



RESTLESS LEG SYNDROME

Symptoms and Solutions





Creepy-crawly, tingly, itchy, achy legs are an everyday, or more often, an every night occurrence for people who have restless leg syndrome (RLS). The National Institute of Neurological Disorders and Stroke estimates that 12 million people in the United States have restless leg syndrome, but it is likely that many people who have the condition go undiagnosed. Some studies estimate 10-15% of the population suffers from RLS. Even more significant is the negative impact it has on sleep and your health in general. That's why the pursuit of a diagnosis and effective treatment plan is such an important priority for sufferers. If you are frustrated with RLS and want to see if vein treatments can bring you relief, the only way to do this is to schedule a specialized vein reflux ultrasound and evaluation by a vein specialist.

In my experience as a vein specialist over the past 16 years, I have treated patients on a daily basis who suffer from RLS and its effects. Over the years, I and other vein specialists have noted a correlation between restless leg syndrome and vein reflux. The symptoms and patterns match. In the majority of my patients who suffer from RLS, and who also are found to have a vein condition, their symptoms significantly improve or disappear completely with treatment.

It's more than a passing coincidence. In this ebook, I will discuss the correlation that I see between vein reflux and RLS and how vein treatments can help. I'll also discuss the treatments and talk about the benefit derived in alleviating the symptoms. One patient in particular said that, after treatment for his vein condition, his RLS symptoms went away and he was able to sleep through the night for the first time in 25 years. Before that he got at most 4 hours of sleep, and he felt tortured by it.

Most patients I see are frustrated by their restless leg symptoms and lack of relief with conventional medical therapy. Most primary care providers, including neurologists, have not yet been exposed to the growing awareness amongst vein care practitioners that there is a vein source for many patients with RLS, and treatments do help. My goal is to share what I've learned in more than 15 years treating vein conditions and over 10 years as a cardiac and vascular surgeon. I also suffered from a vein condition and restless legs and know first hand how debilitating symptoms can be and how exhilarating it is when symptoms go away after treatment. For these reasons, I am excited to share what I have learned and offer hope to those who suffer from RLS.

ARE YOU SUFFERING UNNECESSARILY FROM RLS?

Here are some stories from reporter Tara Parker Pope after she first heard the term “restless leg syndrome.” Here are a few of the patient stories recorded by Pope and a colleague:

Marge is a retired teacher. She is also a poet. She writes many of her poems at two in the morning when restless leg syndrome won't let her sleep. Marge says that she can't remember a time when she didn't have restless leg syndrome. When she first learned about restless leg syndrome 35 years ago, she said, “I knew I wasn't crazy,” and she was not alone.

Joseph was in great shape when he first noticed the symptoms of restless leg syndrome. He was regularly running marathons. But after long runs he started noticing that his legs didn't feel right. Tingly sensations in his legs kept him up at night. When he finally went to a sleep center for a diagnosis, he was diagnosed with restless leg syndrome and put on medication – that didn't work.

Accountant Kathryn developed creepy-crawly sensations in her leg when she was six months pregnant. (It's not unusual for restless leg syndromes to first appear during pregnancy.) She wasn't too concerned, because her mother and her grandmother and her five aunts had the same experience, and for them, the pain and unpleasant sensations went away when they gave birth. Kathryn found relief by sitting on an exercise ball, and, when the sensations spread to her arms, doing push-ups. But she decided to avoid medications as long as possible.

If you have suffered from RLS for a long time, it's important to know that you are not alone...and that there is help. The only way for these patients, and for you, to figure out if vein treatment will help your RLS is to schedule a vein reflux ultrasound with a vein specialist.

