

Final Program



International Parkinson and
Movement Disorder Society

**International Congress of Parkinson's
Disease and Movement Disorders®**

NICE, FRANCE SEPTEMBER 22-26, 2019

International Congress Schedule-at-a-Glance

	Sunday, September 22	Monday, September 23	Tuesday, September 24	Wednesday, September 25	Thursday, September 26
8:00	Therapeutic Plenary Session 8:00 - 10:00	Plenary Session (Presidential Lectures) 8:00 - 10:00	Plenary Session 8:00 - 9:30	Plenary Session 8:00 - 9:30	Plenary Session 8:00 - 9:30
8:30					
9:00					
9:30	MDS Regional Assemblies 10:00-11:00	Break 10:00 - 10:30	Break 9:30 - 10:30	Break 9:30 - 10:00	Break 9:30 - 10:00
10:00					
10:30	Therapeutic Plenary Session 11:00 - 13:00	Plenary Session 10:30 - 12:30	Plenary Session (Grand Rounds) 10:30 - 12:30	Plenary Session 10:00 - 12:00	Plenary Session (Controversies) 10:00 - 11:00
11:00					
11:30					
12:00	Break 13:00 - 14:30	Corporate Therapeutic Symposia 12:45 - 13:45	Corporate Therapeutic Symposia 12:45 - 13:45	Break 12:00 - 13:15	End
12:30					
13:00	Corporate Therapeutic Symposia 13:15 - 14:15	Corporate Therapeutic Symposia 12:45 - 13:45	Corporate Therapeutic Symposia 12:45 - 13:45	Break 12:00 - 13:15	End
13:30					
14:00	Therapeutic Plenary Session 14:30 - 16:30	Poster Sessions & Guided Poster Tours 13:45 - 15:15	Poster Sessions & Guided Poster Tours 13:45 - 15:15	Poster Sessions & Guided Poster Tours 13:15 - 14:45	End
14:30					
15:00	Break 16:30 - 17:00	Break 15:15 - 15:30	Break 15:15 - 15:30	Break 14:45 - 15:00	End
15:30					
16:00	Therapeutic Plenary Session 17:00 - 19:00	Parallel Sessions & Teaching Courses 15:30 - 17:30	Science of Industry Session (non-CME) 15:30 - 17:30	Parallel Sessions & Teaching Courses 15:30 - 17:30	Science of Industry Session (non-CME) 15:30 - 17:30
16:30					
17:00	Break 19:00 - 19:30	Break 17:30 - 18:00	Break 17:30 - 18:00	Break 17:00 - 17:30	End
17:30					
18:00	Welcome Ceremony 19:30 - 21:30	Skills Workshops, Video Sessions, Special Topic Sessions 18:00 - 19:30	Skills Workshops, Video Sessions, Special Topic Sessions 18:00 - 19:30	Skills Workshops, Video Sessions, Special Topic Sessions 17:30 - 19:00	End
18:30					
19:00	Young Delegates Networking Event 19:30-21:30	MDS Video Challenge 19:00 - 22:00	MDS Video Challenge 19:00 - 22:00	MDS Video Challenge 19:00 - 22:00	End
19:30					
20:00					End
20:30					
21:00					End
21:30					
22:00					End

Legend:

- CME Accredited Sessions
- Non-CME Educational Activities
- Corporate Therapeutic Symposia (non-CME)
- MDS Activities
- Events
- Breaks
-  Themed sessions
-  Recorded sessions
-  Ticketed sessions

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mdscongress.org/app



International Parkinson and
Movement Disorder Society

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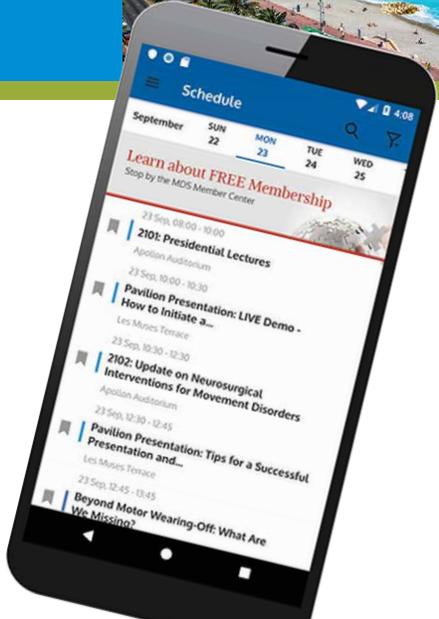



The MDS International Congress app is your complete resource for:

- Abstracts
- Session Evaluations
- Poster Schedules
- Speaker Information

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Welcome to Nice

Dear Colleagues,

On behalf of the International Parkinson and Movement Disorder Society (MDS), we are pleased to welcome you to the International Congress of Parkinson's Disease and Movement Disorders.

Nice is a charming, picturesque city nestled on the southeast coast of France at the foot of the Alps and extending along the Mediterranean Sea.

In addition to the draw of the dynamic landscape, including the Promenade des Anglais situated beside marine reserves and breathtaking ocean views, Nice is recognized for its distinctive architecture and history, with an abundance of historical museums, art galleries, castles, and palaces. The territory is also home to several major research centers and global scientific laboratories, making it the idyllic location for the 2019 International Congress.

We look forward to gathering as a community of clinicians, scientists, and healthcare professionals to learn about the latest advancements and research in the field of Movement Disorders. We expect inspiring discussions, invaluable networking opportunities, and an unforgettable experience.

With kind regards,



Christopher Goetz

Christopher Goetz
President, International
Parkinson and Movement
Disorder Society, 2017-2019



H.A. Jinnah

H.A. Jinnah
Chair, Congress Scientific
Program Committee,
2017-2019



Jean-Christophe Corvol

Jean-Christophe Corvol
Co-Chair, Congress Scientific
Program Committee, 2019

About MDS – Purpose, Mission and Goals

The International Parkinson and Movement Disorder Society (MDS) is a professional society of clinicians, scientists, and other healthcare professionals who are interested in Parkinson's disease, related neurodegenerative and neurodevelopmental disorders, hyperkinetic movement disorders, and abnormalities in muscle tone and motor control.

Purpose:

The objective and mission of the Society shall be to advance the neurological sciences pertaining to movement disorders; to improve the diagnosis and treatment of patients; to operate exclusively for scientific, scholarly and educational purposes; to encourage research; to provide forums, such as medical journals, scientific symposia and International Congresses, for sharing ideas and for advancing the related clinical and scientific disciplines; to encourage interest and participation in the activities of the Society among healthcare and allied professionals and scientists; and to collaborate with other related professional and lay organizations.

Mission and Goals:

To disseminate knowledge about movement disorders by:

- Providing educational programs for clinicians, scientists and the general public designed to advance scientific and clinical knowledge about movement disorders
- Sponsoring International Congresses and symposia on movement disorders
- Collaborating with other international organizations and lay groups
- Publishing journals, videotapes and other collateral materials committed to high scientific standards and peer review

To promote research into causes, prevention and treatment of movement disorders by:

- Using the Society's influence and resources to enhance support for research
- Facilitating the dissemination of information about research
- Encouraging the training of basic and clinical scientists in Movement Disorders and related disorders

For the purposes of favorably affecting the care of patients with movement disorders, the Society will provide expertise, advice and guidance to:

- Regulatory agencies to assist them in the approval process of safe and effective therapeutic interventions
- The public (media) and patient support groups by informing them of new research and therapeutic advances
- Governments to assist them in the development of policies that affect support of research and patient care
- Educational efforts to assist in developing standards of training in the specialty

CME Information

Target Audience

Clinicians, researchers, post-doctoral fellows, medical residents, medical students, allied health professionals with an interest in current clinical trends and approaches for the diagnosis and treatment of movement disorders.

Objectives

1. Evaluate the pharmacological and non-pharmacological management options available for Parkinson's disease and other movement disorders
2. Discuss the diagnostic approaches and tools available for Parkinson's disease and other movement disorders
3. Describe the pathogenesis and neurobiology of Parkinson's disease and other movement disorders

Accreditation Statement

This activity has been planned and implemented in accordance with the accreditation requirements and policies of the Accreditation Council for Continuing Medical Education (ACCME). The International Parkinson and Movement Disorder Society is accredited by the ACCME to provide continuing medical education for physicians.

Credit Designation Statement

The International Parkinson and Movement Disorder Society designates this education activity for a maximum of 33.0 *AMA PRA Category 1 Credits*™. Physicians should claim only credit commensurate with the extent of their participation in the activity.

Satisfactory Completion

Participants must complete an evaluation for each session they attend to receive continuing medical education credit. Your chosen session(s) must be attended in their entirety. Partial credit of individual sessions is not available.

