A *MOVEMENT* DISORDER SOCIETY UPDATE

Moving Along

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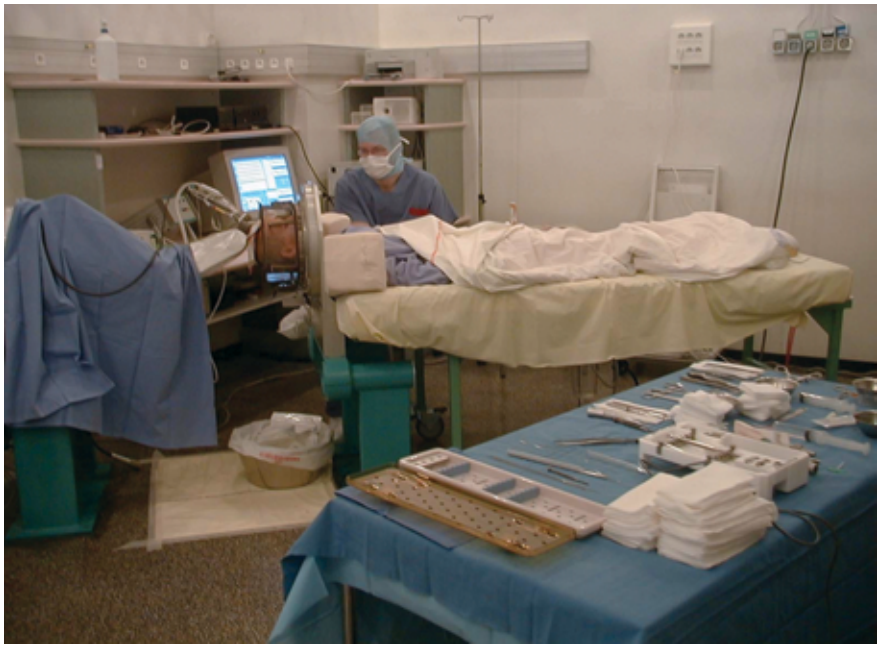
The Future of Functional Neurosurgery in Parkinson's Disease

— Alim Louis Benabid, Grenoble University Joseph Fourier, Grenoble, France



Yes! The future of Functional Neurosurgery (FN) is bright and brilliant. Back from the "dark age" where drug development had hidden it, the revival of FN relies on the development of Neuroscience. When nothing worked, neurosurgeons would select areas by trial and error, and with a lot of luck, they provided therapeutic solutions for apparently simple symptoms, which however meant so much for the patients as they improved mobility which is what allows humans to move around the universe. One could wonder how very small areas in the brain, minute kernels in a complex network, limited targets, might have such a striking influence in the execution of major functions. If these functions would have been less crucial and the general mechanism more complex, one might have missed this opportunity. The arrival of levodopa with its pronounced effects, which sometimes might be a drawback, slowed the development of FN. This restriction was also due to the fact that FN relied on lesioning, which damaged an already sick brain, and the lesions made were irreversible, their size and duration of effects were not easily controllable, and were risky to perform bilaterally.

The discovery of the specific effects of "high frequency stimulation" allowed us to use deep brain stimulation (DBS) as a substitute for the lesioning methods. The advantages of DBS are similar to pharmacologic approaches: reversibility and adaptability or fine-tuning. Moreover, DBS benefits from the advantages of stereotactic procedures, which include precise targeting, restricted radius of action and multiple simultaneous applications, in contrast to the drawbacks of widespread effects of pharmacologic treatment. Stereotactic neurosurgery allowed the fast and efficient reconsideration of well known "good, old targets", such as the thalamus and the pallidum. Moreover, it allowed us to try a new and frightening target suggested by basic research, the subthalamic nucleus (STN). The beneficial effects and the impressive outcomes of DBS over the past 15 years have allowed the rebirth of FN as a treatment of Movement Disorders (MD), from Parkinson's disease (PD) and essential tremor to dystonias, to the treatment of other diseases in these past few years, such as epilepsy, psychiatric disorders, cluster headaches, and likely others to come. Is the future of FN restricted to these new indications? All these indications will certainly ensure its permanence in the therapeutic armamentarium, justifying new technical developments and further basic research, provided that industry will follow our needs for better technology beyond their pure commercial interest. Has FN a future as a useful and grown-up therapy in MD, specifically for PD? Are there alternative techniques coming up the pipe-line? Every new wave crashes down to be followed by another one. All techniques have their challengers, and DBS has its own: neural grafts, gene therapy, infusion of growth factors, but also new drugs free of the side effects of currently available medications.

The problem for neurosurgeons is not to consider how long they will make a living of FN. A method survives or further develops as long as it is the best, or the only one to fulfil a

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This Spring issue of *Moving Along* is heavy on interesting reading material from the cutting edge of research: Prof. Benabid's cover story enriches us with his views on the enormous impact and future of functional neurosurgery in Movement Disorders. In addition to its well established role in advanced Parkinson's disease (PD), recent fascinating preliminary results of deep brain stimulation in Giles de la Tourette syndrome and its potential application in more than twenty conditions confirm its significance as a therapeutic and research tool. We fully agree with his conclusion: "*deep brain stimulation is here to stay*."

This issue's controversy on the "Role of Iron in Neurodegeneration in PD" is discussed in a scholarly manner by Professors Youdim and Topf from the Technion-Rappaport Faculty of Medicine, Haifa, Israel and Prof. Swerdlow from the University of Virginia, Virginia, USA, who provide an in-depth view on this issue which may lead to finding appropriate neuroprotective therapies for the treatment of PD. Both groups of investigators agree that oxidative injury plays a major role in neurodegeneration in PD, but while Dr. Swerdlow takes the position that the high concentration of iron in PD is an end-product, Dr. Youdim and Topf support its etiopathogenic role in PD, in contrast to that of other heavy metals.

As an international medical association, The *Movement* Disorder Society (MDS) is committed to advancing the treatment of patients with Movement Disorders around the world. This Spring issue reflects this effort and provides insight into the challenging experience of healthcare providers and PD patients in South Africa. Through the thought provoking reports of Professor Robert Iansek from Kingston Centre, Cheltenham, Australia as Visiting Professor and his host, Dr. Jonathan Carr, Rondebosch, we better understand the various factors contributing to the difficult management of patients with PD in South Africa. Financial restraints in both the public and private system, lack of experience of health care professionals, restricted access to state-of the art medications, and the absence of functional neurosurgery, contribute to making the management of patients with PD extremely challenging. Unfortunately, similar problems exist in most underdeveloped countries. The experience of both Prof. Iansek and Carr should help us to put into perspective the vastly different needs around the globe and stress the importance of the MDS Visiting Professorship program in improving on the scientific, medical, and social level for physicians and health care providers in underserved areas. We fully support and congratulate all participants in this MDS effort. Finally, this issue continues to offer information on job opportunities, upcoming and past meetings and inaugurates the section on Letters to the Editors that will hopefully reflect readership opinion.


Irene Litvan, MD


Thomas Gasser, MD

We are all looking forward to seeing many of you at the upcoming MDS congress in Rome. We wish you a safe journey there and a stimulating experience.

The *Movement* Disorder Society (MDS) is committed to its mission of providing members and practitioners with the latest developments and practical advice for the diagnosis, treatment and management of Movement Disorders. Integral to the Society's overall strategy for realizing this goal is the creation and implementation of a top notch Movement Disorders Education Program.

The Society will convene the International Congress of Parkinson's Disease and Movement Disorders, the premier scientific meeting in Movement Disorders. Planning continues for the 8th International Congress which will be held in Rome, Italy, June 13-17, 2004. Future congress sites include New Orleans, LA, USA in 2005, Kyoto, Japan in 2006, Istanbul, Turkey in 2007 and Chicago, Illinois, USA in 2008. Further information regarding the International Congress can be found on the Society's Web site at www.movementdisorders.org.

The 2002-2005 Strategic Plan articulated MDS's aim to expand its already highly respected educational program. In 2002, the Society revitalized its Education Committee under the leadership of Co-Chairs, Cynthia Comella and Fabrizio Stocchi, and added a Director of Education to the International Secretariat in Milwaukee. In 2003, through the efforts of the Education Committee, the Society applied for accreditation to the North American Accreditation Council for Continuing Medical Education (ACCME). I am proud to announce that MDS received news of its accreditation earlier this year. Effective April 2, 2004, MDS has been accredited by the ACCME to provide continuing medical education for physicians.

ACCME accreditation permits MDS to provide opportunities for obtaining continuous professional development (CPD) and continuing medical education (CME) credit. MDS plans to offer only activities that address identified educational needs of the geographically, economically, and experientially diverse group of clinicians it has committed to reach. The Society will use its accreditation status for the benefit of its members through continued collaborations with like minded agencies and organizations worldwide, including the European Accreditation Council for Continuing Medical Education (EACCME), the Italian Ministry of Health, the European Federation of Neurological Societies (EFNS), the American Academy of Neurology (AAN), and the Royal College of Physicians of London, United Kingdom (UK) just to name a few.

When reflecting over the past few years and looking ahead to initiatives currently under exploration or development, a vision of an educational program growing in its scope and diversity emerges.