In my practice, I treat patients weekly who have suffered from RLS for years. Here are their descriptions of life with RLS prior to treatment:

- Sensation occurred at night and she would dread falling asleep. The sensation started in her legs with the building urge to move. It felt like a buzzing electrical sensation in her body, and then it grew and extended into her body. She would have to get up and walk around. She told me it was the most unpleasant sensation she has ever had in her life.
- Another patient had to sleep in a separate room from her husband. He kicked throughout the night, forcing her to sleep in a separate room. He wasn't aware he had RLS. He also didn't feel rested in the morning when he woke up. He had vein treatment, successfully resolving his RLS. Both now sleep through the night and feel rested.
- Starting to fall asleep and describe the experience of feeling bugs crawling on your skin. (The medical term for this is 'formication' - often seen in cases of alcohol withdrawal) It's incredibly disturbing because you can't see anything and you can't relax. You reach down and try to swat them away, with no relief.

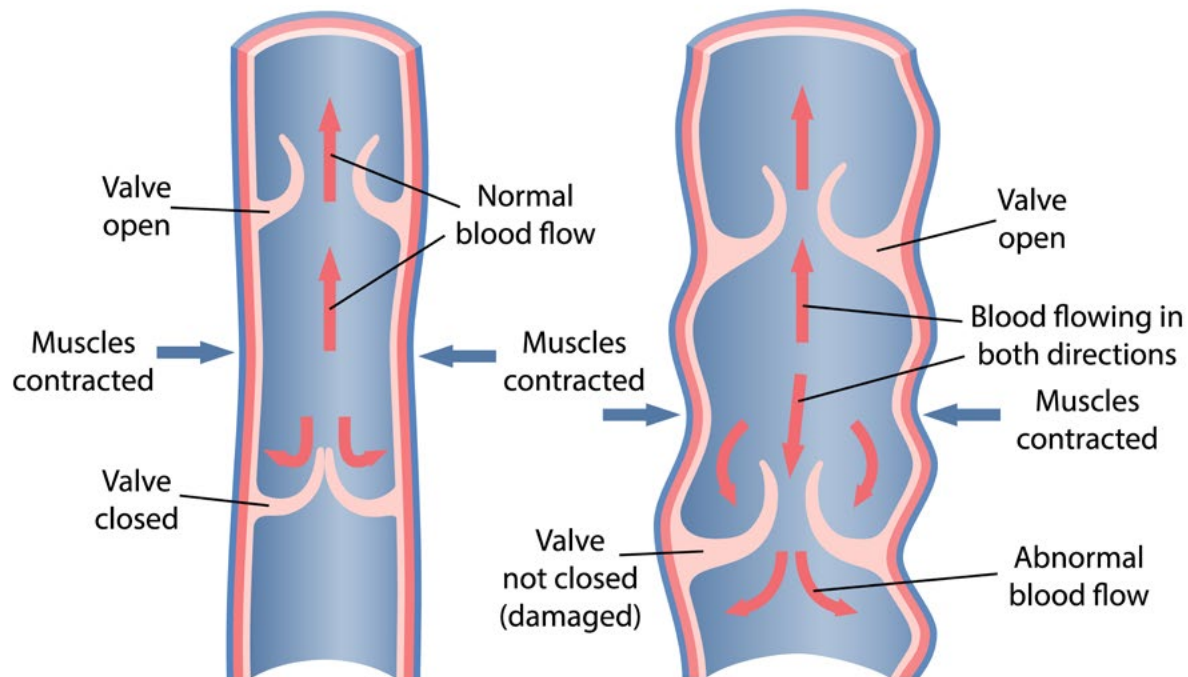
Hear one of our patients share his story here: [Jim's Story](#)



WHAT IS VEIN REFLUX AND HOW DOES IT RELATE TO RLS?

Vein reflux, which is also called venous insufficiency, is a condition in which the blood in the legs are going the wrong way inside the vein. Rather than blood moving from your legs to your heart to get pumped back into the circulation, the blood pools in your legs. You can picture this better by thinking of veins as canals for blood. Each vein has several valves that are working to ensure the blood flows the right way. When these valves stop working, it can cause the blood to flow backward, and the valves to fail. Valves that can't close or that fail will lead to pooled blood in the legs, which will cause pressure and can lead to RLS symptoms. The body reacts to the blood pooling with inflammation in and around the veins. This inflammation causes the local symptoms in your legs and feet (such as cramps, RLS, aching, swelling, etc) but also causes generalized fatigue, which happens to be the most common symptom of vein reflux as it advances.

