

Moving Along

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Is Restless Legs Syndrome Over Diagnosed?

NO

— Werner Poewe, MD, Medical University of Innsbruck, Department of Neurology, Innsbruck, Austria

Restless legs syndrome (RLS) is a clinically defined entity anchored on the presence of four essential criteria, including an urge to move the legs which is usually accompanied by uncomfortable and unpleasant sensations in the legs, symptom onset or worsening during periods of rest or inactivity and/or relief of symptoms by movement and worsening in the evening or night.¹ While resting in a dormant state in the minds of general physicians and neurologists alike over decades following Ekbom's seminal clinical descriptions in 1945 and 1950,^{2,3} RLS has recently moved into the focus of attention of the medical community. In 2006 alone a total of 192 articles on RLS appear in MEDLINE and numerous drug trials targeting RLS are ongoing or have been recently completed. The amount of interest by the scientific community and the pharmaceutical industry alike in RLS and its treatments is truly remarkable and has led some extreme skeptics to suspect that this may all be "much ado about nothing" and that RLS as a morbid entity causing real suffering is an invention of the vested interest of an industrial-medical complex interested in selling drugs to essentially healthy people.

The truth, however, is that RLS is one of the most common neurological conditions in the general population and that its substantial proportion of those affected by it suffer from considerable disability. This has been convincingly demonstrated in several population-based studies using face-to-face interviews, or in some instances telephone interviews, adhering to the standard four essential diagnostic criteria. Högl and colleagues⁴ were able to personally examine a random sex- and age-stratified sample of the general population aged 50 and above. 14% of all females and 7% of all males met standard clinical criteria for RLS when interviewed and examined by experienced neurologists and the overall prevalence



YES

— Fabrizio Stocchi, MD, PhD, Institute of Neurology, IRCCS San Raffaele, Rome, Italy

Thomas Willis, who described "Restless legs syndrome" (RLS) in 1685, and Karl Ekbom, who rediscovered the syndrome in 1944, must be proud of themselves today when eventually RLS has become a well recognized and studied neurological disorder. The number of RLS publications increased enormously in the past several years and there is a lot of attention about RLS across different specialties of medicine. Moreover, drug companies are investing in this new field. All of this attention probably lead to over diagnose RLS. Indeed looking at prevalence studies, RLS seems to be a very common disorder but its prevalence varies in different countries.

In the REST study, RLS symptoms of any frequency were reported by 7.2% of the subjects interviewed using validated diagnostic questions. Symptoms occurred

at least two times per week and were reported as moderately or severely distressing for 2.7% of respondents.¹ However, even in the same study the prevalence varied in different countries being 14.2% in the UK but 5.5% in Spain and the subjects reporting at least twice-weekly RLS were 5.8% in the US and 1.9% in Spain.² Other studies show similar discrepancies. In a Scandinavian study, 11.5% of subjects fulfilled the diagnostic criteria for RLS. Half of these (about 6%) reported the symptoms as moderate to very severe.³ But in a similar study conducted in Greece the overall lifetime prevalence was 3.9% and nearly half of RLS patients (about 2%) reported moderate to severe intensity of symptoms. There are differences also in the same country. In a study conducted in the US, the authors found that subjects from the northeast United States were much less likely to be at risk than those from other regions of the country ($p < 0.05$).⁵ Moreover, it is not easy to differentiate primary or idiopathic RLS (iRLS) from secondary RLS. In fact RLS can be secondary to a number of medical conditions such as iron deficiency, neuropathy, and hypothyroidism and renal failure but also people

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The holiday season has passed, and The *Movement* Disorder Society (MDS) and its members are headed towards a busy, interesting and productive New Year. The Editors of *Moving Along*, the official newsletter of MDS, are looking forward to continuing to provide the membership with up-to-date information on societal and scientific issues, controversies and meeting reports.



Irene Litvan, MD

This first issue of 2008 will focus on a topic that has emerged as one of the scientifically hottest and clinically most relevant in Movement Disorders: Sleep. The Research Update article, by Juliane Winkelmann, skillfully summarizes the exciting progress that has finally been made possible by modern high-throughput genomic methodology in the discovery of genetic factors predisposing to the disease that is arguably the most common one we are confronted with: Restless legs syndrome (RLS). Controversy continues to surround this important entity, which is scholarly laid out by Profs. Poewe and Stocchi, who discuss the issue whether RLS is actually over- or under-diagnosed (this simple question is, as you will see, far from clear).



Thomas Gasser, MD

In any case, probably everybody agrees that sleep and its disturbances is best dealt with by the neurologist, for the benefit of the patient as well as for the advancement of science, and therefore, the most important tool to study sleep, the sleep-lab, should clearly be run by neurologists, as argued by Birgit Högl from Innsbruck, in the Public Policy section of this issue. Here she provides arguments that may be helpful to the readers who may have to lead those discussions with their colleagues or hospital administrations.

The Editors hope that they have been successful in putting together an informative and interesting issue for you. We wish all readers of *Moving Along* a healthy and happy 2008.

Video Olympics Deadlines

February 25, 2008 – After reviewing the Letter of Intents, notifications will be sent out from MDS indicating whether the case will be considered for review and possible presentation.

March 31, 2008 - Final case submissions (slides and video) are due.

May 20, 2008 – Notifications will be sent out from MDS indicating the final selection of cases.

**These dates are subject to change.*

Please visit <http://www.movementdisorders.org/congress/congress08> for more information.



LETTERS TO THE EDITORS

Your Comments and Questions Are Always Welcome

Editorial Policy

As part of its democratic commitment, MDS welcomes the input of all its members about the features and articles that appear in this newsletter. Have a comment or question? Each issue will include responses in the "Letters to the Editor" section. All materials submitted become the property of MDS.

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As we start the New Year, I am pleased to report that the state of The *Movement* Disorder Society (MDS) is strong. When the Society was founded in 1985, the constitution decreed that we should operate to provide forums such as medical journals,

scientific symposia and International Congresses. As I reflect on the current activities of MDS, it's impressive to note that our journal has grown to 16 issues per year and now ranks 27 out of 147 Clinical Neurology titles and our International Congress is an annual event where many world-renowned thought leaders present and our educational activities are available online reaching neurologists in all corners of the world. This is quite an accomplishment for a young Society.

For these achievements, we owe an enormous debt to the dedication and leadership of all the MDS committees and sections. In the past months, many of the planning committees have been hard at work. This has been especially the case for the Congress Scientific Planning Committee. As a consequence, The *Movement* Disorder Society's 12th International Congress of Parkinson's Disease and Movement Disorders scheduled June 22-26, 2008 in Chicago, IL, USA will be an exciting and invigorating scientific program which I invite you to review at <http://www.movementdisorders.org/congress/congress08/program.php>. This will include a remarkable range of presentations by many world-renowned speakers.