Since 2002, MDS has partnered with the AAN to offer regional programming in the United States on the treatment of dystonia and spasticity. In 2004, a similar program was offered in the United Kingdom to members through the Society's European Section. Because of the overwhelming positive response to this activity, plans are currently underway to offer these workshops in other European regions in 2005.

In response to the needs of many health professionals who are interested in clinical research methodology because of the unique challenges encountered in Movement Disorder clinical trials, MDS developed and organized a course on *Design, Conduct and Interpretation of Clinical Trials in Movement Disorders*. The course was offered for the first time in Lisbon, Portugal on October 8-10, 2003, and efforts are underway to replicate it for an Asian Pacific audience in 2005.

Held in Miami, Florida, USA in January of 2004, MDS's *Management of Parkinson's Disease: An Evidence-Based Review* course reviewed clinical research trials, as presented in the *Movement* Disorder Journal Supplement. The course included a case-based discussion designed to extract the current practices in Parkinson's disease management. The Society will again be offering the course in Vienna, Austria on September 24, 2004.

MDS launched the first regional offering of its newly developed interactive workshop entitled, *Practical Management of Motor Complications in Parkinson's Disease*, in Houston, Texas, USA on the 20th of March, 2004. Expert faculty reviewed the clinical manifestations, pathophysiology, and practical treatment options for motor complications associated with the

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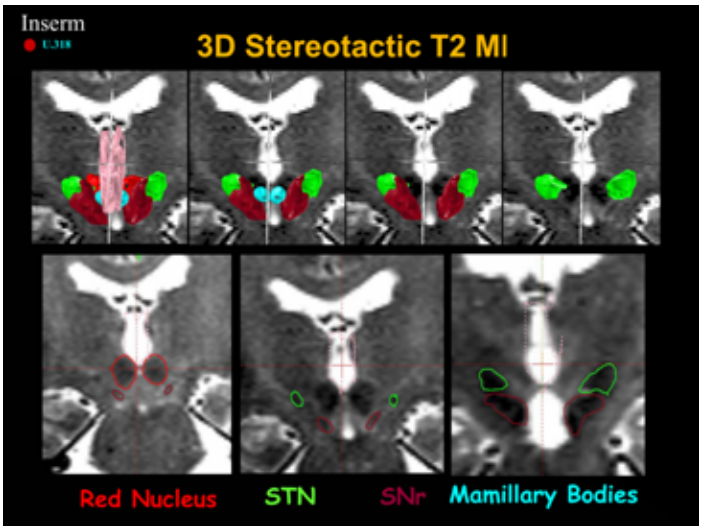
The Future of Functional Neurosurgery in Parkinson's Disease

Continued from cover...

specific need. What do the FN competitors of DBS offer? Neural grafts are obviously the most elegant and ultimate solution for neurodegeneration. However, among its many unsolved problems, the development of uncontrollable dyskinesias related to autonomous activity of the graft is one of the most concerning drawbacks of neural grafts, which has led to the paradoxical use of DBS of the globus pallidus interna (GPi) in some patients. One might alternatively consider that DBS could be used to modulate the activity of the graft itself by combining DBS electrodes and cannullas to insert the graft or encapsulated cells to control the release of neurotransmitters. The same strategy could be applied for gene therapy where the uncontrollable risk and fate of the gene transfected area is still unevaluated and potentially high. The chronic infusion of glial derived neurotrophic factor (GDNF) and other growth factors is the most recent tool of FN which has the potential of redifferentiation and neuroprotection. Of note all these exciting newcomers currently being tested belong to the field of FN, whose perspectives are prosperous and on the rise. The efficacy of DBS is currently considered as outstanding. Progress in technology (waveforms, patterns of pulse sequences, multiple electrodes and smart multiplexers), potential neuroprotection from STN DBS, and a better understanding of the mechanisms of DBS will lead to perfection,



and unsuspected new developments. The only real and pure challenge of FN, although more than probably a complement therapy, will come from the development of new drugs that will provide the benefits without the drawbacks of levodopa.

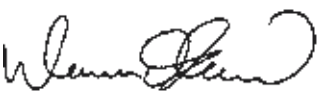
It would be good news if any therapeutic modality would sooner or later challenge and replace DBS or any FN based technology, as this new approach will have to be a much better therapy for PD patients. There is no better future for functional neurosurgery and deep brain stimulation than being replaced by better successors.

Continued from page 3...

chronic treatment of advancing Parkinson's disease. The Society is eagerly looking forward to repeating the success of this first offering in New York, NY on May 22nd, Chicago, IL on August 28th, and Los Angeles, CA on October 23rd, 2004. Interest in a European offering of the course has already been expressed and may be realized in 2005.

New and exciting programs are currently being planned and developed by the Education Committee for 2005 and beyond. These will come in a variety of learning formats, specifically designed to meet the needs of local audiences as well as those of our international membership, and may involve live activities as well as web-based self-study alternatives. Innovative educational concepts are derived from a multitude of sources and the MDS Education Committee welcomes your input when considering future initiatives.

Providing outstanding educational programming is one way in which MDS strives to achieve our common goal – that of enhancing patient care by advancing the science and medical knowledge in the field of neurology and subspecialty of Movement Disorders. I look forward to bringing you updates on the progress of the Society's growing Education Program. In the meantime, please continue to reference the MDS journal, *Movement* Disorders, the Society's Web site at www.movementdisorders.org, and this newsletter for information regarding current and future educational offerings.



C. Warren Olanow
MDS President 2003-2004

Controversy of the Timing of Starting Levodopa Therapy in Parkinson's Disease

— Masharip Atadzhanov, MD, PhD, DSc, Professor of Neurology, Department of Medicine, School of Medicine, University of Zambia

In reference to the previously published controversy on the timing of initiation levodopa therapy in Parkinson's disease (PD) published in *Moving Along* (1, 2), I would like to comment on the poorly investigated topic of population differences in disease pattern in PD.

Epidemiological studies show that considerable differences exist between white and non-white populations in the prevalence and clinical phenotype of PD (3). There is a view that the phenotype of parkinsonism in the white population differs from that in Afro-Caribbean and Asian Indian population (4). According to my experience in three different countries (Russia, Uzbekistan and Zambia) there are ethnic differences in disease risk and clinical manifestations of PD. For example, the prevalence of PD in Russia is higher than in Uzbekistan, and this in turn is higher than in Zambian black adults. Early onset PD and sporadic atypical PD among Zambian patients more often compared in Russia and Uzbekistan (5). Levodopa-induced complications among Zambian patients with PD were considerably less (4-6%) than in comparable patients in Russia and Uzbekistan (unpublished data).

I believe that the real controversy should not be over the nature of PD, but rather how to select therapeutic strategies for specific patients. The development of standardized criteria for diagnosis should not lead to standardization of our judgment in individual cases. The fact that controversy between experts exists is evidence that our understanding of individual patients with PD at a neuropharmacological level is still poor. The true issue is not timing of starting levodopa (LD) therapy in all patients with PD. The question is: which patient with PD needs early LD therapy or DAs? We need to refine clinical or other criteria which will allow us to select appropriate dopaminergic treatment for individual patients.

The revolution in the treatment of PD with LD which started in the 1960s is just beginning.

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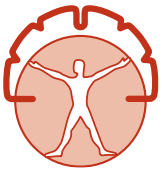

LETTERS TO THE EDITORS

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:

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Iron Does Play a Role in Neurodegeneration

— Moussa B.H. Youdim, Eve Topf and US National Parkinson Foundation Centers of Excellence for Neurodegenerative Diseases Research, Technion-Rappaport Faculty of Medicine and Department of Pharmacology, Haifa, Israel

Iron is an essential nutrient in virtually all cells and organisms. It participates in DNA and protein synthesis and degradation, is a cofactor of numerous important rate limiting regulatory enzymes, is associated with cellular membrane proteins, is involved in mitochondrial electron transport, and myelination of axons. However, iron is a double edged sword, since iron deficiency and iron overload can be deleterious to the central nervous system (Youdim, 2000; Shoham and Youdim, 2000; Youdim and Yehuda, 2000; Ke and Ming Qian, 2003).

It is well established that iron accumulation occurs at neurodegenerative regions in the brains of patients with neurodegenerative diseases, including Parkinson's disease (PD) (Youdim and Riederer, 2004). The increase of iron in PD is within the reactive proliferated microglia and the melanin containing dopamine neurons of substantia nigra pars compacta (SNPC), which selectively degenerate (Jellinger et al. 1991; Hirsh et al. 1991; Faucheux et al.2003). The increased ferritin and iron and loss of glutathione (GSH) has prompted the hypothesis of free ionic iron participating in oxidative stress initiated SNPC dopamine neuronal death. More supportive evidence comes from neuronal cell culture and animal studies employing neurotoxins such a MPTP, 6-hydroxydopamine and kainate. In the animal models of PD, iron also accumulates at SNPC sites where the neurotoxins induce neurodegeneration. It is apparent that the increase in iron is not the consequence of neurodegenerative process, since other metals such as copper and zinc are not altered. By contrast, copper level is decreased in the substantia nigra of PD (Riederer et al. 1989).