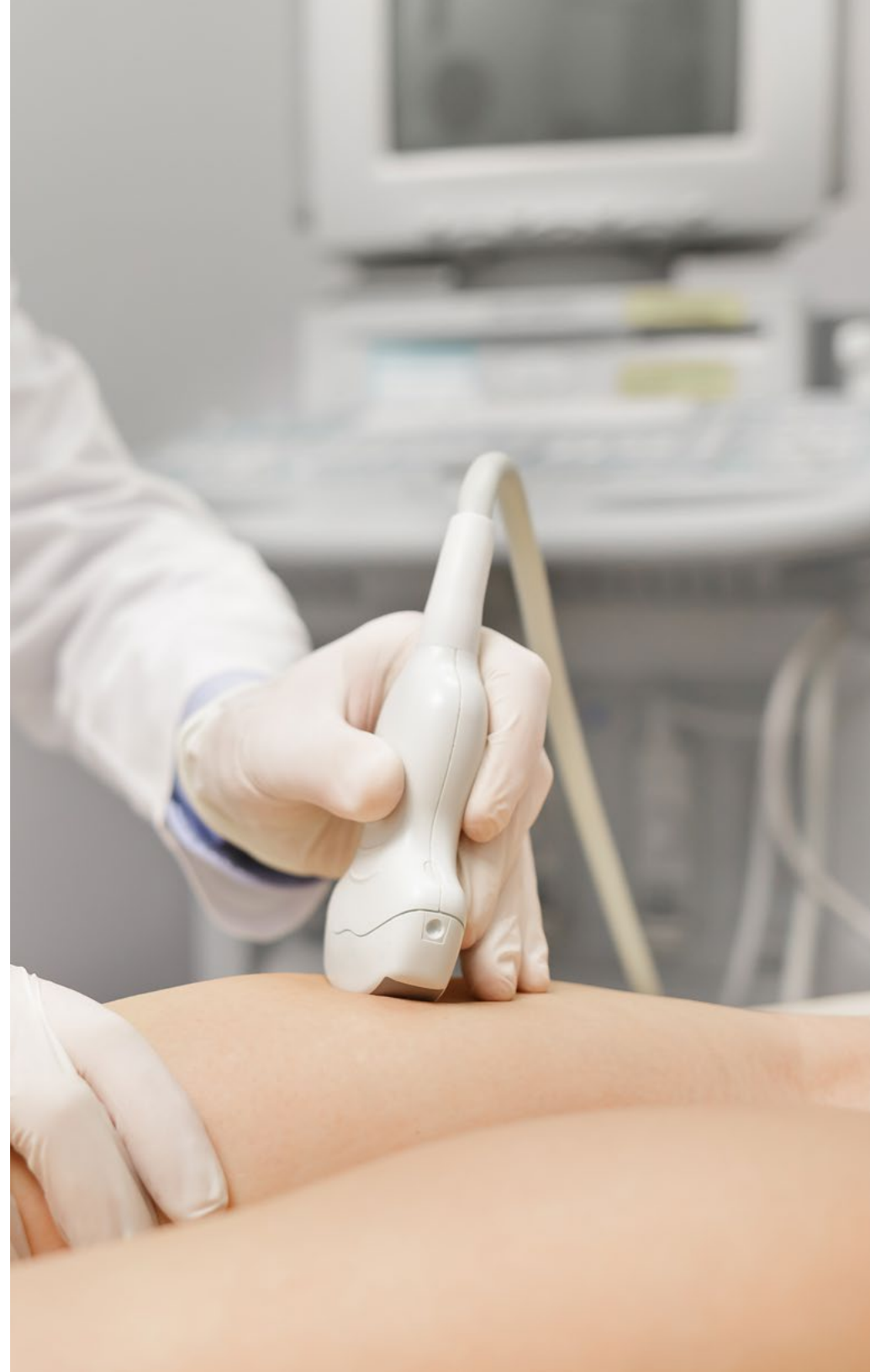
While research and knowledge is growing, many providers are not familiar with the relationship between vein reflux and RLS. The only way to get it sorted out is with a vein reflux ultrasound and evaluation by a vein specialist.