Complimenting the traditional International Congress sessions, several innovative and exciting additions are planned for Chicago. One that I am especially interested in and that we have already begun to announce in e-mails to the membership is the "Video Olympics" where Movement Disorder groups representing various countries will present challenging cases to a panel of senior experts. The experts will discuss the cases, engage the audience and solicit opinions and diagnoses. If your country's Movement Disorder group is interested in participating, please see page 2 for details. If you don't have a local country Movement Disorders group (with or without MDS Affiliated Membership status) you are still welcome to submit a case as an individual by contacting the secretariat as outlined in earlier e-mails. Also new to the International Congress this year are the guided poster tours. Six interactive tours will be taking place during the lunch hour. Please plan to join us in Chicago for what promises to offer a unique and enriching

educational experience for all who attend. Register early to take advantage of the reduced registration rates and to reserve the sessions of your choice.

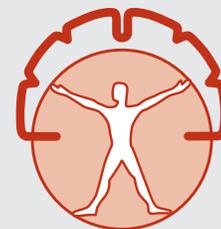
The inaugural meeting of the MDS Asian & Oceanian Section (AOS) was held in Singapore from October 20-22, 2007 this past year. The 1st Asian and Oceanian Parkinson's Disease and Movement Disorders Congress (AOPMC) was well attended with over 500 delegates. Dr. Louis Tan and his colleagues did a remarkable job planning this conference that included both regional and international speakers. A regular component of the AOPMC will be a joint meeting of the International Symposium of the Asian and Pacific Parkinson's Association (APPA). This year the APPA was attended by over 500 patients, family members, carers and allied health professionals. The AOPMC faculty provided a series of lectures at this parallel symposium. The 2nd AOPMC is scheduled February 15-17, 2009 in New Delhi, India.

The MDS Officers held a planning meeting November 26-28, 2008 where they discussed the future direction of the *Movement* Disorders Journal and a number of emerging issues.

I'd like to thank all of you who completed the journal readership survey. For a summary of the survey findings, please see the article on page 11. Thanks to your comments and many suggestions, the journal leadership was able to discuss and plan the future direction of our journal. In the coming months, you can expect to see a new journal cover design and exciting new features including: Clinical-Pathological Conferences articles, Controversies and regular features on "What's Hot in Neuroscience." Other issues the leadership plans to explore in the future include: patient education and the role of MDS, the possibility of funding research and new ways to work with supporters.

There remain many challenges ahead of us, but by working together as a Society we are able to encourage scientific developments in our field, enhance physicians' knowledge of Movement Disorders and, as a consequence, improve the care of patients worldwide. I look forward to working with all of you to ensure the continued success of our Society.

Anthony E. Lang, MD, FRCPC
MDS President 2007-2009



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12th International Congress Updates

Planning is well underway for The *Movement* Disorder Society's 12th International Congress of Parkinson's Disease and Movement Disorders, to be held June 22-26, 2008 in Chicago, IL, USA.

Scientific Program

The *Movement* Disorder Society is pleased to present a new and exciting Scientific Program for the 12th International Congress. The Congress Scientific Program Committee (CSPC) had a large number of member suggestions to choose from and incorporate into the program, as well as interesting and upcoming research and topics that provide a well-balanced and integrated Scientific Program. New this year, the Skills Workshop and How-To-Do-It sessions have been combined to create a more conducive learning tool for attendees and to better facilitate open-ended discussion with experts. Topics for these new sessions include electrophysiological evaluation of patients with movement disorders, preparing videos of movement disorder patients and recognizing normal and abnormal movements in children and assessment of sleep disorders in clinical practice.

By popular demand, the CSPC and the MDS Education Committee have expanded the number of Teaching Courses offered in Chicago to six. Teaching Courses provide attendees with a syllabus of each topic that they may share with colleagues. Selected topics include dysautonomia in Parkinson's disease, tics and stereotypies, vascular and post-hypoxic movement disorders and impulse control disorders.

A complete listing of all session offerings as well as faculty that have already confirmed may be found at www.movementdisorders.org/congress/congress08/program.php. Please check back regularly to find updates on confirmed faculty.

Posters

As a result of feedback from previous meetings, all posters will be available for viewing for the entire three days of the Scientific Program. There will be a published schedule regarding when abstract authors will be attending their poster, but all posters will be up Tuesday through Thursday so that attendees can view them at their leisure and convenience. New this year are Guided Poster Tours, with six tours offered. The tours will take place during the lunch break, and will be an interactive way for delegates to speak with authors and experts alike. All abstracts are due by March 7, 2008.

Video Olympics

New to this year's International Congress is the Video Olympics. Representatives from Movement Disorders centers around the world have been recruited to present unique Movement Disorders cases to a panel of experts. On the evening of the event, the experts will discuss the case and engage the audience in further discussion soliciting opinions and diagnoses. The final diagnosis will then be provided with a brief commentary by the case presenter. The goal of this session is for the audience to observe unique cases as well as to understand how leaders in the field come to conclusions about diagnoses. Following the International Congress, the cases

presented may be developed further for publication in the Journal or presentation on the Society's Web site. This social event will take place on Wednesday, June 25, 2008 and is open to all registered attendees and those guests who have purchased a Social Event Guest Pass. For more information about the Video Olympics, please visit www.movementdisorders.org/congress/congress08/video_olympics.



Upcoming Dates

March 7, 2008 – Abstract submission closes

April 4, 2008 – Early Group and Individual registration deadline (reduced fees)

May 16, 2008 – Housing deadline

June 6, 2008 – Group and Individual registration deadline

June 22-26, 2008 – 12th International Congress of Parkinson's Disease and Movement Disorders

Evidence-Based Management Course on Parkinson's disease

Shengdi Chen, Department of Neurology, Shanghai Jiaotong University School of Medicine, hosted a 1½ day course on the concept of evidence-based medicine and its applications in clinical trials on Parkinson's disease (PD) at Ruijin Hospital, October 17-18, 2007. The course was co-organized with Shu-Leong Ho from the Asian and

Oceanian Section of The *Movement* Disorder Society. Cristina Sampaio and Olivier Rascol, who were sponsored via the MDS Visiting Professorship program, presented the talks and led the interactive discussions. They provided a very well-received overview of evidence-based medicine, design and conduct of various forms of clinical trials,

including ethical considerations. The treatment strategies and options in different stages of PD were expertly reviewed along with motor and non-motor complications, based on currently available evidence. The course materials, the talks and the discussion were eloquently translated by a team of interpreters led by Dr Xiao Qin. GSK(China) provided the wireless voting devices to the participants for their immediate reaction and analysis of the discussions, via an unrestricted educational grant. This voting equipment was extremely helpful in promoting a lively and constructive discussion with the participants during the course.