Iron is never free and is bound to ferritin. In free form (Fe^{+2}), it can be highly toxic with the potential of catalyzing reactive hydroxyl radical formation via Fenton reaction from hydrogen peroxide. As a consequence, its cellular deposition and release is tightly controlled by a highly complex array of regulatory proteins. Nowhere in the body does this manifest itself more avidly than in the brain. Once deposited, before the blood brain barrier (BBB) is formed, it remains relatively constant throughout life with a slow turnover, since serum iron has no access to it.

The mechanism by which iron is increased in neurodegeneration is not known but may be related to its uptake, brain translocation and transport out of the cell as determined by several iron regulatory proteins (IRP) and divalent metal ion transporter (DMT1). IRPs bind to iron responsive elements (IREs) of several mRNAs and control the synthesis of transferrin receptors (TfR) and ferritin and thereby control their translation or stability (Leibold et al. 2001; Siddappa et al. 2002 and 2003; Eisenstein, 2000; Kim and Ponka, 2003). IRPs respond to alterations in intracellular iron levels, nitric oxide and reactive oxygen species (ROS) (Kim and Ponka, 2003). The redox regulation of IRPs has provided direct links between the control of iron homeostasis and oxidative stress. The arguments for involvement of iron in neurodegeneration have been substantially strengthened by targeted deletion of IRPs (LaVaute et al. 2001).

"The increased ferritin and iron and loss of glutathione (GSH) has prompted the hypothesis of free ionic iron participating in oxidative stress initiated SNPC dopamine neuronal death."

IRP2 is one of two mammalian cytosolic proteins that senses cellular iron and represses ferritin synthesis in iron depleted cells. Knock-out of IRP2 in mice results in over expression of ferritin and progressive neurodegeneration in brain regions including the striatum and the increased iron co-localizes with the latter two. These animals have progressive tremor and ataxia (LaVaute et al. 2001).

Another line of investigations by Lin et al. (2001) point to the highly significant interplay between iron metabolism, mitochondrial complex I (which is decreased in PD and both MPTP and 6-hydoxydopamine models of PD). These investigators have shown that the 75-kDa subunit of complex I is regulated by iron via a novel IRE and novel IRP, which adds another level of complexity to the model of iron homeostasis. More recently, misregulations of iron metabolism have been implicated in a number of human neurodegenerative diseases (Roualt, 2001; Roy and Andrews,2001) including Friedreich ataxia (Pandolfo, 2002), neuroferritinopathy (Curtis et al. 2001; Crompton et al. 2002), pantothenate kinase–associated neurodegeneration (Hallervorden-Spatz syndrome) (Gordon, 2002), aceruloplasminemia (Miyajima, 2003), Huntington disease (Hilditch-Maguire, 2002), Alzheimer's disease (Rogers et al.2002) and even Wilson's disease (Bocanegra, 1995), as well as neurodegeneration in mice (Anderson et al.2000; Hilditch-Maguire et al., 2000; LaVaute et al. 2001; Puccio et al.. 2001). Radical scavengers have neuroprotective activity in neuronal cell cultures and *in vivo* models of PD, but have failed in clinical

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Iron Plays a Limited Role in Neurodegeneration

— Russell H. Swerdlow, MD, Associate Professor of Neurology, Department of Neurology, University of Virginia, Charlottesville, Virginia, USA

Oxidative stress exists in cells with excessive oxygen radical burdens. This phenomenon may contribute to neuronal death in Parkinson's disease (PD). Oxidative stress can result from either overproduction of oxygen radicals or from oxygen radical underscavenging. In terms of cell toxicity, not all oxygen radicals are equal. The hydroxyl radical (OH) is particularly harmful, and reduced iron (Fe^{2+}) can promote OH production via Fenton chemistry. In this "Fenton reaction", Fe^{2+} is oxidized to $Fe3^{+}$ by hydrogen peroxide (H_20_2), which dissociates into one molecule each of hydroxyl ion and hydroxyl radical.

Iron concentration is higher in substantia nigra than it is in many other brain regions, and concentrations are further elevated in PD subjects. The neuroanatomic correlate between PD nigral degeneration and high nigral iron content, in conjunction with the recognized ability of iron to promote $OH^{\cdot}$ production, suggested to some that iron might play a crucial role in PD pathogenesis. This hypothesis (that iron might drive PD neurodegeneration) was postulated when our understanding of PD molecular pathophysiology was far more rudimentary. What light does our emerging knowledge of PD neurodegeneration shed on the role (if any) of iron?

Several lines of current investigation do not support an "upstream" role for iron in PD neurodegeneration. We now recognize several genes that, when mutated, will yield a PD phenotype. Although these mutations apply in general only to rare, recognizably mendelian forms of the disease, none of these mutations implicate aberration of iron homeostasis. Rather, an inability to properly process proteins requiring proteasomal degradation seems to represent a recurrent theme.[1] One point these familial forms of PD do make clear is that disrupted iron handling is not required for development of the human PD phenotype.

It also appears that mitochondrial dysfunction figures prominently in PD neurodegeneration. Well over a decade ago it was noted that activity of the electron transport chain enzyme NADH:ubiquinone oxidoreductase (complex I) was reduced in PD.[2,3] This appears to represent a systemic bioenergetic defect, since it is observed in PD subject brain, platelets, muscle, and fibroblasts.[4] Inhibition of complex I with the toxin MPTP causes subacute parkinsonism and nigral demise in humans and mammals, findings that are recapitulated by controlled exposure of rats to the complex I inhibitor, rotenone.[5] Experimental data using cytoplasmic hybrid ("cybrid") systems suggest the PD complex I defect arises at the level of mtDNA.[6,7] The genetic origin of complex I dysfunction in PD, combined with observations that this defect is not limited to the substantia nigra strongly argue iron is not the cause of PD mitochondrial impairment, arguing against an "upstream" role for iron in PD neurodegeneration.

"Several lines of current investigation do not support an "upstream" role for iron in PD neurodegeneration."

Certainly, perturbed iron physiology may kill neurons. For example, Hallervorden-Spatz disease and perhaps Friedreich's ataxia may result from abnormal iron homeostasis. While one cannot rule out some downstream contribution of iron to PD neurodegeneration (through its role in the Fenton reaction or due to changes in how iron-sulfer clusters may function within the context of abnormal complex I), the observation that iron concentrations are relatively high in the substantia nigra and even more so in PD are not sufficient to establish an important causal role for iron in PD. An emerging realization of the importance of mitochondrial dysfunction and protein aggregation in PD, as well as how these phenomena arise, further argues that if iron does play a role in PD neurodegeneration, that role is limited.

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Controversies Are a Topic of Discussion at the 8th International Congress in Rome

The 8th International Congress of Parkinson's Disease and Movement Disorders will take place in Rome, Italy from June 13-17, 2004. One of the many excellent sessions planned for this Congress will highlight the controversies that are currently held within our study and practice.

"Parallel Session 8: Controversies" will take place on June 17 form 2:00 pm to 4:30 pm and will include the following presentations from leaders in our field:

Chair: Yves Agid
Paris, France

Co-chair: Donald Calne
Vancouver, Canada

Initial therapy in Parkinson's disease should be with a dopamine agonist

YES: Werner Poewe, Innsbruck, Austria
NO: William Weiner, Baltimore, MD, USA

Imaging endpoints reflect Parkinson's disease progression

YES: David Brooks, London, United Kingdom
NO: J. Eric Ahlskog, Rochester, MN, USA

Immunology in movement disorders: PANDAS and Tourette's

YES: Gavin Giovannoni, London, United Kingdom
NO: Harvey Singer, Baltimore, MD, USA

Do you need Lewy bodies to diagnose Parkinson's disease?

YES: Dennis Dickson, Jacksonville, FL, USA
NO: Yoshikuni Mizuno, Tokyo, Japan

Can you have Parkinson's disease with a normal F-dopa/PET or DAT/SPECT?

YES: Eldad Melamed, Petah Tiqva, Israel
NO: Kenneth Marek, New Haven, CT, USA

Please be sure to attend the 8th International Congress of Parkinson's Disease and Movement Disorders to get the latest information and to participate in new types of educational sessions such as the "Controversies" session.

If you would like more information on the 8th International Congress, please visit our web site at www.movementdisorders.org or contact the International Secretariat at Tel: +1 414 276-2145 or fax: +1 414 276-3349.

MDS Members Invited to Submit Session Proposals for the 9th International Congress

The *Movement* Disorder Society (MDS) gathers thousands of the field's clinicians, researchers, trainees and industry supporters on an annual basis at its International Congress of Parkinson's Disease and Movement Disorders. The purpose of the MDS Congress is to share ideas, encourage interest among all those involved in the care and research of Movement Disorders, to participate in the activities of MDS and to advance the related clinical and scientific discipline.

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

Call for Applications for the 9th International Congress of Parkinson's Disease and Movement Disorders

In moving to an annual congress format, the structure of the 9th International Congress of Parkinson's Disease and Movement Disorders will be different from what past participants and faculty have experienced. The traditional MDS International Congress format will continue in 2006 and 2008, however, for the alternate year Congresses, the Congress Scientific Program Committee (CSPC) has developed a structure which will focus on the vertical integration of the plenary scientific update sessions and subsequent educational sessions, breakfast seminars, video dinners and skills workshops.

Approximately 20-30 educational sessions will be presented at the International Congress. The majority of these sessions will be planned by the CSPC and will cover the more high profile and common themes in Movement Disorders.

