

Periodic Limb Movement Disorder

(Restless legs during sleep)

Muscle twitches and leg or arm movements during sleep can interrupt good sleep and cause daytime sleepiness in your child.

What is periodic limb movement disorder?

Periodic limb movement disorder (PLMD) is when the legs or arms have episodes of repetitive movements during sleep causing sleep disturbance and daytime symptoms. The movements don't usually wake the child, but they can cause sleep disruption. Most children and teenagers with PLMD are not aware of the movements during their sleep.

If there are no daytime symptoms, the leg or arm movements are usually called PLMS (Periodic Limb movement of Sleep).

Is PLMD related to daytime Restless Legs Syndrome?

PLMD is a disorder by itself, but children with daytime Restless Legs Syndrome can have an increased number of PLMS episodes during sleep. Restless Leg Syndrome is characterized by weird feelings in the legs during periods of rest or in the evening, that are relieved by moving or walking. These sensations are usually described as creepy, crawly or painful and can make it hard to fall asleep at bedtime.

What causes PLMD?

PLMD tends to run in families, although no gene has been found. PLMD appears to be linked with low iron in the blood. The low iron may be due to how the iron is used in the body, or how it's stored. If ferritin (a protein that helps store iron in the body) levels or iron stores are low, this has been linked to PLMD and Restless Legs Syndrome. There is greater risk of PLMD in children with kidney disease.

What are the signs and symptoms of PLMD?

Many children and adolescents with PLMD may not have any symptoms. They are unaware it's even happening. If there are symptoms, then the condition is called PLMD. Common signs to watch for are:

- **Repetitive leg movements during sleep.** Your child is usually unaware of these movements, but you see them.
 - **Sleep disruption.** Your child wakes up at night from the twitching.
 - **Daytime sleepiness.** Your child complains of sleepiness or feels like they are not getting good sleep.
 - **Behavior concerns or poor school performance.** Your child or adolescent may have mood swings or trouble focusing due to the poor sleep they are getting.
-

To Learn More

- Sleep Disorders Center
206-987-5072
- Ask your child's healthcare provider
- seattlechildrens.org

Free Interpreter Services

- In the hospital, ask your nurse.
- From outside the hospital, call the toll-free Family Interpreting Line, 1-866-583-1527. Tell the interpreter the name or extension you need.

How is PLMD diagnosed?

Often, the first step is testing your child. PLMD can be confirmed with an overnight sleep study. During the study, it appears most often as brief leg muscle twitches, about every 20 to 40 seconds. The twitches are usually seen in clusters in the beginning of the night. The clusters can last a few minutes to a few hours. If there are elevated Periodic Limb Movements found on overnight sleep study, or sleep disruption with leg symptoms, lab tests are ordered.

Sometimes the sleep study is skipped, and the healthcare team decides to go straight to testing the iron levels, especially if there are symptoms of Restless Legs Syndrome.

Lab tests include a complete blood cell count, iron profile and a test of iron stores. This tells us how your child's body is using the iron and if extra iron is needed.

How is it treated?

- **Iron supplements.** If your child's blood iron or iron stores are low, an iron supplement such as ferrous sulfate may be prescribed. Use of iron pills or liquid should be monitored closely by your sleep healthcare provider. We also have an intravenous (IV) iron infusion program.
- **Other medicines.** Sometimes other medicines are used to treat the movement disorder.
- **Diet changes.** We often find avoiding or limiting caffeine in soda, tea, coffee, chocolate and some medicine (like antihistamines) helps.