APPENDIX 1. APPROACH TO MANAGEMENT OF RESTLESS LEGS SYNDROME

Reassure patient
Determine symptom frequency and severity
Evaluate for underlying causes (2º RLS) and treat appropriately
Measure ferritin: Iron supplementation if ferritin low
Eliminate aggravating factors (caffeine, alcohol)
Discontinue medications that could exacerbate symptoms
Recommend good sleep hygiene
Consider exercise programme

Re-assess
Determine appropriateness of pharmacotherapy

Intermittent RLS
Levodopa/Carbidopa prn
If ineffective:
- Opioid prn
- Pramipexole or ropinirole daily
- Gabapentin daily

Frequent or daily moderate-to-severe RLS
Pramipexole or ropinirole daily
If ineffective:
- Gabapentin daily
- Opioid daily

If ineffective consider:
- Combination therapy
- Referral

Adapted from:

November 2010
# APPENDIX 2. PHARMACOLOGICAL MANAGEMENT OF RESTLESS LEGS SYNDROME

<table>
<thead>
<tr>
<th>Agent</th>
<th>Daily Starting Dose and Titration</th>
<th>Adverse Effects</th>
<th>Clinical Use and Comments</th>
<th>Evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Levodopa/</td>
<td>25–100 mg</td>
<td>Headache, GI upset</td>
<td>• Intermittent RLS</td>
<td>Level I-2</td>
</tr>
<tr>
<td>carbidopa</td>
<td></td>
<td>Augmentation with daily use (high rate)</td>
<td>• Fast onset of effect, often first dose</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rebound</td>
<td>• Can use prn</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Short duration of effect (rebound)</td>
<td></td>
</tr>
<tr>
<td>Pramipexole</td>
<td>0.125 mg</td>
<td>Nausea, postural hypotension, daytime</td>
<td>• First-line agent for moderate-to-severe frequent or daily RLS</td>
<td>Level I-2</td>
</tr>
<tr>
<td></td>
<td>Titrate by 0.25 mg after 4 days;</td>
<td>drowsiness</td>
<td>• Probably most effective agents for RLS</td>
<td></td>
</tr>
<tr>
<td></td>
<td>maximum 0.5 mg</td>
<td>Augmentation</td>
<td>• No evidence to prefer one over the other</td>
<td></td>
</tr>
<tr>
<td>Ropinirole</td>
<td>0.25 mg</td>
<td></td>
<td>• Mean effective dose 1800 mg</td>
<td>Level I-2*</td>
</tr>
<tr>
<td></td>
<td>Increase to 0.5 mg (day 3); to 1.0</td>
<td>Patients with pain benefit most</td>
<td>• RLS with neuropathic pain (first-line)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>mg (day 8); 0.5 mg/week to maximum</td>
<td>After dopamine agonist if ineffective</td>
<td>• In combination with dopamine agonist for refractory RLS</td>
<td></td>
</tr>
<tr>
<td>Gabapentin</td>
<td>100–300 mg</td>
<td>Sedation</td>
<td>• RLS associated with pain</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Titrate to 600–2400 mg</td>
<td>GI discomfort</td>
<td>• Good initial and long-term results in open trials without problems with dependence,</td>
<td>Level I-2*</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>tolerance or addiction</td>
<td></td>
</tr>
<tr>
<td>Opioids</td>
<td>Varies with opioid selected</td>
<td>Nausea, constipation, abuse potential</td>
<td>• In combination with dopamine agonist for refractory RLS and residual insomnia</td>
<td></td>
</tr>
<tr>
<td>Clonazepam</td>
<td>0.5 mg</td>
<td>Daytime drowsiness, increased risk of</td>
<td>• Intermittent RLS</td>
<td>Limited data</td>
</tr>
<tr>
<td></td>
<td>Titrate up to 2 mg if necessary</td>
<td>falls, abuse potential</td>
<td>• Probably more benefit for insomnia than RLS</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Seldom improves cardinal symptoms</td>
<td></td>
</tr>
</tbody>
</table>

Gl: gastrointestinal; *Small patient numbers

Adapted from:

November 2010
Restless Legs Syndrome

Restless legs syndrome causes uncomfortable feelings in your legs. As a result, you have an urge to move your legs which gives temporary relief. Symptoms come on when resting and are worse at the end of the day. No treatment may be needed if symptoms are mild. Medication can ease symptoms if the condition is distressing.

What is restless legs syndrome?

Restless legs syndrome (RLS) is sometimes called Ekbom's syndrome after the doctor who first described it in 1945. It is a condition where you have an urge to move your legs. This is usually caused by an uncomfortable or unpleasant feeling in the legs.

What are the symptoms of restless legs syndrome?

Many people with RLS find it difficult to describe the feeling that they get in their legs. It may be like a 'crawling' sensation, or 'like an electric feeling', or 'like toothache', or 'like water running down your leg', or 'like itchy bones' or just 'fidgety, jumpy or twitchy legs', or just uncomfortable. Some people describe a 'deep painful feeling' in their legs. The unpleasant feelings make you have an urge to move. Typically, when the unpleasant feelings occur they occur every 10-60 seconds and so you become quite restless.

Typically, the symptoms:

- Develop when you are resting - particularly when you are sitting down or lying in bed. They tend to be worse if you are in a confined space such as in a cinema seat.
- Are usually worse in the evening. In many people they only occur in the evening, especially when trying to get to sleep. The symptoms can make it difficult to get to sleep. This can have a knock-on effect of causing poor sleep, and tiredness the next day.
- Are usually eased briefly by moving, walking, massaging or stretching the legs. However, the symptoms tend to return shortly after resting again.
- Usually affect both legs. Occasionally, the arms are affected too.

