Several other factors make RLS/WED symptoms worse. Some of these factors include smoking, caffeine use, and nerve damage from other diseases such as diabetes, and kidney failure.

Other metabolic factors that may be involved in the development of RLS/WED include inadequate body stores of vitamin B12 and magnesium.

Several medications may make RLS/WED worse, including antihistamines, antipsychotic medications, certain antidepressants including selective serotonergic reuptake inhibitors (SS¬RIs), as well as certain gastrointestinal motility agents such as metoclopramide.

ARE PERIODIC LIMB MOVEMENTS RELATED TO RLS/WED?

Yes. About 90% of patients with RLS/WED will also have periodic limb movements in sleep. However, only about half of people with periodic limb movements have RLS/WED. The same things that worsen RLS/WED can worsen periodic limb movements. The underlying cause is thought to be similar aside from limb movements that can be attributable to arousals from sleep disordered breathing.

HOW CAN RLS/WED AND PERIODIC LIMB MOVEMENT DISORDER BE TREATED?

For RLS/WED, sometimes distraction techniques may be helpful. Hot or cold compresses to the legs, physical exercise, massaging the legs, or even working on the computer may be helpful. It is also important to avoid factors that are known to make these symptoms worse, such as sleep loss, alcohol, caffeine, and nicotine.

Another important factor to address is low iron levels, which may be a causative factor in RLS/WED (see the section above on "What Causes RLS/WED?"). Iron levels can be assessed using a blood test called serum ferritin. If the ferritin level is low, or even low normal, iron supplements may be helpful in addressing RLS/WED symptoms.

Several medications have also been shown to be effective in treating the symptoms of RLS/WED and PLM-D. Generally, the most frequently effective medications are the dopamine replacement drugs. The most commonly used are pramipexole and ropinirole though the latter medication has more drug interactions. Up to 80% of patients may benefit from the use of these medications. Generally these need to be used nightly before bedtime. These medications are generally well tolerated, with nausea, nasal stuffiness and leg swelling being uncommon side effects.

Blood pressure may also drop when going from lying to standing, so patients should exercise caution when rising quickly from bed. Sometimes, they can also cause insomnia or excessive daytime sleepiness. As a result, if beginning these medications, one should exercise caution before driving. In rare instances, impulse control problems such as pathological gambling can occur, so these medications should be used cautiously.

Although generally very effective, dopamine replacement medications can cause significant problems for a minority of patients, particularly with the use of higher doses, and with prolonged exposure. Some may develop "augmentation", where worsening RLS/WED symptoms occur progressively earlier in the day or begin to involve other body parts. This is more common with levodopa treatment, which should generally be avoided for daily treatment of this condition. The medication may have to be reduced or stopped if complications like this occur. As a result, these medications should only be used for significant RLS/WED with regular physician supervision.

Another class of medications that has been shown to be helpful for RLS/WED symptoms is the alpha 2 delta medications, including gabapentin and pregabalin. These medications only need to be dosed at night for this problem. The exact mechanism by which these medications help RLS/WED symptoms is not known. In severe situations, sedative hypnotics, such as clonazepam, or narcotic pain killers may be tried.

However, these medications have an addictive potential and significant safety concerns, and should only be used under the supervision of an experienced medical sleep physician.

Canadian Sleep Society
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Restless Legs Syndrome/ Willis Ekbom Disease (RLS/WED) and Periodic Limb Movement Disorder (PLM-D)