Evaluations

Evaluations are considered part of the course. All evaluations must be completed by Monday, September 30, 2019. Evaluations are available via the MDS International Congress app. *Delegates must be logged in to the MDS International Congress app to access evaluations.*

Claiming CME

Please visit www.mdscongress.org to claim CME for this activity. Please be advised CME must be claimed by November 26, 2019. Please contact education@movementdisorders.org with any questions.

Faculty Disclosures

All individuals in control of content for the MDS International Congress are required to disclose all relevant financial relationships with commercial interests as defined by the ACCME. Disclosure information is available online at www.mdscongress.org and via the MDS International Congress app.

Content Validity Statement

All recommendations involving clinical medicine in MDS activities are based on evidence that is accepted within the profession of medicine as adequate justification for their indications and contraindications in the case of patients. All scientific research referred to, reported or used in CME in support or justification of patient care recommendations conforms to the generally accepted standards of experimental design, data collection and analysis. Activities that promote recommendations, treatment or manners of practicing medicine not within the definition of CME or are knowing to have risks or dangers that outweigh the benefits or are knowing to be ineffective in the treatment of patients do not constitute valid CME.

EACCME Accreditation Statement



The International Congress of Parkinson's Disease and Movement Disorders, Nice, France, 22/09/2019-26/09/2019 has been accredited by the European Accreditation Council for Continuing Medical Education (EACCME®) with 32* European CME credits (ECMEC®s).

Each medical specialist should claim only those hours of credit that he/she actually spent in the educational activity.

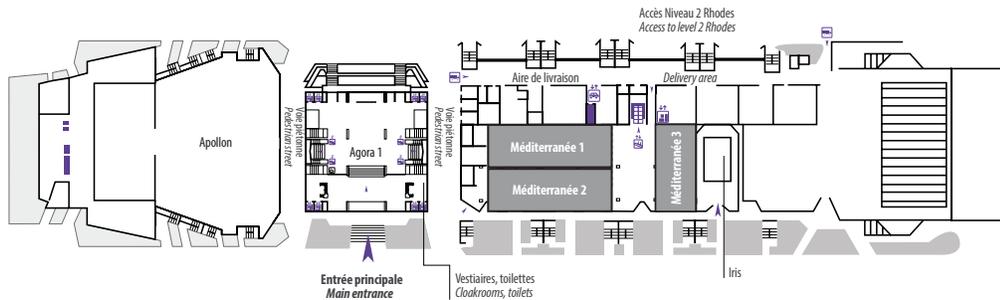
Through an agreement between the European Union of Medical Specialists and the American Medical Association, physicians may convert EACCME credits to an equivalent number of *AMA PRA Category 1 Credits*™. Information on the process to convert EACCME credit to AMA credit can be found at www.ama-assn.org/education/earn-credit-participation-international-activities.

Live educational activities, occurring outside of Canada, recognised by the UEMS-EACCME for ECMEC credits are deemed to be Accredited Group Learning Activities (Section 1) as defined by the Maintenance of Certification Program of The Royal College of Physicians and Surgeons of Canada.

*The EACCME® awards ECMEC®s on the basis of One hour = 1 ECMEC®. The EACCME® does not award fractions of credits.

Floor Plan

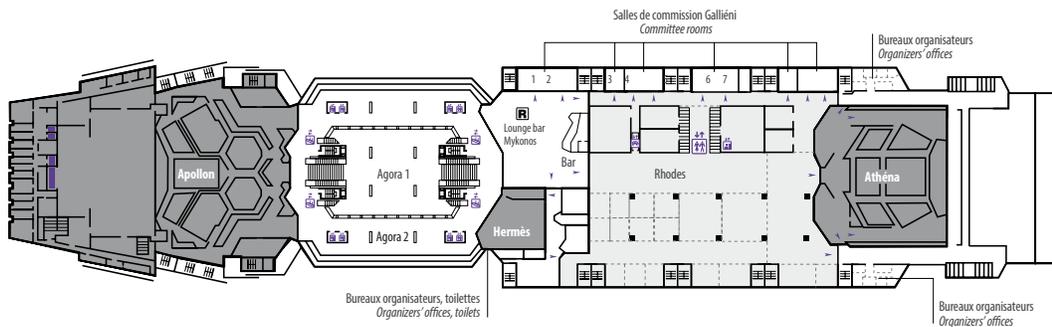
Niveau 1 / Level 1



Level 1

Breakout Sessions
Corporate Therapeutic Symposia
MDS Member Center
Regional Assemblies
Registration

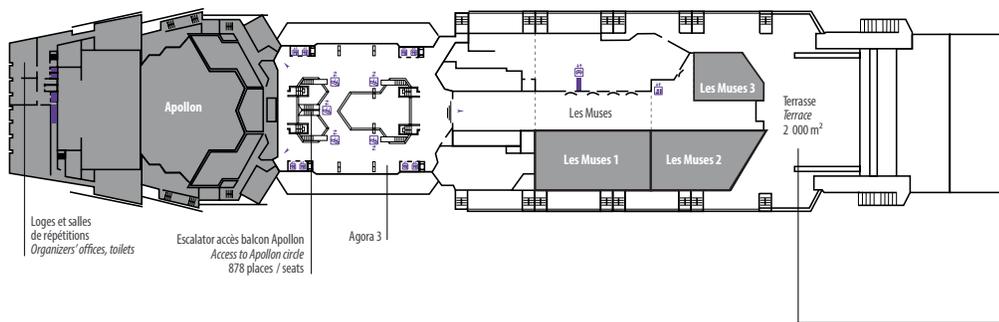
Niveau 2 / Level 2



Level 2

Breakout Sessions
Charging Stations
Exhibits
Guided Poster Tours
History Exhibit
Late-Breaking Abstracts
MDS Business Meeting
MDS Resource Center
MDS Video Challenge
Plenary Sessions
Posters
Regional Assemblies
Speaker Ready Room
Welcome Ceremony

Niveau 3 / Level 3



Level 3

Breakout Sessions
Corporate Therapeutic Symposia
Guided Poster Tours
Leadership/Faculty Lounge
MDS Video Challenge
Plenary Sessions
Posters
Welcome Ceremony

Terrace

MDS Pavilion
Posters

International Congress Session Definitions

CME Accredited Sessions

2019 International Congress Themed Sessions: At each annual International Congress, the Congress Scientific Program Committee (CSPC) selects a theme that is highlighted throughout the meeting. This year's theme, *Translating the Science of Movement Disorders into Clinical Practice*, will be showcased with international experts serving as faculty. Delegates can elect to attend any or all of these sessions. Themed sessions are designated in the program with .

Controversies: This Plenary Session is designed to involve all International Congress delegates. Content is prepared to stimulate interest and debate among a panel of experts. Views from several angles will be addressed as discussion of pre-selected "hot" topics will be open for debate among the panelists.

Grand Rounds: In this interactive session, MDS experts will examine both common and rare movement disorder patients. The audience will learn how they formulate diagnoses and manage these interesting and challenging patients.

Parallel Sessions: These concurrent sessions provide an in-depth summary of new clinical and basic research findings, state-of-the-art treatment options, and future strategies on a variety of focused topics within the field of Movement Disorders.

Plenary Sessions: These sessions provide an overview of the latest clinical and basic science research findings and state-of-the-art information relating to topics of broad interest within the field of Movement Disorders.

Skills Workshops: These concurrent sessions provide practical illustrations of clinical or scientific techniques relevant to the field of Movement Disorders through video examples and equipment demonstrations.

Special Topics in Movement Disorders: These interactive sessions address "hot" topics in science or medicine using a variety of different formats that may include lectures, video presentations, and audience interaction.

Teaching Courses: These educational programs provide up-to-date information focused on a single topic. The sessions highlight both the clinical and basic science of topics of relevance to Movement Disorder specialists. The sessions are unique in providing a syllabus that includes a review of the topic and the presentation slides.

Therapeutic Plenary Sessions: These sessions provide an overview of the latest, state-of-the-art treatment options in the diagnosis and management of Parkinson's disease and other movement disorders.

Video Sessions: These concurrent sessions focus on video demonstrations to provide an overview of clinical movement disorders.

Corporate Therapeutic Symposia (non-CME)

These company-based informational sessions provide delegates with non-CME educational opportunities to learn the latest in therapeutics.

Non-CME Educational Activities

Guided Poster Tours: Guided Poster Tours give small groups of delegates an opportunity to hear discussion on a select group of abstracts in several different topics.

MDS Pavilion: The MDS Pavilion is an interactive presentation space designed to provide delegates with valuable information on MDS' initiatives and programs, insight and MDS expert advice, and various ways to get involved with the Society.

Poster Sessions: Poster sessions give each delegate an opportunity to view their colleagues' posters on the most current research in the field of Movement Disorders. Posters are available for daily viewing and authors are present for 90 minutes to discuss their work and answer questions.

Science of Industry Sessions: These interactive sessions will provide attendees with a non-CME educational opportunity to learn about novel therapeutic agents under development by industry. Sessions may incorporate faculty working in industry, and topics may address specific therapeutics in development within the field of Movement Disorders.

