

Restless Legs Syndrome

Restless legs syndrome (RLS), also known as Willis-Ekbom disease, is a type of dyssomnia that is most commonly of idiopathic origin but also associated with iron deficiency and Parkinson's disease. This condition is characterized by a constant urge to move one's legs, with accompanying unpleasant sensations in the legs that are worsened with inactivity and relieved by movement. Treatment of restless legs syndrome includes iron supplementation, supportive therapy, anticonvulsants like gabapentin and dopamine-agonists like pramipexole.



PLAY PICMONIC

Pathophysiology

Idiopathic

[Idiot-path](#)

Restless legs syndrome most commonly arises spontaneously with unknown etiology, although alterations in central and peripheral neurotransmitter functions have been attributed to the disease. There is also a strong underlying familial component to the condition.

Iron Deficiency

[Iron Broken](#)

A consistent finding in some patients is decreased iron stores within the central nervous system, resulting in impaired dopamine synthesis and signaling. Iron studies should be ordered in patients with restless legs syndrome, as correction of iron deficiency can improve or resolve symptoms. Restless leg syndrome is associated with reduced transferrin receptor expression and altered iron regulatory mechanisms.

Parkinson's Disease

[Park-in-sun garage](#)

Although evidence is unclear, there is a somewhat higher incidence of restless leg syndrome in Parkinson's disease. Symptoms of RLS in Parkinson's patients are generally less severe and may be confused with true Parkinson's symptoms, such as akathisia and tremor.

Uremia

[U-rainbow](#)

Uremia, a condition associated with renal failure, increases the risk of restless legs syndrome. Particularly in patients who are undergoing dialysis. Treatment of uremia often alleviates symptoms of restless leg syndrome.

Signs and Symptoms

Urge to Move the Legs

[Urgent Alarm with Moving-legs](#)

When RLS patients sit or lay still for extended amounts of time, like at nighttime, they begin to feel an uncomfortable feeling in their legs that may be described as itching, tingling, or crawling; these feelings are relieved when they move their legs.

Unpleasant Sensations in Legs

[Unhappy Leg with Creepy-crawly Sensation](#)

Descriptions of unpleasant sensations felt in the legs vary widely, but some terms used by RLS patients include itching, tingling, or crawling. It is important to distinguish these patients from peripheral neuropathy patients, who often use adjectives like burning or pins and needles.

Worsens with Inactivity

[Legs-restless in Bed](#)

When RLS patients sit or lay still for extended amounts of time, like at nighttime, they begin to feel an uncomfortable feeling in their legs that may be described as itching, tingling, or crawling.

Relieved by Movement

Relieved-face with Moving-leg

The uncomfortable feelings that RLS patients feel in their legs are almost universally relieved when they move their legs via walking, stretching, or shaking. These movements may disturb others around them, such as a partner in bed.

Treatment

Iron Supplementation

Iron

Iron studies are often ordered when RLS is suspected. If iron deficiency is identified, even without anemia, at a serum ferritin level lower than 75 ng/mL, oral iron supplements, like ferrous sulfate, should be started.

Nonpharmacologic Treatment

Massaging Legs with Heating-pad

Nonpharmacologic therapies are helpful for some RLS patients and serve as a first-line approach in most cases. These include lifestyle modifications such as regular exercise, maintaining good sleep hygiene, and avoiding caffeine, alcohol, and nicotine. Additionally, periodic daily massages, the use of leg warmers, and engaging in activities that distract the mind during symptoms can be beneficial.

Gabapentinoids

GABA-Goose-Penguin

Gabapentin is a medication that binds to the voltage-gated calcium channels in the central nervous system. It is used as an antiseizure medication and for neuropathic pain. Gabapentinoids, including gabapentin and gabapentin enacarbil, are considered first-line pharmacologic options for patients with moderate to severe restless legs syndrome, particularly due to a lower risk of augmentation compared with dopaminergic agents.

Non-ergot Dopamine Agonists

Prom-picture

Dopamine agonists, such as pramipexole, ropinirole, and rotigotine, are effective treatments for restless legs syndrome and are also used in Parkinson's disease. Common adverse effects include nausea, dizziness, fatigue, insomnia, impulse control disorders, and daytime sleepiness. Their use has become more selective due to the risk of augmentation, a phenomenon in which symptoms begin earlier in the day, increase in severity, or spread to other body regions with long-term therapy.