A *MOVEMENT* DISORDER SOCIETY UPDATE

Moving Along

87-0504-003

VOLUME 6, ISSUE 3 • FALL/WINTER 2004 • EDITORS, DR. THOMAS GASSER, DR. IRENE LITVAN

Use of Retrograde Viral Delivery of Nerve Growth Factors as a Potential Therapy for Parkinson's Disease

— Yang Lu, PhD, Department of Neurology, The Johns Hopkins School of Medicine, Baltimore, MD, USA

Parkinson's disease (PD) is a progressive neurodegenerative disorder. It is characterized by tremor, rigidity and slowness of motion resulting from a loss of dopaminergic neurons within the substantia nigra (SN) region in the brain. The most common therapy for PD is to administrate L-Dopa, the precursor of dopamine (DA). However L-dopa loses its effectiveness as the disease progresses. In addition, the side effects caused by L-dopa eventually outweigh its clinical benefit.

Viral Delivery of Nerve Growth Factors for Parkinson's Disease

Transgene	Delivery Vector	Animal Model	Reference
GDNF	HSV	Mice, 6-OHDA subacute model, 5.5 months after GDNF delivery; Mice, MPTP 3-month low-dose chronic model	Puskovic, V et al. 2004, Mol Ther. 10(1): 67-75.
GDNF	Retroviral vector/ Astrocytes	Mice, 6-OHDA lesion, 6-day after implantation	Cunningham, LA et al. 2002, Exp. Neuro. 174: 230-242.
BDNF (NSE promoter)	AAV	Rats, 6-OHDA lesion model 6 months after infection into SNc	Klein, RL et al. 1999, Brain Res. 847: 314-320.
GDNF	LV	Rats, 6-OHDA lesion 3 weeks after vector delivery to the striatum	Georgievska, B et al. 2002, NeuroReport, 13(1): 75-81.
GDNF (GFAP promoter)	Ad	Rats, 6-OHDA lesion 1 week after vector delivery into striatum	Do Thi NA et al. 2004, Gene Ther. 11: 746-756.
GDNF	AAV	Rats, 6-OHDA lesion model, 4 weeks BEFORE viral injection into striatum	Wang, L et al. 2002. Gene Ther. 9: 381-389.
GDNF	LV	Monkey, MPTP lesion model, 1 week after vector delivery into striatum and SN	Kordower, JH et al. 2000, Science, 290: 767-773.

Currently there are two clinical trials testing methodologies that aim at supplying key enzymes in DA metabolism that represents one of the two strategies of gene therapy for PD treatment. One trial is to administer recombinant adeno-associated virus (rAAV) into the striatum which produces human L-aromatic amino acid decarboxylase (AADC), the enzyme for converting L-Dopa to DA. The other trial is the administration of rAAV to the subthalamic region in the brain that encodes glutamic acid decarboxylase (GAD), the enzyme that synthesizes gamma-amino-butyric acid (GABA), the main inhibitory neurotransmitter in the nerve system (Mandel and Burger, 2004).

Gene therapy in lieu of viral vectors delivering neurotrophic factors represents another strategy to treat PD. Costantini and his colleagues have summarized the application of viral vectors and other delivery systems to either replace key enzymes in DA metabolism, or supply neurotrophic factors for PD treatment (Costantini, Bakowska et al. 2000). This article will summarize the recent application of the retrograde viral delivery of nerve growth factors in animal models as a potential therapy for PD.

1. Mice as the model animals. Herpes simplex virus (HSV) engineered to express glial cell-derived neurotrophic factor (GDNF) was injected into mouse substantia nigra (SN). Dopaminergic function was restored when 6-hydroxydopamine (6-OHDA) was injected into the striatum in a subacute lesion model, and when 1-methyl-4-phenyl-1,2,3,6-tetrahydropyeidine (MPTP) was injected into the striatum in a chronic model (Puskovic V et al. 2004). In another mouse ex vivo experiment, astrocytes transduced with retroviral vector encoding GDNF were implanted into the midbrain. GDNF-producing astrocytes provided strong neuroprotection of nigral dopaminergic neurons and partial protection of striatal dopaminergic fibers (Cunningham and Su, 2002).

2. Rats as the model animals. Recombinant adeno-associated virus (rAAV) encoding brain-derived neurotrophic factor (BDNF) was injected into the rat substantia nigra pars compacta (SNc). BDNF expression of up to nine months in duration blocked 6-OHDA

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inside this issue

This fall issue of *Moving Along*, the official Newsletter of The *Movement* Disorder Society (MDS), again attempts to bring to its readership a mixture of scientific news, Society information and clinically relevant issues.

The highlight of the year was undoubtedly the 8th International Congress on Parkinson's Disease and Movement Disorders in Rome, Italy. Five days of outstanding scientific sessions, lively discussions with friends and colleagues and the charm of the Eternal City have once again stimulated the entire Movement Disorders community. Dr. C. Warren Olanow, President of MDS, refreshes our memories of this outstanding event by summing up the highlights of the Congress in this issue's *President's Letter*. It is this success that has encouraged MDS to move to a yearly format for its International Congress. The Society is confident that the 9th International Congress, to be held in New Orleans, Louisiana, USA, will be just one more chapter in this success story. Up-to-date information can be found in this issue of *Moving Along*.

A topic on the cutting-edge of neuroscience is featured in this issue's cover article by Dr. Lu from The Johns Hopkins School of Medicine. The use of retroviral delivery systems for the delivery of neurotrophic factors as a potential treatment for PD is a fascinating and promising approach. The recently revealed disappointing results of Amgen's clinical trial of intrastriatal GDNF-infusion, which followed extremely promising preliminary results of two open pilot studies, however, makes it painfully clear that the road from experimental laboratory results to clinical practice is long and laborious. There is another message in this sobering news, however: novel ideas and innovative research, as well as carefully designed clinical trials are needed more than ever to transform the astonishing progress of molecular neuroscience into practical benefit to our patients. While stopping recruitment into this trial is an appropriate measure, one should also consider the impact this decision has for patients already enrolled in the trial who still have viable catheters and pumps and believe that GDNF is beneficial. It is one of the main goals of MDS to support and encourage the discussion of the scientific and ethical issues involved in this process.


Irene Litvan, MD


Thomas Gasser, MD

Delegates assemble for a Plenary Session at the 8th International Congress of Parkinson's Disease and Movement Disorders in Rome, Italy.