A total of about 70 participants took part in the course. Their feedback was extremely positive. This course took place the day after a symposium on basic and clinical aspects of PD and Movement Disorders. The invited speakers at this symposium included Philip Thompson and Peter Lewitt. The entire event was coordinated with the 1st AOPMC, which was held from October 20-22, 2007 in Singapore.



Shengdi Chen, Cristina Sampaio, Olivier Rascol, Shu-Leong Ho and Xiao Qin with her team of interpreters who took part in the evidence-based course.

Quebec Conference on Abnormal Plasticity in Basal Ganglia

The Quebec City Conference on Abnormal Plasticity in Basal Ganglia held October 12-14, 2007 brought together over 145 neurologists, psychiatrists and researchers to discuss the complex interplay between mental and motor aspects in Levodopa induced dysfunctions and was presented with the latest experimental and clinical data available in both fields.

This two-day gathering supported by The *Movement* Disorder Society was organized by Dr. Emmanuelle Pourcher from Quebec Memory & Motor Skills Disorders Research Center to honor Dr. Paul J. Bédard for his 35 years of research in the Neurobehavioral pharmacology of Parkinson's disease. The Conference featured presentations by more than twenty of the top international fundamentalists and clinicians in Parkinson's disease who had all gracefully accepted to be present and lecture in honor of Paul Bédard.

"This was a wonderful conference. The interaction of clinicians and fundamentalists stimulated many exciting discussions." said Dr. Anthony Lang, President of The *Movement* Disorder Society, who presented Dr. Paul Bédard with the Society's certificate of recognition for his contribution to research in Parkinson's disease.



MDS President, Dr. Lang, presents Dr. Bédard with a certificate of recognition.

The inaugural meeting of the MDS-Asian & Oceanian Section (AOS) was held in Singapore from October 20–22, 2007 and proved a huge success. The 1st Asian and Oceanian Parkinson's Disease and Movement Disorders Congress (AOPMC) was extremely well attended with over 500 delegates from a diverse number of countries within the region. The scientific and educational program was well balanced with kick-off seminars, plenary sessions, workshops, and original scientific presentations. The faculty was a mix of regional and international speakers with an emphasis on speakers from countries within the AOS region. The feeling from the meeting was extremely friendly with an air of enthusiasm from all the delegates.



The AOS was proud to sponsor 17 traveling fellowships to scientists, trainees and neurologists from emerging economies. All fellowship recipients presented either a poster, or if selected, a platform presentation at the meeting. The meeting was well supported by pharmaceutical industry representatives, and the information booths proved very popular with the delegates. The social program gave delegates a taste of Singapore with young dancers demonstrating the cultural background of this country at the opening ceremony and a cocktail reception at a vantage point over the Singapore River.

One highlight at the AOPMC was the case studies, which were presented by neurology trainees from a variety of countries. This session was excellently chaired by Tony Lang and John Morris. The case studies were unusual, but characterized the diversity of Movement Disorders within the AOS and each case study, with the help of the Chairmen, enabled enthusiastic audience participation and contributions.

The Asia and Pacific Parkinson's Association (APPA) symposium was held concurrently with the AOS meeting. This was the 10th anniversary of the APPA which focused on providing an update on Parkinson's for patients, caregivers and health care professionals in the Asia-Pacific region. The APPA shared some of the faculty with the AOPMC meeting as well as the posters, pharmaceutical sponsored booths and dining areas. The combination of meetings of this type is unique to our region and all members of the AOS take great pride in our relationship with the APPA and plan to continue this association for future meetings.

The Executive and Education Committees of the Section met at the conference and endorsed the guidelines and application forms for educational event funding over the next 12 months. All information should be available on the MDS Web site, and requests for funding are from the AOS membership. Planning for the next AOS meeting in New Delhi, India is well underway under the direction of Professor Madhuri Behari.

We all wish to extend our congratulations and thanks to Dr. Louis Tan and his colleagues and the NNI secretariat for providing the AOS with such a successful and enjoyable meeting.

Robert Ianssek, PhD, FRACP
Chairman, MDS-AOS

Visit The *Movement Disorder Society* Web site for new educational content exclusive to MDS members only:

- Video Library – search video supplements to the *Movement Disorders Journal*
- Case of the Month – review a new case each month, and answer questions
- Slide Kits – valuable information regarding various Movement Disorders

Available to everyone are additional learning activities:

- Teaching Courses from the 11th International Congress in Istanbul, Turkey
- Journal CME – selected articles are chosen from the Journal so members may obtain CME credit

www.movementdisorders.org



Dear Colleagues,

MDS-ES represents the local interests of over 900 MDS members in Europe, and we keep very busy!

Our relationship with the European Federation of Neurological Societies (EFNS) continues to be highly successful. The scientific meeting at the EFNS Congress in Brussels was well attended, our Movement Disorders program for Madrid in 2008 has been accepted, and we have submitted our scientific program proposals for Florence, 2009. MDS-ES Officers met the leadership of the EFNS in Brussels in August 2007, and we have agreed to renew the collaborative agreement between the two organizations for a three year period.



Participants of the MDS-ES Officers meeting in Brussels. From left to right: Niall Quinn, Olivier Rascol, Giovanni Abbruzzese, Fabrizio Stocchi, J. Martin Rabey, Espen Dietrichs, Wolfgang Oertel, Karen Henley, Alfredo Berardelli, Mira Kapisiyzi, Evzen Ruzicka, David John Burn, Jaime Kulisevsky, Joaquim Ferreira.

We anticipate with pleasure the 2008 European Basal Ganglia Club, which will take place during the EFNS Congress in Madrid in August. This session is always very popular, and our Invited Lecturer, Dr. Karl Kiebertz, will speak on "Can we prove neuroprotection in PD - designing and analyzing clinical trials". We have been fortunate to raise sponsorship from TEVA to support this lecture. Please remember that there is an opportunity for you to bring videos of interesting cases to show your colleagues at the interactive video session that follows the invited lecture.

MDS-ES has arranged the Movement Disorders program for the EFNS Academy for Young Neurologists in May 2008, and we are grateful to Allergan for providing sponsorship to cover the travel costs for the MDS-ES faculty: Dirk Dressler, Andreas Hartmann and Martin Bares. EFNS is also planning a full day on Movement Disorders topics during their Teaching Course in Ukraine in 2008, and MDS-ES will provide and sponsor the faculty for this educational activity.

MDS has been invited to endorse the first European Brain Policy Forum on Parkinson's disease which will take place in Brussels, 27-28 February 2008. A number of MDS-ES members are contributing to this important debate. Program and registration details are available from www.europeanbraincouncil.org/ebpf2008.