In an effort to spark research interest in new areas, the CSPC invites the MDS membership to submit proposals to cover unique session topics involving unknown, under-studied, or under-emphasized areas of Movement Disorders. Four to six time slots have been reserved for member-proposed educational sessions. Proposed sessions should be limited to 2 or 2.5

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hours in length with a chairperson and three or four presenting speakers. These educational sessions will be didactic in presentation style with some time reserved for questions and answers. The audience size will be from 50 to 130 International Congress attendees.

The *Movement* Disorder Society is seeking proposals for such sessions. Proposals should include the general topic or theme, the names of the proposed chairperson and potential faculty members with suggested topics. The final decision on the organization and faculty for each of these sessions will remain the responsibility of the CSPC.

Please note that the MDS International Congress Scientific Program Committee will make all final decisions regarding invited faculty for accepted proposals.

The deadline for applications for the 2005 International Congress is June 30, 2004.

Applications are available at:
http://ww.movementdisorders.org/congress/05sessionproposalapp.pdf

For more information please go to http://www.movementdisorders.org/congress/neworleans05.shtml

Congress participants will also have the opportunity to submit abstracts for this meeting. A Call for Abstracts will be sent to MDS Members and Congress participants by August 2004. If you have any questions, please contact Terri Walosz, Director of Meetings, by telephone at + 1 414-276-2145, by fax at +1 414-276-3349 or by e-mail at twalosz@movementdisorders.org.

"Moving and Shaping" Global Understanding of Parkinson's Disease

— Oscar S. Gershanik, MD, Professor & Chairman Department of Neurology, Centro Neurologico-Hospital Frances, Buenos Aires, Argentina

On December 7, 2003 a global declaration on Parkinson's disease (PD), "Moving and Shaping", was officially launched by the Working Group on PD on the occasion of the 7th World PD day symposium held in Mumbai, India. The "working group on PD", an international group of leading specialists representing different regions of the world, was formed by the WHO in 1997 with the purpose of developing guidelines for the WHO-led international efforts to promote dissemination of knowledge and establishing strategies to improve the care of patients with PD. Since then, the group has maintained its structure working with representatives of lay organizations, and forming a Global PD Alliance, of which The *Movement* Disorder Society has been an important partner.

The Global Declaration is a formal appeal to everyone involved in medical education, public health and global policy-making to endorse and support the WHO Health for All initiative with particular emphasis in making PD a priority health concern.

Extensive coverage of the launching of the declaration was provided in the winter issue of *Moving Along*; it is now the time to ask ourselves where do we go from here, how will this effectively translate into changes that will influence the quality of life of patients, their families and caregivers?

In my view, the first step is to put words into action in such a way that we do not lose the momentum that this initiative has generated. Doctors, patients, professional societies, and voluntary societies in every country or region should seize this opportunity to help promote the principles sustained by the global declaration and the actions proposed in it. If the alliance created at the global level is reproduced at the national and regional level, we can exert together the pressure upon governments that will bring about the necessary changes. Often, policymakers immersed in the routine administration of public affairs, distance themselves from the pressing needs of the same people they represent and need to be made aware through actions promoted at the grass-root level.

The Global Declaration is an instrument that can be used in this regard. It is our duty as specialists committed to the welfare of our patients to be active participants in this campaign. The strategy designed by those forming the Global Alliance is to produce a domino or cascade effect through sequential launches of the Global Declaration in different regions of the world, trying to generate as much media coverage as possible.

If its goals are effectively attained, the patients will count on having doctors better educated in dealing with the problems of PD, will in addition have better access to comprehensive treatment programs, and will perceive a change in the attitudes of society towards chronic disabling disorders. The bottom line of this campaign can be summarized in two words: ***education*** and ***awareness*** at all levels of society.

MDS Pilots the First Visiting Professor Program

Impressions from the Host

— Jonathan Carr, MD, Neurophysiology Laboratory, Neurology Unit, Rondebosch, South Africa

South Africa has had very little contact with The *Movement* Disorder Society since the early 1980's, when Professors Marsden and Fahn had visited the country. After the country's first democratic elections in 1994, a group of neurologists from Boston attended our national congress, including Dr. Daniel Tarsy. However, we have had very little input with regard to the management of Parkinson's disease (PD) and were thus fortunate in being able to host MDS Visiting Professor, Professor Bob Iansek, from Melbourne.

South Africa is a large country with a population of about 45 million people and suffers from the problem of scattered areas of urban high population with large rural areas with very poor access to health care. To some extent, this is a legacy of the apartheid system which created separate "countries" for different tribal groups. These were nominally independent of South Africa, including health services, and exacerbated the divide of rural versus urban health care. It is rumoured that in Umtata, the former capital of the homeland of Transkei, there are signs at the local bus-station for the various teaching hospitals in Cape Town over a 1,000 kilometers away.

Added to this, South Africa has a high prevalence of AIDS and apart from some clinics run by Medecins sans Frontieres, has had very limited access to anti-retroviral therapy.

Despite all these problems, chronic illnesses such as PD continue to pose great challenges for neurologists in the developing world as much as they may in the developed world. This challenge is exacerbated by limited resources. Although apartheid may have had its demise a decade ago, economic apartheid persists. Thus, South Africa has a two-tiered health system: a private system where everything is available (at a price) and the state system, where there are significant limitations on availability of the newer drugs and surgeries for PD. This is reflected in the following statistic: of the 100 or so neurologists in South Africa, less than a quarter work in the state. Although there are those fortunate enough to have extensive private medical coverage, this coverage is often limited, particularly in the case of the elderly on fixed pensions. The average wage in South Africa is $ 3,000 (based on GDP per capita), an amount which at current prices would pay for about 5 months of Pramipexole and would require 5 years to afford bilateral DBS.

However, all is far from doom and gloom. We are able to admit our patients with PD to the hospital without difficulty and have probably been under-utilizing services that are available, such as physical therapists and occupational therapists.

Through input from the European Economic Community, considerable attention has been given to upgrading existing health services and increasing health spending to a level comparable with that of more developed countries. Professor Iansek was able to visit all the major urban centers and medical schools in South Africa including Cape Town, Johannesburg, Durban and Cape Town. He was thus able to speak to over 80% of the country's neurologists, as well as representatives from allied disciplines. Professor Iansek's message was universally well-received, and his enormous practical experience and thoughtful approach to difficult clinical problems was most appreciated by his audience. In particular, the fact that we were able to hear an unbiased viewpoint on the pros and cons of the newer agents was extremely useful, and supplemented existing efforts by MDS to provide evidence-based approaches to patient care.

Impressions from the Visiting Professor

— Robert Iansek, PhD, FRACP, Kingston Centre, Cheltenham, Australia

I was quite impressed by the dedication, empathy and understanding of the staff that I met during my visit to all locations in South Africa. The situation makes life very difficult not only for people with Parkinson's disease (PD), but also for the healthcare professionals trying to provide optimal service under difficult circumstances.

It appears that since apartheid was overruled and democracy introduced in South Africa that there have been numerous changes taking place, but that unfortunately because of the legacy of the apartheid system, a large number of people are still under the influences of the system, particularly in relation to their education, housing, financial independence and healthcare provision. Suffice to say that PD would not be a prominent disorder that would be uppermost in the healthcare system's mind, particularly in relation to financial need. A number of factors do influence the services that are available and provided to people with PD in South Africa. Some of these I will list below.

Firstly, there are few Neurologists who have been trained in Movement Disorder Departments overseas with experience in the management of the condition. The majority of neurologists are general neurologists and provide general neurological services to the people in South Africa. A large proportion of the neurologists who attended the meetings and presentations were in private practice. The other group of neurologists are employed by the government and work in the government-run hospitals. There appears to be an equally high demand for neurological management of PD in South Africa, as there are

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in western countries, and people with PD do form a large part of the neurologists' treatment population.

However, there are a number of difficulties in trying to provide an appropriate service to people with PD in South Africa. Partly this relates to the hospital infrastructure and its lack of funding.

To a large degree there appears to be similar bureaucratic hurdles that need to be jumped in order to try and improve the facilities and to provide the necessary service providers that currently exist in western countries. There appears to be a variety of levels of development within the hospital system, in that I was speaking at a brand new hospital in Durban, as well as speaking in quite old hospitals in other towns, which certainly were in great need of structural refurbishment and reorganization. Some of these hospitals are extremely large with over 1,000 beds.

A major issue of importance to the management of PD is the lack of experience of nurses and allied health professionals in the area. This was particularly important in relation to participating in decision-making in titrating and optimizing drug management regimes. I believe that one of the major problems are the financial restraints in both the public and the private system forced on the patient either by the lack of funding of the government hospitals or the restricted amount of funding available through the health insurance scheme for the private patient. Such restraints restricted the drugs that were available for patients with PD. Despite the fact that a large majority of drugs available in western countries are also available in South Africa, the exorbitant cost that would be necessary to utilize those drugs made it almost impossible for patients to use the drug that may be appropriate to their particular needs.

The government hospitals have only available quick-release L-dopa in generic form with the Carbi-dopa combination. The slow release preparations are too expensive and there is no access to COMT inhibitors or any of the newer dopamine agonists. Old dopamine agonists, such as Bromocriptine, are available. Similarly other drugs, such as anti-depressants and major tranquillizers with minimal basal ganglia side effects, although available, are again prohibitively expensive for the routine patient to access. It appears that this is a major stumbling block to the adequate optimization of medication schedules in South Africa.

