who have occasional RLS symptoms may be prescribed with carbidopa-levodopa (Duopa, Rytary, others) to take as needed.
3. Gabapentin (Neurontin, Gralise), Gabapentin Enacarbil (Horizant) and Pregabalin (Lyrica), work for some people with RLS.
4. Muscle relaxants and sleep medicines. These medicines help to sleep better at night, but they don't eliminate the leg sensations. They also may cause daytime drowsiness. These medicines may only be used if no other treatment provides relief.
5. Opioids. These medicines are used mainly to relieve serious symptoms, but they may be addictive if used in high doses. Some examples include tramadol (ConZip, Qdolo), codeine, oxycodone (Oxycontin, Roxicodone, others) and hydrocodone (Hysingla ER).

It may take several trials to find the right medicine or combination of medicines that work best for you. Most medicines prescribed to treat RLS aren't recommended during pregnancy. Instead, self-care techniques may be recommended to relieve symptoms. But if symptoms are bothersome during the last trimester, then healthcare professional may approve the use of certain medicines.

#### At-home restless legs syndrome therapies



Some home therapies may help to feel comfortable and fall asleep with restless legs. These may include:

- Getting regular exercise, such as aerobics, riding a bike/stationary bike or walking.
- Avoid heavy or intense exercise within a few hours of bedtime.
- Following good sleep habits like avoiding reading, watching television or being on a computer or phone while lying in bed. Not getting enough sleep can make RLS symptoms worse.
- Soaking legs in a warm tub, and applying a heating pad or cold compress to legs. These may provide temporary relief for the discomfort.
- Reducing overall stress. A mental health professional can help you with this.
- Avoiding caffeine, like drinking coffee, before bedtime.

#### CONCLUSION

Living with restless legs syndrome (RLS) can be a constant annoyance. It interferes with the life of an individual. While there isn't a cure available for RLS, treatment can help you manage your symptoms, feel better and get back to a regular sleeping routine and a better life.

#### REFERENCES

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