



Complete Summary

GUIDELINE TITLE

EFNS guidelines on management of restless legs syndrome and periodic limb movement disorder in sleep.

BIBLIOGRAPHIC SOURCE(S)

Vignatelli L, Billiard M, Clarenbach P, Garcia-Borreguero D, Kaynak D, Liesiene V, Trenkwalder C, Montagna P, EFNS Task Force. EFNS guidelines on management of restless legs syndrome and periodic limb movement disorder in sleep. *Eur J Neurol* 2006 Oct;13(10):1049-65. [292 references] [PubMed](#)

GUIDELINE STATUS

This is the current release of the guideline.

** REGULATORY ALERT **

FDA WARNING/REGULATORY ALERT

Note from the National Guideline Clearinghouse: This guideline references a drug(s) for which important revised regulatory and/or warning information has been released.

- [March 29, 2007, Permax \(pergolide\)](#): Voluntary market withdrawal in the U.S. and worldwide due to safety concerns of an increased risk of cardiovascular events. See the U.S. Food and Drug Administration (FDA) Web site for more information.

COMPLETE SUMMARY CONTENT

** REGULATORY ALERT **

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INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT

CATEGORIES

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SCOPE

DISEASE/CONDITION(S)

- Restless legs syndrome (RLS)
- Periodic limb movement disorder (PLMD)

GUIDELINE CATEGORY

Assessment of Therapeutic Effectiveness
Management
Treatment

CLINICAL SPECIALTY

Family Practice
Internal Medicine
Neurology
Pharmacology
Sleep Medicine

INTENDED USERS

Physicians

GUIDELINE OBJECTIVE(S)

- To examine the best evidence available on the effectiveness of any treatment for restless legs syndrome (RLS) and periodic limb movement disorder (PLMD) in sleep.
- To determine the effectiveness and maintained effect of drugs and physical interventions in the treatment of RLS and PLMD, the following hypotheses were tested:
 1. Any drugs are more effective than no treatment or treatment with placebo in abolishing or reducing the occurrence of RLS and PLMD and in improving the quality of life.
 2. One class or one molecule is better than another.
 3. Any physical intervention is more effective than no treatment or treatment with placebo in abolishing or reducing the occurrence of RLS and PLMD and in improving the quality of life.
 4. The side-effects of the class or molecules and of the physical treatments proved to be effective do not exceed the therapeutic effects.

TARGET POPULATION

Patients with restless legs syndrome (RLS) and periodic limb movement disorder (PLMD)

INTERVENTIONS AND PRACTICES CONSIDERED

Management

Primary Restless Legs Syndrome (RLS)

1. Dopaminergic drugs (e.g., ropinirole, pergolide*, cabergoline, levodopa, rotigotine, bromocriptine, pramipexole)
2. Antiepileptic drugs (e.g., gabapentin, valproate, carbamazepine)
3. Drugs acting on the adrenoceptor (e.g., clonidine)
4. Benzodiazepines (e.g., clonazepam)
5. Opioids (e.g., oxycodone)

***Note from the National Guideline Clearinghouse (NGC):** On March 29, 2007, Permax (pergolide) was withdrawn from the market in the U.S. and worldwide due to safety concerns of an increased risk of cardiovascular events. See the [U.S. Food and Drug Administration \(FDA\) Web site](#) for more information.

Secondary RLS

1. Levodopa, ropinirole
2. Gabapentin
3. Iron dextran
4. Clonazepam

Periodic Limb Movement Disorder (PLMD)

1. Clonazepam, triazolam
2. Levodopa, bromocriptine

Note: Refer to the original guideline document for information on medications that were considered but not recommended due to ineffectiveness or lack of evidence.