On a more practical note, this issue features articles on the revision of the Unified Parkinson's Disease Rating Scale (UPDRS) by Dr. Christopher Goetz, and on the use of treatment guidelines by Drs. Oertel and Dodel. Those are two interconnected issues, as reliable, valid and user-friendly rating scales are obviously necessary to evaluate any treatment modality before it can be included into formalized recommendations, such as treatment guidelines. The value of guidelines are not beyond controversy. There is some concern that in a context of limited resources, guidelines may be used to limit access to diagnostic or therapeutic measures which are beyond those considered necessary for a "standard" patient (but which may be indispensable in a particular case), or that they may restrict physicians in the use of their clinical judgement. Drs. Oertel and Dodel, however, clearly present convincing arguments that reassure us that treatment guidelines are likely to help to improve overall healthcare quality. Like all medical interventions, the effect of treatment guidelines on healthcare will have to be evaluated by rigorous scientific methods. They will stand the test of time if they provide better outcomes at a lower cost for a majority of patients.

The *Movement* Disorder Society's (MDS) 8th International Congress of Parkinson's Disease and Movement Disorders held this past June in Rome, Italy was a truly unforgettable experience. Rome was a wonderful location for the meeting and we were able to enjoy the best weather that Rome has to offer.

C. Warren Olanow, MDS President, and Andrew Lees, MDS President-Elect, at the Rome Congress.

The 8th International Congress marked a significant milestone for MDS. More than 3,500 delegates attended the 8th International Congress in Rome. This is a phenomenal 29% increase over those numbers recorded in Miami.

All aspects of the program were widely acclaimed and the members of the MDS Congress Scientific Program Committee (CSPC) and world-renowned faculty did a superb job in developing and presenting an outstanding scientific program.

Complimenting the traditional Congress sessions, several innovative and exciting additions were made to the program this year. Platform Presentations of work presented during the Rome Congress and accentuating cutting-edge science on Parkinson's disease and other Movement Disorders were included. Delegates also enjoyed ground-breaking Plenary Presentations on controversial topics. These novel sessions were a highlight of the meeting and well-received by participants.

At each International Congress, MDS has the privilege of recognizing individuals for extraordinary achievement. Among these are the C. David Marsden and Stanley Fahn Lectureships, Junior Awards in Clinical and Basic Science, Career Awards, and Honorary Membership.

In Rome, we were pleased to welcome Dr. Donald Price, who gave the C. David Marsden Lecture, and Dr. Huda Zoghbi, who gave the Stanley Fahn Lecture. Two Junior Awards were also given in recognition of outstanding abstracts submitted by Junior MDS Members. Dr. Pedro Gonzalez-Alegre received the award for basic science, and Dr. David R. Williams received the award in clinical research. Junior Award recipients presented their abstracts during a special Congress session.

Each year, MDS recognizes individuals for career scientific achievement and contributions to Movement Disorders. Dr. Yves Agid was the recipient of the prestigious Career Award in 2004. Also this year, Honorary Membership in the Society was bestowed upon Dr. Roger Duvoisin and Dr. Hiroshi Shibasaki. Honorary Membership honors individuals who have made extraordinary contributions to MDS and Movement Disorders. Recipients become lifetime members of MDS.

Professor Alfredo Berardelli, Chair, Congress Organizing Committee for the 8th International Congress.

Planning is now well underway for the Society's 9th International Congress in New Orleans, Louisiana, USA. New Orleans is a city famous for its French Quarter, jazz music, lively entertainment and distinctive cultures. The New Orleans Marriott Hotel, the headquarters for the 2005 Congress, and the Sheraton New Orleans Hotel, will serve as the venues for the scientific sessions, poster presentations, exhibits and registration. Delegate accommodations will also be available at these locations.

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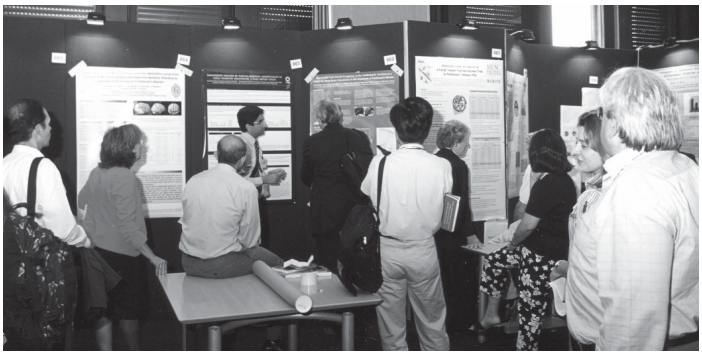
The 2005 scientific program will incorporate Kickoff Seminars, Plenary and Parallel Sessions, Skills Workshops, Video Seminars, and Poster Sessions. While Kickoff Seminars and Plenary Sessions will remain largely unchanged from previous Congresses, Parallel Sessions and Skills Workshops have been added to meet the need for smaller, more focused sessions. Between 50 and 200 delegates will participate, allowing for more in-depth coverage on specific topics and enhancing audience interaction. Platform Presentations of selected abstracts and controversies, both very well-received by delegates in 2004, will be offered again in 2005.

MDS is committed to providing a balanced and inclusive educational experience for all delegates and attendees of the 9th International Congress may expect to find modifications to the registration format in 2005. **Registration fees for the meeting will include all Plenary and Parallel Sessions, Skills Workshops and evening Video Sessions, providing delegates with an opportunity to create a personal Congress itinerary from those topics they are most interested in.** Register early to take advantage of the reduced registration rates and to reserve the sessions of your choice.



Attendees present the latest in Movement Disorders research during a Poster Session at the 8th international Congress in Rome, Italy.

Please plan to join us in New Orleans for the 9th International Congress of Parkinson's Disease and Movement Disorders, March 5-8, 2005. The 2005 International Congress promises to offer a unique and enriching educational experience for all who attend. Please visit the MDS Web site at www.movementdisorders.org for all the latest updates on the 9th International Congress.

C. Warren Olanow, MD
MDS President 2003-2004

Cover Story

Use of Retrograde Viral Delivery of Nerve Growth Factors as a Potential Therapy for Parkinson's Disease

Continued from cover...

lesion induced disorder in the animal, even though the number of tyrosine hydroxylase (TH)-labeled neurons did not change (Klein, RL et al. 1999). In another report, a lentiviral vector (LV) that encodes GDNF efficiently protected the rat nigral DA neurons and their projection into striatum against 6-OHDA lesion 3 weeks after LV-GDNF injection into SN, due to the anterograde transport of the GDNF protein (Georgievska B et al. 2002). A different publication in which an adenoviral vector (Ad) (with E1 and E3/E4 deleted) that encodes GDNF was transduced into striatum of rats and expressed at least 120-fold higher level of GDNF protein than the control group. The expressed GDNF protein protected about 70% of DA neurons from degeneration for up to three months as compared to about 45% in the control group (Do Thi, NA et al. 2004). In a remarkable study in which AAV encoding GDNF was injected into rat striatum with lesions caused by 6-OHDA four weeks ago, retrograde transported GDNF was detected in the SN. Not only was the density of TH-positive DA fibers increased in the striatum, but also the number of TH-positive neurons in the SN significantly greater in the AAV-GDNF group than in the control. The prevention of nigral neurodegeneration by delivery of AAV-GDNF four weeks after the lesion formation portends significance in the treatment of PD in real situation (Wang, L et al. 2002).