Following the positive evaluations from the first series of workshops on Dopamine Transporter Imaging in Neurological Practice, GE Healthcare is supporting a second series. The first workshop in the new series was held in Marburg in November, and was greatly enjoyed by all present. Plans for the next workshops are well in hand and you will be very welcome to attend a workshop at one of the upcoming venues:



Venue	Workshop Director	Date
Marburg	Wolfgang Oertel	02 November 2007 (completed)
Naples	Paolo Barone	25 January 2008 (completed)
Innsbruck	Werner Poewe/ Christoph Scherfler	29 February 2008
Glasgow	Donald Grosset	1 May 2008
Madrid	Francisco Grandas	30 October 2008
Toulouse	Olivier Rascol	5 December 2008

For further details about workshops and bursaries please contact Kate Breckenridge, MDS Program Manager, at the International Secretariat: cbreckenridge@movementdisorders.org.

Our Armenian Movement Disorders colleagues have been awarded an MDS Visiting Professor Program for 2008. Wolfgang Oertel and Evzen Ruzicka will travel to Yerevan, Armenia and provide an intensive program of lectures and video sessions on 24-25 April 2008.

The Education Committee has approved our proposal for MDS-ES to organize an interactive Movement Disorders Summer School in Marburg, Germany. The Summer School has been rescheduled for 11-13 July 2008. Places will be restricted to 48 to ensure an optimum learning experience for attendees. Early in 2008 we will contact all MDS members in Europe to ask you to encourage your junior staff to apply; we particularly want to reach out to those young neurologists who have not yet decided on their specialization within neurology and to our junior colleagues from Eastern Europe.

The European Section is always open to receiving your comments and suggestions for opportunities to bring Movement Disorders teaching to our neurology colleagues throughout Europe.

Wolfgang Oertel, MD
Chairman, MDS-ES

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"There is a striking contrast between the consistent body of evidence showing a high prevalence of RLS and of RLS sufferers and the actual diagnosis rate in clinical practice."

of RLS in the general population in this study was 10.6%.⁴ These authors were also in a position to score every individual reporting the four essential RLS criteria on the IRLS Severity Scale and found that about 45% of those affected had moderate RLS with IRLS-scores between 11 and 20, while

close to 22% had scores between 20 and 30 corresponding to severe RLS. These figures translate into overall population-based figures of 4.7% for moderate RLS and 2.3% for severe RLS. Similar numbers were also reported by two independent prevalence studies using the IRLS Severity Scale: 48% of the 11.5% of people meeting RLS diagnostic criteria in the population-based study by Bjorvatn et al.⁵ had moderate to severe symptoms. The corresponding figure in the French population-based study by Tison et al.⁶ was 56% out of a total prevalence of 8.5% for RLS⁵.

Overall, the prevalence figures for RLS in population-based studies using the standard diagnostic criteria are remarkably similar and range between 7 and 11% of the general population with a consistently higher rate in females (9-14%) versus males (5-9%). The only exception to this has been one study (Sevim et al., 2003)⁷ which was based on face-to-face interviews in 3,234 community-dwelling subjects in Turkey reporting a low overall prevalence of 3.2% with no information on rates in males versus females. There is also a possibility that RLS may be less common in Asia as suggested by a population-based study in Japan.⁸

From all European and North-American studies on the prevalence of RLS it can be safely concluded that between 7 and 10% of the general population have RLS as currently defined and that at least 50% of RLS patients in the community have moderate to severe symptoms based on IRLS scores. This is further supported by two studies trying to assess the burden of RLS both in the general population and in primary care setting. Allen and colleagues⁹ screened more than 16,000 adults in the US and in the EU using a questionnaire on RLS criteria and associated severity and distress. Defining those as "RLS sufferers" that had moderately to severely distressing symptoms at least twice per week, these authors concluded that 2.7% of the adult population above the age of 18 are RLS sufferers and a similar figure was found by Hening et al.¹⁰ in a primary care-based survey of more than 23,000 patients.

There is a striking contrast between the consistent body of evidence showing a high prevalence of RLS and of RLS sufferers and the actual diagnosis rate in clinical practice. Of all

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suffering from hypertension, arthritis, gastroesophageal reflux disease, depression, anxiety, and diabetes are also more likely to be at risk for RLS.⁵ This has been confirmed in a recent study focused on medication use in patients with RLS compared with a control population. Significantly more of the RLS patients than controls used anti-depressants, gastro-intestinal (GI) medications and asthma/allergy medications.⁶ It has been recently proposed that RLS may be a risk factor for cardiovascular disease.⁷ However, taking into account the results of the above mentioned studies, it can not be excluded that RLS may be the result, and not the cause, of systemic medical conditions.

In conclusion, RLS has probably been overestimated as a unique entity, and this could be due to the clinical diagnostic criteria and because false positive diagnoses could be more frequent than previously assumed. Moreover, RLS can be associated to a number of other medical conditions. Today there is a general agreement that clinically significant RLS affects about 2-2.5% of the adult population, however it is not yet clear what proportion of these patients suffer from idiopathic RLS. This is crucial for a correct therapeutic approach which may exclude the use of unnecessary drugs. Despite the attention paid to RLS in the recent years, the number of patients seeking treatment remains pretty small in some countries and large in others. This probably means that the number of patients ready to take drugs for their condition is inferior to what has been estimated and the diagnosis is not accurate.

Indeed we need to learn more about this complex neurological movement and sleep disorder taking into consideration the new pathophysiological concepts which are being derived from recent genetic and neurobiological advances.

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"...this could be due to the clinical diagnostic criteria and because false positive diagnoses could be more frequent than previously assumed."

Recent Advances in Restless Legs Syndrome Research

— Juliane Winkelmann, MD, Institute of Human Genetics, Technical University and Helmholtz Zentrum, Munich, Germany

Restless legs syndrome (RLS) is arguably the most common of all Movement Disorders. It is characterized by an urge to move and unpleasant sensations mostly in the lower extremities when the patient is at rest, particularly during the night. Relief is provided, at least temporarily, by moving about. Despite its high prevalence, remarkably little is known about the aetiology and the pathophysiology of the disorder. However, progress has been astounding, ever since the disease has come into the focus of research only a few years ago.

