



Effective Health Care Program

Options for Treating Restless Legs Syndrome

A Review of the Research for Adults



Agency for Healthcare Research and Quality
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Is This Information Right for Me?

Yes, this information is for you if:

- Your doctor* has told you that you have restless legs syndrome (RLS), also called Willis-Ekbom disease, and you want to know what researchers have found about treatment options.
- You are age 18 or older. This information is from research on adults.

What will this summary cover?

This summary will cover:

- What RLS is
- Treatment options for RLS
- What researchers have found about RLS treatments

This summary can help you talk with your doctor about what treatment might be best for you.

Where does the information come from?

Researchers funded by the Agency for Healthcare Research and Quality (AHRQ), a Federal Government research agency, reviewed 53 studies on treatments for RLS published through June 2012. The report was reviewed by clinicians, researchers, experts, and the public. You can read the report at www.effectivehealthcare.ahrq.gov/restless-legs.cfm.

Note: The people in the research for this summary had long-term moderate to severe RLS. In people with moderate to severe RLS, the RLS interferes with their ability to do daily activities and/or sleep. This information may not apply to people with mild RLS.

Pregnant women, people on dialysis for kidney disease, and older people with other health problems were not included in the research for this summary. These groups of people have an increased risk for RLS and may have an increased risk for side effects from RLS medicines.

The studies included in the research for this summary are “randomized controlled trials.” This type of study is considered high-quality research. Not all treatments for RLS have been studied in a randomized controlled trial.

*In this summary, the term “doctor” refers to your health care professional, including your physician, nurse practitioner, or physician assistant.

Understanding Your Condition

What is restless legs syndrome?

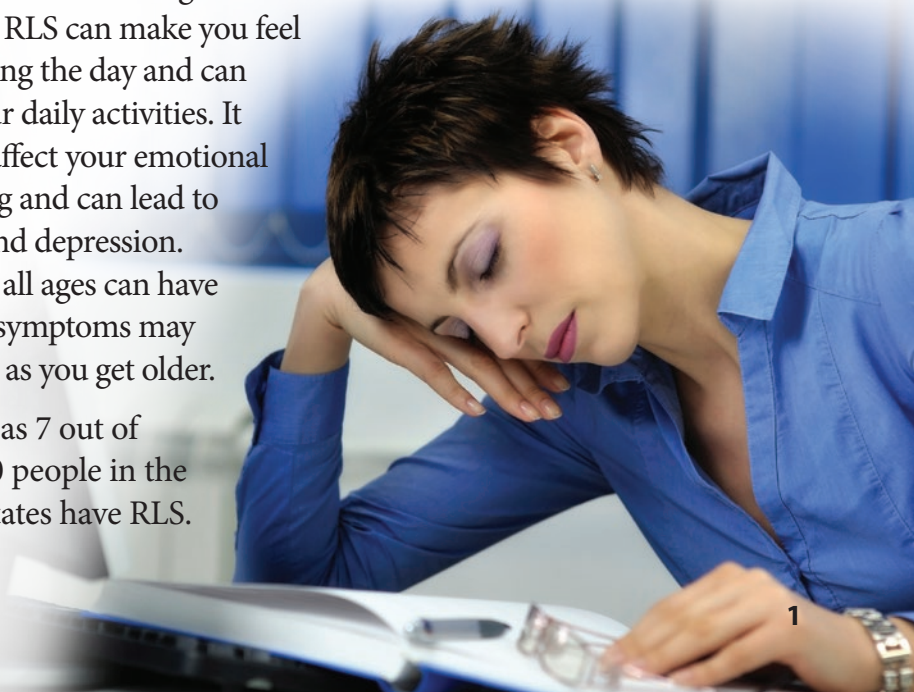
Restless legs syndrome (RLS) is a disorder of the nervous system (the system consisting of your brain, spinal cord, and nerves).

For a doctor to diagnose RLS, you must have the following:

- A very strong urge to move your legs. Often, RLS also causes unpleasant or painful feelings in your legs.
 - Your legs may feel itchy or tingly, or you may feel creeping, burning, pulling, aching, or throbbing.
 - Your legs may jerk or twitch.
 - These feelings can also happen in other parts of your body, such as your arms.
- Symptoms get worse when sitting or lying down.
- Symptoms get better or go away when you move, but come back once you sit or lie down again.
- Symptoms are worse in the evening or at night.
 - This can make it hard to fall asleep or to stay asleep.

RLS symptoms can range from mild to severe. RLS can make you feel tired during the day and can affect your daily activities. It can also affect your emotional well-being and can lead to anxiety and depression. People of all ages can have RLS, but symptoms may get worse as you get older.

As many as 7 out of every 100 people in the United States have RLS.



What causes RLS?

Doctors are not sure what causes RLS. It may be passed down in families. Several things can trigger or worsen RLS symptoms, including:

- Sitting for long periods of time (such as in a car, airplane, or theater)
- Some conditions such as iron deficiency, kidney failure, diabetes, nerve problems, or pregnancy
- Taking certain medicines such as some antihistamines (allergy medicines) or antidepressants
- Drinking alcohol or caffeine
- Smoking or using other tobacco products
- Not getting enough sleep



Understanding Your Options

How is RLS treated?