3. Monkeys as the model animals. A LV encoding GDNF was injected into the monkey striatum and SN regions. GDNF expression was observed as a result of anterograde transport in the globus pallidus and retrograde transport in the SN neurons. In monkeys with lesions caused by MPTP, the extensive expression of GDNF reversed functional deficits and prevented nigrostriatal degeneration (Kordower, JH et al. 2000).

The table (see cover) outlines the experiments discussed. The virally delivered nerve growth factors into different animals shed light on the possible treatment of PD by gene therapy in humans.

References:

Costantini, L. C., J. C. Bakowska, et al. (2000). "Gene therapy in the CNS." Gene Ther 7(2): 93-109.

Mandel, R.J., and C. Burger (2004). "Clinical trial in neurological disorders using AAV vectors: promises and challenges." Current Opinion of Molecular Therapy, in press.

Are Treatment Guidelines Helpful?

— Prof. Dr. W.H. Oertel and Dr. Richard Dodel, Department of Neurology, Philipps-University, Marburg, Germany

Guidelines designed to communicate diagnostic and therapeutic recommendations for patient care on the basis of scientifically valid observations have been part of medicine for a very long time, for example in the form of medical textbooks, journal reviews, and consensus conference reports. Two factors among others, however, distinguish clinical practice guidelines (CPG) from their less formal predecessors. First, emerging societal interests have accelerated the development of clinical practice guidelines and created specific goals that these documents are now designed to fulfill. These societal interests include the need to decrease practice variation among physicians, to reduce healthcare costs and to monitor appropriate care. On the other hand, there is professional concern that guidelines are needed to counter managerial recommendations primarily at cutting costs, and may assist the physicians who are finding it increasingly difficult to stay abreast of the mass of new investigative information relevant to their clinical practices. Consequently, CPG have developed goals beyond the traditional interests of communicating recent advances in medical care. These goals include the promotion of measurable health-care quality, effectiveness and appropriateness, the maintenance of access to care and the identification of gaps in our medical knowledge to set research priorities.

The second factor that distinguishes CPG from earlier documents is a reliance on a formal method that explicitly outlines the guidelines' developmental process. CPG are based on a systematic review of the literature according to criteria of evidence based medicine (1). Systematic reviews use rigorous and explicit methods to search for and critically appraise the entire body of clinical research related to a quest. In contrast, parameters of care are usually based on narrative reviews. These are the types of reviews with which we are most familiar. Narrative reviews are often written by a single topic expert based on his understanding of the literature. The literature may be searched in a biased way to support the ideas of the reviewer. This is not done deliberately, nonetheless the process can not be replicated and does not permit the reader to check the assumptions of the authors (see Table 1).

This formal approach has been emphasized by the definition of clinical practice guidelines, which "are systematically developed statements to assist practitioner and patient's decisions about appropriate health care for specific clinical circumstances": "systematically" means unbiased methodology; "assist" means that they are not laws, but boundaries for the individual doctor; "patient" means that quality of life issues are always included; "appropriate" is open to a whole battery of methods in medical decision making including utilities, QALYs and other measures and finally "specific clinical circumstances" may also vary considerably between different countries.

Systematic review	Narrative review
• systematic methods used to control bias and imprecision	• subjective and may be biased
• uses rigorous scientific methodology to search literature	• no explicit methods for searching literature or reporting results
• can be replicated	• cannot be replicated

Table 1: *Systematic vs. narrative review*

This formal approach, however, as occurs with any intervention intended to alter outcome also has a potential to have a negative impact on patient care if the recommendations are flawed or incorrectly used in inappropriate clinical situations. In fact and unfortunately, most published guidelines up to 1999 at least did not adhere to established methodological standards for practice guidelines (2). Similar to other interventions such as drugs or medical devices, CPG could be tested appropriately before going into clinical practice and should have attributes acknowledged which are important (see page 6, Table 2). If these attributes are addressed adequately, CPG should fulfill their goals in slowing the rise of health-care costs, monitor inappropriate care, assist clinicians to stay abreast of new clinical information, set research priorities and most importantly promote better care for patients.

If created by using the most valid and current research evidence summarized in systematic reviews, guidelines are one of many tools that can help to translate research evidence into clinical decision-making, optimize health outcomes, and educate clinicians (3). Like all decision aids, however, guidelines have their shortcomings and should be integrated with pathophysiological reasoning and experience and should be adopted, adapted, or rejected according to patient preferences and the constraints of each regional health care setting.

Thus in summary, clinical practice guidelines are helpful, as they provide information generated by a standardized reproducible procedure with a transparent method for bias control. They identify the substantial gaps in our knowledge, for example in the treatment of Movement Disorders, and can be easily updated. They are designed to enhance, not replace, clinical judgement and expertise.

The interest in CPG is documented by the number of Web site visits to the German Web site of CPG receiving 540,000 visits in March 2004 (http://www.uni-duesseldorf.de/AWMF/ll/ll_index.htm).

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Are Treatment Guidelines Helpful?

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Validity	Will the guidelines produce the intended health-care outcome?
Reliability and reproducibility	Would another group of experts derive similar guidelines if provided the same evidence and methodology? Would different caregivers interpret and apply the guidelines similarly in identical clinical circumstances?
Clinical applicability	Does the document describe the clinical settings and the population to which the guidelines apply?
Clinical flexibility	Are the recommendations sufficiently flexible to promote their judicious use to greater or lesser degrees depending on the clinical circumstances? Are alternatives and exceptions explicitly stated?
Clarity	Are the guidelines stated in an unambiguous and precise terms?
Multidisciplinary process	Were stakeholders included at various stages of guideline development allowing their comment and participation?
Scheduled review	Is a schedule for update and revision provided?
Documentation	Is the method used for developing the guidelines explicitly stated?

Table 2: *Attributes of clinical practice guidelines (according to Hefner (3))*

References

1. Management of Parkinson's disease: An evidence-based review. Mov Dis 2002;17(4):1-166.
2. Shaneyfelt TM, Mayo-Smith MF, Rothwangl J. Are guidelines following guidelines? The methodological quality of clinical practice guidelines in the peer-reviewed medical literature. Jama 1999;281(20):1900-1905.
3. Heffner JE. Does evidence-based medicine help the development of clinical practice guidelines? Chest 1998;113(3 Suppl):172S-178S.