One interesting aspect is the relationship of RLS to Parkinson's disease (PD). There is increasing evidence that PD can be preceded by non-motor symptoms like olfactory dysfunction, constipation, REM Sleep Behavior Disorder or depression. Correspondingly, it has been recognized that the neurodegenerative process in PD is not limited to the substantia nigra and can start in olfactory bulb, basal forebrain, hypothalamus, medulla, pons, spinal cord, or possibly even the peripheral autonomic nervous system. Some studies suggest that the symptoms of RLS may be one of the early non-motor manifestations of the clinical Parkinson Complex.¹ Can they be regarded as an early manifestation of PD? Common features of both disorders such as improvement by dopaminergic agents already led to the discussion about an association of the two disorders. However, it is still under debate whether RLS occurs more often in patients with PD than in the general population. So far, it has never been shown that patients who initially present with RLS have a higher risk to subsequently develop PD. Autopsy studies did not show positive staining for α -synuclein or tau protein in brain and spinal cord of RLS patients. Furthermore, no neuronal loss in any of the dopaminergic cell groups investigated has been reported. These largely negative neuropathological findings do not support the hypothesis of RLS being a neurodegenerative disorder.

Until recently, the origin and underlying mechanisms of RLS were completely unknown. Genetic high-throughput techniques begin to unravel this mystery. By means of a genome wide association (GWA) study including about 1600 RLS patients from Germany, Austria, and Canada we identified genetic risk variants in three genomic regions encoding the four genes *MEIS1*, *BTBD9* and *MAP2K5/LBXCOR1*.² Carriers of one risk allele had a 50% increase in risk to develop RLS, homozygote carriers for all risk alleles theoretically had a 20-fold increase in risk. At the same time the deCODE company performed a similar GWA experiment and showed an association of *BTBD9* to periodic leg movements (PLMs) in the Icelandic and US population.³ What is already known about the genes identified? To our surprise, *MEIS1* and *LBXCOR1* - a corepressor of *LBX* - are involved in embryonic development. In particular, *MEIS1* is involved in neural crest development. Based on the expression pattern it may have regulatory function in central locomotor circuits. *LBX* determines a GABAergic phenotype and cell fate of accessory interneurons in the ventral part of the dorsal horn and may be related to the sensory components of RLS. *BTBD9* encodes a BTB/POZ domain containing protein and the function of this gene is completely unknown. It is broadly expressed in the nervous system as well as internal organs. Caution has to be taken because a functional influence of the variants

identified on adjacent genes is also possible and the true functions of all variants remain to be investigated. However, the involvement of developmental factors challenges us to rethink our previous concept of RLS. Based on this connection, it is of particular interest whether these genes are only functional during embryonic development or if they have different roles in the adult central nervous system and in association to RLS as well. Studies investigating endophenotypes of RLS may reveal whether some of these variants are more associated to the sensory or to the motor component of RLS.

The identification of genetic risk variants for RLS based on the clinical definition criteria underlines that RLS is a clearly defined phenotype and a disease entity on its own. Genetically, none of the PARK-loci overlaps with any RLS-loci which further argues against the idea that RLS shares genetic susceptibility factors with PD. With the recent findings, we now have a better prerequisite to study the molecular mechanisms of RLS, PLM, and possible associated or overlapping conditions.

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community-based cases identified in the careful study by Högl et al., not a single subject had been previously diagnosed as RLS.⁴ The percentages of correctly diagnosed cases among RLS patients identified in other population-based studies have also been strikingly low ranging between 3.3 and 6.2%.^{6,7,9} Of those 551 RLS individuals identified in the primary care survey conducted by Hening et al.,¹⁰ only 13% had been previously diagnosed. The most striking figures can be deduced from the survey by Van de Vijver et al.,¹¹ who analyzed 1,561,692 patients registered in the UK General Practice Research Data Base. 3,877 of these had a registered diagnosis of RLS yielding a prevalence rate of RLS diagnosis in this particular patient cohort of 0.25% indicating a remarkable lack of awareness of RLS among primary care physicians. This is not a reflection of affected patients not seeking medical attention. Between 53% and 81% of patients identified in RLS prevalence studies had actually consulted a doctor about their complaints.^{6,9,10}

Despite all recent efforts in medical education, RLS continues to be seriously under diagnosed and raising awareness about this disorder is a major need.

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Why Should Neurologists Run a Sleep Lab?

— Birgit Högl, MD, Medical University of Innsbruck, Department of Neurology, Innsbruck, Austria

“Sleep is of the brain, by the brain and for the brain.” (Hobson JA, *Nature* 2005; 437:1254-6). And, sleep is a still underappreciated window to the brain: Polysomnography can provide invaluable information far beyond apnea and PLM indices.

Running a sleep lab can provide neurologists with better insight into what happens to their patients during the night, and how they can best treat them. While this is valid for all neurologists, it is even more so for Movement Disorder specialists.

A videopolysomnography in a neurological sleep lab is the gold standard of a sleep study. It provides information on sleep stages, the degree of daytime sleepiness, respiration, periodic and aperiodic movements, other jerks and behavior, and most importantly, the interaction and interrelation of all these.

Sleep, wakefulness, and sleep related respiration or movements are affected in the majority of neurological diseases, ranging from Movement Disorders, dementias, neuromuscular, inflammatory, or infectious diseases, to headache syndromes and stroke. In some of them, disorders of sleep and wakefulness constitute a potential risk factor (e.g., obstructive sleep apnea for stroke, “idiopathic” REM behavior disorder for parkinsonian syndromes), in others, a disease manifestation (e.g. breathing disorders of sleep in neuromuscular disease, RBD in narcolepsy or MSA), and in others, they contribute to outcome or prognosis, (e.g. sleep breathing disorders in stroke, stridor in MSA). Co-morbid sleep disorders may also have an impact on the clinical severity of neurological diseases (e.g. respiratory related arousals affecting the frequency of seizures and parasomnic spells or obstructive snoring affecting daytime sleepiness in Parkinson’s disease).

Questions that can be asked to a neurological sleep lab, but often remain unanswered by standard polysomnography, include the following:

- Is muscle activity in REM sleep (in the absence of clear-cut RBD) increased, excessive or normal?
- Is eye movement velocity and density in REM sleep normal or disturbed?
- Are limb movements in sleep or wakefulness truly periodic or only apparently periodic due to high frequency in patients with sleep fragmentation?
- Is heart rate variability normal in a patient with subclinical RBD?
- Is it sleepiness or fatigue?

The differential diagnosis of daytime sleepiness is a genuine neurological topic, as is quantification and objective measurement of different degrees of daytime sleepiness up to sleep attacks, and the disentangling of contributing factors (sleep breathing disorders, medications, disease related, etc.). Getting their own polysomnography may provide neurologists with crucial information to suspect the possible development of a synucleinopathy in a patient with very subtle motor or cognitive impairment, or to disentangle if daytime sleepiness points to a narcoleptic syndrome, other hypersomnia, insufficient sleep syndrome, or UARS with respiratory related arousals, or PLMD in the absence of Restless legs syndrome.