International Congress Events

Health Professionals Networking Meeting: Join the MDS Health Professionals (Non-Physician) Special Interest Group (SIG) as they discuss exciting updates and current trends in the field. Open to all registered delegates and there is no additional fee to attend.

MDS Video Challenge: The goal of this event is for delegates to observe how MDS experts approach unusual and challenging cases as presented by representatives from Movement Disorder centers around the world.

Welcome Ceremony: All registered International Congress delegates are warmly invited to attend the Welcome Ceremony for no additional fee.

Young Delegates Networking Event: This event will provide an excellent opportunity for delegates who are in the beginning phase of their career to network and socialize with other up-and-coming experts in the field. This event is open to all registered delegates and there is no additional fee to attend.

MDS Activities

MDS Business Meeting: Open to all International Congress delegates, the Society encourages Members to attend the MDS Business Meeting to receive updates from the MDS President and other MDS Officers on the Society, the various Regional Sections, to participate in the Officers' and International Executive Committee (IEC) election and to discuss other Society activities.

Regional Assemblies: Delegates from each of the various MDS Regional Sections (MDS-AOS, MDS-ES, MDS-PAS, and MDS-Africa) are invited to participate in the Regional Assemblies to receive updates on activities within the sections.

International Congress Faculty Roles

Chair: Facilitates the learnings of the session; ensures that learning objectives are met during the presentation(s), and engages the learners as needed.

CSPC Liaison: Develops the session from the onset and provides guidance to ensure that the overall objectives are met.

Speaker / Presenter: Creates and delivers the presentation materials, and participates in the dialogue of the session.

Sunday, September 22, 2019

1101 Therapeutic Plenary Session

Recognition and Treatment of Early Stage Parkinson's Disease

8:00 – 10:00

Location: Apollon Auditorium, Level 2, 3

Chairs: Franck Durif, *France*
Susan Fox, *Canada*

- 8:00 Distinguishing Prodromal and Early Parkinson's Disease
Daniela Berg, *Germany*
- 8:40 Treatment of Early Parkinson's Disease
Shen-Yang Lim, *Malaysia*
- 9:20 Disease Modifying Treatment for Parkinson's Disease:
Current and Future
Olivier Rascol, *France*

CSPC Liaison: Shengdi Chen, *People's Republic of China*

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

1. Discuss the concept of prodromal Parkinson's disease and its evolution to Parkinson's disease
2. Summarize the non-pharmacological and pharmacologic treatment of early stage Parkinson's disease
3. Review the history and the future of disease modifying treatment for Parkinson's disease

Recommended Audience: Clinical academicians, Non-physician Health Professionals, Practitioners, Students/Residents/Trainees

MDS-AOS Regional Assembly

10:00-11:00

Location: Méditerranée 3, Level 1

All delegates from Asia and Oceania are encouraged to attend.

MDS-ES Regional Assembly

10:00-11:00

Location: Méditerranée 1, Level 1

All delegates from Europe are encouraged to attend.

MDS-PAS Regional Assembly

10:00-11:00

Location: Méditerranée 2, Level 1

All delegates from Pan America are encouraged to attend.

MDS-Africa Assembly

10:00-11:00

Location: Gallieni 1 + 2, Level 2

All delegates from the African continent are encouraged to attend.

1102 Therapeutic Plenary Session

Recognition and Treatment of Complications in Later Stage Parkinson's Disease

11:00 – 13:00

Location: Apollon Auditorium, Level 2, 3

Chairs: Elena Moro, *France*
Louis Tan, *Singapore*

- 11:00 Motor and Non-Motor Fluctuations and Dyskinesias
Angelo Antonini, *Italy*
- 11:40 Cognitive, Behavioral and Psychiatric Problems
Jennifer Goldman, *USA*
- 12:20 Gait, Balance and Falls
Nir Giladi, *Israel*

CSPC Liaison: Han-Joon Kim, *South Korea*

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

1. Illustrate the phenomenology and treatment of the motor and non-motor fluctuations and dyskinesias in later stage Parkinson's disease
2. Review cognitive, behavioral and psychiatric problems and their treatment in later stages of Parkinson's disease
3. Identify common axial problems affecting gait and balance, and their treatment in later stages of Parkinson's disease

Recommended Audience: Basic scientists, Clinical academicians, Non-physician Health Professionals, Practitioners, Students/Residents/Trainees

1103 Therapeutic Plenary Session

Diagnosis and Treatment of Atypical Parkinsonian Disorders

14:30 – 16:30

Location: Apollon Auditorium, Level 2, 3

Chairs: Irene Litvan, *USA*
François Tison, *France*

- 14:30 Clinical Manifestations of Atypical Parkinsonian Disorders
Irene Litvan, *USA*
- 15:10 Ancillary Investigations for the Diagnosis of Atypical Parkinsonian Disorders
Maria Teresa Pellecchia, *Italy*
- 15:50 Therapeutic Options for Atypical Parkinsonian Disorders
Gregor Wenning, *Austria*

CSPC Liaison: Wassilios Meissner, *France*

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

1. Distinguish atypical parkinsonian disorders based on clinical features
2. Discuss ancillary investigations for the diagnosis of atypical parkinsonian disorders
3. Review therapeutic options for atypical parkinsonian disorders

Recommended Audience: Clinical academicians, Non-physician Health Professionals, Practitioners, Students/Residents/Trainees

Sunday, September 22, 2019

1104 Therapeutic Plenary Session

Recognition and Treatment of Dystonia, Tremor and Ataxia

17:00 – 19:00

Location: Apollon Auditorium, Level 2, 3

Chairs: Antonio Strafella, *Canada*
Christine Tranchant, *France*

17:00 Therapeutic Options for Dystonia
Marie Vidailhet, *France*

17:40 Treatment Options for Tremor
Elan Louis, *USA*

18:20 Management of Ataxia
Elizabeth Slow, *Canada*

CSPC Liaison: Antonio Strafella, *Canada*

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

1. Identify management strategies for dystonia
2. Select treatment options for tremor
3. Summarize management options for ataxia

Recommended Audience: Clinical academicians, Non-physician Health Professionals, Practitioners, Students/Residents/Trainees

Welcome Ceremony

19:30–21:30

Location: Apollon Auditorium, Level 2, 3

Monday, September 23, 2019

2101 Plenary Session

Presidential Lectures

8:00 – 10:00

Location: Apollon Auditorium, Level 2, 3

Chairs: Christopher Goetz, *USA*
Claudia Trenkwalder, *Germany*

8:00 Stanley Fahn Lecture: Leadership and Mentorship: The Partners of Success
Cynthia Comella, *USA*

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

1. Describe the essential elements of good leadership and mentorship

9:00 Junior Award Lectures
Eleonora Fiorenzato, *Italy*
Juan Li, *Canada*

9:30 C. David Marsden Lecture: Reduced Penetrance of Hereditary Movement Disorders: Elucidating Mechanisms of Endogenous Disease Protection
Christine Klein, *Germany*

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

1. Summarize the concept and relevance of reduced penetrance in hereditary movement disorders

CSPC Liaison: H.A. Jinnah, *USA*

Recommended Audience: Basic scientists, Clinical academicians, Non-physician Health Professionals, Practitioners, Students/Residents/Trainees.

The MDS Paper of the Year and Honorary Member Awards will also be presented at the beginning of this session.

2102 Plenary Session

Update on Neurosurgical Interventions for Movement Disorders

10:30 – 12:30

Location: Apollon Auditorium, Level 2, 3

Chairs: Jean-Philippe Azulay, *France*
Stéphane Palfi, *France*

10:30 Redefining Neurosurgical Indications and Interventions for Movement Disorders
Helen Bronte-Stewart, *USA*

11:10 Lessons Learned and Current Developments in Neuromodulation
Maria Fiorella Contarino, *Netherlands*

11:50 Overview on MRI-Focused Ultrasound
Clement Hamani, *Canada*

CSPC Liaison: Elena Moro, *France*

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

1. Identify signs and appropriate surgical intervention for patients with movement disorders
2. Describe pros and cons of different neuromodulation treatments, including DBS
3. Summarize the latest available knowledge about MRI-focused ultrasound

Recommended Audience: Clinical academicians, Non-physician Health Professionals, Practitioners, Students/Residents/Trainees

Monday, September 23, 2019

2203 Parallel Session **Cognitive Issues in Parkinson's Disease**

15:30 – 17:30

Location: Apollon Auditorium, Level 2, 3

Chairs: Bruno Dubois, *France*
Jennifer Goldman, *USA*

15:30 Cognitive Impairment: Clinical Phenotype and Heterogeneity

Caroline Williams-Gray, *United Kingdom*

16:10 Neuroimaging Markers of Cognitive Dysfunction

Antonio Strafella, *Canada*

16:50 Management Strategies for Cognitive Issues

Irena Rektorova, *Czech Republic*CSPC Liaison: Jennifer Goldman, *USA*

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

1. Illustrate the clinical phenotype and heterogeneity associated with cognitive issues in Parkinson's disease
2. Discuss neuroimaging markers associated with cognitive issues in Parkinson's disease
3. Review management strategies for cognitive issues in Parkinson's disease