Although I did not meet any patient representatives of support groups, when speaking to the neurologists it appears that support groups are present in the community but they are few in number and they work in an independent manner rather than through there own specific society. This appears to further limit the amount of information that is available to patients and their caregiver's in regard to treatment options, such

as is available in western countries. This lack of information and lack of support would make it very difficult for individual patients or families to advocate for improved conditions, as well as management and therapies.

In a similar way no functional neurosurgery takes place in South Africa. There are isolated cases of pallidotomy, but these are very few. Again, the prohibitive costs of deep brain stimulation would be a major stumbling block, as well as the lack of experience of the use of these techniques by the medical staff.

Overall, given the information that I have outlined above, it appeared that South Africa was certainly poverty-stricken and functioning at a level of an underdeveloped country in regard to the delivery of clinical services for people with PD.

I think it was most appropriate that The *Movement* Disorder Society provided the Visiting Professor Program to South Africa. From my brief discussions with neurologists and healthcare professionals that attended the meetings, I believe they obtained some positive benefit in the approach to direct patient management.

I think that there is great scope for The *Movement* Disorder Society to play a role in South Africa through the use of education via the Web site. The majority of neurologists and health care professionals do have access to the Web and I think that this would be an appropriate way to provide on-going support and advice for neurologists, doctors and healthcare professionals, as well as patients, which currently does not exist. Especially helpful would be providing basic modules of information in regard to specific problems in the management of PD. It would also be beneficial to implement a chat-line where questions can be raised and discussed with Movement Disorder Specialists from other countries particularly taking into consideration that access to conventional medication that we commonly take for granted is unavailable in South Africa.

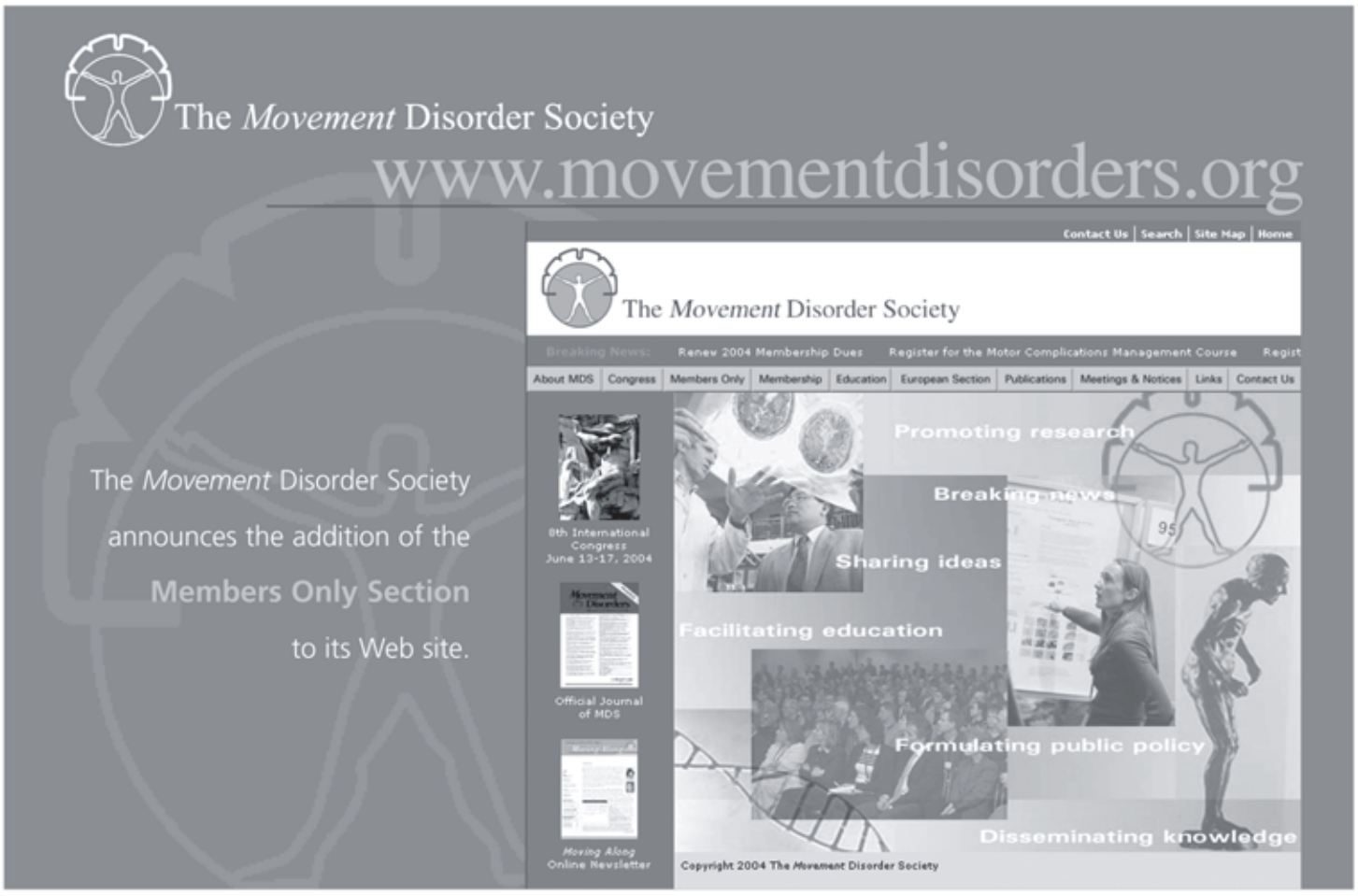
MDS Awarded Provisional ACCME Accreditation

The *Movement* Disorder Society (MDS) has been successful in the Accreditation Council for Continuing Medical Education's (ACCME's) application process and awarded the status of Provisional Accreditation through March of 2006. In other words, the Society now functions as an ACCME accredited provider of continuing medical education (CME) for physicians.

ACCME accreditation offers MDS many advantages.

Accreditation provides more freedom for creativity and growth in the development of a comprehensive Movement Disorders Education Program. Furthermore, ACCME requirements promote quality and integrity in all MDS educational activities. Members will also benefit from free or reduced registration fees for CME activities. In sum, ACCME accreditation supports and strengthens the Society's educational mission.

Please visit the Education Page of MDS's Web site to learn more about CME opportunities that can benefit you at www.movementdisorders.org.



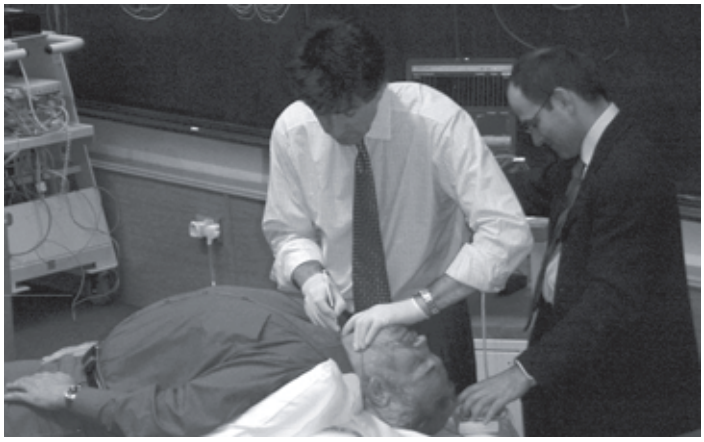
Moving Forward in Europe

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

Botulinum Toxins Workshop, Queen Square, London, United Kingdom

Our first Botulinum Toxins in Neurological Practice workshop in Europe took place at the Institute of Neurology, Queen Square, London, on January 30, 2004 organized by Kailash Bhatia in association with the MDS-European Section (MDS-ES). An enthusiastic audience heard presentations on dystonia and the use of botulinum toxins in dystonia from leading European experts. Eduardo Tolosa from Barcelona, Spain and Alfredo Berardelli from Rome, Italy joined the UK-based faculty, which was itself a pan-European group, with Santiago Catania (Spain), Marie-Helene Marion (France) and Carla Cordivari (Italy) presenting or demonstrating during the day. Andrew Lees, Peter Moore, Peter Misra and Gerald Brookes, Consultant ENT Surgeon, completed the impressive faculty line-up. Local faculty members had invited patients from around the UK to allow their injections to be demonstrated during the afternoon practical sessions, and patients travelled from as far as South Wales and Manchester to participate in the session. The program was much appreciated by the attendees. Evaluations indicated that at least one new botulinum toxin clinic will be started as a result of the workshop, several participants will now start to use botulinum toxins in their clinical practice and confidence in the administration of BTX and the use of EMG-guidance had increased. Due to the demand for places on the course, more workshops will be organized at major Movement Disorders centers in Europe.

Peter Moore speaks on blepharospasm and oromandibular dystonia



Gerald Brookes (left) and Santiago Catania (right) demonstrate botulinum toxin injection for spasmodic dysphonia

Kailash Bhatia lectures on dystonia

European Federation of Neurological Societies (EFNS) Congress, Paris, September 4-7, 2004

MDS-ES and EFNS are co-sponsoring 20 bursaries of $1,000 towards travel, accommodation and registration costs for junior participants presenting abstracts on Movement Disorders topics at the 2004 EFNS Congress. The bursary awards will be made following the March EFNS Scientific Committee abstract selection meeting in Vienna, from the applications submitted to the EFNS at the time of abstract submission.