MAJOR OUTCOMES CONSIDERED

- Paraesthesia/dysaesthesia or pain (determined by simple subjective report or subjective validated scales/questionnaires)
- Polysomnographic indexes of sleep dysfunction (mean periodic limb movements in sleep [PLMS]-I in sleep, mean PLMS-A, sleep efficiency, sleep latency, actigraphic activity in sleep)
- Quality of life
- Adverse events
- Drop-outs
- Rate of patients choosing to remain in treatment after completion of trial

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

The best available evidence to address each question was sought, with the classification scheme by type of study design according to the European Federation of Neurological Societies (EFNS) Guidance document (Class I to Class IV evidence) (see the "Availability of Companion Documents" field in this summary). If the highest class of evidence was not sufficient or required updating the literature search was extended to the lower adjacent class of evidence. Patients with restless legs syndrome (RLS) and/or periodic limb movement disorder (PLMD), with any other comorbidity and co-treatment were considered. Explicit diagnostic criteria of RLS were not required for inclusion. Therapies with any kind of drugs (any dose, any regimen) and with any kind of physical intervention were included. The following classes of drugs were considered: drugs acting on the adrenoceptor, antiepileptic drugs, benzodiazepines/hypnotics, dopaminergic agents (levodopa, ergot- and non-ergot-derived dopaminergics), opioids, other treatments. The duration of treatment in every study was divided into short term (≤ 30 days) or long term (> 30 days).

In the strategy for identification of studies, search terms were generated for searching the following electronic databases (see Table S1 on the website): Cochrane Library, National Library of Medicine's MEDLINE (from 1966), EMBASE (from 1980), CINAHL (from 1982). Existing guidelines were also sought and taken into consideration.

All references until the end of 2004 were reviewed to assess potentially relevant studies for inclusion, and data extraction performed.

NUMBER OF SOURCE DOCUMENTS

Approximately 307 articles

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Weighting According to a Rating Scheme (Scheme Given)

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Evidence Classification Scheme for a Therapeutic Intervention

Class I: An adequately powered prospective, randomized, controlled clinical trial with masked outcome assessment in a representative population or an adequately powered systematic review of prospective randomized controlled clinical trials with masked outcome assessment in representative populations. The following are required:

- a. Randomization concealment
- b. Primary outcome(s) is/are clearly defined
- c. Exclusion/inclusion criteria are clearly defined
- d. Adequate accounting for dropouts and crossovers with numbers sufficiently low to have minimal potential for bias

- e. Relevant baseline characteristics are presented and substantially equivalent among treatment groups or there is appropriate statistical adjustment for differences

Class II: Prospective matched-group cohort study in a representative population with masked outcome assessment that meets a–e above or a randomized, controlled trial in a representative population that lacks one criteria a–e

Class III: All other controlled trials (including well-defined natural history controls or patients serving as own controls) in a representative population, where outcome assessment is independent of patient treatment

Class IV: Evidence from uncontrolled studies, case series, case reports, or expert opinion

METHODS USED TO ANALYZE THE EVIDENCE

Systematic Review with Evidence Tables

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

For every key question, an evidence table was created listing the design and methodological classification of each study. Classes of evidence were attributed according to the European Federation of Neurological Societies (EFNS) Task Force Guidance (see the "Availability of Companion Documents" field). Disagreement was resolved by discussion.

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Expert Consensus

DESCRIPTION OF METHODS USED TO FORMULATE THE RECOMMENDATIONS

For forming guideline recommendations, the volume of evidence, applicability, generalizability, consistency and clinical impact, were summarized by every member of the Task Force. Rating levels of recommendations were attributed according to the European Federation of Neurological Societies (EFNS) Task Force Guidance (see the "Availability of Companion Documents" field) and recommendations formulated by every member. Disagreement was resolved by discussion.

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Rating of Recommendations

Level A rating (established as effective, ineffective, or harmful) requires at least one convincing class I study or at least two consistent, convincing class II studies.

Level B rating (probably effective, ineffective, or harmful) requires at least one convincing class II study or overwhelming class III evidence.

Level C rating (possibly effective, ineffective, or harmful) requires at least two convincing class III studies.

COST ANALYSIS

A formal cost analysis was not performed and published cost analyses were not reviewed.

METHOD OF GUIDELINE VALIDATION

Peer Review

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

The guidelines were validated according to the European Federation of Neurological Societies (EFNS) criteria (see "Availability of Companion Documents" field).