Recommended Audience: Clinical academicians, Non-physician Health Professionals, Practitioners, Students/Residents/Trainees

2204 Parallel Session **Parkinson's Disease and Atypical Parkinsonism: Tauopathies vs. Synucleinopathies**

15:30 – 17:30

Location: Les Muses 1, Level 3

Chairs: Irene Litvan, *USA*
Maria Stamelou, *Greece*

15:30 Diagnostic Pearls in Recognizing Tauopathies vs. Synucleinopathies

Stephen Reich, *USA*

16:10 Pathophysiology and Targets for Therapeutic Interventions

Lawrence Golbe, *USA*

16:50 Disease Modifying Therapies

Huw Morris, *United Kingdom*CSPC Liaison: Irene Litvan, *USA*

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

1. Describe how to distinguish patients with tauopathies from synucleinopathies
2. Summarize the mechanisms leading to the development and spread of tauopathies versus synucleinopathies
3. Describe the biological rationale for experimental therapies

Recommended Audience: Basic scientists, Clinical academicians, Non-physician Health Professionals, Practitioners, Students/Residents/Trainees

2205 Science of Industry Session (non-CME) 

See page 21 for complete session information.

2206 Parallel Session **Ataxia**

15:30 – 17:30

Location: Les Muses 2, Level 3

Chairs: Alexandra Durr, *France*
Helio Teive, *Brazil*

15:30 The Clinical Approach to Patients with Ataxia

Hidehiro Mizusawa, *Japan*

16:10 From Phenotype to Genotype in Ataxia

Alexandra Durr, *France*

16:50 Ataxia Syndromes in Children and Adults

Ludger Schöels, *Germany*CSPC Liaison: H.A. Jinnah, *USA*

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

1. Describe the approach for reaching an etiological diagnosis in patients with ataxia
2. Examine the different phenotypes of ataxia in both children and adults
3. Describe the genetic basis for common disorders with ataxia

Recommended Audience: Basic scientists, Clinical academicians, Non-physician Health Professionals, Practitioners, Students/Residents/Trainees

 This presentation is offered in collaboration with the European Academy of Neurology.**2207 Parallel Session** **Tics and Tourette Syndrome: From Bench to Bedside**

15:30 – 17:30

Location: Les Muses 3, Level 3

Chairs: Andreas Hartmann, *France*
Davide Martino, *Canada*

15:30 Motor and Behavioral Spectrum of Tics and Tourette Syndrome

Christos Ganos, *Germany*

16:10 Pathophysiology of Tics and Tourette Syndrome

Yulia Worbe, *France*

16:50 Pharmacological and Non-Pharmacological Therapy of Tics and Tourette Syndrome

Davide Martino, *Canada*CSPC Liaison: Jean-Christophe Corvol, *France*

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

1. Recognize the clinical spectrum (motor and behavioral) of tics and Tourette syndrome
2. Analyze the pathophysiology of tics and Tourette syndrome including both proposed sites of origin and abnormalities of synaptic transmission
3. Adapt the therapeutic approaches tailored to the needs of individual patients with tics and Tourette syndrome

Recommended Audience: Basic scientists, Clinical academicians, Non-physician Health Professionals, Practitioners, Students/Residents/Trainees

Monday, September 23, 2019

2208 Parallel Session

Translating the Science of Functional (Psychogenic) Movement Disorders into Clinical Practice

15:30 – 17:30

Location: Athéna Auditorium, Level 2

Chairs: Beomseok Jeon, *South Korea*
Kathrin LaFaver, *USA*

15:30 Connecting Pathophysiology and Risk Factors to Clinical Care in Functional Movement Disorders
Selma Aybek Rusca, *Switzerland*

16:10 Treatment Choices in Functional Movement Disorders: Established and Novel Treatments
Kathrin LaFaver, *USA*

16:50 Putting It Together: How to Develop and Run a Clinical Service for Functional Movement Disorders
Mark Edwards, *United Kingdom*

CSPC Liaison: Beomseok Jeon, *South Korea*

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

1. Explain the pathophysiology and risk factors of functional movement disorders
2. Discuss the evidence base for physiotherapy and multidisciplinary rehabilitation in functional movement disorders
3. Discuss how to design care pathways and run a service for people with functional movement disorders

Recommended Audience: Basic scientists, Clinical academicians, Non-physician Health Professionals, Practitioners, Students/Residents/Trainees

2309 Teaching Course

Integrated Management of Movement Disorders: The Example of Parkinson's Disease

15:30 – 17:30

Location: Méditerranée 1, Level 1

Chairs: Alice Nieuwboer, *Belgium*
Mayela Rodriguez Violante, *Mexico*

15:30 How to Organize Multidisciplinary Care
Carsten Eggers, *Germany*

16:10 Physical and Occupational and Speech Therapy
Alice Nieuwboer, *Belgium*

16:50 Shifting Management Towards Patient-Centered Care and Empowerment
Maria Piemonte, *Brazil*

CSPC Liaison: Wassilios Meissner, *France*

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

1. Describe the organization of a multidisciplinary care team for Parkinson's disease
2. Apply the evidence for physical, occupational and speech therapy for Parkinson's disease
3. Discuss strategies to enhance patient-centered care and patient empowerment in patients with Parkinson's disease

Recommended Audience: Clinical academicians, Non-physician Health Professionals, Practitioners, Students/Residents/Trainees

This course will be recorded and developed into an online MDS eLearning module that will be available to MDS Members.

2310 Teaching Course

Using Imaging Methods for Movement Disorders

15:30 – 17:30

Location: Méditerranée 2, Level 1

Chairs: Han-Joon Kim, *South Korea*
Stephane Lehericy, *France*

15:30 Structural and Functional MRI Imaging
Stephane Lehericy, *France*

16:10 Brain Imaging Using PET and SPECT
Jee-Young Lee, *South Korea*

16:50 Other Novel and Non-CNS Imaging Techniques
Thilo Van Eimeren, *Germany*

CSPC Liaison: Han-Joon Kim, *South Korea*

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

1. Explain the role of MRI techniques in the diagnosis of Parkinson's disease and other movement disorders
2. Discuss how PET and SPECT imaging can detect brain alterations in Parkinson's disease and other movement disorders
3. Report the use and limitations of other neuroimaging techniques in Parkinson's disease and other movement disorders (TCS, NIRS, OCT, and MIBG)

Recommended Audience: Basic scientists, Clinical academicians, Non-physician Health Professionals, Practitioners, Students/Residents/Trainees

This course will be recorded and developed into an online MDS eLearning module that will be available to MDS Members.

2411 Skills Workshop

Advanced Therapies for Movement Disorders: Difficult Cases and Pitfalls

18:00 – 19:30

Location: Les Muses 1, Level 3

Tove Henriksen, *Denmark*
Andrea Kühn, *Germany*

CSPC Liaisons: Elena Moro, *France*
Claudia Trenkwalder, *Germany*

In this interactive session, the presenters will describe the selection process of parkinsonian patients who can benefit from advanced therapies, and how to recognize and manage issues and complications related to these treatments. In particular, cases presenting with infusion therapies such as apomorphine pump and levodopa intestinal infusion, and Deep Brain Stimulation therapy will be discussed.

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

1. Describe the selection of patients for the different advanced therapies
2. Recognize and manage problems and side effects during infusion therapies with apomorphine and LDCD
3. Identify and manage the most frequent problems related to neuromodulation surgery and post-surgery management

Recommended Audience: Clinical academicians, Non-physician Health Professionals, Practitioners, Students/Residents/Trainees

Monday, September 23, 2019

2412 Skills Workshop **TICKET****Using Genetic Tools for Diagnosis**

18:00 – 19:30

Location: Les Muses 3, Level 3

Hui Fang Shang, *People's Republic of China*
Matthis Synofzik, *Germany*CSPC Liaison: Vincenzo Bonifati, *Netherlands*

In this interactive session, the presenters will describe the different tools currently available for the laboratory diagnosis of genetic movement disorders, including tools for the detection of mutations in single genes (including small sequence and copy number variants), as well as gene panels, clinical whole-exome (WES) and whole-genome sequencing (WGS).

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

1. Identify currently existing tools for the laboratory diagnosis of genetic movement disorders
2. Recognize the advantages and disadvantages of the different tools
3. Define the strategy of choice for diagnostic genetic testing of patients with movement disorders

Recommended Audience: Basic scientists, Clinical academicians, Practitioners, Students/Residents/Trainees

2413 Skills Workshop **TICKET****Metabolic Movement Disorders**

18:00 – 19:30

Location: Méditerranée 2, Level 1

Jennifer Friedman, *USA*
Mayela Rodriguez Violante, *Mexico*CSPC Liaison: Maria Stamelou, *Greece*

In this interactive session, the presenters will discuss the phenotypic spectrum of movement disorders caused by a variety of metabolic diseases, diagnostic tools to approach metabolic movement disorders and available treatment plans for patients with these disorders.