MDS-ES Annual Business Meeting, EFNS Paris

Please support the European Section by attending the MDS-ES Annual Business Meeting which will be held during the EFNS Congress in Paris, September 4-7, 2004. Details of the day, time and venue will be circulated to all MDS members in Europe.

MDS-ES has put together an excellent Movement Disorders teaching course and plenary symposium for the Congress, and we look forward to seeing you there. All details are on the EFNS Web site at www.efns.org.

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trials. However, it is important to note that iron chelators, such as desferal, brain permeable VK-28 (Ben Shachar et al. 1991, 2004) and cloquinol (Kaur et al. 2003) are neuroprotective agents against 6-hydroxydopamine and MPTP models of PD. The role of iron in neurodegeneration is further strengthened by the recent reports that nutritional iron deficiency in rats, which reduces brain iron and alters IRPs (Siddappa et al. 2002 and 2003), prevents the neurotoxicity of 6-hydroxydopamine and kainate (Shoham and Youdim, 2004). These findings reinforce the argument for the use of non-toxic brain permeable iron chelators for preventing iron-induced oxidative stress in neurodegenerative diseases, including PD (Youdim et al. 2004).

*This work was supported by grants from National Parkinson Foundation (Miami, USA) and Michael J. Fox Foundation (New York, USA)

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New MDS Course Illuminates Current and Future Therapeutic Strategies in Parkinson's Disease

As part of its growing education program, MDS launched the first regional offering of the newly developed course "Update on the Management of Motor Complications in Parkinson's Disease". The course was held at the Baylor College of Medicine's vast Medical Center in Houston, Texas and drew widely from the local physician population.

Under the direction of Joseph Jankovic, Director of the Parkinson's Disease Center and Movement Disorders Clinic at Baylor's Department of Neurology, expert faculty reviewed the clinical manifestations and pathophysiology of motor complications associated with the chronic treatment of advancing Parkinson's disease (PD). Select pharmacological as well as surgical treatment approaches for PD were emphasized, including a summary of experimental treatments on the horizon. Non-motor complications associated with PD and their management were also addressed.

The one-day activity culminated in an interactive panel discussion focusing on case vignettes, supplemented by videos, that applied the treatment strategies discussed earlier in the day.

MDS is eagerly looking forward to repeating the success of this first offering on:

May 22, 2004 - New York, NY, USA
Cheryl Waters, MD, FRCP(C), Course Director

August 28, 2004 - Chicago, IL, USA
Leo Verhagen, MD, PhD, Course Director

October 23, 2004 - Los Angeles, CA USA
Charles Adler, MD, PhD, Course Director

For more information or online registration, visit the MDS website at www.movementdisorders.org or contact MDS Program Manager, Jennifer Oliva at joliva@movementdisorders.org or +1 414-276-2145.

International Symposium on Pediatric Movement Disorders,

Barcelona, Spain

— Eduardo Tolosa, Meeting Organizer, Hospital Clinic Universitari, Barcelona, Spain

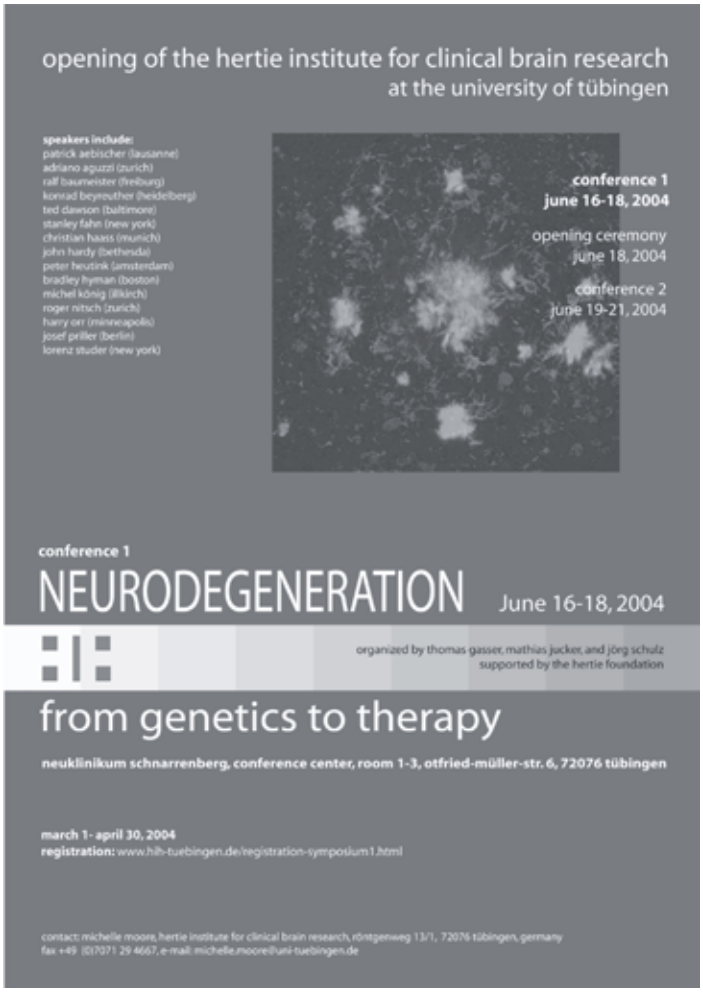
More than 300 participants from 38 different countries met in Barcelona the 20th and 21st of February to attend The *Movement* Disorder Society (MDS) sponsored International Symposium on Pediatric Movement Disorders. Drs. Emilio Fernández-Alvarez and Eduardo Tolosa, from Barcelona, were the organizers of the event, helped by an outstanding international Advisory Committee. Most attendees were adult and pediatric neurologists interested in the field of Movement Disorders, but general neurologists and pediatricians as well as child psychiatrists were also present. Also sponsoring the event, besides MDS, were the Pediatric Neurotransmitter Disease Association, The European Dystonia Federation, the Société Européenne de Neurologie Pediatrique and the Sociedad Española de Neurologia Pediátrica. It was the first major scientific meeting ever to be devoted to Movement Disorders occurring in children, an area of growing interest.

The meeting took place at the Hospital San Juan de Dios, a hospital affiliated with the University of Barcelona, devoted exclusively to the care of children. There were 20 invited expert speakers, from all over the world, some of them prominent members of MDS. Topics covered included the interface between pediatric and adult Movement Disorders, abnormal movements in metabolic disorders, episodic and paroxysmal dyskinesias, dystonia in childhood, tics, chorea, myoclonic disorders and neurobehavioural aspects of Movement Disorders. Besides the organizers, participants included Drs. Jean Aicardi (Paris), Alberto Albanese (Milan), Alexis Arzimanoglou (Paris), Kailash Bhatia (London), Nenad Blau (Zurich), Francisco Cardoso (Belo Horizonte), Philippe Coubes (Montpellier), Michael Gibson (Portland), Jane Gitschier (San Francisco), Padraic Grattan-Smith (Sydney), Renzo Guerrini (Pisa), Georg Hoffmann (Heidelberg), Keith Hyland (Dallas), Joseph Jankovic (Houston), Bernhard Landwehrmeyer (Ulm), Elan Louis (New York), Nardo Nardocci (Milan),Laurie Ozelius (New York), Samuel Pascual (Madrid), Roser Pons (New York), Michael Pranzatelli (Springfield), Agathe Roubertie (Montpellier), Sylvia Stöckler-Ipsiroglu (Vienna), Robert Surtees (London) and Marie Vidailhet (Paris). The symposium featured two video sessions on unusual Movement Disorders in children and 48 posters, 24 with an accompanying video.

Plans are in progress to publish the abstracts of the presentations in Movement Disorders and the proceeding as a book in Pediatric Movement Disorders. Based on the apparent success of the meeting, it was decided to hold a second symposium two years from now.

The topic of Pediatric Movement Disorders has been covered before in small seminars at Movement Disorders meetings or in general pediatric congresses. Recently study groups on the topic, like the European Group for Pediatric Movement Disorders have been organized and are meeting regularly. Never, though, had a major meeting been organized exclusively around the field of Movement Disorders in children. The interaction between adult and child Movement Disorder specialists was highly valued by participants and there was plenty of time during the meeting to agree on semiological definitions and therapeutic options.

Professional Notices - Announcements



The Diagnosis and Management of Pediatric Movement Disorders

Physicians treating children and young adults with spasticity, dystonia, tremor, or other movement disorders, can now visit WE MOVE's Movement Disorders Virtual University at http://www.mdvu.org/classrooms/movdis/ to enroll in its newest course, The Diagnosis and Management of Pediatric Movement Disorders.

Funded by an educational grant from Medtronic, Inc., this new interactive educational activity is a unique combination of background text and video, blended with challenging case studies designed to help physicians refine their diagnostic skills and learn about the most current approaches to treatment. Physicians may gain easy access from www.mdvu.org as well as a wealth of additional movement disorder education already available on the site.

