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Published in:
European Journal of Neurology

Link to article, DOI:
[10.1111/j.1468-1331.2010.03233.x](https://doi.org/10.1111/j.1468-1331.2010.03233.x)

Publication date:
2010

Document Version
Publisher's PDF, also known as Version of record

[Link back to DTU Orbit](#)

Citation (APA):
Jensen, P. S., Sørensen, H. B. D., & Jennum, P. J. (2010). Automatic sleep scoring in normals and in individuals with neurodegenerative disorders according to new international sleep scoring criteria. *European Journal of Neurology*, 17(Supplement s3), 624. <https://doi.org/10.1111/j.1468-1331.2010.03233.x>

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Restless legs syndrome in depression

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Objective: Symptoms of depression and anxiety are frequent in patients with restless legs syndrome (RLS). Recent community-based studies have shown associations between RLS and major depressive disorder and panic disorder. However, little is known whether patients with a manifest depressive disorder have an increased prevalence of RLS and whether there is an association to different depressive disorders.

Patients and methods: Three psychiatry departments in two countries (Germany and Australia) each recruited 100 consecutive patients with current depression. All patients filled in a standardized questionnaire including diagnostic questions for RLS, a depression scale (CESD), and the RLS severity scale (IRLS) if RLS was present. The treating doctors filled in a second standardized questionnaire including RLS-diagnostic questions and comorbidities.

Results: Altogether, 290 questionnaires could be evaluated, 190 in Germany (96 in Bremen, 94 in Freiburg) and 100 in Australia. The Australian patients were younger than the German patients (45.4±13.8 vs. 49.7±15.0 years, $p=0.018$), the gender distribution was not different ($p=0.71$). The minimal criteria for RLS were fulfilled by 8.3% of the German and 17.0% of the Australian patients ($p=0.017$). The treating physicians, blinded to the patient answers, rated 4.3% of the German and 12.4% of the Australian patients as RLS cases. RLS prevalence was similar across subtypes of depression.

Discussion: In Germany, RLS is not more frequent in inpatients with manifest depression as compared to the general population. Possible reasons for the higher prevalence of RLS in depressive patients in Australia are discussed. RLS prevalence does not vary by subtype of depression.

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Automatic sleep scoring in normals and in individuals with neurodegenerative disorders according to new international sleep scoring criteria

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Introduction: Reliable polysomnographic classification is the basis for evaluation of sleep disorders in neurological diseases.

Aim: To develop a fully automatic sleep scoring algorithm on the basis of a reproduction of new international sleep scoring criteria from the American Academy of Sleep Medicine (AASM).

Methods: A biomedical signal processing algorithm was developed, allowing for automatic sleep depth quantification of routine polysomnographic (PSG) recordings through feature extraction, supervised probabilistic Bayesian classification, and heuristic rule-based smoothing. The performance of the algorithm was tested using 28 manually classified day-night PSGs from 18 normal subjects and 10 patients with Parkinson's disease (PD) or multiple system atrophy (MSA). This led to quantification of automatic-versus-manual epoch-by-epoch agreement rates for both normal and abnormal recordings.

Results: Resulting average agreement rates were 87.7% (Cohen's Kappa: 0.79) and 68.2% (Cohen's Kappa: 0.26) in the normal and abnormal group, respectively. Based on an observed reliability of the manual scorer of 92.5% (Cohen's Kappa: 0.87) in the normal group and 85.3% (Cohen's Kappa: 0.73) in the abnormal group.

Conclusion: The developed algorithm was capable of scoring normal sleep with an accuracy around the manual inter-scorer reliability, it failed in accurately scoring abnormal sleep as encountered for the PD/MSA patients, which is due to the abnormal micro- and macrostructure pattern in these patients.