Neurologists may wish to have their patients studied in the sleep lab because of a primary interaction of specific disorders with sleep or wakefulness. Or they may wish to study patients for a secondary problem of daytime sleepiness, insomnia or abnormal behavior during the night.

Sleep and wakefulness can be affected by several simultaneous ways in neurological patients, and only a sleep laboratory examination is able to give more specific information about the degree of contribution of each of the different factors. Because the contributors to sleep and wakefulness disorders are heterogeneous, the treatment approach needs to be specific – there are various treatment options for sleep breathing disorders, abnormal movements, insomnia and daytime sleepiness, taking into account the neurological underlying or co-morbid disorder.

The range of patients who can benefit in more than one way from a sleep laboratory examination encompasses almost the whole field of neurology. A sleep laboratory examination can definitely help neurologists to provide better care for their patients. In addition, it can help them to get further insights of disease progress and in some cases, even forecast the possible future development of a patient.

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2007 Movement Disorders Journal Readership Survey Results

In August 2007, MDS conducted a 23-question readership survey covering a wide range of issues regarding the *Movement Disorders Journal*. This survey was sent via e-mail to 2,390 members and 372 people completed the online survey, giving a response rate of 15.5%.

The following are some of the highlights of the results tabulated from the survey:

- 55% (200) of the total respondents read both the online and hard copy versions of the *Movement Disorders Journal*. Whereas, 29% (144) read only the online journal, and 6% (21) read only the hard copy.
- 60% (216) of the respondents indicated that they are authors submitting to the MD Journal.
- When asked to select what types of content the readers wish to be made available in the future, there was a high interest indicated in educational videos, formal practice guidelines and controversies. Three areas which the readers felt there was “too little” coverage are Tics, Functional imaging, and other forms of parkinsonism.
- The vast majority of readers indicated they would like to maintain the page size, frequency of issues, presentation of video material, and order/arrangement of journal material. However, several suggestions were made as to how to improve these areas, primarily involving the overall look of the journal.
- 93% responded that they value the videos/DVDs published with the journal.
- When asked what the readers like most about the MD Journal, the most common answers were the videos/DVDs and coverage of relevant topics.



The Movement Disorder Society VISITING PROFESSOR PROGRAM

The aim of MDS Visiting Professorships is to educate physicians and healthcare professionals in underrepresented regions of the world about Movement Disorders. Since its first offering in 2003, the Society's Education Committee has developed Visiting Professor Programs in South Africa, Romania, India, Tunisia, China and Chile.

The MDS Visiting Professors have implemented programs at local institutions utilizing:

- Didactic lectures
- Clinical case presentations
- Interactive seminars
- Practical workshops

If you are aware of, or currently located in, a region that could benefit from this program, please contact the MDS International Secretariat in order to submit an application. Please visit www.movementdisorders.org or e-mail bnelezen@movementdisorders.org for more information.



The *Movement Disorder Society*

The Many Faces of Dystonia:

A Frequently Misdiagnosed Disorder

A PRACTICAL and VIDEO-INTERACTIVE COURSE

Registration now Available!

20 free registrations for residents and fellows are also available. Please contact Larissa Sevcik at lsevcik@movementdisorders.org for more information.

Workshop attendees are eligible for a reduced room rate at the Boston Marriott Copley. Please call +1 617-236-5800 and mention The *Movement Disorder Society*.

Learning Objectives

At the conclusion of this workshop, participants should be able to:

- List the most frequent forms of dystonia;
- List the diagnostic criteria for dystonia;
- Describe common presenting symptoms of dystonia;
- Discuss the differential diagnosis of dystonia;
- Describe common pitfalls in diagnosing dystonia;
- Outline treatment strategies for dystonia.



March 7, 2008

**Marriott Boston Copley
Boston, MA, USA**

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Upcoming DTI Workshops

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For more information,
or to register online, please visit
www.movementdisorders.org/education

Upcoming MDS Educational Offerings

The Many Faces of Dystonia: A Frequently Misdiagnosed Disorder

March 7, 2008 – Boston, MA, USA

RLS and PD in the Office Setting

May 17, 2008 – Atlanta, GA, USA

12th International Congress of Parkinson's Disease and Movement Disorders

June 22-26, 2008 - Chicago, IL, USA

DeNovo Parkinson's Disease: Diagnosis and Treatment

September 13, 2008 – San Francisco, CA, USA

2nd Meeting on NeuroImaging in PD and Related Disorders

October 21-22, 2008 – Chatham, MA, USA

2nd Asian and Oceanian Parkinson's Disease and Movement Disorder Congress

February 15-17, 2009 – New Delhi, India

Psychogenic Movement Disorders Meeting

April 2-4, 2009 – Washington DC, USA

13th International Congress of Parkinson's Disease and Movement Disorders

June 7-11, 2009 – Paris, France

14th International Congress of Parkinson's Disease and Movement Disorders

June 13-17, 2010 – Buenos Aires, Argentina

Notice to Members!

2008 MDS Bylaws Amendment

All voting members of The *Movement* Disorder Society (MDS) will be given the opportunity to vote on amendments to the Society's Bylaws at the Annual MDS Business Meeting to be held during the 12th International Congress of Parkinson's Disease and Movement Disorders, at the Hilton Chicago, on June 26, 2008, from 1230-1330. A notice detailing the amendment and a proxy ballot will be sent to the membership in the weeks prior to the International Congress. For more information, please contact the International Secretariat at info@movementdisorders.org, or +1-414-276-2145.

Announcements

Join the International RLS Study Group

We are inviting individuals with a special interest in Movement Disorders to join the International Restless Legs Syndrome Study Group (IRLSSG).

The IRLSSG is responsible for:

- Developing the criteria for the essential clinical features of Restless Legs Syndrome (RLS).
- Developing and validating a severity rating scale for RLS.
- Defining the clinical criteria for measuring Periodic Limb Movements in Sleep.

IRLSSG members are currently carrying out joint linkage studies in an attempt to find the gene(s) responsible for RLS symptoms. The IRLSSG has advised pharmaceutical companies on the experimental design of therapeutic trials, and IRLSSG members have participated in several large industry-sponsored RLS treatment trials.

There are two types of membership:

1. VOTING MEMBERS

- a) Individuals with a doctoral degree or equivalent who are currently working in areas related to RLS research or clinical practice.
- b) Students or para-professionals (including study coordinators and technicians) who provide evidence of significant contributions to the field within the past five years (such as working with an RLS support group) or one or more publications in the field.

2. NON-VOTING MEMBERS

Students or para-professionals who have not published or made significant contributions to the field may apply for non-voting membership.

Excluded from membership are individuals working full time for for-profit organizations with potential conflicts of interest, such as pharmaceutical companies.