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

The levels of evidence (class I-IV) supporting the recommendations and ratings of recommendations (A-C) are defined at the end of the "Major Recommendations" field.

Drugs Acting on the Adrenoceptor

Clonidine is probably effective in reducing symptoms and sleep latency in primary restless legs syndrome (RLS) at short term (**level B rating**). Clonidine had several but tolerated adverse events (dry mouth, decreased cognition and libido, lightheadedness, sleepiness, headache) (**level B**). There is no sufficient evidence to make a recommendation about talipexole, propranolol and phenoxybenzamine, and about clonidine in secondary RLS.

Antiepileptic Drugs

Gabapentin, at 800 to 1800 mg/day can be considered effective in primary RLS (**level A rating**) and probably effective in secondary RLS after haemodialysis (**level B**). Adverse events were usually mild and reversible. Carbamazepine 100 to 300 mg and valproate slow release at 600 mg/day can be recommended as probably effective in primary RLS (**level B**). There is insufficient evidence to make a recommendation about topiramate and lamotrigine, and about the use of antiepileptic drugs in periodic limb movement disorder (PLMD).

Benzodiazepines/Hypnotics

Clonazepam should be considered as probably effective for improving symptoms in primary RLS when given at 1 mg before bedtime, but also probably ineffective when given at four doses throughout the day (**level B rating**). In PLMD,

clonazepam at 0.5–2 mg/daily is probably effective in ameliorating periodic limb movements in sleep index (PLMS-I) and PLMS associated with arousals (PLMS-A) (**level B**) and triazolam (0.125 to 0.50 mg/day) is probably effective in ameliorating sleep efficiency and probably ineffective in reducing PLMS (**level B**).

Adverse events with benzodiazepines (morning sedation, memory dysfunction, daytime somnolence and muscle weakness) were usually mild, dose dependent and reversible. There is insufficient evidence to make a recommendation about alprazolam, nitrazepam, temazepam and zolpidem. Likewise no recommendation can be offered for benzodiazepines/hypnotics in secondary RLS.

Dopaminergic Agents

Levodopa

In primary RLS and at short-term follow-up, levodopa was effective in reducing symptoms of RLS and in improving sleep quality and quality of life and reducing PLMS (**level A rating**). Adverse events were minor but more frequent than placebo (**level A**). In long-term follow-up, levodopa was possibly still effective, but 30 to 70% of patients dropped out because of adverse events or lack of efficacy (**level C**). Augmentation probably occurred in 20 to 82% of treated patients, in a still uncertain number of them leading to treatment discontinuation. In RLS secondary to uraemia, at short-term follow-up, levodopa was probably effective in reducing symptoms, improving quality of life and reducing PLMS-I and PLMS-A (**level B**). In PLMD, at short-term follow-up, levodopa was probably effective in improving PLMS-I and PLMS-A (**level B**).

Ergot Derivatives

In primary RLS, pergolide* is established as effective at mean dosages of 0.4 to 0.55 mg/day (**level A rating**) and possibly effective in the long term (**level C**). PLMS-I and PLMS-A are also improved. Cabergoline is also effective at 0.5 to 2 mg/day (**level A**) and possibly effective in the long term (**level C**). Bromocriptine 7.5 mg can be recommended as probably effective (**level B**). In secondary RLS associated with chronic haemodialysis, pergolide* in short-term administration is probably ineffective at 0.25 mg/day (**level B**). In PLMD associated with narcolepsy, bromocriptine is probably effective (**level B**). Most frequent adverse events of ergot-derived dopamine agonists (nausea, headache, nasal congestion, dizziness and orthostatic hypotension) were controlled by domperidone. Augmentation was not assessed with pergolide* in class I studies. There is insufficient evidence to make a recommendation about alpha-dihydroergocryptine, lisuride and terguride.