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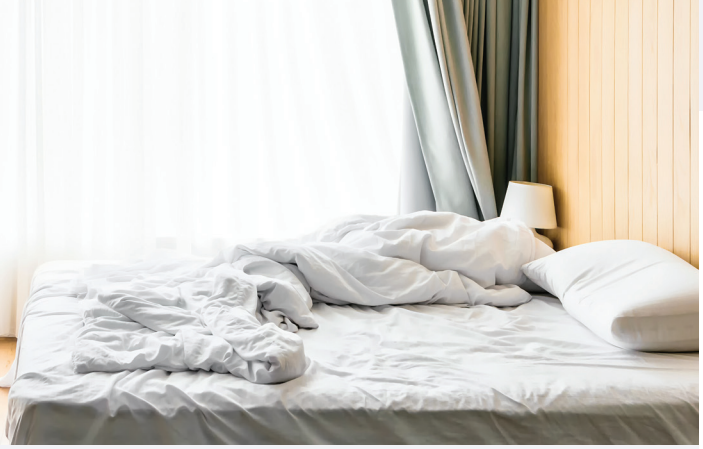

WHAT IS RESTLESS LEGS SYNDROME/WILLIS EKBOM DISEASE?

People with Restless Legs Syndrome (RLS/ WED) experience an uncomfortable sensation in their legs, associated with an urge to move. The sensation can be hard to describe, but people often use the following terms:

"Creepy crawly"
"Heebee Jeebees"
"Electricity in the veins"
"Aching"
"Growing Pains"
"Coca Cola in the legs" "Nervous legs"
"Itching"
"Like I have to move"

The sensation usually comes on at night, and can interfere with sleep. It typically affects both legs. Occasionally, other parts of the body such as the arms or even trunk may be involved. The sensation improves with movement, and sometimes people have to get out of bed and walk around.

Unfortunately, it tends to recur when they go back to bed. Prolonged periods of rest such as long car rides, plane rides, or sitting in a movie theatre may also bring on the symptoms.

WHO GETS RLS/WED?

Studies indicate that 5 to 10% of people have RLS/WED. Women are twice as likely to be affected as men. Symptoms can begin at virtually any age, although the average age of onset is in the late twenties and early thirties.
For some people, however, symptoms can start in the teens or earlier. In these cases, symptoms can be chronic, and may slowly get worse. The symptoms may wax and wane over time. They may recall having to rub their legs to go to sleep at night; many attribute these symptoms to "growing pains".
Often, other family members may have the same symptoms, strongly suggesting a genetic component. For others, symptoms might develop later in life, perhaps in their forties or fifties. These people will often experience a faster progression of their symptoms. RLS/WED in general seems to be more common in older populations.

WHAT CAUSES RLS/WED?

The precise cause of RLS/WED is unknown. There is evidence that RLS/WED is related to dopamine dysfunction, a key brain chemical. One of the strongest pieces of evidence for this theory is that patients often experience a dramatic improvement in their symptoms when they receive a dopamine replacement drug.
Of note, it is known that the brain needs iron to make its own dopamine and move dopamine around. As a result, people without enough iron in their bodies are more likely to have RLS/WED. Low iron levels are frequently related to blood loss, so those who lose blood through the stool, have heavy periods, have had surgery, or donate blood frequently can be at increased risk for having RLS/WED. Pregnant women are also at increased risk for RLS/WED, perhaps because of the iron needs of the developing baby. Current research also strongly suggests several genetic factors as the cause of RLS/WED, and of a related disorder called Periodic Limb Movement Disorder (PLM-D, see later text).

ADDITIONAL PATIENT BROCHURES BY SLEEP EXPERTS

- Dental Appliances
- Sleep in Aging
- Sleep Bruxism
- Drowsy Driving
- Insomnia
- Human Circadian Rhythms
- Strategies for Night Shift Workers
- Narcolepsy and Cataplexy
- Dreams and Nightmares
- Obstructive Sleep Apnea
- Patient Guide to Sleep Studies
- Positional Therapy for Obstructive Sleep Apnea
- Children
- Restless Legs Syndrome
- Sleep and Post- Traumatic Stress Disorder
- Normal Sleep

The Canadian Sleep Society is a national organization committed to improving sleep for all Canadians through: support for research, promotion of high quality clinical care, education of professionals and the public, and advocacy for sleep and sleep disorders medicine.

For more information visit **www.canadiansleepsociety.com** or email **info@css-scs.ca**

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