Membership is free. To apply, please submit a letter of intent and attached curriculum vitae to Dr. Marco Zucconi at zucconi.marco@hsr.it.

The Progressive Supranuclear Palsy Association

Research Fellowship Grant Announcements

The PSP Association announces that funding for research fellowships is available. Applicants should apply in the first instance to the Sara Koe PSP Research Centre, 1 Wakefield Street, London WC1N 1PJ or by email to s.stoneham@ion.ucl.ac.uk. Submitting a brief proposal giving an outline of their research project with an estimate of costs to cover salary and some laboratory consumables. Following peer review successful applicants will be asked to complete a full grant application. Preference will be given to 3 year research fellows.

Progressive Supranuclear Palsy Study

The University of Louisville Movement Disorder Program, is seeking patients with progressive supranuclear palsy for a multi-center study to identify environmental and genetic risk factors associated with the disease. Subjects will be provided with a physical

and neuropsychological examination, will be asked to provide a blood sample for DNA testing and will take part in a detailed phone interview. This study is sponsored by the National Institutes of Health (NIH). Subjects can be seen at eight medical centers throughout the United States. For more information please call 1-866-PSP-0448 (1-866-777-0448).

MDS Accepting Applications for the Visiting Professor Program

The *Movement* Disorder Society (MDS) is currently accepting applications for countries interested in hosting a Visiting Professor in the MDS-sponsored Visiting Professor Program. The MDS Visiting Professor Program provides educational opportunities in Movement Disorders to regions of the world that are under represented in MDS and do not have regular access to educational programs in Movement Disorders. For more information or applications for this program, please visit the following link, <http://www.movementdisorders.org/education/visitingprofessor.shtml> or contact Bridgit Nelezen, MDS Education Program Manager, at +1 414-276-2145.

Fourth International Neuroacanthocytosis Symposium

The Institute of Neurology, Queen Square, National Hospital for Neurology and Neurosurgery, Wellcome Centre for Human Genetics, Oxford University, and Advocacy for Neuroacanthocytosis Patients are pleased to announce the Fourth International Neuroacanthocytosis Symposium: Bridging clinical and basic aspects, July 1-2, 2008 in Oxford and London.

Tuesday July 1 - Queen Square, London

Clinical aspects of chorea-acanthocytosis and McLeod syndrome; muscle and nerve pathology; and syndromes related to neuroacanthocytosis, including Huntington's disease, Huntington's disease-like 2 PKAN, FAPED, & chronic granulomatous disease.

Wednesday July 2 - Oxford

Basic science of neuroacanthocytosis; VPS genes and proteins; XK and Kell genes and proteins; animal models of neurodegenerative basal ganglia diseases; mechanisms of red cell membrane shape changes.

To propose papers or posters for presentation at the symposium or for more details contact: Glenn Irvine, Advocacy for Neuroacanthocytosis Patients, glenn@naadvocacy.org, TEL: +44 20 7937 2938.

Job Openings

PDCMDC Baylor College of Medicine Neurologist

The Parkinson's Disease Center and Movement Disorders Clinic (PDCMDC), Baylor College of Medicine is seeking a full time, board-certified or board-eligible neurologist at assistant/associate professor level. Completion of a movement disorders fellowship is required. The successful candidate will be joining other movement disorders faculty and an active program involved in clinical and translational studies of Parkinson disease and other movement disorders, including botulinum toxin, surgery, and experimental

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therapeutics. For information about the PDCMDC, visit www.jankovic.org.

Interested individuals should send or e-mail (josephj@bcm.tmc.edu) their personal statements and CVs to Joseph Jankovic, MD, director of the PDCMDC.

Faculty Positions in Neuromodulation, Medical School, University of Minnesota

The University of Minnesota Medical School, its newly founded Institute of Translational Neuroscience, and its partner, University of Minnesota Physicians seek to hire faculty in the research area of Neuromodulation.

- 1) Director of Neuromodulation: The successful applicant will be a midcareer clinician investigator who can direct an integrated clinical neuromodulation program being developed by the departments of Neurology, Neurosurgery and Psychiatry. Appointment is possible in any of the clinical neuroscience departments according to the individual's background and interests. The collaborating departments share a single administrative center. The successful applicant is expected to have clinical experience and a research program that uses neuromodulation to treat diseases/disorders of the nervous system.
- 2) Professor of Neuromodulation: The successful applicant will be a physician-translational neuroscientist at the Assistant, Associate, or Full Professor level in the tenure track who is expected to have an established research program that uses neuromodulation to treat diseases/disorders of the nervous system. Appointment is possible in any of the clinical neuroscience departments and/or Department of Neuroscience.

Applicants should send a current curriculum vitae, statement of research interests and intentions, and three letters of reference to: Neuromodulation Search Committee

Attention: Walter C. Low, Ph.D., Chair, Search Committee
 Department of Neurosurgery, University of Minnesota
 2001 Sixth Street SE
 Minneapolis, MN 55455 USA
 or lowwalt@umn.edu

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Movement Disorder Fellowship

The University of Louisville Division of Movement Disorders in Louisville, KY is offering one- or two-year fellowships for qualified applicants beginning July 2008. Training will emphasize the diagnosis and treatment of a wide range of movement disorders, with exposure to deep brain stimulation and botulinum toxin injections. Fellows will be encouraged to participate in clinical research studies with opportunities to publish. Applicants must be US board-eligible in Neurology. Candidates should send their CV, personal statement and three letters of recommendation to: Irene Litvan, M.D., Division of Movement Disorders, University of Louisville, 220 Abraham Flexner Way, Suite 1503, Louisville, KY 40202.



2008 MDS International Congress Travel Grant Program

The *Movement* Disorder Society (MDS) will offer up to 60 travel grants of a maximum amount of \$1,000 USD each in partial support of International Congress delegates in financial need to facilitate their travel to and participation in the 12th International Congress of Parkinson's Disease and Movement Disorders in Chicago, IL, USA, June 22-26, 2008.

The amount of each grant given will be determined by the MDS Awards Committee, and will be based on multiple criteria including the applicant's location in relation to the 2008 International Congress. Please note that Waived Dues members of the Society will receive special consideration when applying for Travel Grants in 2008. Additional information regarding the 2008 International Congress Travel Grant program, including how to apply, went out via a broadcast e-mail in January 2008.

RENEW FOR 2008! RENEW FOR 2008! RENEW FOR 2008! RENEW FOR 2008!

The *Movement* Disorder Society's (MDS) 2008 Dues Renewal process is underway! With your 2008 membership renewal, you will be able to continue taking advantage of the many benefits MDS has to offer, including reduced fees to our 12th International Congress of Parkinson's Disease and Movement Disorders, June 22-26, 2008 in Chicago, IL, USA.