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Non-ergot Derivatives

In primary RLS, ropinirole at 1.5 to 4.6 mg/day has a **level A rating** of efficacy. Rotigotine by transdermal patch delivery is also effective in the short term (**level A**), and pramipexole is probably effective (**level B**). In RLS secondary to uraemia ropinirole is probably effective (**level B**). Adverse events were those common to all dopaminergic agents. Augmentation has not been well studied for any of these drugs, and has been reported by 7% of patients with ropinirole (**class I evidence**). There is insufficient evidence to make recommendations about the use of non-ergot derivatives in PLMD.

Opioids

For primary RLS, oxycodone at a mean dosage of 11.4 mg can be considered as probably effective in improving RLS symptoms and PLMS-I, PLMS-A and sleep efficiency on a short-term basis (**level B rating**). Adverse events (mild sedation and rare nocturnal respiratory disturbances on long-term use) were usually mild and reversible, problems of addiction being observed only rarely. For PLMD, short-term propoxyphene is probably ineffective in improving sleep quality and PLMS-I (**level B**). There is insufficient evidence to make a recommendation about morphine, tramadol, codeine and dihydrocodeine, tilidine, and methadone and about the intrathecal route of administration. There is insufficient evidence to make a recommendation about the use of opioids in secondary RLS.

Other Treatments

In primary RLS, both iron sulphate and vibration are probably ineffective (**level B rating**). There is insufficient evidence to make any recommendation about the use of intravenous iron dextran, magnesium oxide and amantadine. In RLS secondary to uraemia, iron dextran 1000 mg in a single intravenous dose is probably effective in the short term (<1 month) (**level B**). In PLMD, transdermal oestradiol is established as ineffective (**level A rating**) and modafinil and 1-day nocturnal haemodialysis as probably ineffective, whilst cognitive-behavioural therapy is no different than clonazepam (**level B**). 5-OH-tryptophan and trazodone are possibly ineffective and apomorphine and physical exercise (in myelopathy) possibly effective (**level C rating**).

Final Comments

For primary RLS, ropinirole given at mean dosages of 1.5 to 4.6 mg/day, and pergolide* at 0.4 to 0.55 mg/day have confirmed **level A rating** efficacy for relieving paraesthesia and motor restlessness. Cabergoline, levodopa and transdermal delivery rotigotine are also established as effective, the latter two so far only for short-term use (**level A rating**). Amongst the antiepileptic drugs, gabapentin should be considered as effective in primary RLS (**level A rating**).

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For other dopaminergics (pramipexole, bromocriptine) and for valproate, carbamazepine, clonidine and oxycodone there is evidence to consider these drugs as probably effective (**level B rating**), whilst for clonazepam evidence for

probable efficacy (at 1 mg at bedtime) and probable inefficacy (at 4 doses/day), according to dosage schedule (**level B rating**). Iron sulphate and vibration are probably ineffective (**level B rating**). In long-term use, levodopa is possibly effective (**level C rating**).

For RLS secondary to uraemia, levodopa, ropinirole 1.45 mg/day, gabapentin 200 to 300 mg/day and iron dextran 1000 mg intravenously (iv) are probably effective, the latter on short-term use (**level B rating**). For PLMD, transdermal oestradiol is ineffective (**level A rating**). Clonazepam and levodopa are probably effective whilst propoxyphene, triazolam, modafinil and one-night haemodialysis probably ineffective (**level B rating**). Bromocriptine is probably effective in PLMD associated with narcolepsy (**level B**). 5-OH-tryptophan and trazodone are possibly ineffective and apomorphine and physical exercise possibly effective (**level C rating**).