The New UPDRS

— Christopher G. Goetz, MD, Rush University Medical Center, Chicago, IL, USA

The MDS previously named a Task Force to evaluate currently available scores for the rating of Parkinson's disease. Chaired by Christopher G. Goetz, this group began its charge with a critique of the UPDRS (see *Movement* Disorders 2003; 18(7):738-750). The critique concluded that the scale is practical and excellent for monitoring many of the aspects of parkinsonism, but has several ambiguities and imprecise directions. Further, with the advancing knowledge of non-motor aspects of Parkinson's disease, the scale falls short of assessing several behavioral and autonomic areas of impairment. As a result, the International Executive Committee (IEC) recruited Dr. Goetz to organize an effort to present to the Society a new scale that would retain the overall structure of the original UPDRS, but attend to the cited deficiencies.

The UPDRS Steering Committee is composed of W. Poewe, M. Stern, S. Fahn, P. Martinez-Martin, G. Stebbins, C. Sampaio, B. Tilley and C. Goetz. Committee members are A. Schrag, B. Dubois, P. LeWitt, A. Lang, C.W. Olanow, J. Jankovic, B. Van Hilten, A. Lees, O. Rascol, R. Holloway, D. Nyenhuis, J. Kulievesky, R. Dodel, S. Leurgans and J. Teresi.

The New UPDRS has a similar format as the original scale with four core parts: Non-motor Experiences of Daily Living, Motor Experiences of Daily Living, Objective Motor Examination, and Assessment of Motor Complications. All items are rated on a 0-4 basis with uniform anchors: 0=normal; 1=slight; 2=mild; 3=moderate; 4=severe. To each of these designations, a short descriptive text follows in order to tailor the rating to the impairment or disability being assessed. A strong emphasis on clarity of instructions has been introduced both for the interview portions as well as the motor examination. In addition, an official appendix is attached to the scale to guide investigators and clinicians to standardized, recommended scales that examine areas of interest in more detail (depression, dementia, apathy, quality of life).

The New UPDRS was presented to the MDS at the Society's 8th International Congress in Rome in June 2004. The MDS

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The New UPDRS

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will sponsor a series of clinimetric testing studies to test the usefulness of the new scale and its relationship to the original UPDRS. The first steps of this testing program are currently in progress. For more information on the new scale, members can contact Dr. Goetz at cgoetz@rush.edu.

MDS Membership Committee Surpasses Goals

— Gregor K. Wenning, MD, PhD, University of Innsbruck, Department of Neurology, Innsbruck, Austria

The leadership of The *Movement* Disorder Society (MDS) charged the Membership Committee with very challenging goals for the 2003-2004 term. I am excited to report that the dedicated members of the Membership Committee rose to this challenge and surpassed these goals, which included implementing a Waived Dues Program, identifying potential candidates for Honorary Membership and increasing the membership of the Society.

Beginning in early 2004, MDS piloted a Waived Dues Program. The Waived Dues Program has been specifically designed to enable those with an economic disadvantage to join the Society at a reduced membership rate. This will help to disseminate knowledge throughout the world, advance Movement Disorders as a subspecialty and enhance the visibility of MDS as a society.

The benefits made available to all Waived Dues Members include:

- Full participation in Society activities at a $10 USD reduced yearly fee
- All member benefits except the journal, *Movement* Disorders
- Reduced International Congress registration fees

Applicants for Waived Dues are requested to complete a full, detailed application, and provide a candidacy statement articulating their financial need. All applications are reviewed by the Membership Committee, with final approval from the International Executive Committee.

For further information, or to apply for Waived Dues, please visit the Membership Section of the MDS Web site, www.movementdisorders.org, or contact the International Secretariat directly via telephone (+1 414-276-2145), fax (+1 414-276-3349) or e-mail (info@movementdisorders.org).

Each year, up to two Honorary Members may be selected for announcement at each International Congress to recognize persons who have made extraordinary contributions to the field of Movement Disorders or to the Society. This year, the Membership Committee and International Executive Committee (IEC) named two honorary members, Drs. Roger Duvoisin and Hiroshi Shibasaki, during the Society's 8th International Congress in Rome, Italy. Joining the 2002 Honorary Members, Drs. Stanley Fahn, Oleh Hornykiewicz, and Gerald Stern, each will receive lifetime membership to the Society with full membership benefits.

Another objective of the Membership Committee has been to reach a landmark goal of 2000 members. We are delighted to announce that as of August 2004, MDS membership reached and exceeded that goal and has attained a record high 2,200 members! This is a generous 15.7% increase from December 2003, largely due to an extensive recruitment initiative in early 2004.

A special thank you to all MDS members involved in broadening the scope of our membership. Please continue to encourage others to join the Society, so they may share knowledge, promote research and guide public policy with fellow members committed to the study and treatment of Movement Disorders.

Renew for 2005!

The *Movement* Disorder Society's (MDS) 2005 dues renewal process is underway. With your 2005 membership renewal, you will be able to continue taking advantage of the many benefits MDS has to offer, including reduced fees to our 9th International Congress of Parkinson's Disease and Movement Disorders, March 5-8, 2005 in New Orleans, Louisiana, USA.

If you have not yet renewed for 2005, you may do so by visiting our Web site, www.movementdisorders.org, or by contacting the MDS Secretariat at +1 414-276-2145.

Don't miss out!

Levodopa-Continuous Dopaminergic Stimulation in the Treatment of Parkinson's Disease: The Role of COMT Inhibitors

The *Movement* Disorder Society (MDS) announces a free internet-based CME activity sponsored by MDS and hosted by Medscape entitled Levodopa-Continuous Dopaminergic Stimulation in the Treatment of Parkinson's Disease: The Role of COMT Inhibitors.

This CME activity is based on transcripts and slide presentations as delivered by the faculty at the "Levodopa-CDS in the Treatment of Parkinson's Disease: The Role of COMT Inhibitors" symposium held at The *Movement* Disorder Society's 8th International Congress of Parkinson's Disease and Movement Disorders, June 13, 2004 in Rome, Italy.

The faculty for this course consists of co-chairs **Yves Agid, MD** from Paris, France and **C. Warren Olanow, MD** from New York, NY, USA plus presenters **Robert A. Hauser, MD, MBA**, Tampa, FL, USA, **Peter Jenner, BPharm, PhD, DSc**, London, UK, **Eldad Melamed, MD**, Tel Aviv, Israel and **Fabrizio Stocchi, MD, PhD**, Rome, Italy.

To access this free CME activity, members of Medscape can go to www.medscape.com/cmecircle/parkinsonsdisease or first-time visitors can register for free at www.medscape.com.