If you have not yet renewed for 2008, you may do so by visiting our Web site, www.movementdisorders.org or by contacting the MDS Secretariat at +1 414-276-2145.

RENEW FOR 2008! RENEW FOR 2008! RENEW FOR 2008! RENEW FOR 2008!

* Meetings Sponsored, Supported and/or Endorsed by MDS

2008

February 18-19, 2008

4th Annual Update Symposium on Clinical Neurology and Neurophysiology. Tel Aviv, Israel. Contact: ISAS International Seminars, P.O. Box 574, Jerusalem 91004, Israel; TEL: +972-2-6520574; FAX: +972-2-6520558; E-mail: conventions@isas.co.il; Web site: www.neurophysiology-symposium.com

February 27-28, 2008

1st European Brain Policy Forum: A Focus on Parkinson's Disease & the European Society. Sheraton Brussels Hotel, Belgium. Contact: European Brain Council, c/o University of Florence, Department of Neurology, Viale Pieraccini, 6, 50139 Florence, Italy; TEL: +39-055-4362098; FAX: +39-055-4271280; E-mail: evelyn.sipido@unifi.it; Web site: www.europeanbraincouncil.org/ebpf2008

***March 7, 2008**

The Many Faces of Dystonia: A Frequently Misdiagnosed Disorder – A Practical and Video-Interactive Course. Marriott Boston Copley, 110 Huntington Avenue, Boston, MA, 02116 USA. Contact: Larissa Sevcik, Program Manager, The Movement Disorder Society, 555 East Wells Street, Suite 1100, Milwaukee, WI 53220 USA; TEL: +1 414-276-2145; FAX: +1 414-276-3349; E-mail: lsevcik@movementdisorders.org; Web site: www.movementdisorders.org/education/dystonia/boston/

***May 17, 2008**

Restless Legs Syndrome and Parkinson's Disease in the Office Setting: Case Studies. Atlanta, GA, USA. Contact: Bridgeit Nelezen, Program Manager, The Movement Disorder Society, 555 East Wells Street, Suite 1100, Milwaukee, WI 53220 USA; TEL: +1 414-276-2145; FAX: +1 414-276-3349; E-mail: bnelezen@movementdisorders.org; Web site: <http://www.movementdisorders.org/education/activities/restlesslegs/>

April 12-19, 2008

American Academy of Neurology 60th Annual Meeting. Chicago, IL, USA. Contact: Bobbi Johnston, American Academy of Neurology, 1080 Montreal Avenue, St. Paul, MN, USA 55116; TEL: +1-651-695-2756; FAX: +1-651-361-4856; E-mail: mcdtemp@aan.com; Web site: www.aan.com

May 16-17, 2008

2nd International Brainstorming Conference on Parkinson's Disease: Nosology. Jewish Hospital Rudd Heart & Lung Conference Center, 200 Abraham Flexner Way, Louisville, Kentucky, USA. Contact: University of Louisville, Continuing Health Sciences Education, 511 South Floyd Street, MDR Building 111, Louisville, KY, USA 40202; TEL: +1-502-852-5329; FAX: +1-502-852-6300; E-mail: chse@louisville.edu; Web site: www.chse.louisville.edu/parkinson's08.html

June, 2008

Fourth International Neuroacanthocytosis Symposium. United Kingdom. Contact: Advocacy for Neuroacanthocytosis Patients, Glenn Irvine; TEL: +44 20 7409 0092; Email: glenn@naadvocacy.org; Web site: www.naadvocacy.org

June 7-11, 2008

18th Meeting of the European Neurological Society. Palais de congres Acropolis, Nice, France. Contact: ENS Administrative Secretariat c/o AKM Congress Service, Basel, Switzerland; TEL: +41-61-686-77-11; FAX: +41-61-686-77-88; E-mail: ensinfo@akm.ch; Web site: www.akm.ch/ens2008

June 12-15, 2008

Toxins 2008 – Basic and Therapeutic Aspects of Botulinum and Tetanus Toxins. Baveno, Lake Maggiore, Italy. Contact: Domm International, Via Rossini 20122 Milano, Italy; Fax: +39 02 760 001 81; E-mail: stefania@domminternational.com; Web site: www.toxins2008.org/

***June 22-26, 2008**

12th International Congress of Parkinson's Disease and Movement Disorders. Chicago, IL, USA. Offered by The Movement Disorder Society. Contact: The Movement Disorder Society, 555 E. Wells Street, Suite 1100, Milwaukee, WI 53202 USA; TEL: +1 414-276-2145; FAX: +1 414-276-3349; E-mail: congress@movementdisorders.org; Web site: www.movementdisorders.org

***September 13, 2008**

De Novo Parkinson's Disease: Diagnosis and Treatment. San Francisco, California. Contact: Catherine Breckenridge, Program Manager, The Movement Disorder Society, 555 East Wells Street, Suite 1100, Milwaukee, WI 53202 USA; TEL: +1 414-276-2145; FAX: +1 414-276-3349; E-mail: cbreckenridge@movementdisorders.org; Web site: www.movementdisorders.org

September 17-20, 2008

American Association of Neuromuscular & Electrodagnostic Medicine (AANEM) Annual Meeting. Providence, RI, USA. Contact: Shelly Hansen, AANEM, 421 1st Avenue, SW Ste 300E, Rochester, MN 55902 USA; TEL: +1 507-288-0100; FAX: +1 507-288-1225; E-mail: aanem@aanem.org; Web site: www.aanem.org

September 17-21, 2008

11th Congress of the European Society of Hypnosis (ESH). Vienna, Austria. Contact: Marianne Martin, European Society of Hypnosis, Sternwartestr. 21a/13, Vienna, Austria; TEL: + 431-479-6458; FAX: + 431-440-7290; E-mail: marianne martin-isorec@aon.at; Web site: www.vienna.hypnos.de

October 16-19, 2008

6th International Congress on Mental Dysfunction in Parkinson's Disease. Dresden, Germany. Contact: Kenes International - Global Congress Organizers & Association Management Services, 17 Rue du Cendrier, P.O. Box 1726, CH-1211 Geneva 1, Switzerland; TEL: +41-22-908-0488; FAX: +41-22-732-2850; E-mail: pdment@kenes.com; Web site: www.kenes.com/pdment2008

October 23-26, 2008

The Second World Congress on Controversies in Neurology (CONY). Athens, Greece. Contact: Comtec Med – Medical Congresses, P.O. Box 68, Tel Aviv, 61000 Israel; TEL: +972-3-5666166; Fax: +972-3-566177; E-mail: cony@comtecmed.com; Web site: www.comtecmed.com/cony

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