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

1. Interpret the phenotypic spectrum of movement disorders caused by metabolic diseases
2. Describe diagnostic tools for metabolic disease causing movement disorders
3. Design, review and modify a treatment plan for patients with metabolic movement disorders

Recommended Audience: Clinical academicians, Non-physician Health Professionals, Practitioners, Students/Residents/Trainees

2514 Video Session **TICKET****Atypical Parkinsonism**

18:00 – 19:30

Location: Athéna Auditorium, Level 2

Gesine Respondek, *Germany*
Iva Stankovic, *Serbia*CSPC Liaison: Ryosuke Takahashi, *Japan*

In this interactive session, the presenters will explain the clinical diagnostic criteria and red flags for atypical parkinsonism and show videos of the phenomenology of patients with atypical parkinsonism such as progressive supranuclear palsy, corticobasal syndrome, multiple system atrophy and Lewy body disease. The audience will learn important tips to clinically distinguish atypical parkinsonism from Parkinson's disease.

2514 Video Session, cont. **TICKET**

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

1. Identify the phenotypic spectrum of atypical parkinsonism
2. Describe clinical clues useful in the diagnosis of atypical parkinsonism
3. Explain current clinical diagnostic criteria of atypical parkinsonism

Recommended Audience: Clinical academicians, Non-physician Health Professionals, Practitioners, Students/Residents/Trainees

2515 Video Session **TICKET****A Case-Based Approach to Dystonia: What Would You Do?**

18:00 – 19:30

Location: Méditerranée 1, Level 1

Susan Bressman, *USA*
Joseph Jankovic, *USA*CSPC Liaison: Steven Frucht, *USA*

In this interactive session, experienced movement disorders clinicians will use a case-based approach to describe the strategy for diagnosis and treatment of various types of dystonia, both common and rare.

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

1. Recognize unusual presentations of various forms of dystonia
2. Explain the differences in opinion of applying modern practical techniques (oral medications, botulinum toxin, Deep Brain Stimulation, rehabilitation therapy) to treatment of a wide variety of forms of dystonia
3. Evaluate pitfalls in the diagnosis and treatment of dystonia

Recommended Audience: Clinical academicians, Non-physician Health Professionals, Practitioners, Students/Residents/Trainees

2616 Special Topics in Movement Disorders **TICKET****The Future Is Now: Telemedicine in Your Movement Disorders Practice**

18:00 – 19:30

Location: Hermès Auditorium, Level 2

Esther Cubo Delgado, *Spain*
Ali Shalash, *Egypt*CSPC Liaison: Maria Stamelou, *Greece*

In this interactive session, the presenters will discuss clinical situations in which telemedicine may be helpful for improving care of patients with movement disorders such as Parkinson's disease and will describe practical ways in which such telemedicine visits can be implemented in everyday clinical practice. The audience will observe and identify the challenges and possible hurdles that need to be overcome for telemedicine visits to be implemented in clinical practice.

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

1. Detect situations amenable to telemedicine for improving patients' care
2. Describe ways in which a telemedicine visit can be implemented in clinical practice
3. Identify challenges in telemedicine visits and ways to overcome them

Recommended Audience: Clinical academicians, Non-physician Health Professionals, Practitioners, Students/Residents/Trainees

Monday, September 23, 2019

2617 Special Topics in Movement Disorders

Gait Disorders: From Pathophysiology to the Clinic

18:00 – 19:30

Location: Les Muses 2, Level 3
Klaus Jahn, *Germany*
Jorik Nonnekes, *Netherlands*

CSPC Liaison: Alice Nieuwboer, *Belgium*

In this interactive session, the delegates will gain a better understanding of how different neurological systems are involved in gait and how this presents in clinical practice. Video vignettes will also illustrate how gait deficits can be recognized and how they can be best managed.

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

1. Translate a systems understanding of gait disorder into the clinical picture
2. Recognize cerebellar and vestibular contributions to gait disorders and their management
3. Recognize corticostriatal dysfunction in gait disorders and their management

Recommended Audience: Clinical academicians, Non-physician Health Professionals, Practitioners, Students/Residents/Trainees

2618 Special Topics in Movement Disorders

Pluripotent Stem Cells and Organoids: State-of-the-Art

18:00 – 19:30

Location: Méditerranée 3, Level 1
Agnete Kirkeby, *Denmark*
Wim Mandemakers, *Netherlands*

CSPC Liaison: Vincenzo Bonifati, *Netherlands*

In this session, the technology of induced pluripotent stem cells (iPS) and brain organoids as powerful tools for disease modeling will be presented, and the potential application of iPS in the experimental therapy of Parkinson's disease will be discussed.

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

1. Illustrate the application of human pluripotent stem cell technology and brain organoids to study mechanisms of movement disorders
2. Discuss the potential of human pluripotent stem cell technology to treat Parkinson's disease

Recommended Audience: Basic scientists, Clinical academicians, Non-physician Health Professionals, Practitioners, Students/Residents/Trainees

Tuesday, September 24, 2019

3101 Plenary Session

Tremor Disorders: Challenges and Future Directions

8:00 – 9:30

Location: Apollon Auditorium, Level 2, 3
Chairs: Kailash Bhatia, *United Kingdom*
Maria Stamelou, *Greece*

8:00 Overview of the New Classification Scheme for Tremor
Rodger Elble, *USA*

8:30 What Do We Know About Etiologies?
Peter Bain, *United Kingdom*

9:00 Pathophysiology of Tremor: Is Pathophysiology Useful in Diagnosis and Classification?
Rick Helmich, *Netherlands*

CSPC Liaison: Maria Stamelou, *Greece*

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

1. Apply the new tremor classification scheme in everyday clinical practice
2. Describe how the etiologies of tremor relate to classification
3. Describe how the pathophysiology of tremor relates to the diagnosis and classification of tremor

Recommended Audience: Basic scientists, Clinical academicians, Non-physician Health Professionals, Practitioners, Students/Residents/Trainees

MDS Business Meeting

9:30-10:30

Location: Hermès Auditorium, Level 2
All delegates are encouraged to attend.

3102 Plenary Session

Grand Rounds

10:30 – 12:30

Location: Apollon Auditorium, Level 2, 3
MDS Experts: Tim Anderson, *New Zealand*
Mathieu Anheim, *France*
Steven Frucht, *USA*
Timothy Lynch, *Ireland*

CSPC Liaison: Jean-Christophe Corvol, *France*

In this interactive session, MDS experts will examine both common and complex movement disorder patients. The audience will gain expert advice on how to formulate diagnoses and manage interesting and challenging patients.

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

1. Identify how experts use the clinical history and exam to formulate a diagnosis in movement disorder cases
2. Identify how experts use diagnostic testing in the differential diagnosis of movement disorders
3. Identify how experts plan therapies for movement disorder patients

Recommended Audience: Clinical academicians, Non-physician Health Professionals, Practitioners, Students/Residents/Trainees

Tuesday, September 24, 2019

3203 Parallel Session

Psychosis and Hallucinations in Lewy Body Disorders

15:30 – 17:30

Location: Méditerranée 1, Level 1

Chairs: Gilles Fenelon, *France*
Simon Lewis, *Australia*

15:30 Current Theories on Visual Hallucinations
Nico Diederich, *Luxembourg*

16:10 Neuroimaging and Visual Hallucinations: A Window Into Their Mechanism
Simon Lewis, *Australia*

16:50 Management Strategies for Visual Hallucinations and Psychosis
Laura Marsh, *USA*

CSPC Liaison: Jennifer Goldman, *USA*

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

1. Identify current theories of visual hallucinations in Parkinson's disease and Lewy body disorders
2. Describe neuroimaging findings associated with visual hallucinations in Parkinson's disease and Lewy body disorders
3. Review management strategies for hallucinations and delusions in Parkinson's disease and Lewy body disorders

Recommended Audience: Clinical academicians, Non-physician Health Professionals, Practitioners, Students/Residents/Trainees

3204 Parallel Session

Challenges in Clinicogenetic Correlations: One Gene - Many Phenotypes; One Phenotype - Many Genes

15:30 – 17:30

Location: Athéna Auditorium, Level 2

Chairs: Vincenzo Bonifati, *Netherlands*
Enza Maria Valente, *Italy*

15:30 One Gene – Many Phenotypes
Niccolo Mencacci, *USA*

16:10 One Phenotype – Many Genes
Aurelie Meneret, *France*

16:50 Clinical Implications – Diagnosis and Management Strategies
Enza Maria Valente, *Italy*