The *Movement* Disorder Society

This activity is supported by an unrestricted educational grant from

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MDS Accepting Applications for the Visiting Professor Program

The *Movement* Disorder Society (MDS) is currently accepting applications for the 2005 Visiting Professor Program. MDS is committed to assisting the healthcare profession in under-represented countries throughout the world. As part of this mission, the MDS Visiting Professor Program will provide educational opportunities in Movement Disorders to regions of the world not adequately served by the resources within that region. By supporting the continuing medical education needs of healthcare professionals in under-represented countries, MDS hopes to enhance the quality of treatment and care provided to the Movement Disorders patients living there. For more information or applications for this program, please visit the MDS Web site at www.movementdisorders.org or contact Jenny Oliva, MDS Director of Education, at +1 414-276-2145.

Mark your Calendar for the 9th International Congress of Parkinson's Disease and Movement Disorders

The 9th International Congress of Parkinson's Disease and Movement Disorders will take place in New Orleans, LA, USA, March 5-8, 2005.

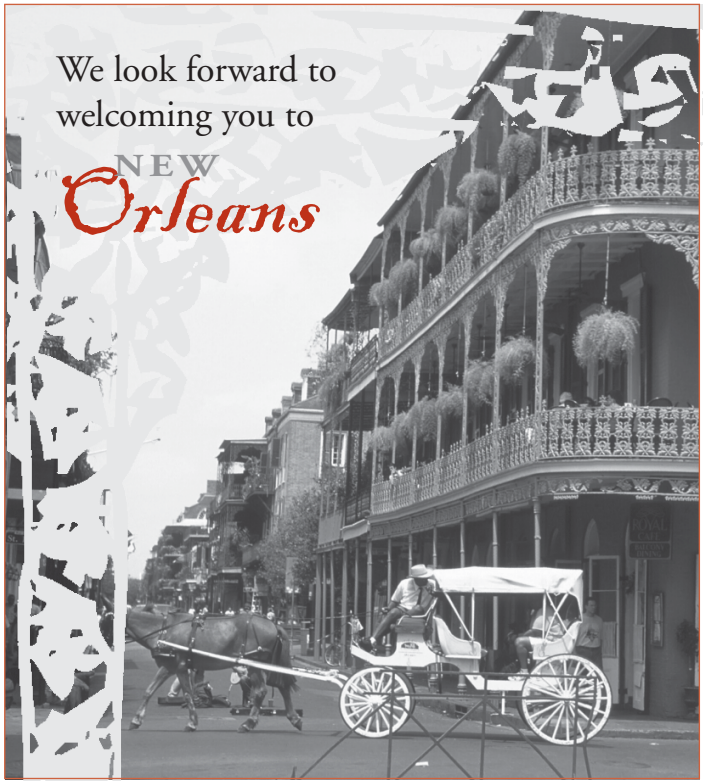
New Orleans is a beautiful city with a blend of French, Spanish, Indian, Anglo and African heritage. This heritage is very visible in its architecture, famous cuisine and lively music.

Scientific Sessions will be held in the French Quarter at the New Orleans Marriott and the Sheraton New Orleans. The Scientific Program will incorporate Kickoff Seminars, Plenary and Parallel Sessions, Skills Workshops, Video Seminars and Poster Sessions.

Although the ever popular Kickoff Seminars and Plenary Sessions will follow a style similar to the 2002 Miami and 2004 Rome International Congresses, Parallel Sessions and Skills Workshops have been designed to meet the need for smaller, more focused sessions. These sessions will be offered to an audience size of 50-200 participants resulting in greater in-depth coverage of a specific topic with audience participation. Platform presentations of selected abstracts featuring state-of-the-art updates about Parkinson's disease and other Movement Disorders will also be offered again in 2005.

Be sure to check www.movementdisorders.org for scientific program updates and registration information. A printed Preliminary Program was sent to all members and past International Congress participants in January.

Please contact the International Secretariat by telephone at +1 414-276-2145, by fax at +1 414-276-3349 or by e-mail at congress@movementdisorders.org with any questions regarding the 9th International Congress.



MDS is Active in Europe

— Eduardo Tolosa, MD, Chairman, MDS-European Section

The relationship between The *Movement* Disorder Society-European Section (MDS-ES) and the European Federation of Neurological Societies (EFNS) continues to thrive. 2004 marked the first collaboration between both organizations to fund bursaries for young clinicians and scientists. In total, 14 delegates received bursaries of €1,000, which enabled them to attend the meeting and present work on Movement Disorders.

Each year, MDS-ES presents a plenary session during the EFNS Annual Meeting. This year's highly successful program, entitled *New Developments in Movement Disorders,* was convened by Drs. Pierre Pollak and Yves Agid. The faculty, comprised of Drs. Thomas Klockgether, Oliver Bandmann, and Pierre Pollak, provided highly educational lectures.

Several other Movement Disorders educational initiatives were organized during the EFNS meeting in addition to the plenary session. Prof. Eduardo Tolosa directed The Movement Disorders Teaching Course on the Diagnosis and Management of Movement Disorders that was organized during the EFNS meeting. The invited lecturer presenting The European Basal Ganglia Club's *What's New in Progressive Supranuclear Palsy?* was Dr. Larry Golbe. Four enlightening, focused workshops on Movement Disorders topics were also presented in Paris and organized by Drs. Alain Destee, François Tison, Murat Emre and Etienne Hirsch. MDS-ES would like to acknowledge an unrestricted educational grant from Allergan to support the European Basal Ganglia Club invited lecture.

Due to the enthusiastic response to the Dopamine Transporter Imaging Workshop held in London, UK in January 2003, MDS-ES will be organizing a series of workshops on Dopamine Transporter Imaging throughout Europe during 2005. The morning session of each workshop will feature lectures from world-renowned faculty and will provide an opportunity to discuss the value and limitations of the technique in clinical practice. Afternoon sessions will involve a visit to a local scanning facility to discuss the interpretation of scans and to witness the procedure as it is performed.

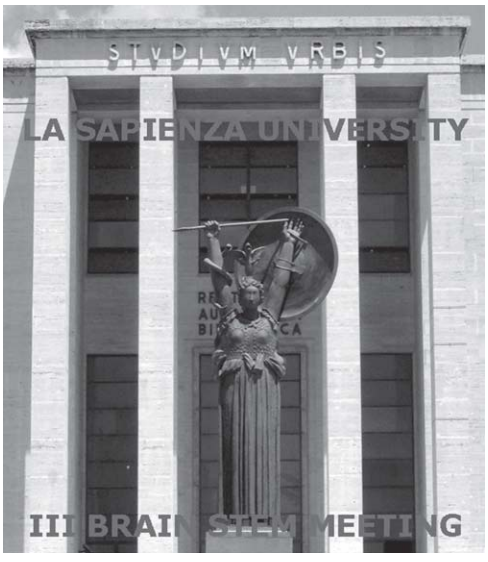
To receive further information on the planned workshops, please contact Karen Henley, MDS Associate Executive Director, via e-mail at the European Secretariat at khenley@movementdisorders.org, or Lisa Seidl, MDS Program Manager, at the International Secretariat at lseidl@movementdisorders.org.