As for adverse events, these were reported as usually mild and reversible upon discontinuation of treatment in the generality of the trials. In particular the peripheral adverse events of dopaminergics were easily relieved by domperidone. For this class of drugs, augmentation represents a troublesome adverse event: even though reported particularly with levodopa, it is hard to get reliable comparative data, especially in the absence of an augmentation rating scale. Recently, concern with the ergot derivatives was raised by the discovery of severe multivalvular heart defects and constrictive pericarditis and pleuropulmonary fibrosis after long-term use in Parkinson's disease (reported with cabergoline, pergolide and bromocriptine). Daily dosages in these cases were equal or greater than 4 mg pergolide for several months. Spontaneous echocardiographic regression of valvular insufficiency along with marked clinical improvement was reported after cessation of the ergot derivatives in some case reports. It was suggested that high doses should be avoided and that patients under dopamine agonists receive a clinical cardiac assessment at 3 to 6 months intervals and if any doubt, obtain an echocardiogram. However, the cardiopulmonary fibrosis side-effects of the ergot derivatives have been described too recently for a meaningful analysis across the different compounds.

Comparison of these versus guidelines already published demonstrates minor differences in judgement, in part related to the different sets of evidence utilized. In all guidelines, dopaminergic agents come out as the best-recommended agents for the treatment of RLS. Opioids have not been here considered as established, and for iron supplementation the Task Force found only class II favourable trials (short term) or even evidence of inefficacy. Iron has been reported as more effective in low-ferritin patients. Unfortunately, still partial evidence is overall available for secondary RLS, almost all in RLS secondary to uraemia, and for PLMD. In particular, recommendations cannot be offered for RLS during pregnancy or during childhood, where quality trials are needed.

Final Level A Recommendations

For primary RLS:

- Cabergoline (0.5 to 2 mg once daily) improves RLS scores.
- Gabapentin (dosage 800 to 1800 mg/daily) reduces RLS scores and improves sleep efficiency and PLMS-I.

- Levodopa/benserazide (mean dose 159/40 mg at bedtime) improves RLS symptoms, quality of sleep, sleep latency, PLMS-I and quality of life.
- Pergolide* (mean doses 0.4 to 0.55 mg/day) is effective in improving RLS severity and ameliorating subjective quality of sleep.

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- Ropinirole (mean doses 1.5 to 4.6 mg/day) is effective in ameliorating RLS scale scores and quality of life, and in improving sleep latency and PLMS-I/PLMS-A.
- Rotigotine by transdermal patch delivery (4.5 mg) and in short-term use improves RLS symptoms.

For PLMD:

- Transdermal oestradiol is ineffective.

Definitions:

Evidence Classification Scheme for a Therapeutic Intervention

Class I: An adequately powered prospective, randomized, controlled clinical trial with masked outcome assessment in a representative population or an adequately powered systematic review of prospective randomized controlled clinical trials with masked outcome assessment in representative populations. The following are required:

- a. Randomization concealment
- b. Primary outcome(s) is/are clearly defined
- c. Exclusion/inclusion criteria are clearly defined
- d. Adequate accounting for dropouts and crossovers with numbers sufficiently low to have minimal potential for bias
- e. Relevant baseline characteristics are presented and substantially equivalent among treatment groups or there is appropriate statistical adjustment for differences

Class II: Prospective matched-group cohort study in a representative population with masked outcome assessment that meets a–e above or a randomized, controlled trial in a representative population that lacks one criteria a–e

Class III: All other controlled trials (including well-defined natural history controls or patients serving as own controls) in a representative population, where outcome assessment is independent of patient treatment

Class IV: Evidence from uncontrolled studies, case series, case reports, or expert opinion

Rating of Recommendations

Level A rating (established as effective, ineffective, or harmful) requires at least one convincing class I study or at least two consistent, convincing class II studies.

Level B rating (probably effective, ineffective, or harmful) requires at least one convincing class II study or overwhelming class III evidence.

Level C rating (possibly effective, ineffective, or harmful) requires at least two convincing class III studies.

CLINICAL ALGORITHM(S)

None provided

EVIDENCE SUPPORTING THE RECOMMENDATIONS

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The type of supporting evidence is identified and graded for selected recommendations (see "Major Recommendations").

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

Appropriate management of restless legs syndrome and periodic limb movement disorder in sleep

POTENTIAL HARMS

Adverse Effects of Medications

- Clonidine had several but tolerated adverse events including dry mouth, decreased cognition and libido, lightheadedness, sleepiness, headache.
- Antiepileptic drugs are associated with only mild and reversible adverse events including malaise, somnolence, gastrointestinal symptoms, dizziness, drowsiness.
- Adverse events with benzodiazepines (morning sedation, memory dysfunction, daytime somnolence and muscle weakness) were usually mild, dose dependent and reversible.

