

### **What is Restless Legs Syndrome?**

Restless Legs Syndrome (RLS) is a sensori-motor (movement) disorder characterized by uncomfortable sensations in the legs, which are worse during periods of inactivity or rest or while sitting or lying down. There is often a positive family history of the disorder. Individuals affected with the disorder describe the sensations as pulling, drawing, crawling, wormy, boring, tingling, pins and needles, prickly, and sometimes painful sensations that are usually accompanied by an overwhelming urge to move the legs. Sudden muscle jerks may also occur. Movement provides temporary relief from the discomfort. In rare cases, the arms may also be affected. Symptoms may interfere with sleep onset (sleep onset insomnia). Research suggests that restless legs syndrome is related to periodic limb movement disorder (PLMD), another more common motor disorder which causes interrupted sleep. The symptoms often exhibit circadian rhythmicity in their peak occurrence during awakening hours. The syndrome is typically diagnosed by the characteristic history. Sleep-lab evaluations can also be helpful in making the diagnosis. There is a similar syndrome of nocturnal (night-time/with sleep) leg cramps. The cramps are different than the jerks of RLS. Cramps are treated with Quinine Sulfate or Magnesium supplements.

### **Is there any treatment?**

Treatment for restless legs syndrome is symptomatic. Massage and application of cold compresses may provide temporary relief.

Vitamin supplements can also help. Correction of iron deficiency may improve symptoms for some patients. Many patients with “normal” iron studies can be helped by taking iron supplements (but toxicity can occur, this should only be done under medical supervision to help prevent syndromes of iron-overload such as hemochromatosis which can cause damage to many different organ systems). Vitamin B12 has also been found to be helpful, again it can be helpful even in patients with “normal” levels when supplements are taken to boost the levels to supra-therapeutic or higher than normal levels. These findings suggest that there are probably genetic problems with metabolism that can be “overcome” by taking higher than normal doses of certain supplements as well as certain classes of medicine that effect the dopamine, opiate and GABA receptors in the brain.

There are “Alternative” Medical therapies such as Butcher’s Broom; an herbal supplement that increases circulation to the lower extremities. Niacin or Vitamin B3 can also help relieve the symptoms.

Acupuncture has not been helpful with RLS but certain Chinese herbs such as: rehmannia and cornus for nourishing liver and kidney; tang-kuei and peony for nourishing blood of liver and heart; millettia and achyranthes for nourishing and vitalizing blood (achyranthes is also relied upon to direct the blood flow to the lower body). Chaenomeles is often included Chinese formulas for contracture of the leg muscles, and is especially used in deficiency syndromes; the traditional pair of peony and licorice is typically given to reduce spastic activity, also in deficiency syndromes.

Medications such as levodopa/carbidopa, bromocriptine, pergolide mesylate, oxycodone, propoxyphene, codeine, and benzodiazepines such as clonazepam and temazepam, are

effective in relieving the symptoms. However, many of these medications have side effects.

The first 3 medications are used to treat Parkinson's disease. They work on the neurotransmitter dopamine in the brain. Oxycodone & propoxyphene are opiates related to morphine. They work to blunt the discomfort associated with RLS. Benzodiazepine class medications basically work on the GABA receptor and sedate causing deeper sleep and also seem to have other effects on helping the syndrome probably through the actions on the GABA receptor. Gabapentin is another medication used for seizures and chronic pain conditions that can be quite effective through its effect on the GABA(a) receptor.

There are certain other preventive therapies that can be used as well. Patients with chronic pain problems such as a bad disc pinching a nerve will frequently have relief of the RLS if the pinched nerve is treated with appropriate therapy.

### **What is the prognosis?**

Restless legs syndrome is a life-long condition for which there is no cure. Symptoms may gradually worsen with age, and their most disabling feature is the sleep onset insomnia they cause, which can be severe enough to leave patients contemplating suicide. Control of the symptoms is usually achieved by controlling contributing factors and careful use of medications and supplements

### **What research is being done?**

The NINDS supports an extensive program of basic and clinical research aimed at discovering the mechanisms responsible for many motor disorders such as restless legs syndrome, especially those associated with sleep changes. The goal of this research is to discover ways to prevent, diagnose, treat, and, ultimately, find cures for motor disorders including restless legs syndrome.

## **Organizations**

### **National Organization for Rare Disorders (NORD)**

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### **National Sleep Foundation**

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### **Restless Legs Syndrome Foundation**

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## **Related NINDS Publications and Information**

### [Brain Basics: Understanding Sleep](#)

Fact sheet on normal sleep and sleep disorders developed by the National Institute of Neurological Disorders and Stroke (NINDS).

### [Restless Legs Fact Sheet](#)

Restless legs syndrome fact sheet developed by the National Institute of Neurological Disorders and Stroke (NINDS).

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