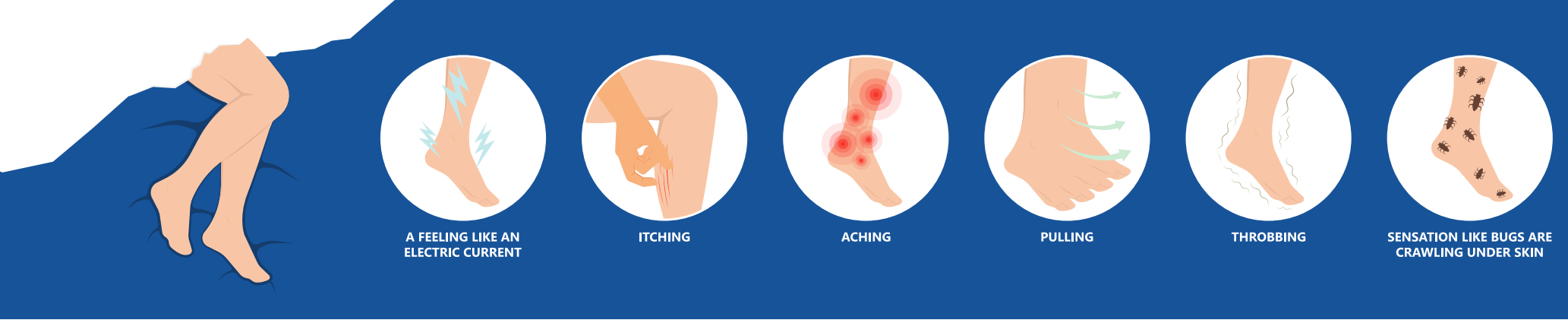


HOW DOES VEIN TREATMENT HELP RLS?

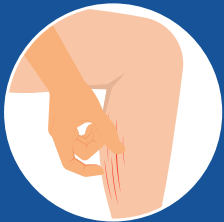
Because vein treatments have such a positive impact on RLS, I recommend vein reflux evaluation in patients with RLS who are not getting relief from medical therapy or who are suffering from side effects of their RLS medications. Each vein treatment will be tailored to your individual condition. If you have vein reflux, the most likely treatment will include closing down abnormally functioning veins where the blood is pooling, and this results in an automatic rerouting of blood flow to healthy, properly working veins. This is due to the fact that your body has an excess number of veins and also continues to make new veins each year. The abnormal veins are then easily reabsorbed into the body. This treatment is called endovenous thermal ablation. Treatments are well tolerated by patients, and most patients note that is way easier than going to the dentist. Patients will need to wear compression stockings for a few days post treatment, but can return to work and resume normal activities including exercise right away.

“IN MY CLINIC, 80% OF PATIENTS WITH RLS EXPERIENCE AN ELIMINATION OR REDUCTION OF THEIR RLS SYMPTOMS.”

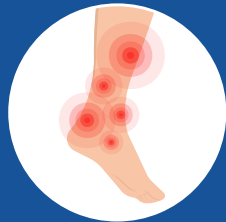




A FEELING LIKE AN ELECTRIC CURRENT



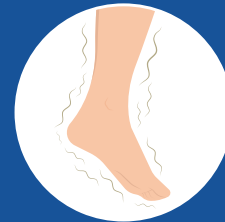
ITCHING



ACHING



PULLING



THROBBING



SENSATION LIKE BUGS ARE CRAWLING UNDER SKIN

RLS AND VEIN CONDITIONS HAVE A LOT IN COMMON

The medical field of epidemiology looks at population statistics to see who gets a disease or symptom, and this helps researchers understand its origin. The demographic patterns seen with RLS have striking similarities to the demographics seen with vein reflux, which would be expected if these two are related.