Dystonia Research Study

For many years, dystonia researchers at Massachusetts General Hospital have been studying the genetic causes of dystonia. This research has led to the identification of several genes involved in dystonia, including a gene called DYT-1.

While we continue to search for other dystonia genes, we are expanding our research to understand how the DYT-1 gene affects the body. In particular, we are investigating whether a change in the DYT-1 gene can lead to an altered ability to learn specific movements.

We are studying individuals who have a change in the DYT-1 gene, and their family members (whether or not they have dystonia). This study will consist of an examination, videotaping, a blood draw, and a series of "motor learning" tests (similar to video games). The first visit will take place at Massachusetts General Hospital and will last for approximately 1.5 hours. The second study visit will span 26 hours and includes spending the night at Beth Israel Deaconess Medical Center and a visit during that time to a laboratory at MIT. You will have the option of repeating the study yearly for five years. Though these studies aim to expand our understanding of DYT1 dystonia, there are no direct benefits to you for your participation, and you will not learn the results of your testing.

If you are interested in learning more about participation in this research, please contact us to discuss enrollment. The Principal Investigator, Jennifer Friedman, MD, may be reached at (617) 726-0580 or jfriedma@helix.mgh.harvard.edu. The Study Coordinator, Mary McQueen, RN, MN, can be reached at (617) 726-0580 or mcqueen@helix.mgh.harvard.edu.

Professional Notices - Job Openings

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: (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

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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. The proposed starting date is July 1, 2004. Salary is negotiable. Send c.v. to **Michael Rezak, MD, PhD, 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.

Junior Movement Disorder Position Available
The Department of Neurology at the University of Louisville is seeking a full-time Board Eligible or Board Certified Neurologist with a completed Fellowship training in Movement Disorders. ECFMG Certification for foreign candidates is essential. The position is designed for a clinician-scientist at the Instructor or Assistant Professor level who wants to succeed in Academic Medicine. The successful candidate will be responsible for the clinical care of Movement Disorder patients in inpatient, consultation, and outpatient settings. He/she will participate in the development and conduction of research studies.

The position is funded by the Department of Neurology of the University of Louisville, one of the major state Universities in KY, and offers a competitive salary and generous benefits package. The successful candidate will achieve intensive experience in clinical assessment and management of patients with unusual Movement Disorders, participation in ongoing clinical research studies and development of original research projects. The position is oriented towards strengthening skills for a career in clinical neuroscience research and offers opportunities to develop areas of professional interest. Interested candidates should send a resume, statement of career interests and objectives, and three letters of recommendation to:

Irene Litvan, MD, 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

Women and minorities are encouraged to apply. The University of Louisville is an Equal Opportunity Employer

UPCOMING MEETINGS

2004

June 8-12, 2004
Canadian Congress of Neurological Sciences. Calgary, AB, Canada. Contact: Canadian Congress of Neurological Sciences, P.O. Box 5456, Station A, Calgary, AB, T2H 1X8 Canada; TEL: +1-403-229-9544; FAX: +1-403-229-1661; E-mail: brains@ccns.org

***June 11–12 2004**
3rd Brain Stem Society Meeting. University La Sapienza, Rome, Italy. Contact: Monica Daliana O.I.C. s.r.l., Viale G. Matteotti 7, 50121 Firenze, Italy; TEL: +39 055 5035205; FAX +39 055 570227; E-mail: m.daliana@oic.it; Web site: www.oic.it/bss2004

***June 12, 2004**
Treatment of Dystonia: Workshop Demonstrating the Use of Botulinum Toxin. Embassy Suites Hotel Indianapolis, Indianapolis, Indiana, USA. Jointly sponsored by The *Movement* Disorder Society and the American Academy of Neurology. Contact: Registration, American Academy of Neurology, 1080 Montreal Avenue, St. Paul, MN 55116, USA; TEL: +1 800-879-1960; FAX: +1 651-361-4806; Web site: www.aan.com

***June 13-17, 2004**
8th International Congress of Parkinson's Disease and Movement Disorders. Pallazo dei Congressi, Rome, Italy. Offered by The *Movement* Disorder Society. Contact: The *Movement* Disorder Society, 555 E. Wells Street, Suite 1100, Milwaukee, WI, USA; TEL: +1-414-276-2145; FAX: +1-414-276-3349; E-mail: congress@movementdisorders.org; Web site: www.movementdisorders.org

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June 16-19, 2004

European Headache Federation (EHF) 7th Headache Congress. De Doelen Concert and Congress Center, Rotterdam, The Netherlands. Contact: Kenes International, 17 Rue du Cendrier, P.O. Box 1726, CH-1211, Geneva 1, Switzerland; TEL: +41 22 908 0488; FAX: +41 22 732 2850; Email: headache@kenes.com; Web site: http://www.kenes.com/headache

***June 17-18, 2004**

2nd International Meeting on Multiple System Atrophy (MSA). Palazzo dei Congressi, Rome, Italy. Contact: Eva Appelgren, Serono Symposia International, Via Casilina 125, Rome, Italy; TEL: + 39 06 70384513; FAX: + 39 06 7038 4577; E-mail: eva.appelgren@serono.com; Web site: www.seronosymposia.org/ms/event_descrip.ihtml?id=192

June 23-26, 2004

5th World Stroke Congress. Vancouver Convention and Exhibition Centre, Vancouver, Canada. Contact: 5th World Stroke Congress, Kenes International - Global Congress Organizers and 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: stroke2004@kenes.com; Web site: http://www.kenes.com/stroke2004

June 26-30, 2004

14th Meeting of the European Neurological Society. Barcelona, Spain. Web site: www.ensinfo.com

July 7-9, 2004

The Bárány Society XXIII International Congress. Collège de France, Paris, France. Contact: Congress Office, BARANY 2004 c/o MCI France, 11 rue de Solférino - 75007 Paris, France, TEL: +33 (0) 1 53 85 82 56; FAX: +33 (0) 1 53 85 82 83; E-mail: baranyparis2004@mci-group.com; Web site: www.baranyparis2004.com

July 22-23, 2004

2nd *Singapore International Neuroscience Conference (SINC) "Mechanisms, Models & Medicine".* National Neuroscience Institute, Singapore. Contact: NNI Secretariat, National Neuroscience Institute 11 Jalan Tan Tock Seng, Singapore 308433; TEL: +65-6357-7538/7152; Fax: +65-6256-4755; Web site: http://www.sinc.com.sg/

***July 30-August 2, 2004**

A Comprehensive Review of Movement Disorders for the Clinical Practitioner. Hotel Jerome, Aspen, Colorado, USA. Contact: Center for Continuing Education, Columbia University College of Physicians & Surgeons, 630 West 168th Street, Unit 39, New York, New York, USA, TEL: +1 212-305-3334; FAX: +1 212-781-6047; E-mail: cme@columbia.edu; Web site: http://columbiacme.org

September 4-9, 2004

8th European Federation of Neurological Societies Congress. Paris, France. Contact: EFNS, University Campus, Alser Str. 4, Courtyard 1, 1090 Vienna, Austria; TEL: +43 1 889 05 03; FAX: +43 1 889 05 03 13; E-mail: headoffice@efns.org; Web site: www.efns.org

***September 10, 2004**

Update on the Management of Motor Complications in Parkinson's Disease. Chicago, Illinois, USA. Jointly sponsored by The *Movement* Disorder Society and the National Institutes of Health/Foundation for Advanced Education in the Sciences, Inc. Contact: Jennifer Kehoe, MDS Program Manager; TEL: +1 414-276-2145; FAX: +1 414-276-3349; E-mail: jkehoe@movementdisorders.org; Web site: www.movementdisorders.org

September 10-11, 2004

Recent advances in the Pathophysiology and Treatment of Parkinson's Disease. Foundation for Biomedical Research of the Academy of Athens, Athens, Greece. Sponsored by the Foundation for Biomedical Research of the Academy of Athens. Contact: Leonidas Stefanis, ; TEL: 30-210-6597214 or 30-210-6597498; FAX: 30-210-6597545; E-mail: ls76@columbia.edu or lstefanis@bioacademy.gr

***September 18, 2004**

Spasticity Management: Workshop Demonstrating the Use of Botulinum Toxin. Philadelphia, PA, USA. Jointly sponsored by The *Movement* Disorder Society and the American Academy of Neurology. Contact: Registration, American Academy of Neurology, 1080 Montreal Avenue, St. Paul, MN 55116, USA; TEL: +1 800-879-1960; FAX: +1 651-361-4806; Web site: www.aan.com

***September 20-22, 2004**

International Meeting on Ideomotor Apraxia. Bethesda, MD, USA. Contact: Meeting Organizer, Mark Hallett, MD or Lewis Wheaton, NINDS, NIH Bldg. 10, Rm. 5N226, 10 Center Drive, MSC 1428, Bethesda, MD, 20892-1428; TEL: +1-301-496-1561/ +1-301-496-0219; FAX: +1-301-402-1007; E-mail: mark_hallett@nih.gov or WheatonL@ninds.nih.gov

September 20-24, 2004

II International Congress on Neuroregeneration. Rio de Janeiro, Brazil. Contact: CONGREX do Brasil, Av. Presidente Wilson, 20030-020 - Rio de Janeiro, BRASIL, TEL: +55 (21) 3974-2001; FAX: +55 (21) 2509-1492; E-mail: icn@congrex.com.br; Web site: http://www.neuroregeneration2004.med.br