CSPC Liaison: Vincenzo Bonifati, *Netherlands*

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

1. Recognize the sometimes different and complex phenotypes of monogenic mutations
2. Describe similar clinical phenotypes resulting from mutations in different genes
3. Discuss the evolving role of genetics in the diagnosis and management of movement disorders

Recommended Audience: Basic scientists, Clinical academicians, Practitioners, Students/Residents/Trainees

3205 Parallel Session

Myoclonus

15:30 – 17:30

Location: Apollon Auditorium, Level 2, 3

Chairs: Marina De Koning-Tijssen, *Netherlands*
Steven Frucht, *USA*

15:30 The Essential Role of Physiology in Understanding and Evaluating Myoclonus
Hiroshi Shibasaki, *Japan*

16:10 The Progressive Myoclonic Epilepsies: How Genetics Have Revolutionized Understanding of These Disorders
Pierre Genton, *France*

16:50 Treatment of Myoclonus: What Is the Evidence?
Martje Van Egmond, *Netherlands*

CSPC Liaison: Steven Frucht, *USA*

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

1. Explain the role of physiology in the evaluation and management of myoclonus
2. Appreciate the enormous strides made in understanding genetic forms of myoclonus
3. Review the evidence supporting decisions on treatments for myoclonus

Recommended Audience: Basic scientists, Clinical academicians, Non-physician Health Professionals, Practitioners, Students/Residents/Trainees

3206 Parallel Session

Translational Science of Dystonia

15:30 – 17:30

Location: Méditerranée 2, Level 1

Chairs: William Dauer, *USA*
Marie Vidailhet, *France*

15:30 How Genetics, Cell Biology and Animal Models Informed Our Understanding of Dystonia
William Dauer, *USA*

16:10 Dystonia as a Network Disorder: How Physiology and Imaging Have Informed Our Understanding of Dystonia
Ryuji Kaji, *Japan*

16:50 The Mystery of Deep Brain Stimulation in Dystonia: Are We Any Closer to Understanding How it Works?
Jill Ostrem, *USA*

CSPC Liaison: Carolyn Sue, *Australia*

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

1. Discuss the role that advances in the basic sciences have played in our understanding of dystonia
2. Summarize the role that imaging and physiology have played in understanding the biological bases for dystonia
3. Analyze the current theories explaining the improvement of dystonia with Deep Brain Stimulation

Recommended Audience: Basic scientists, Clinical academicians, Non-physician Health Professionals, Practitioners, Students/Residents/Trainees

Tuesday, September 24, 2019

3207 Parallel Session

Drug Repurposing in Parkinson's Disease

15:30 – 17:30

Location: Méditerranée 3, Level 1

Chairs: Wassilios Meissner, *France*
D. James Surmeier, *USA*

15:30 Recent and Ongoing Clinical Trials with Repurposed Drugs
Michael Schwarzschild, *USA*

16:10 Repurposing Anti-Hypertensive Drugs: Rationale and
Clinical Experience
Tatyana Simuni, *USA*

16:50 Insulin Resistance and Diabetes: Repurposing Antidiabetics
as Disease Modifying Treatments
Wassilios Meissner, *France*

CSPC Liaison: Angela Cenci, *Sweden*

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

1. Critically review recent clinical studies for Parkinson's disease involving inosine, nilotinib, simvastatin, and iron chelators
2. Summarize scientific rationale and clinical study of isradipine for disease modification in Parkinson's disease
3. Discuss the scientific rationale for repurposing antidiabetics as potential disease-modifying treatments for Parkinson's disease

Recommended Audience: Basic scientists, Clinical academicians, Non-physician Health Professionals, Practitioners, Students/Residents/Trainees

3208 Science of Industry Session (non-CME)

See page 21 for complete session information.

3309 Teaching Course

Recognition and Management of Sleep Disturbances in Movement Disorders

15:30 – 17:30

Location: Les Muses 1, Level 3

Chairs: Ron Postuma, *Canada*
Aleksandar Videnovic, *USA*

15:30 Insomnia and Somnolence in Movement Disorders
Aleksandar Videnovic, *USA*

16:10 Restless Legs Syndrome in Movement Disorders
Juliane Winkelmann, *Germany*

16:50 Parasomnias and Sleep-Related Breathing Disorders in
Movement Disorders
Ron Postuma, *Canada*

CSPC Liaison: Wassilios Meissner, *France*

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

1. Discuss the management of insomnia and excessive daytime sleepiness in movement disorders
2. Discuss the management of restless legs syndrome in movement disorders
3. Analyze investigations and therapeutic options for parasomnias and sleep-related breathing disorders in movement disorders

Recommended Audience: Clinical academicians, Non-physician Health Professionals, Practitioners, Students/Residents/Trainees

3310 Teaching Course

Pediatric Movement Disorders

15:30 – 17:30

Location: Les Muses 2, Level 3

Chairs: Manju Kurian, *United Kingdom*
Ali Shalash, *Egypt*

15:30 Transient Benign Movement Disorders of Infancy
Emilio Fernández-Alvarez, *Spain*

16:10 Genetic Movement Disorders in Children and Adolescents
Manju Kurian, *United Kingdom*

16:50 Acquired Movement Disorders in Children and Adolescents
Darius Ebrahimi-Fakhari, *USA*

CSPC Liaison: Wassilios Meissner, *France*

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

1. Recognize transient benign movement disorders in infancy
2. Summarize genetic movement disorders in children and adolescents
3. Illustrate acquired movement disorders in children and adolescents

Recommended Audience: Basic scientists, Clinical academicians, Practitioners, Students/Residents/Trainees

3411 Skills Workshop

Allied Health Professionals' Skills for Proactive Patient Management

18:00 – 19:30

Location: Méditerranée 2, Level 1

Terry Ellis, *USA*
Sue Thomas, *United Kingdom*

CSPC Liaison: Alice Nieuwboer, *Belgium*

In this interactive session, the presenters will focus on how to assess and manage Parkinson's disease patients proactively to maintain optimal levels of subjective well-being. The audience will learn about the benefits of involving nurses and physical therapists in patient care and learn about the timely interventions of each profession to prevent disease-related complications.

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

1. Identify the most optimal management strategies to prevent Parkinson's disease-related complications in various disease stages
2. Define the role of the Parkinson's disease nurse in realizing proactive patient care
3. Explain methods to enhance exercise compliance and physical activity levels in Parkinson's disease

Recommended Audience: Clinical academicians, Non-physician Health Professionals, Practitioners, Students/Residents/Trainees

Tuesday, September 24, 2019

3412 Skills Workshop

Clinical Applications of Big Data Analytics in Movement Disorders: Challenges, Promises and Potentials

18:00 – 19:30

Location: Apollon Auditorium, Level 2, 3
Jean-Christophe Corvol, France
Charles Venuto, USA

CSPC Liaison: Roongroj Bhidayasiri, Thailand

In this session, the presenters will describe the nascent field of big data analytics in movement disorders, discuss the benefits as well as limitations, outline methodologies and applications on how to integrate small data sets. Examples with clinical applications will be provided (e.g. genetics and imaging). The presenters will briefly discuss challenges and offer recommendations for the future.

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

1. Define advantages and challenges of big data analytics in movement disorders
2. Describe architectural framework of big data analytics through the process of application, development, and methodology
3. Evaluate examples of big data analytics in movement disorders (especially Parkinson's disease) with their clinical applications

Recommended Audience: Basic scientists, Clinical academicians, Non-physician Health Professionals, Practitioners, Students/Residents/Trainees

3413 Skills Workshop

Monogenic Hyperkinetic Disorders with Variable Phenotypes

18:00 – 19:30

Location: Méditerranée 3, Level 1
Martin Paucar Arce, Sweden
Ana Westenberger, Germany

CSPC Liaison: Vincenzo Bonifati, Netherlands

In this interactive session, the presenters will describe the pleomorphic phenotypes associated with ATP1A3, ADCY5, and PDE10A and other related genes, as well as the underlying genotypes, and they will discuss how these rare monogenic movement disorders might provide insights for understanding normal brain functions and the pathogenesis of more common forms of complex movement disorders.

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

1. Discuss disorders associated with mutations in the ATP1A3, ADCY5, and PDE10A gene variants
2. Illustrate the underlying genetic variants and emerging genotype-phenotype correlations
3. Discuss possible insights deriving from these rare monogenic forms for understanding of normal brain functions and the pathogenesis of more common movement disorders

Recommended Audience: Basic scientists, Clinical academicians, Students/Residents/Trainees

3414 Skills Workshop

Eye Movements: A Case-Based Approach

18:00 – 19:30

Location: Les Muses 1, Level 3
Vivek Lal, USA
Aasef Shaikh, USA

CSPC Liaison: Roongroj Bhidayasiri, Thailand

In this interactive session, delegates will acquire clinical ophthalmologic examination skills, focusing on eye movement examinations, to recognize typical abnormalities and to integrate these findings into a differential diagnosis of movement disorder conditions.