Currently, there is no cure for RLS. However, lifestyle changes, nonmedicine treatments, and medicines may relieve symptoms and help you sleep better. Below are details about each of these types of treatment and what researchers have found about them.



Lifestyle Changes

Several lifestyle changes have been tried to help RLS symptoms. Some examples are listed below.

- Limit or avoid caffeine, alcohol, and smoking.
- Switch or stop any medicines that might be making your RLS worse (such as some antihistamines and antidepressants).
 - Never stop taking any medicine without first talking with your doctor.
- Exercise a few times a week (such as walking on a treadmill and doing exercises to strengthen your lower body).
 - However, too much exercise can make RLS symptoms worse. Talk with your doctor about how much exercise is right for you.
- Try to go to bed around the same time each night and wake up around the same time each morning.

What does research say about lifestyle changes to treat RLS?

Researchers found that:

- Exercise (treadmill walking and strength exercises for the lower body) three times a week may help lessen RLS symptoms, but more research is needed to know this for sure.
- There is not enough research to know how well other lifestyle changes work to treat RLS.



Nonmedicine Treatments

Several nonmedicine treatments have been tried for RLS, including those listed below.

- Hot or cold baths
- Massage
- Compression stockings: stockings made of strong elastic that gently squeeze your legs
- Pneumatic (pronounced new-MAT-ik) compression devices: leg coverings that inflate and deflate with an air pump to squeeze your legs during the night
- Near-infrared light therapy: treatments with a device that uses near-infrared light (the red part of the light spectrum) to help increase the circulation in your legs

What does research say about nonmedicine treatments for RLS?

Researchers found that:

- Pneumatic compression devices work to lessen RLS symptoms.
- Near-infrared light therapy may help lessen RLS symptoms, but more research is needed to know this for sure.
- There is not enough research (and in some cases no research) to know how well other nonmedicine treatments work to treat RLS.



Medicines

Several types of medicines have been used to treat RLS, including those listed below.

- **Dopamine agonists:** These medicines work by affecting the level of a chemical called dopamine in your brain. Dopamine agonists studied in the research for this summary include:
 - Pramipexole (Mirapex®)*
 - Ropinirole (Requip®)*
 - Rotigotine (Neupro®) skin patch*
- **Antiseizure medicines:** These medicines are usually used to stop seizures and nerve pain. You do not have to have seizures to take this type of medicine. Antiseizure medicines studied in the research for this summary include:
 - Pregabalin (Lyrica®)
 - Gabapentin (Neurontin®)
 - Gabapentin enacarbil (Horizant®)*
- **Iron:** Iron is usually given to people who have too little iron in their body. Iron can be taken as a pill or given through an intravenous (IV) tube in your arm.
 - Taking too much iron can be dangerous, so it is important to talk with your doctor before taking iron.

* The U.S. Food and Drug Administration (FDA) has approved these medicines to treat moderate to severe RLS.

Note: The following medicines have been taken by some people for RLS. But, there is not enough research to know if these medicines work or if they are safe to treat RLS.

- **Opioids** (strong pain relievers that can become addictive) such as codeine, hydrocodone (Vicodin®, Lortab®), morphine (DepoDur®), or oxycodone (Tylox®, Percodan®, Oxycontin®)
- **Sedatives** (medicines that relax your muscles and help you sleep) such as clonazepam (Klonopin®), oxazepam (Serax®), or temazepam (Restoril®)

What does research say about medicines to treat RLS?

Researchers found that:

- Dopamine agonists work to lessen RLS symptoms, improve quality of life, and improve sleep.
- The antiseizure medicine gabapentin encarbil (Horizant®) works to improve sleep. It may also improve quality of life, but more research is needed to know this for sure.
- The antiseizure medicine pregabalin (Lyrica®) works to lessen RLS symptoms. It does not appear to improve quality of life, but more research is needed to know this for sure.
- There is not enough research to know how well the antiseizure medicine gabapentin (Neurontin®) works to treat RLS.
- Intravenous (IV) iron works to lessen RLS symptoms and improve quality of life. It may also improve sleep, but more research is needed to know this for sure.
- Iron pills may help lessen RLS symptoms in people who have too little iron in their body, but more research is needed to know this for sure.



What are the possible side effects of RLS medicines?