***September 24, 2004**

Management of Parkinson's Disease Symptoms: An Evidence-Based Review. Mercure Grand Hotel Biedermeier Wein,Vienna, Austria. Sponsored by The *Movement* Disorder Society. Contact: Jody McCarthy, MDS Director of Education; TEL: +1 414-276-2145; FAX: +1 414-276-3349; E-mail: jmccarthy@movementdisorders.org; Web site: www.movementdisorders.org

October 1-3, 2004

ASSFN 2004 Biennial Meeting, Neuromodulation: Defining the Future . Jointly sponsored by the American Society for Stereotactic and Functional Neurosurgery (ASSFN) and The Cleveland Clinic Foundation. The InterContinental Hotel and Conference Center, Cleveland, OH, USA. Contact: The Cleveland Clinic Educational Foundation, PO Box 931653, Cleveland, OH, 44193-1082, USA; FAX: +1 216-445-1642; Web site: www.clevelandclinicmeded.com/courses/assfn-neuromodulation2004.htm

October 3, 2004

18th Annual Symposia on Etiology, Pathogenesis, and Treatment of Parkinson's Disease and Other Movement Disorders. Toronto Sheraton, Toronto, Ontario, Canada. Contact: Dorothy Graffrath, University of Rochester, 1351 Mt. Hope Avenue, Suite 223, Rochester, NY 14620, USA; TEL: +1 585-275-1642; FAX: 585-273-1074; E-mail: dorothy.graffrath@ctcc.rochester.edu

October 3-6, 2004

129th Annual Meeting of the American Neurological Association. The Sheraton Toronto, Toronto, ON, Canada. 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 6-9, 2004

The Human Brain Modelling and Remodelling. IRCCS Fondazione Santa Lucia, Rome, Italy. TEL/FAX: +39-06-5015636; E-mail: secretariat@thehumanbrain.org; Web site: www.thehumanbrain.org

***October 16, 2004**

Advanced Treatment of Dystonia and Spasticity: Workshop Demonstrating the Use of Botulinum Toxin. Seattle, WA, USA. Jointly sponsored by The *Movement* Disorder Society and the American Academy of Neurology. Contact: Registration, American Academy of Neurology, 1080 Montreal Avenue, St. Paul, MN 55116, USA; TEL: +1 800-879-1960; FAX: +1 651-361-4806; Web site: www.aan.com

October 16-21, 2004

Congress of Neurological Surgeons 54th Annual Meeting. San Francisco, CA, 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 20-23, 2004

First Joint Meeting of the European Federation of Autonomic Societies & American Autonomic Society. Amsterdam, The Netherlands. Contact: Anita Zeller, AAS Executive Secretary, American Autonomic Society, 5458 193rd St W, Farmington, MN 55024, USA; TEL: 651-463-4119, FAX: 651-463-2009, E-mail: zeller.anita@mayo.edu, Web site: www.americanautonomicsociety.org

***October 23, 2004**

Update on the Management of Motor Complications in Parkinson's Disease. Las Vegas, Nevada, USA. Jointly sponsored by The *Movement* Disorder Society and the National Institutes of Health/Foundation for Advanced Education in the Sciences, Inc. Contact: Jennifer Kehoe, MDS Program Manager; TEL: +1 414-276-2145; FAX: +1 414-276-3349; E-mail: jkehoe@movementdisorders.org; Web site: www.movementdisorders.org

October 23-27, 2004

34th Annual Meeting of the Society for Neuroscience. San Diego, CA, 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

October 24-27, 2004

Mental Dysfunctions in Parkinson's Disease. Salzburg, Austria. Contact: Mental Dysfunctions in Parkinson's Disease, Kenes International, 17 Rue du Cendrier, P.O. Box 1726, CH-1211, Geneva 1, Switzerland; TEL: 41-22-908-0488; FAX: 44-847-127-5678; E-mail: PDment2004@kenes.com; Web site: www.kenes.com/PDment2004

***November 13, 2004**

Advanced Treatment of Dystonia and Spasticity: Workshop Demonstrating the Use of Botulinum Toxin. Washington, DC, USA. Jointly sponsored by The *Movement* Disorder Society and the American Academy of Neurology. Contact: Registration, American Academy of Neurology, 1080 Montreal Avenue, St. Paul, MN 55116, USA; TEL: +1 800-879-1960; FAX: +1 651-361-4806; Web site: www.aan.com

***November 18-19, 2004**

International Workshop on Functional Neurosurgery for Movement Disorders, Pain and Psychiatric Illness. Institute of Neurology, Queen Square, London, United Kingdom. Contact: Marwan I. Hariz, MD, PhD, TEL: +44 20 7837 3611 Ext. 4458 or 3656; FAX: +44 20 7278 9836; E-mail: m.hariz@ion.ucl.ac.uk

November 26-28, 2004

11th Asian & Oceanian Congress of Neurology (AOCN). Suntec Singapore International Convention & Exhibition Centre, Singapore. Contact: Junia Heng, The NNI Secretariat for AOCN c/o National Neuroscience Institute, 11 Jalan Tan Tock Seng, Singapore 308433, Republic of Singapore; TEL: +65-6357-7151/ +65-6357-7162; FAX: +65-6256-4755; Email: nni_secretariat@ttsh.com.sg; Web site: http://www.aocn.com.sg

2005

***March 5-8, 2005**

9th International Congress of Parkinson's Disease and Movement Disorders. The New Orleans Marriott, 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

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

June 5-9, 2005

28th International Congress of Clinical Neurophysiology. Berlin, Germany. Contact: AAEM, 421 First Avenue SW, Suite 300E, Rochester, MN, 55902; TEL: +1-507-288-0100; FAX: +1-507-288-1225; E-mail: aaem@aaem.net

June 5-9, 2005

16th 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

September 17-21, 2005

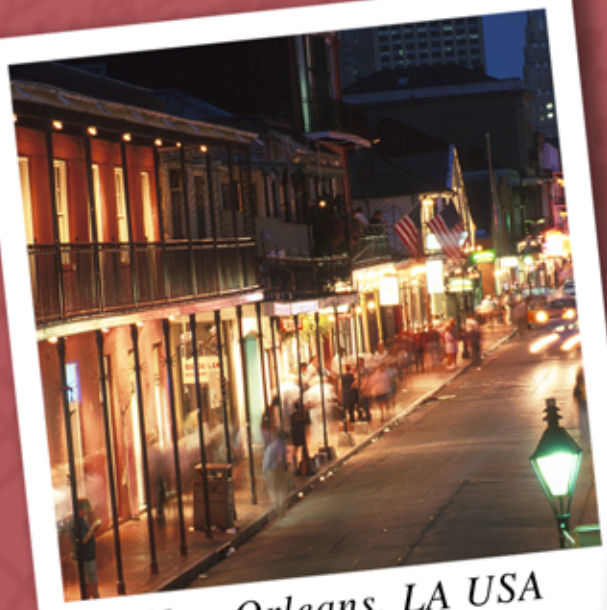
9th European Federation of Neurological Societies Congress. Athens, Greece. Contact: EFNS, Neurological Hospital Rosenhugel, Riedelgass 5, A-1130, Vienna, Austria; TEL: 43-1-880-00-270; FAX: 43-1-88-92-581; E-mail: headoffice@efns.org

September 25-28, 2005

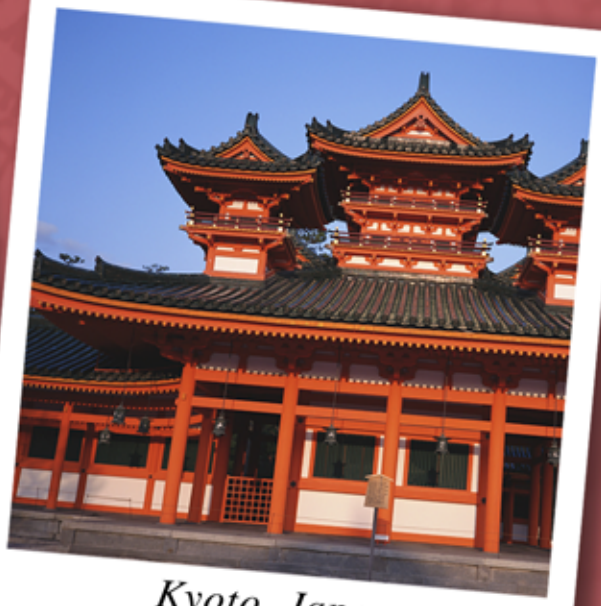
130th Annual Meeting of the American Neurological Association. San Diego, CA, USA. Contact: American Neurological Association, 5841 Cedar Lake Road, Suite 204, Minneapolis, MN 55416; TEL: +1-952-545-6284; FAX: +1-952-545-6073; E-mail: lorijanderson@msn.com; Web site: www.aneuroa.org

* Meetings Sponsored, Supported and/or Endorsed by MDS

The *Movement* Disorder Society



New Orleans, LA USA
March 6 to 9, 2005



Kyoto, Japan
October 29 to November 2, 2006

Istanbul, Turkey
June 3 to 7, 2007

Chicago, IL USA
June 22 to 26, 2008

Future Congresses