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

1. Describe the approach to a bedside neuro-ophthalmological exam in movement disorders
2. Recognize typical eye movement abnormalities in common hypokinetic and hyperkinetic disorders
3. Integrate findings from bedside ophthalmological examinations into differential diagnosis of movement disorders

Recommended Audience: Clinical academicians, Non-physician Health Professionals, Practitioners, Students/Residents/Trainees

3415 Skills Workshop

A Case-Based Approach for Management of Motor Fluctuations and Dyskinesias

18:00 – 19:30

Location: Méditerranée 1, Level 1
Han-Joon Kim, South Korea
Fabrizio Stocchi, Italy

CSPC Liaison: Maria Stamelou, Greece

In this interactive session, the faculty will describe the clinical phenomenology of both motor fluctuations and dyskinesias in Parkinson's disease, along with current and potential future treatment strategies.

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

1. Describe the various types of motor fluctuations in Parkinson's disease
2. Describe the various types of dyskinesias in Parkinson's disease
3. Summarize treatment strategies for motor fluctuation and dyskinesias

Recommended Audience: Clinical academicians, Non-physician Health Professionals, Practitioners, Students/Residents/Trainees

Tuesday, September 24, 2019

3516 Video Session **TICKET**

Movement Disorder Emergencies

18:00 – 19:30

Location: Les Muses 2, Level 3
Roongroj Bhidayasiri, *Thailand*
Anna Castrioto, *France*

CSPC Liaison: Shen-Yang Lim, *Malaysia*

In this interactive session, the presenters will show videos of hypokinetic and hyperkinetic emergencies, and outline the management strategies for these conditions.

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

1. Recognize clinical settings and signs of movement disorder emergencies, including emergencies related to Deep Brain Stimulation
2. Explain management strategies for the various Parkinson's disease related and other hypokinetic emergencies
3. Describe management strategies for the various hyperkinetic emergencies

Recommended Audience: Clinical academicians, Non-physician Health Professionals, Practitioners, Students/Residents/Trainees

3617 Special Topics in Movement Disorders **TICKET**

Axial Movement Disorders: Camptocormia, Pisa Syndrome, Antecollis, and Retrocollis

18:00 – 19:30

Location: Athéna Auditorium, Level 2
Günther Deuschl, *Germany*
Michele Tinazzi, *Italy*

CSPC Liaison: H.A. Jinnah, *USA*

In this session, faculty will describe axial defects in Parkinson's disease and other movement disorders including their clinical manifestations, pathophysiology and treatment.

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

1. Describe the varied clinical manifestations of postural abnormalities in various movement disorders
2. Discuss possible mechanisms of postural problems in various movement disorders
3. Summarize avenues for management of postural problems in various movement disorders

Recommended Audience: Clinical academicians, Non-physician Health Professionals, Practitioners, Students/Residents/Trainees

3618 Special Topics in Movement Disorders **TICKET**

How to Become a Successful Movement Disorder Specialist

18:00 – 19:30

Location: Les Muses 3, Level 3
Yves Agid, *France*
Caroline Tanner, *USA*

CSPC Liaison: Roland Dominic Jamora, *Philippines*

In this interactive session, the presenters will discuss the approach to becoming a successful movement disorder specialist in academic and private practice settings.

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

1. Recognize the best approach to becoming an excellent movement disorder specialist in academic medicine and in the clinic
2. Recognize the importance of searching for good mentors when pursuing specialization
3. Identify essential aspects of becoming an effective leader

Recommended Audience: Clinical academicians, Practitioners, Students/Residents/Trainees

European National Society Networking Event

19:30 – 20:30

Location: Mykonos Lounge, Level 2

This is a networking event for MDS-ES leaders and representatives from European National Societies.

Health Professionals Networking Meeting

19:30 – 20:30

Location: Galliéni 1+2, Level 2

Join the MDS Health Professionals (Non-Physician) Special Interest Group (SIG) as they discuss exciting updates going on around the world, meet the SIG Leadership, and discuss current trends in the field.

Young Delegates Networking Event

19:30 – 21:30

Location: Le Palace (about 600m away from the Nice Acropolis Convention Centre)

All young delegates at the International Congress are invited to attend this event. It is located within walking distance of the Convention Centre.

Wednesday, September 25, 2019

4101 Plenary Session

Predicting Parkinson's Disease Onset and Progression

8:00 – 9:30

Location: Apollon Auditorium, Level 2, 3

Chairs: Jean-Christophe Corvol, *France*
Matthew Stern, *USA*

- 8:00 What Can Big Cohorts Add to Prediction for Parkinson's Disease?
Andrew Siderowf, *USA*
- 8:30 Precision Medicine: Insights from Genetic and Other Biomarkers
Rejko Krueger, *Luxembourg*
- 9:00 Sleep and Parkinson's Disease: Prediction and Progression
Friederike Sixel-Doring, *Germany*

CSPC Liaison: Jean-Christophe Corvol, *France*

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

1. Discuss implications of results from big cohorts in predicting onset or progression of Parkinson's disease
2. Discuss the role of genetic and other biomarkers in predicting onset or progression of Parkinson's disease
3. Identify the predictive value of sleep disorders in predicting onset or progression of Parkinson's disease

Recommended Audience: Basic scientists, Clinical academicians, Non-physician Health Professionals, Practitioners, Students/Residents/Trainees

4102 Plenary Session

Autoimmune Movement Disorders: From Phenomenology to Immunopathogenesis

10:00 – 12:00

Location: Apollon Auditorium, Level 2, 3

Chairs: Victor Fung, *Australia*
Jerome Honnorat, *France*

- 10:00 How Do I Recognize an Autoimmune Movement Disorder?
Sarosh Irani, *United Kingdom*
- 10:40 The Pathogenesis of Autoimmune Movement Disorders
Angela Vincent, *United Kingdom*
- 11:20 Therapeutic Approaches to Autoimmune Movement Disorders
Sean Pittock, *USA*

CSPC Liaison: Carolyn Sue, *Australia*

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

1. Describe the clinical clues for autoimmune movement disorders
2. Explain the molecular mechanisms of autoimmune movement disorders
3. Summarize therapeutic approaches for autoimmune movement disorders

Recommended Audience: Basic scientists, Clinical academicians, Non-physician Health Professionals, Practitioners, Students/Residents/Trainees

4203 Parallel Session



TICKET

Placebos in Parkinson's Disease and Other Movement Disorders

15:00 – 17:00

Location: Méditerranée 3, Level 1

Chairs: Christopher Goetz, *USA*
Olivier Rascol, *France*

- 15:00 The Science of Placebo
Fabrizio Benedetti, *Italy*
- 15:40 Assessing Placebo Response in Clinical Trials
Joaquim Ferreira, *Portugal*
- 16:20 Harnessing the Power of Placebos in Clinical Practice and Research
Tiago Mestre, *Canada*

CSPC Liaison: Jean-Christophe Corvol, *France*

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

1. Discuss the scientific basis for the placebo response and related effects
2. Recognize the nature and underpinnings of the placebo and nocebo responses
3. Apply the novel perspectives on the use of placebos in research and clinical practice

Recommended Audience: Basic scientists, Clinical academicians, Non-physician Health Professionals, Practitioners, Students/Residents/Trainees

4204 Parallel Session



TICKET

Huntington's Disease: From Bench to Bedside

15:00 – 17:00

Location: Les Muses 1, Level 3

Chairs: Sandrine Humbert, *France*
Karen Marder, *USA*

- 15:00 The Many Presentations of Huntington's Disease and the Differential Diagnosis
Claudia Perandones, *Argentina*
- 15:40 The Role of Huntington in Neurodegeneration and Neurodevelopment: What Have We Learned?
Sandrine Humbert, *France*
- 16:20 Current and Future Therapies for Huntington's Disease
Sarah Tabrizi, *United Kingdom*

CSPC Liaisons: Emilia Gatto, *Argentina*

Karen Marder, *USA*

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

1. Recognize the many variable phenotypes of Huntington's disease and potential differential diagnosis
2. Identify the genetic mechanisms underlying Huntington's disease
3. Identify the current and new therapies for Huntington's disease

Recommended Audience: Basic scientists, Clinical academicians, Non-physician Health Professionals, Practitioners, Students/Residents/Trainees

Wednesday, September 25, 2019

4205 Parallel Session

How to Diagnose Rare Movement Disorders

15:00 – 17:00

Location: Apollon Auditorium, Level 2, 3

Chairs: Emilia Gatto, *Argentina*
Pedro Garcia Ruiz, *Spain*

- 15:00 Clinical Clues for Rare Movement Disorders
Pramod Pal, *India*
- 15:40 Laboratory Clues for Rare Movement Disorders
Emilia Gatto, *Argentina*
- 16:20 Neuroimaging Clues for Rare Movement Disorders
Pedro Garcia Ruiz, *Spain*