Dopaminergic Drugs

- Commonly reported adverse events of levodopa were diarrhoea, nausea, dyspepsia, reduced general drive, muscle weakness, somnolence and headache. Augmentation probably occurred in 20 to 82% of treated patients.
- Most frequent adverse events of ergot derivatives (nausea, headache, nasal congestion, dizziness, and orthostatic hypotension) were controlled by domperidone. Recently, concern with the ergot derivatives was raised by the

discovery of severe multivalvular heart defects and constrictive pericarditis and pleuropulmonary fibrosis after long-term use in Parkinson's disease (reported with cabergoline, pergolide* and bromocriptine). Daily dosages in these cases were equal or greater than 4 mg pergolide for several months. Spontaneous echocardiographic regression of valvular insufficiency along with marked clinical improvement was reported after cessation of the ergot derivatives in some case reports. It was suggested that high doses should be avoided and that patients under dopamine agonists receive a clinical cardiac assessment at 3 to 6 months intervals and if any doubt, obtain an echocardiogram. However, the cardiopulmonary fibrosis side-effects of the ergot derivatives have been described too recently for a meaningful analysis across the different compounds.

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- Non-ergot derivatives: nausea, headache, fatigue, dizziness, augmentation.
- For *dopaminergic drugs*, augmentation represents a troublesome adverse event: even though reported particularly with levodopa, it is hard to get reliable comparative data, especially in the absence of an augmentation rating scale.
- Opioids: mild sedation and rare nocturnal respiratory disturbances on long-term use were usually mild and reversible, problems of addiction being observed only rarely.

Refer to the original guideline document for more information.

QUALIFYING STATEMENTS

QUALIFYING STATEMENTS

- This guideline provides the view of an expert task force appointed by the Scientific Committee of the European Federation of Neurological Societies (EFNS). It represents a peer-reviewed statement of minimum desirable standards for the guidance of practice based on the best available evidence. It is not intended to have legally binding implications in individual cases.
- Dopaminergic agents are the best-studied drugs to date because of the increasing interest of pharmaceutical companies in achieving an official treatment indication for restless legs syndrome (RLS). However, as only few and small studies have been carried out on non-dopaminergic compounds, and some have shown promising therapeutic effects, it is to be hoped that an increased effort from both industry and investigators to develop further alternatives will be carried out. Accordingly, lack of controlled trials for many drug classes should not be construed as implying negative evidence of efficacy. The most frequently observed weak points of the randomized controlled trials cited in this guideline were flaws in allocation concealment procedures, the absence of a predefined primary endpoint, the overuse of non-validated or surrogate endpoints instead of clinically relevant patient

oriented endpoints (e.g., rate of remission, quality of life). Such problems are generally, but not only, shared by studies predating the year 2000. The recently validated international scales of disease severity and disease-specific quality of life will represent valuable tools to design future trials with clinically relevant primary endpoints. Furthermore, augmentation has not been assessed adequately for most drugs (both dopaminergic and not-dopaminergic) and it is hoped that, as more specific and reliable tools are being developed, they will allow a better assessment of both the long-term efficacy and augmentation.

- It is useful to underline that these guidelines should not be considered as exhausting all methods of care for RLS or periodic limb movement disorder (PLMD). In consideration of the circumstances presented by any particular patient, the ultimate judgement regarding the type of care need always rest with the attending physician.