About 3 in 4 people with RLS also have sudden jerks (involuntary movements) of their legs when they are asleep. This is called periodic limb movements of sleep (PLMS). These movements can wake you up (and/or your partner). Some jerks may also occur when you are awake but resting.

The severity of symptoms can vary from a mild restlessness of the legs on some evenings, to a distressing problem that occurs every evening and night (and, sometimes, during the daytime) which regularly disturbs sleep. Many people fall somewhere in between these extremes. If you have moderate or severe symptoms it may lead to anxiety and depression on top of the RLS.

Tiredness

In addition to the unpleasant symptoms when they occur, many people with RLS become persistently tired. This is due to the symptoms of restlessness and/or PLMS that can cause regular disturbed nights' sleep. This can have a 'knock-on' effect of causing daytime tiredness due to lack of sleep.

Who gets restless legs syndrome?

About 1 in 10 people develops some degree of RLS at some point in their life. It can affect anyone and can first develop at any age. It affects women more often than men.
What causes restless legs syndrome?

The cause is not known in most cases
This is called primary or 'idiopathic' RLS. This most commonly first develops in younger adults (under 45 years old). Symptoms tend to become slowly worse over the years. It is thought that the cause may be a slight lack of, or imbalance of, some brain chemicals (neurotransmitters), especially one called dopamine. It is not known why this should occur. There may be some genetic factor as primary RLS runs in some families.

Secondary causes
Symptoms of RLS can develop as a 'complication' of certain other conditions. For example:

- Pregnancy. About 1 in 5 pregnant women develops RLS during pregnancy (especially in the later part of pregnancy). Symptoms often go after giving birth.
- Lack of iron (iron deficiency) - which can cause anaemia. If this is the cause, then the symptoms of RLS usually go if you take iron tablets.
- As a side-effect of some drugs. For example, it occurs in some people who take: antidepressants, antipsychotics, dopamine antagonists, antihistamines, calcium channel blockers, phenytoin, or steroids.
- As a symptom of some other conditions. For example, kidney failure, Parkinson's disease, diabetes, and underactive thyroid.

How is restless legs syndrome diagnosed? Do I need any tests?

A doctor will usually make the diagnosis from the typical symptoms. There is no test to prove the diagnosis. A doctor may do some tests to rule out a 'secondary cause'. For example, a blood test to check for a lack of iron, and to rule out kidney failure.

What is the treatment for restless legs syndrome?

Treatment for secondary RLS is to treat the underlying cause such as iron deficiency, etc. Perhaps a change of medication may be advised if a side-effect from a drug is thought to be responsible. However, most people with RLS have primary RLS.

For primary RLS, if symptoms are mild or infrequent then no treatment may be needed or wanted. Many people are reassured that they have primary RLS and not something more serious. (Some people with RLS fear that they have a serious neurological disorder.) If the symptoms are troublesome, then one or more of the following may be advised.

General measures

- Simple distractions such as reading or watching TV may help if symptoms are mild.
- Sleep hygiene to help improve your sleep patterns. This means:
  - Try to get into a regular bedtime routine of going to bed and getting up at the same time each day.
  - Do not nap - especially in the evenings.
  - Take some exercise during the day (but not near bedtime).
  - Avoid drinks that contain caffeine (a stimulant) before bedtime.
  - Try to relax before going to bed. A relaxing warm bath may help.

- A trial without caffeine or alcohol altogether. (Caffeine or alcohol may make symptoms worse.) Reduce or cut out any drinks that contain caffeine, such as tea, coffee and cola. Also limit, or cut out, alcohol. Try this for a couple of weeks or so to see if symptoms improve. If symptoms do improve, you could then experiment to see what level of caffeine or alcohol causes symptoms. For example, you may not need to cut these things out completely, but just take less than you were used to.
**Exercise**

There is some evidence to suggest that regular daytime exercise can reduce the symptoms of RLS and reduce periodic limb movements of sleep described earlier. For example, one small study split a number of people with RLS into two groups. One group did three sessions of exercise training per week. The other group did no exercise (the control group). After twelve weeks the exercise group had a significant improvement in symptoms compared with the control group. Further research is needed to confirm these results. However, it would certainly do no harm to try regular exercise during the daytime to see if symptoms improve.

**Medication**

If symptoms are not helped much by the above then your doctor may suggest medication.

*Dopamine agonists* are the most commonly used drugs to treat RLS. There are various types and brands. Dopamine agonists in effect ‘top up’ a low level of dopamine which is thought to be lacking in people with RLS. The two most commonly used dopamine agonists to treat RLS are pramipexole and ropinirole. There is a good chance that symptoms will go or greatly reduce in severity if you take one of these drugs.

As with any medication, the benefit of treatment has to be weighed against the possible side-effects of treatment. The most common side-effects of these drugs are nausea (feeling sick), light headedness, tiredness and difficulty with sleep. However, many people do not get any side-effects, or they are mild, and the side-effects often go away with continued use.

Other drugs that are sometimes used include: carbamazepine, gabapentin, strong painkillers, and benzodiazepines. One may be tried if other treatments have not helped.

**Further help and information**

RLS-UK/Ekbom Syndrome Association  
42 Nursery Road, Rainham, Gillingham, Kent ME8 0BE  
Tel: 01634 260483 (Mon and Thurs, 9-11am only) Web: www.rlsuk-esa.org.uk

**References**

- Restless legs syndrome, Clinical Knowledge Summaries (December 2009)
- EFNS guidelines on management of restless legs syndrome and periodic limb movement disorder in sleep, European Federation of Neurological Societies (2006)

Comprehensive patient resources are available at www.patient.co.uk

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November 2010