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## Restless Leg Syndrome in Hemodialysis Patient

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### ABSTRACT

Restless legs syndrome (RLS) is a long-term condition characterized by a persistent need to move one's legs. An unpleasant sensation in the legs is common, and exercising them helps to alleviate it. The pathophysiology of restless legs syndrome (RLS) is still unknown. Restless legs syndrome (RLS) may be caused by dopamine malfunction locally within the central nervous system, according to enhanced brain imaging studies and positive findings of dopaminergic treatment. Levodopa, dopamine agonists, opioids, benzodiazepines, antiepileptic medications, and iron supplements are among the current therapy choices.

**Keywords:** Restless leg Syndrome, Chronic Kidney Disease and dialysis.

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### Definition

Unpleasant, creeping, or crawling feelings deep within the lower legs, most typically between the knees and ankles, describe restless legs syndrome. Willis –Ekborn illness is another name for it.

The International Classification of Sleep Disorders defines restless legs syndrome (RLS) as "a disease characterized by uncomfortable leg sensations, usually anterior to sleep onset, that produce an almost uncontrollable need to move the legs." Creeping, crawling, tingling, aching, burning, pulling, itching, or cramping are common descriptions of the unpleasant feelings

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### Prevalence

Restless legs syndrome (RLS) symptoms affect anywhere from 6.6 percent to 83 percent of people. As a result, many patients undergoing dialysis for uraemia experience restless legs, which can be difficult to manage. Restless legs syndrome (RLS) can occur before and after dialysis, however it can be alleviated with a kidney donation. Restless legs syndrome (RLS) affects 3% of people in the Mediterranean and Middle East, and 1–5% of people in East Asia, suggesting that a variety of hereditary or environmental variables, including nutrition, may play a role in the disease's frequency. Restless legs syndrome (RLS) that develops later in life has a more severe course. Restless legs syndrome (RLS) is more likely in people who have anemia, are pregnant, or have end-stage kidney disease. Restless legs syndrome (RLS) has various risk factors, including old age, familial history, and uremia. Restless legs syndrome (RLS) is more common as people become older, and the severity and length of symptoms tend to get worse. People with uremia who receive renal dialysis have a prevalence of 20% to 57 percent, but those who receive a kidney transplant fare better than those who receive dialysis.

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### Types

1. Primary Restless legs syndrome
2. Secondary Restless legs syndrome

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### Primary Restless legs syndrome

Idiopathic means that there is no known reason for primary restless legs syndrome. Primary restless legs syndrome usually develops gradually before the age of 40–45 years and can last for months or even years. It's usually progressive and grows worse as you get older. Growing pains are sometimes mistaken as restless legs syndrome (RLS) in youngsters.

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## Secondary RLS

It usually appears suddenly after the age of 40, and it may be present on a daily basis at first. It's most commonly linked to particular medical issues or the usage of certain medications.

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## Causes

- End-stage kidney disease and hemodialysis
- Folate deficiency
- Magnesium deficiency
- Sleep apnea
- Diabetes
- Peripheral neuropathy
- Parkinson's disease
- Autoimmune diseases, such as multiple sclerosis
- Use of alcohol, nicotine products, and caffeine may be associated with Restless legs syndrome (RLS) .

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## Risk factors

- Low iron levels
- Kidney failure
- Parkinson's disease
- Diabetes mellitus
- Rheumatoid arthritis
- Pregnancy
- Certain medications such as antidepressants, antipsychotics, antihistamines, and calcium channel blockers.

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## Signs and symptoms

- Buzzing sensation
- A crawling feeling, or limbs jerking while awake.
- An urge to move, usually due to uncomfortable sensations that occur primarily in the legs, but occasionally in the arms or elsewhere.
- Motor restlessness, expressed as activity, which relieves the urge to move.
- Worsening of symptoms by relaxation.
- Variability over the course of the day-night cycle, with symptoms worse in the evening and early in the night.
- Restless legs feel similar to the urge to yawn, situated in the legs or arms.

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## Treatment

- Lifestyle modifications
- Adopting improving sleep hygiene,
- Regular exercise, and
- Stopping smoking.

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## Medications

- Dopamine agonists or gabapentin in those with daily restless legs syndrome,
- Opioids for treatment of resistant cases.
- Intravenous iron supplementation, randomized, placebo controlled trials on iron treatment in RLS are still few. However, Sloand *et al.* showed that iron dextran infused in patients with end stage renal disease decreased RLS symptoms significantly when compared with placebo but the efficacy persisted only for 2 weeks.

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