- Both RLS and vein reflux affects women about twice as often as men
- Women are more likely to develop RLS and vein reflux during pregnancy, and both peak in the third trimester and resolve usually within a month after delivery.
- Sometimes symptoms start before the age of 20, but most of the people who have symptoms bad enough to disrupt their lives are 50 and older.
- RLS and vein reflux both run in families.
- RLS and vein reflux symptoms worsen with age.
- Both vein reflux and RLS predominantly affect the lower legs. Cases of restless arm syndrome are rare; only a dozen reported in the medical literature.
- RLS and vein reflux tend to appear or worsen in the evening and at night.
- Both RLS and vein symptoms can occur during the day, but both always occur in the evening or at night
- Both RLS and vein symptoms decrease by the morning for most patients.
- Vein symptoms and RLS both have worsening of their symptoms with rest

The medical world has classified RLS as “idiopathic,” which means that the actual cause is unknown. Truly effective treatment options, too, have remained elusive for most healthcare practitioners. While the similarities I observe don’t necessarily

point to a definitive cause and effect between vein reflux and RLS, they both share remarkable similarities, one which medical researchers should delve into. If you think you may have a vein condition causing your RLS, the only way to get it sorted out is with a specialized vein reflux ultrasound by a vein specialist.

The diagnosis of RLS is present when these four criteria are present:

- Uncontrolled urge to move the legs with abnormal leg sensations
- The urge begins or worsens with inactivity or rest
- The urge to move is partially or totally relieved by walking
- The urge is worse in the evening or night rather than the day

What are the abnormal sensations of restless leg syndrome?

Patients who have restless leg syndrome often have sensations they describe in vivid terms:

- It’s like there were ants crawling up and down my legs.
- I can feel creepy-crawlies I know aren’t there.
- It’s like my skin itches from the inside out. (This is a very common symptom in patients who have venous insufficiency in their lower legs.)
- It’s like I was trying to sleep on pins and needles.
- An electrical buzzing in my legs and body
- I just can’t make my legs stop moving - it’s an uncontrollable urge to move your legs. There’s nothing you can do to make it stop, except get up and walk around.



LONG TERM HEALTH IMPLICATIONS OF RLS

There can be mental health implications with RLS. First of all, knowing it's chronic - that it isn't going away, can be debilitating. The inability to control RLS can lead to hopelessness and despair.

The long term health impact of RLS can include:

- **Sleep disorder** - RLS is a sleep disorder, and people with sleep disorders are known to have a shortened life span.
- **Chronic fatigue** - This can be characterized by lowered athletic and work performance, irritability, increased conflict in relationships, and even daytime drowsiness.
- **Weight gain** - People with sleep disorders tend to gain weight. Lack of sleep causes fatigue and a feeling of hopelessness or despair, which leads to a lack of exercise or overeating to compensate.
- **Quality of life** - Because of the emotional toll of sleeplessness, individuals

who suffer from RLS are more likely to experience mood swings, angry outbursts, relationship strain and more.

- **Negative emotional state** - Individuals with RLS can experience depression, hopelessness, despair, irritability, and poor relationships.

There is one additional condition of abnormal leg movements that may be related to RLS and vein reflux: Periodic Limb Movement of Sleep, or PLM. With PLM, there is an involuntary, forceful backward flexing of one foot that lasts from half a second to five seconds every 20 to 40 seconds during sleep. With RLS, the patient is aware of the movement and the sensations and can self-report it to the provider. With PLM, the symptoms occur during sleep so that they are not aware of them and they must be reported by the patient's sleeping partner. The patient just wakes up in the morning feeling washed out and tired. These patients do not report the abnormal sensations seen with RLS.