MEETING UPDATES

3rd Brain Stem Society Meeting, June 11-12, 2004, Rome, Italy

— Giorgio Cruccu, BSS President, Department of Neurological Science, La Sapienza University, Rome, Italy

The Brain Stem Society (BSS), a group of scientists interested in brain stem functions, held its third meeting in Rome, June 11-12, 2004, as a satellite of the MDS International Congress. Devoted to promoting scientific knowledge of the brain stem in all its aspects, from anatomy and physiology to pathophysiology, diagnosis, and treatment of brainstem-related diseases, BSS organizes an international meeting every third year: the first was held in Barcelona 1998, the second in Amsterdam 2001, the third in Rome 2004, and the next will be held in Mainz 2007.



To us the brain stem is fascinating. It is only 2x2x6 cm, more or less, but how many complex, indispensable functions it rules! Some of us even recur to a trained neural network to figure out from which area a dysfunction arises (Figure 1, page 11).

The meeting in Rome covered many aspects of brain stem function and dysfunction: the most recent advances in functional imaging, transcranial magnetic stimulation, laser evoked potentials, and brainstem reflexes, vestibular control of ocular movements and posture, cranial dystonias and other Movement Disorders, facial pains, and headache.

CONTINUED ON PAGE 11

3rd Brain Stem Society Meeting, June 11-12, 2004, Rome, Italy

Continued from page 10...

The speakers, the best—I dare say—in their field (e.g. A. Bronstein, G. Deuschl, M. Hallett, J. Rothwell, J. Valls-Solé, just to mention those probably most known to MDS members), gave rise to scientific sessions characterized, as usual in BSS meetings, by open and "vivid" discussions (to understate the tendency to dig into the most controversial points).

In the end, attendants and speakers were very happy, though I must admit that the Roman monuments and generous wines strongly contributed to keep us up-mooded.

Finally, I take the occasion to invite those of you who would like more information on joining our group to visit these Web sites: www.oic.it/bss2004, www.brainstemsociety.com.

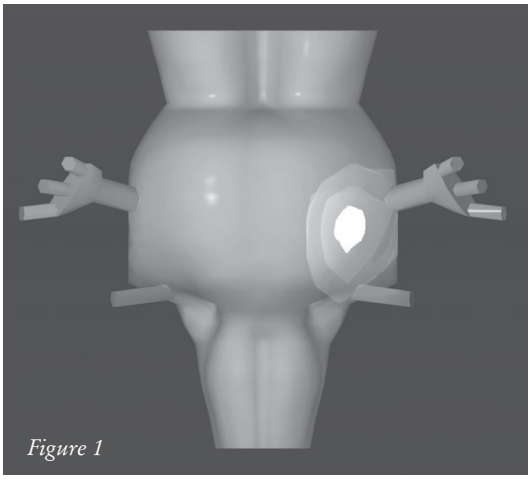


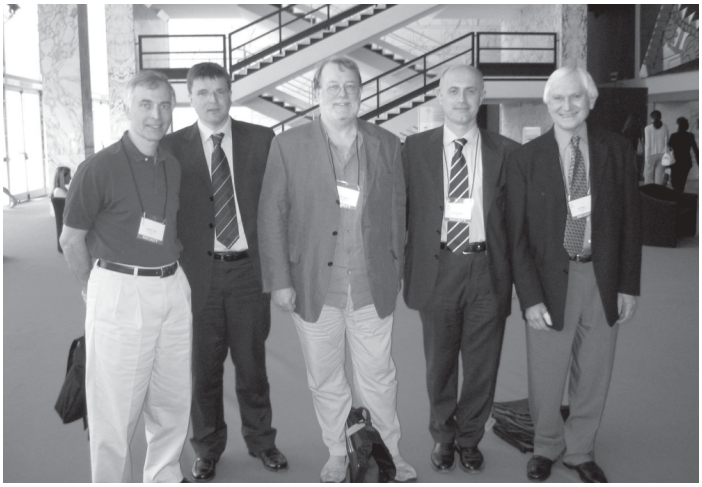
Figure 1

2nd International Meeting on Multiple System Atrophy, June 17-18, 2004, Rome, Italy

— Carlo Colosimo, MD, Universita la Sapienza, Rome, Italy

Multiple System Atrophy (MSA) is an uncommon, progressive neurological disorder, caused by cell loss in specific areas of the brain and spinal cord leading to a variety of symptoms affecting especially the functions of the motor system and the autonomic nervous system. Due to the variety of different ways MSA can manifest, it is often difficult to differentiate it from other neurodegenerative disorders like Parkinson's disease, progressive supranuclear palsy or corticobasal degeneration. This one-day meeting on MSA, a satellite meeting of The *Movement* Disorder Society's 8th International Congress of Parkinson's Disease and Movement Disorders, in Rome, Italy, followed a previous meeting held in London in 1997. It was held under the auspices of the MDS, Serono Symposia and two multicentre research groups, one in Europe (EMSA-SG) and the other in North-America (NAMSA-SG), which have just started their research activity on MSA in the last couple of years. The excellent meeting program (set up by the international organizing committee comprised of C. Colosimo, S. Gilman, N. Quinn and G. Wenning) consisted of 13 invited lectures plus one poster session on the neuropathological and molecular features, clinical picture, investigations and novel therapies of this devastating condition.

The objective of the conference was to bring together basic and clinical neuroscientists to generate ideas for future research in this long-neglected field. Around 100 people attended the conference, which was a good number considering that almost everybody was coming from a very tiring week. Dr. Miller (USA) and Prof. Wenning (Austria) were also awarded with the Oppenheimer prize for their outstanding original research in the field. In the end, everybody from the faculty and the audience agreed that we should not wait another seven years to have the 3rd meeting of this series.



From Left to Right: Anthony Lang, Gregor Wenning, Niall Quinn, Carlo Colosimo and Sid Gilman at the 2nd International Meeting on Multiple System Atrophy in Rome, Italy.

MDS and MDS-ES Announce Results of the 2004 Leadership Elections

— C. Warren Olanow, President, MDS
— Eduardo Tolosa, Chairman, MDS-ES

On behalf of The *Movement* Disorder Society (MDS) and The *Movement* Disorder Society- European Section (MDS-ES), we are proud to announce the results of the 2004 leadership elections.