Medicines	Possible Side Effects	More Information About Possible Side Effects
Dopamine agonists*		
<ul style="list-style-type: none"> <input type="checkbox"/> Pramipexole (Mirapex®) <input type="checkbox"/> Ropinirole (Requip®) <input type="checkbox"/> Rotigotine (Neupro®) skin patch 	<ul style="list-style-type: none"> ■ Nausea and vomiting ■ Drowsiness ■ Tiredness ■ Headache ■ Hallucinations (seeing things that are not there) ■ Intense urges (such as intense urges to gamble or to have sex) 	<ul style="list-style-type: none"> ■ In some people, dopamine agonists may cause RLS symptoms to start happening earlier in the day, to worsen, or to spread to other parts of the body such as the arms. This is called “augmentation.” ■ The rotigotine (Neupro®) skin patch can also cause redness, swelling, and itching where the patch is placed on the skin.
Antiseizure medicines*		
<ul style="list-style-type: none"> <input type="checkbox"/> Gabapentin enacarbil (Horizant®) <input type="checkbox"/> Gabapentin (Neurontin®) <input type="checkbox"/> Pregabalin (Lyrica®) 	<ul style="list-style-type: none"> ■ Dizziness ■ Drowsiness ■ Tiredness ■ Swelling of the feet or ankles ■ Trouble thinking or concentrating ■ Trouble with balance ■ Increased risk of suicidal thoughts 	<ul style="list-style-type: none"> ■ The antiseizure medicine pregabalin (Lyrica®) can also cause the following side effects. If you have any of these side effects, call your doctor right away. <ul style="list-style-type: none"> <input type="checkbox"/> Dry mouth <input type="checkbox"/> Blurred vision <input type="checkbox"/> Weight gain <input type="checkbox"/> Difficulty concentrating <input type="checkbox"/> Swelling of the throat, head, and neck <input type="checkbox"/> An allergic reaction (hives, shortness of breath, or wheezing)
Iron†		
<ul style="list-style-type: none"> <input type="checkbox"/> Iron pills <input type="checkbox"/> Intravenous (IV) iron 	<ul style="list-style-type: none"> ■ Nausea and vomiting ■ Constipation ■ Diarrhea ■ Stomach discomfort ■ Dark-colored stool (waste) 	<ul style="list-style-type: none"> ■ Taking too much iron can lead to iron poisoning. It is important to talk with your doctor before taking iron.
<p>* The possible side effects listed here are from the FDA.</p> <p>† Iron is a dietary supplement. Unlike prescription or over-the-counter medicines, dietary supplements do not have to be approved by the FDA. The possible side effects of iron listed here are from the National Institutes of Health Office of Dietary Supplements Web site available at http://ods.od.nih.gov/factsheets/Iron-HealthProfessional/.</p>		

Note: If you are pregnant, talk with your doctor before taking a dopamine agonist or antiseizure medicine. These medicines may harm the unborn baby.

Dopamine agonists and antiseizure medicines can cause drowsiness. Talk with your doctor about whether it is safe to drive while taking your RLS medicine.

What are the costs of RLS medicines?

The costs to you for medicines to treat your RLS depend on your health insurance, the dose (amount) of the medicine you need, whether the medicine comes in a generic form, and the pharmacy where you buy the medicine.

- The dopamine agonists pramipexole (Mirapex®) and ropinirole (Requip®) and the antiseizure medicine gabapentin (Neurontin®) all come in a generic form.
- The average wholesale prices for dopamine agonists and antiseizure medicines to treat RLS range from \$80 to \$185* per month.

*Prices are the average wholesale prices listed from *RED BOOK Online*® rounded to the nearest \$5. Average wholesale prices are the prices paid by pharmacies.

Making a Decision

What should I think about when deciding?

There are many things to think about when deciding what RLS treatment might be best for you. You and your doctor may want to talk about:

- How severe your RLS symptoms are and how much they are affecting your sleep or daily activities
- The possible benefits and side effects of each treatment
- Which treatment best fits your preferences and lifestyle (some people may want to try lifestyle changes like exercise, and others would rather take a medicine)
- The cost of each treatment

Ask your doctor

- What lifestyle changes might help my RLS?
- Am I taking any medicines that might be making my RLS worse?
- Would a nonmedicine treatment help my RLS?
- Would a medicine help my RLS? If so, which type of medicine might be best for me?
- Will the medicine interfere with any other medicines I take?
- If I take a dopamine agonist, how likely am I to have augmentation (symptoms start happening earlier in the day, worsen, or spread to other parts of the body)?
- How will I know if my medicine is causing augmentation?
- Is there anything I can do to help prevent augmentation?
- Is there anything else I can do to help improve my RLS symptoms and help me sleep?

Other questions:

Write the answers here:

Sources

The information in this summary comes from the report *Treatment for Restless Legs Syndrome*, November 2012. The report was produced by the Minnesota Evidence-based Practice Center through funding by the Agency for Healthcare Research and Quality (AHRQ).

For a copy of the report or for more information about AHRQ and the Effective Health Care Program, go to www.effectivehealthcare.ahrq.gov/restless-legs.cfm.

Additional information came from the MedlinePlus® Web site, a service of the National Library of Medicine and the National Institutes of Health. This service is available at www.nlm.nih.gov/medlineplus.

This summary was prepared by the John M. Eisenberg Center for Clinical Decisions and Communications Science at Baylor College of Medicine, Houston, TX. People who have restless legs syndrome reviewed this summary.