PEOPLE WHO HAVE RESTLESS LEG SYNDROME MAY ENCOUNTER SKEPTICISM ABOUT THEIR PROBLEM.

Because some of the symptoms of restless leg syndrome overlap with those of other conditions like Parkinson's disease, diabetic neuropathy, and psychiatric issues, a diagnosis can be difficult. For that reason, it's important to find out if your RLS is related to a vein condition, and a simple free screening with a vein specialist can rule that out. Many providers, including neurologists, aren't aware of the advances in the field of vein care that now indicate a relationship between RLS and vein reflux. To find out if you have a vein condition causing your RLS, you need to

see a vein specialist and get a specialized vein reflux ultrasound.

People who have restless leg syndrome have an unusual problem, but they usually lead very normal lives. Restless leg syndrome isn't a problem that is all in your mind. It's in your veins and in your nervous system...and likely in your circulatory system as well.

OTHER POSSIBLE CAUSES OF RESTLESS LEG SYNDROME?

Medical science does know that these conditions are associated with RLS. The conditions below are not a list of recommended therapies, nor are they confirmed causes. They are conditions that are known to have an association with RLS. I list them because I believe it's important to be informed. In the cases where a vein condition is not present after a full evaluation, there could be something else at play.

- **Kidney disease.** Restless leg syndrome is very common in dialysis patients.
- **Rheumatoid arthritis.** The combination of uncontrollable muscle movement and joint damage can be quite painful.
- **Amyloidosis.** Amyloidosis is the accumulation of an abnormal protein called amyloid throughout your body.
- **Lumbosacral radiculopathy**, which is a fancy way of saying "slipped disc or ruptured disc in your lower back."
- **Iron deficiency.** Although low iron is associated with RLS, it also occurs in patients who have hemochromatosis, a condition of iron overload.
- **Frequent blood donation.** Even if you follow the rules about how often you donate blood, some people become slightly anemic resulting in iron deficiency.
- **Magnesium deficiency.** Magnesium is a mineral that you get from greens. If you never eat your greens, you may become magnesium deficient.

- **Lyme disease.** This tick-borne infection can cause numerous neurological issues, including restless leg syndrome.
- **Diabetes**, both type I and type II. The better you can keep your blood sugar levels under control, the fewer symptoms you will have.
- **Vitamin B12 deficiency.** Vitamin B12 is an unusual condition, but it can occur in older people who have digestive issues.
- **Nicotine, caffeine, or alcohol use.** Smoking, drinking alcohol, or drinking coffee, tea, and soft drinks are not causes of restless leg syndrome, but may make symptoms worse.
- **Neuropathy, especially diabetic neuropathy.** Both neuropathy and restless leg syndrome can cause tingling, burning, and creepy-crawly sensations.
- **Sjögren syndrome (pronounced show-grin syndrome).** Sjögren syndrome is an autoimmune disease that causes white blood cells to build up around glands.
- **Sleep problems.** Sleep problems make restless leg syndrome worse, and restless leg syndrome makes sleep problems worse.

WHAT RESEARCH IS ONGOING RELATING TO RESTLESS LEG SYNDROME?

As we have already stated, the direct cause of RLS is still unknown. However, studies are being conducted that point toward a definitive connection between RLS and vein reflux, as well as vein treatment as an effective treatment plan.