The international MDS election took place at the Annual Business Meeting during the 8th International Congress of Parkinson's Disease and Movement Disorders on June 15, 2004, in Rome, Italy. The following individuals were elected by the MDS membership to represent the Society on the International Executive Committee (IEC):

REPRESENTATIVE	OFFICE AND TERM
Anthony E.T. Lang, MD, FRCPC	President-Elect 2005-6, President 2007-8
Olivier Rascol, MD, PhD	Secretary-Elect 2005-6, Secretary 2007-8
Yoshikuni Mizuno, MD	Treasurer-Elect 2005-6, Treasurer 2007-8
Shu-Leong Ho, MD, FRCP	IEC Member, 2005-2008
Karl D. Kieburtz, MD	IEC Member, 2005-2008
Marcelo Merello, MD, PhD	IEC Member, 2005-2008
John C. Rothwell, MA, PhD	IEC Member, 2005-2008
Claudia M. Trenkwalder, MD	IEC Member, 2005-2008

The MDS-ES held their election by mailed ballot. The results of the election were announced at the European Section Annual Business Meeting on Tuesday, September 7, 2004, in Paris, France held during the European Federation of Neurological Societies (EFNS) Congress. The following individuals were elected by MDS members residing and/or working in Europe to represent the MDS-ES on the European Section Executive Committee (ESEC):

REPRESENTATIVE	OFFICE AND TERM
Wolfgang H. Oertel, MD	Chairman-Elect 2005-6, Chairman 2007-8
Giovanni Abbruzzese, MD	Secretary-Elect 2005-6, Secretary 2007-8
J. Martin Rabey, MD	Treasurer-Elect 2005-6, Treasurer 2007-8
Espen Dietrichs, MD, PhD	ESEC Member, 2005-2008
Timothy Lynch, MB BSc, FRCPI, FRCP	ESEC Member, 2005-2008
Bob Van Hilten, MD, PhD	ESEC Member, 2005-2008

We offer our congratulations to the candidates and wish them every success as they assume the responsibility of advancing the mission and goals of the Society and guiding our organization into the future.

We also take this opportunity to offer our sincere thanks to the members of MDS and MDS-ES for their commitment to the electoral process and to their selection of the Society's future leaders.

Professional Notices - Announcements

3rd Competition for the Annemarie Opprecht Parkinson Award

We are happy to announce the 3rd competition for the Annemarie Opprecht Parkinson Award for research on Parkinson's disease, sponsored by the Annemarie Opprecht-Foundation (Switzerland).

The Award will be presented in the year 2005 with a sum of 100'000 Swiss Francs. Deadline for submission is January 31, 2005.

Details regarding the Award, the conditions for submission, addresses, contacts and deadlines can be found on the foundation's homepage: www.opprecht-foundation.com.

WEMOVE Advances Health Literacy for People Living with Parkinson's Disease

WEMOVE announces the launch of a multi-tiered educational program to advance health literacy for people living with Parkinson's disease (PD).

WE MOVE is launching online educational resources to assist people living with Parkinson's to better understand and deal with their symptoms, including "off-time" management. These enhanced features, which may be easily located by patients and doctors on the WE MOVE Web site at www.wemove.org will include: live chat events with a physician expert in the management of PD; an "Ask the Expert" discussion forum specific to "off-time" management; and downloadable FAQs (frequently asked questions) for patients about PD "off-time" management.

Established in 1991, WE MOVE is a not-for-profit organization dedicated to educating and informing patients, healthcare professionals and the public about the latest clinical advances, management and treatment options for Parkinson's disease and other Movement Disorders.

Professional Notices - Job Openings

Movement Disorder Position at the University of Louisville

Immediate opening for a full-time faculty to join our *Movement Disorder Program at the University of Louisville*. BE or BC Neurologist with completed Fellowship training in Movement Disorders is required. The successful candidate will be responsible for the clinical care of Movement Disorder patients in outpatient, inpatient and consultation settings. He/she will participate in the development and conduction of research studies and will have opportunities to develop areas of professional interest. Rank and appointment consistent with qualifications and experience. Interested candidates should send a resume, statement of career interests and objectives, and three letters of recommendation to: Irene Litvan, M.D., Director, Movement Disorder Program, Department of Neurology, University of Louisville, 500 South Preston, A Building, Room 113, Louisville, KY 40202. Phone: 502-852-3655/ FAX: 502-852-6344, E-mail: i.litvan@louisville.edu

Neurologist

A position for a neurologist with specialty training in Movement Disorders and administration of botulinum toxin is available at The Parkinson's Institute in Sunnyvale, CA, USA. Responsibilities include the management of patients with a variety of Movement Disorders. The position provides the opportunity to participate as a PI or co-PI in clinical trials, patient and physician education, on-going clinical research projects and development of independent clinical research projects. Please email your CV to careers@thepi.org.

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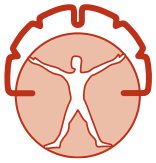

LETTERS TO THE EDITORS

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 your responses in the "Letters to the Editor" section. All materials submitted become the property of MDS.

Address your communications to:

Editor: *Moving Along*
The *Movement* Disorder Society
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Milwaukee, WI 53202-3823, USA
Tel: +1 414-276-2145
Fax: +1 414-276-3349
E-mail: info@movementdisorders.org

Professional Notices - Job Openings

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Movement Disorder Faculty Position
The Department of Neurology at the Medical College of Wisconsin is recruiting a fellowship-trained BE/BC neurologist with expertise in Movement Disorders. The current program includes two Movement Disorder specialists who have developed an active clinical program that offers both medical and surgical treatments for Movement Disorders patients. Existing research includes clinical trials, functional magnetic resonance (MR) imaging and MR spectroscopy, and NIH-sponsored natural history and epidemiological studies in the various Movement Disorder diseases. Opportunities exist for collaboration on existing projects or the development of new clinical or basic science Movement Disorder studies. Interested applicants should send their CV to Safwan Jaradeh, MD, Professor and Chairman, Department of Neurology, Medical College of Wisconsin, 9200 West Wisconsin Ave, Milwaukee, WI, 53226 or call: +1 414-805-5235.

Exciting Faculty Opportunity
An exciting faculty opportunity is available at the Parkinson's Disease Center and Movement Disorders Clinic, Baylor College of Medicine for an energetic individual who has completed a Movement Disorders fellowship and is interested in clinical and/or basic science research. The interested individual should contact Joseph Jankovic, MD, the Director of the Center, at 713-798-5998 or by e-mail: josephj@bcm.tmc.edu.