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

The European Federation of Neurological Societies has a mailing list and all guideline papers go to national societies, national ministries of health, World Health Organisation, European Union, and a number of other destinations. Corporate support is recruited to buy large numbers of reprints of the guideline papers and permission is given to sponsoring companies to distribute the guideline papers from their commercial channels, provided there is no advertising attached.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Getting Better
Living with Illness

IOM DOMAIN

Effectiveness

IDENTIFYING INFORMATION AND AVAILABILITY

BIBLIOGRAPHIC SOURCE(S)

Vignatelli L, Billiard M, Clarenbach P, Garcia-Borreguero D, Kaynak D, Liesiene V, Trenkwalder C, Montagna P, EFNS Task Force. EFNS guidelines on management of restless legs syndrome and periodic limb movement disorder in sleep. *Eur J Neurol* 2006 Oct;13(10):1049-65. [292 references] [PubMed](#)

ADAPTATION

Not applicable: The guideline was not adapted from another source.

DATE RELEASED

2006 Oct

GUIDELINE DEVELOPER(S)

European Federation of Neurological Societies - Medical Specialty Society

SOURCE(S) OF FUNDING

European Federation of Neurological Societies

Supported by MURST ex 60% grants

GUIDELINE COMMITTEE

European Federation of Neurological Societies Task Force on the Management of Restless Legs Syndrome and Periodic Limb Movement Disorder in Sleep

COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

Task Force Members: L. Vignatelli, Department of Neurological Sciences, University of Bologna Medical School, Bologna, Italy; M. Billiard, Faculty of Medicine, Gui de Chauliac Hospital, Montpellier, France; P. Clarenbach, Neurologische Klinik, EV Johannes-Krankenhaus, Bielefeld, Germany; D. Garcia-Borreguero, Department of Neurology, Fundacion Jimenez Diaz, Sleep Disorders Unit, Universidad Autonoma de Madrid, Madrid, Spain; D. Kaynak, Cerrahpasa Faculty of Medicine, Sleep Disorders Unit, Istanbul University, Istanbul, Turkey; V. Liesiene, Faculty of Medicine, University of Kaunas, Kaunas, Lithuania; C. Trenkwalder, Department of Clinical Neurophysiology, University of Goettingen, Goettingen, Germany; P. Montagna, Department of Neurological Sciences, University of Bologna Medical School, Bologna, Italy

FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Every member of the guideline group had to declare a potential conflict of interest, if any.

Dr Billiard received continuing medical education honoraria from GlaxoSmithKline.

Dr Clarenbach was involved in a trial with Schwarz Pharma.

Dr Montagna was involved in trials with GlaxoSmithKline.

Schwarz Pharma and received consultant honoraria from Boehringer-Ingelheim.

Dr Trenkwalder received grants/research support from GlaxoSmithKline, is a consultant for Boehringer-Ingelheim, Glaxo-SmithKline and Novartis, and received

speaker's honoraria for educational symposia from Glaxo-SmithKline, Hoffmann La Roche and Pfizer.

Dr Garcia-Borreguero received research grants from Pfizer and is a consultant for Pfizer, GlaxoSmithKline, Schwarz Pharma and Boehringer-Ingelheim.

GUIDELINE STATUS

This is the current release of the guideline.

GUIDELINE AVAILABILITY

Electronic copies: Available to registered users from the [European Federation of Neurological Societies Web site](#).

Print copies: Available from Prof. Pasquale Montagna, Dipartimento di Scienze Neurologiche, Universita di Bologna, Via Ugo Foscolo 7, 40123 Bologna, Italy; Phone: ++39 051 2092927; Fax: ++39 051 2092963; E-mail: pmontagn@neuro.unibo.it

AVAILABILITY OF COMPANION DOCUMENTS

The following are available:

- Brainin M, Barnes M, Baron JC, Gilhus NE, Hughes R, Selmaj K, Waldemar G; Guideline Standards Subcommittee of the EFNS Scientific Committee. Guidance for the preparation of neurological management guidelines by EFNS scientific task forces – revised recommendations 2004. Eur J Neurol. 2004 Sep;11(9):577-81. Electronic copies: Available in Portable Document Format (PDF) from the [European Federation of Neurological Societies Web site](#).
- Guideline papers. European Federation of Neurological Societies. Electronic copies: Available from the [European Federation of Neurological Societies Web site](#).

PATIENT RESOURCES

None available

NGC STATUS

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