- A study published in April 2019 found that there was enough connection and noted improvement in symptoms with RLS patients treated for a vein condition. The study concluded that “Venous ultrasound study and intervention should be considered for potential patients.”
- In another paper published by the National Library of Medicine, the conclusion was that “RLS appears to be a common overlapping clinical syndrome in patients with Chronic Vein Disorder (CVD). In this study, 174 consecutive patients and 174 matched healthy controls. They found that 36% of patients presenting to Phlebology practice had RLS symptoms, and of the 36% that had RLS symptoms - 98% had chronic venous disease. Also, of the 19% control that had RLS symptoms - 91% had chronic venous disease.
- Kanter Dermatological Surgery 1995 had 113 patients with the dual diagnosis of RLS and varicose veins. They were treated with sclerotherapy only, and of those treated - 98% reported rapid relief.
- Hayes et al Phlebology 2008 studied 35 patients with moderate to severe RLS with CVD. 80% of those with treatment had improvement in their symptoms. 53% had a follow up score less than 5 indicating their symptoms had been largely alleviated. 31% had a score of 0 indicating complete relief of their symptoms.
- McDonagh et al COMPASS study Phlebology 2002 studied 186 patients with GSV reflux, 17% with RLS. They were treated with sclerotherapy and 100% reported RLS relief.



“THE ONLY WAY TO KNOW IF YOU CAN BE HELPED IS TO HAVE A SPECIALIZED VEIN ULTRASOUND WITH A VEIN SPECIALIST.”

OTHER POSSIBLE TREATMENT OPTIONS FOR RLS

I would be remiss if I didn't also offer the additional treatment options available for RLS. That being said, the first thing I would suggest that someone do is schedule a free vein screening to rule out the presence of vein reflux. Where that is the case, treatment for a vein condition is the recommended next step.

Beyond that, here is a list of things people have tried. My patients share the host of things they've tried over the years. I keep tabs on those efforts because I'm interested in their efficacy. My professional opinion is that this list doesn't produce the results that the patients had hoped for, but you are welcome to try them.

- **At-Home Treatments:** There are many things you can do to eliminate some of the pain associated with RLS without the use of medications they include using heating pads or ice packs, taking hot baths, getting leg massages or using a specialized vibrating pad such as Relaxis.
- **Lifestyle Changes:** As previously mentioned, some researchers feel there may be an association between some sorts between alcohol, tobacco and caffeine use and this condition. If you reduce your intake of these substances, it could help reduce your RLS symptoms. In my experience, changes in these habits have not been effective for most patients.
- **Folic acid supplementation and iron infusion:** There is support among some researches that these have some benefit, but it isn't widely accepted.
- **Prescriptions, Medications:** In some cases, a doctor could prescribe medications like dopaminergic drugs or Mirapex, Neupro or Requip, which

are FDA-approved drugs to treat RLS. They might also prescribe anti seizure or anticonvulsant drugs like Tegretol, Lyrica or Neurontin. Be aware, though, that all medications come with many potential side effects, so you will have to discuss the benefits and side-effects with your provider. In my experience, there have been a minority of patients who say they have achieved complete resolution of their RLS symptoms through medication.

NOTE: In my experience, there are a handful of patients who say that the medicines work great, but the vast majority that I speak with say it doesn't work for them...or that they don't like it because it's a sedative and causes extreme drowsiness. If you don't like your medicine because of the side-effects, or if you find that taking them isn't helping, make sure you work with your healthcare provider to back off of them slowly. Many of them need to be tapered off, and can't be stopped cold turkey without side effects.

If you've tried any of these treatments without improvement to your satisfaction, it is likely that your RLS is connected to a vein condition. Schedule a vein reflux ultrasound and an evaluation by a vein specialist to find out.

If you have vein disease, such as venous insufficiency or varicose veins, causing RLS, then understand that simple outpatient vein treatments can help. The results are usually long-lasting, and one can find relief for years before needing another treatment.

YOUR NEXT STEP

Your next step is easier than you think. We're happy to answer questions - feel free to contact us. What you will need is a specialized vein reflux ultrasound, and part of the exam is performed by standing up or at a steep angle by a qualified vascular ultrasound technician. This is followed by an interpretation of the ultrasound and an assessment of your symptoms by a vein care specialist. If you are like 80% of people with RLS AND vein reflux, you will get relief with vein treatments.

SCHEDULE A FREE VEIN SCREENING



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