

Restless Leg Syndrome and Periodic Limb Movement Disorder

Restless Legs Syndrome

Individuals experience restless legs in many different ways, but most sufferers describe very unpleasant "creepy, crawly" sensations that occur in the legs when they are sitting or lying still, but especially at bedtime. For some individuals RLS can be very painful, but the pain is not like that of a leg cramp. It is also different from the feeling of a limb "falling asleep" when the blood supply is cut off. The pain and unpleasantness of RLS appear most often in the calves and can be temporarily relieved by stretching and moving the legs. Although this occurs primarily when individuals are awake, it can also affect your ability to sleep. The constant need to stretch, walk or move the legs to get rid of the uncomfortable or painful feelings often prevents those with RLS from falling asleep. Extreme tiredness during the day can be one result, with the inability to participate in normal activities or carry out regular duties. But the sleepiness that results from a restless night is not the only problem. During the day RLS can limit activities by interfering with the length of time you are able to travel by car or airplane, or any activity that requires sitting for long periods of time.

Periodic Limb Movement Disorder

Another disorder that impacts the limbs and an individual's ability to sleep at night is periodic limb movement disorder (PLMD), also known as nocturnal myoclonus. While the movements of RLS are a voluntary response to uncomfortable feelings in the limbs when a person is awake, the movements of PLMD occur most often when a person is asleep and are involuntary. Those with RLS have periodic limb movements, but patients with PLMD often do not have RLS. Periodic limb movements usually occur in the legs but can also occasionally affect the arms. As the name implies the movements occur at periodic intervals, usually every 20 to 60 seconds. They typically consist of a rhythmic extension of the toes, together with bending of the ankle, knee or hip. The movements usually do not occur continuously throughout the night, but instead cluster in the first half of the night during the phases of light sleep. During rapid eye movement sleep (when people are usually dreaming), the movements are much less common.

PLMD may result in various complaints about sleep. One individual may have particular difficulty falling asleep, while another may have trouble staying asleep. Other individuals experience excessive daytime sleepiness. These problems result from the same cause, but involve a difference in timing and perception. People who are awakened by leg movements that occur immediately after they fall asleep may wake up before they realize they have fallen asleep. When this happens, the person may complain of difficulty falling asleep. Those reporting difficulty staying asleep often experience leg movements throughout the night accompanied by very brief awakenings that can create an overall feeling of a poor night's sleep. While one person might not be aware of any nighttime disturbance, the many brief awakenings do disturb sleep and cause excessive daytime sleepiness. This person might have no complaint about sleep at night, but fall

asleep while reading, watching TV, working or driving. A bed partner may complain of being kicked at night or that the bed covers are twisted or knocked off the bed. Periodic limb movements are not the same as hypnic jerks (night muscle spasms), the occasional jerks of the body that can occur just when a person is falling asleep. These jerks are normal and usually do not cause a problem with nighttime sleep or daytime alertness.

How common are RLS and PLMD?

Restless Leg Syndrome

Five to 10 out of every 100 people experience the discomfort or pain of RLS at some time in their lives. Severe cases of RLS, although not common, tend to run in families. The disorder is more common in older individuals, but it can occur at any age in both men and women. It is more common during pregnancy, especially during the last six months. Over the course of years the problem may come and go without any obvious cause. It can be related to problems with iron deficiency.

Periodic Limb Movement Disorder

PLMD is rare in people under 30 years of age, but becomes more common as people grow older. PLMD affects 5 percent of people age 30 to 50; 25 percent of people age 50 to 65; and 44 percent of people over age 65. Men and women are equally likely to be affected. PLMD contributes to the inability to sleep in 20 percent of people who have been diagnosed with insomnia.

What causes these disorders?

Restless Legs Syndrome

Approximately 30 percent of RLS cases have a hereditary cause. This means that in 30 cases out of 100, the disorder has been passed through the genes of either the father or mother to the child. The cases of RLS that run in families often have more severe symptoms and are often more difficult to treat.

For the other 70 percent of RLS cases, the causes are not clearly known. A number of situations seem to have a connection to or provoke the symptoms of RLS. These include poor blood circulation in the legs, nerve problems, muscle disorders, kidney disease, alcoholism and vitamin or mineral deficiencies. Other factors that can trigger RLS are stopping or starting certain medications, consumption of caffeine, smoking, fatigue, a very warm environment or prolonged exposure to cold temperatures.

Periodic Limb Movement Disorder

The cause of PLMD is also unclear. The same factors that are associated with RLS are associated with PLMD. Periodic limb movements are more common in people who have kidney disease or narcolepsy. Some antidepressant medications can also increase the frequency of limb movements.

How are these disorders diagnosed?

Restless leg syndrome

Before prescribing a specific treatment a health care provider must make a proper diagnosis. RLS has such unique symptoms that diagnosis of this disorder can often be made on the basis of patients' descriptions of their symptoms. Terms used frequently to describe these symptoms include creepy, crawly, pulling and gnawing. These feelings create an almost irresistible need to move the affected limb.

Another sign that points to a diagnosis of RLS is that movement of the affected limb relieves the painful or uncomfortable feelings. However, health care providers need to obtain a careful medical history and perform a physical examination to exclude other problems that may be mistaken for RLS.

Periodic Limb Movement Disorder

PLMD, on the other hand, often requires more extensive studies for proper diagnosis. People with PLMD are often unaware of their nighttime movements and may instead complain only of restless sleep or excessive daytime sleepiness. They may need to have their nighttime sleep observed and studied in order to discover the cause of their problem.

How are these disorders treated?

The first step in treating RLS or PLMD is to determine whether underlying causes (such as an iron deficiency, diabetes, arthritis, lung disease or the use of antidepressant medications) are contributing to the movements. Sometimes proper diagnosis and treatment of these underlying problems can relieve the symptoms of RLS or PLMD. However, patients often find that their disturbing movements continue even after they receive proper treatment of the underlying conditions. When this occurs, a number of possible treatments are available.

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Home remedies are effective for some people with RLS or PLMD. These include a hot bath, leg massage, use of heating pads, ice packs, aspirin or other pain relievers, regular exercise and elimination of caffeine. Vitamin E and supplemental calcium have helped some people, although no studies have proven the effectiveness of these treatments.

When home remedies are not effective, health care providers often treat RLS with medications. Because a medication may help one sufferer and not another, the patient and health care provider must work together to determine the best treatment regimen. The effectiveness of a particular drug will depend on the severity of the condition, the patient's other medical problems, and other medications that the patient is taking.

Further readings on RLS/PLMD

Montplaisir J, Godbout R, Pelletier G, Warnes H: Restless legs syndrome and periodic limb movements during sleep. In: Kryger MH, Roth T, Dement WC, eds. Principles and Practice of Sleep Medicine, 2nd ed. New York: Saunders, 1994: chap. 58, 589-597.

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