Movement Disorders Position Available
The Department of Neurology at the University of Colorado Health Sciences Center (UCHSC) is recruiting clinician-educators and clinician-scientists with expertise in Movement Disorders. The Department of Neurology currently has an active research and clinical Movement Disorders program which will provide the successful applicant with ample opportunities for academic development, and to direct clinical and research programs, as well as to train fellows and residents. Movement Disorders neurologists at any career level are welcome to apply. Collaborations and joint appointment available in corresponding academic departments. Send CV to: Donald H. Gilden, M.D., Professor and Chairman, Department of Neurology, Box B182, UCHSC, 4200 East 9th Ave., Denver, CO 80262. UCHSC is an equal opportunity/affirmative action employer.

Movement Disorder Neurologist
Evanston Northwestern Healthcare, which operates the Evanston and Glenbrook Hospitals, seeks a member of its Department of Neurology. The position is for an adult neurologist with training in Movement Disorders in a full-time hospital-based practice, Evanston Northwestern Healthcare Medical Group. Applicants will be eligible for faculty appointment at the Instructor or Assistant Professor Level, non-tenure track, at The Northwestern University Feinberg School of Medicine. Salary is negotiable. Send c.v. to **Michael Rezak, M.D., Ph.D., Dept of Neurology, Movement Disorders Center, Glenbrook Hospital, 2100 Pfingsten Road, Glenview, IL 60025.** Evanston Northwestern Healthcare and Northwestern University are Affirmative Action/Equal Opportunity Employers. Hiring is contingent upon eligibility to work in the United States. Women and minorities are encouraged to apply.

9th International Congress Important Dates to Remember

January 21, 2005 Pre-Registration Deadline
February 4, 2005 Hotel Reservation Deadline
March 5-8, 2005 9th International Congress of Parkinson's Disease and Movement Disorders, New Orleans, LA, USA

Click on the 9th International Congress on the MDS Web site at www.movementdisorders.org for more information!

2005

March 2-5, 2005
7th Annual Meeting of the American Society for Experimental NeuroTherapeutics (ASENT). Omni Shoreham Hotel, Washington, DC. Contact: ASENT, 555 E. Wells Street, Suite 1100, Milwaukee, WI 53202; TEL: +1 414-273-8290; FAX: +1 414-276-3349; E-mail: info@asent.org; Web Site: www.asent.org.

*March 5-8, 2005
9th International Congress of Parkinson's Disease and Movement Disorders. The New Orleans Marriott and the Sheraton New Orleans, New Orleans, LA, 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

March 9-13, 2005
7th International Conference AD/PD. Sorrento, Italy. Contact: Kenes International, 17 Rue du cendrier, P.O. Box 1726, CH-1211 Geneva 1, Switzerland; TEL: +41 22 908 0488; E-mail: adpd@kenes; Web site: www.kenes.com/adpd

*March 24-26, 2005
The 3rd International Parkinson's Disease Symposium. Kagawa International Conference Hall, Takamatsu City, Japan. Contact: E-mail: pd-taka@wine.ocn.ne.jp; Web site: http://pd-taka.umin.jp

*April 9-16, 2005
American Academy of Neurology 57th Annual Meeting. Miami, FL, USA. Contact: American Academy of Neurology, 1080 Montreal Avenue, St. Paul, MN 55116; TEL: +1-651-695-1940; E-mail: web@aan.com; Web site: www.aan.com

April 17-20, 2005
Second International Neuroacanthocytosis Symposium "Expanding the Spectrum of Choreatic Syndromes", Montreal, Quebec, Canada. Contact: Advocacy for Neuroacanthocytosis Patients c/o Ginger Irvine, 32 Launceston Place, London W8 5RN; TEL: +44207 937 2938; E-mail: gingerirvine@usa.net

May 29-June 2, 2005
International Society of Posture and Gait Research 2005 – ISPGR XVIIth Conference. Marseille, France. Contact: Dr. Christine Assaiante. INPC-CNRS, Marseille, France, TEL: +33 4 9116 4342, FAX: +33 4 9177 5084, E-mail: assaiant@dpm.cnrs-mrs.fr or ispgr2005@atout-org.com, Web site: www.ispgr2005-org.com

June 5-9, 2005
16h International Congress on Parkinson's Disease and Allied Disorders. Berlin, Germany. Contact: CPO HANSER SERVICE GmbH, Paulsborner Strasse 44, D-14193 Berlin, Germany; TEL: +49-30-300-66 90; FAX: +49-30-305-73 91; E-mail: berlin@cpo-hanser.de: Web site: www.parkinson-berlin.de

July 15-16, 2005
2nd International Comprehensive "Botulinum Toxins in Neurology" Workshop. Chennai, India. Contact: Sri Ramachandra Medical College and Research Institute, Ramachandra Nagar Porur, Chennai, Tamilnadu, 600 116, India; Tel: 91-4423771737; Fax: 91-4424761548; Web site: www.srmc.edu

September 17-21, 2005
9th European Federation of Neurological Societies Congress. Athens, Greece. Contact: EFNS, Neurological Hospital Rosenhugel, Riedelgass 5, A-1130, Vienna, Austria; TEL: 43-1-880-00-270; FAX: 43-1-88-92-581; E-mail: headoffice@efns.org

September 25-28, 2005
130th Annual Meeting of the American Neurological Association. San Diego, CA, USA. Contact: American Neurological Association, 5841 Cedar Lake Road, Suite 204, Minneapolis, MN 55416; TEL: +1-952-545-6284; FAX: +1-952-545-6073; E-mail: lorijanderson@msn.com; Web site: www.aneuroa.org

October 8-13, 2005
Congress of Neurological Surgeons 55th Annual Meeting. Boston, MA, USA. Contact: Congress of Neurological Surgeons, 10 North Martingale Road, Suite 190, Schaumburg, IL, USA, 60173; TEL: +1-847-240-2500; FAX: +1-847+240-0804; E-mail: info@1cns.org

October 29-November 3, 2005
20th Brazilian Congress of Clinical Neurophysiology and 19th Meeting of the Brazilian League on Epilepsy. Rio Grande do Sul, Brazil. Contact: VJS Assessoria de Eventos, Rua Vieira de Castro, 150 / 501, Santana, 90040-320, Porto Alegre, RS; Tel: 55-51-3330-1134; E-mail: vjs@vjs.com.br

November 5-11, 2005
18th World Congress of Neurology. Sydney, Australia. Web site: www.wcn2005.com

November 12-16, 2005
35th Annual Meeting of the Society for Neuroscience. Washington, DC, USA. Contact: Society for Neuroscience, 11 Dupont Circle, N.W., Suite 500, Washington DC 20036; TEL: +1-202-462-6688; E-mail: info@sfn.org

* Meetings Sponsored, Supported and/or Endorsed by MDS

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The *Movement* Disorder Society's

9th International Congress of Parkinson's Disease & Movement Disorders

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