CSPC Liaison: Shen-Yang Lim, *Malaysia*

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

1. Recognize clinical features of rare movement disorders
2. Discuss laboratory tests for rare movement disorders
3. Describe imaging findings of rare movement disorders

Recommended Audience: Basic scientists, Clinical academicians, Non-physician Health Professionals, Practitioners, Students/Residents/Trainees

4206 Parallel Session

Spasticity: From Bench to Bedside

15:00 – 17:00

Location: Méditerranée 1, Level 1

Chairs: Mark Hallett, *USA*
Raymond Rosales, *Philippines*

- 15:00 Recognition and Differential Diagnosis of Spasticity:
Hereditary and Acquired
Joerg Wissel, *Germany*
- 15:40 The Molecular and Physiological Basis for Spasticity
Craig Blackstone, *USA*
- 16:20 Recent Advances in the Management of Spasticity
Jean-Michel Gracies, *France*

CSPC Liaison: H.A. Jinnah, *USA*

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

1. Report the various clinical presentations and differential diagnosis of spasticity
2. Describe the biological basis for spasticity at the molecular and physiological levels
3. Summarize management options for spasticity

Recommended Audience: Basic scientists, Clinical academicians, Non-physician Health Professionals, Practitioners, Students/Residents/Trainees

4207 Parallel Session

Translating Genetic Discoveries into Disease-Modifying Strategies for Parkinson's Disease

15:00 – 17:00

Location: Les Muses 2, Level 3

Chairs: Alexis Brice, *France*
Mark Cookson, *USA*

- 15:00 Strategies Targeting Mitochondria
Ryan Davis, *Australia*
- 15:40 Is LRRK2 Inhibition a Viable Disease-Modifying Strategy?
Mark Cookson, *USA*
- 16:20 Strategies for Disease-Modification Targeting GBA
Ziv Gan-Or, *Canada*

CSPC Liaison: Vincenzo Bonifati, *Netherlands*

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

1. Compare the different strategies targeting mitochondria for Parkinson's disease
2. Discuss LRRK2 kinase inhibition as a strategy for Parkinson's disease
3. Compare the different strategies, targeting the glucocerebrosidase enzyme for Parkinson's disease

Recommended Audience: Basic scientists, Clinical academicians, Practitioners, Students/Residents/Trainees

4208 Parallel Session

Dyskinesia in Parkinson's Disease: From the Bedside to the Lab Bench

15:00 – 17:00

Location: Les Muses 3, Level 3

Chairs: Angelo Antonini, *Italy*
Philippe Damier, *France*

- 15:00 Update on the Clinical Phenomenology and Burden of Dyskinesias
Oscar Gershanik, *Argentina*
- 15:40 Modulation of Dopamine Signaling by Glutamate and Serotonin Receptors
Angela Cenci Nilsson, *Sweden*
- 16:20 Morphological and Functional Changes of Striatal and Cortical Neurons
Masahiko Tomiyama, *Japan*

CSPC Liaison: Angela Cenci, *Sweden*

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

1. Review the incidence and clinical features of dyskinesias in Parkinson's disease, and their impact on activities of daily living
2. Appraise the mechanisms by which glutamate and serotonin receptors can modulate an altered dopamine signaling in dyskinesias
3. Summarize the evidence that dyskinesias relate to maladaptive changes of dendritic spines in striatal and cortical neurons

Recommended Audience: Basic scientists, Clinical academicians, Non-physician Health Professionals, Practitioners, Students/Residents/Trainees

Wednesday, September 25, 2019

4309 Teaching Course **TICKET**

Recognition and Management of Non-Motor Symptoms in Parkinson's Disease

15:00 – 17:00

Location: Athéna Auditorium, Level 2

Chairs: Bastiaan Bloem, *Netherlands*
K. Ray Chaudhuri, *United Kingdom*

15:00 Recognition and Management of Neuropsychiatric Disorders

Daniel Weintraub, *USA*

15:40 Recognition and Management of Dysautonomia

Alessandra Fanciulli, *Austria*

16:20 Recognition and Management of Pain and Fatigue

K. Ray Chaudhuri, *United Kingdom*

CSPC Liaison: Wassilios Meissner, *France*

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

1. Describe the recognition and management of neuropsychiatric disorders in Parkinson's disease
2. Summarize the recognition and management of dysautonomia in Parkinson's disease
3. Discuss the recognition and management of pain and fatigue in Parkinson's disease

Recommended Audience: Clinical academicians, Non-physician Health Professionals, Practitioners, Students/Residents/Trainees

4310 Teaching Course **TICKET**

Palliative Care for Parkinson's Disease

15:00 – 17:00

Location: Méditerranée 2, Level 1

Chairs: Nicholas Galifianakis, *USA*
Victor McConvey, *Australia*

15:00 Definition and Models of Palliative Care

Stefan Lorenzl, *Germany*

15:40 Managing Palliative Needs of Patients and Their Caregivers

Nicholas Galifianakis, *USA*

16:20 End-of-Life Care

Miguel Coelho, *Portugal*

CSPC Liaison: Wassilios Meissner, *France*

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

1. Define palliative care for Parkinson's disease
2. Manage palliative needs of patients with Parkinson's disease and their caregivers
3. Examine the management of end-of-life for Parkinson's disease

Recommended Audience: Clinical academicians, Non-physician Health Professionals, Practitioners, Students/Residents/Trainees

4411 Skills Workshop **TICKET**

Practical Use of the MDS-UPDRS

17:30 – 19:00

Location: Les Muses 3, Level 3

Evžen Růžička, *Czech Republic*
Glenn Stebbins, *USA*

CSPC Liaison: Christopher Goetz, *USA*

4411 Skills Workshop, cont. **TICKET**

This interactive session will permit delegates to understand the core construct elements of the MDS-UPDRS, to practice application of the scale in a series of test cases, and to appreciate the process of establishing validated non-English editions. The session will be highly interactive between faculty and participants.

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

1. Apply and interpret the scale in clinical and research settings
2. Practice using the MDS-UPDRS through interactive exercises and test cases during the session
3. Recognize the process utilized to develop validated non-English translations

Recommended Audience: Clinical academicians, Non-physician Health Professionals, Practitioners, Students/Residents/Trainees

4412 Skills Workshop **TICKET**

Functional (Psychogenic) Movement Disorders

17:30 – 19:00

Location: Apollon Auditorium, Level 2, 3

Isabel Parees, *Spain*
Jon Stone, *United Kingdom*

CSPC Liaison: Beomseok Jeon, *South Korea*

In this interactive session, the presenters will discuss how to effectively communicate about the diagnosis and management in patients with functional movement disorders. They will discuss novel/experimental treatments.

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

1. Deliver an effective diagnostic explanation for functional movement disorders
2. Describe the approach for triaging patients for appropriate therapies
3. Interpret the nature of and role for novel/experimental treatments in functional movement disorders

Recommended Audience: Basic scientists, Clinical academicians, Non-physician Health Professionals, Practitioners, Students/Residents/Trainees

4413 Skills Workshop **TICKET**

Neuromodulation for Movement Disorders: A Case-Based Approach

17:30 – 19:00

Location: Les Muses 1, Level 3

Joohee Jimenez-Shahed, *USA*
Genko Oyama, *Japan*

CSPC Liaison: Elena Moro, *France*

In this interactive session, the audience will be involved in the discussion of the selection and treatment of difficult movement disorders cases with neuromodulation therapies. Participants will be able to recognize and learn how to manage several types of complications and side effects in patients treated with neuromodulation.

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

1. Identify common and uncommon issues in neuromodulation therapies
2. Manage side effects and complications related to neuromodulation therapies
3. Summarize the rational steps to optimize neuromodulation therapies

Recommended Audience: Clinical academicians, Non-physician Health Professionals, Practitioners, Students/Residents/Trainees

Wednesday, September 25, 2019

4414 Skills Workshop **TICKET**

Botulinum Toxins: Difficult Cases and Pitfalls

17:30 – 19:00

Location: Athéna Auditorium, Level 2
Austen Peter Moore, *United Kingdom*
Raymond Rosales, *Philippines*

CSPC Liaison: Roland Dominic Jamora, *Philippines*

This interactive session will present potential pitfalls in the treatment of movement disorders with botulinum toxins, along with management strategies for problems that are more difficult to treat.

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

1. Recognize potential pitfalls in the application of botulinum toxins in clinical practice
2. Identify situations when botulinum toxin should not be used
3. Analyze strategies to manage difficult cases and improve outcome in botulinum toxin use

Recommended Audience: Clinical academicians, Practitioners, Students/Residents/Trainees

4515 Video Session **TICKET**

Lessons From My Patients

17:30 – 19:00

Location: Méditerranée 2, Level 1
Francisco Cardoso, *Brazil*
Janet Rucker, *USA*

CSPC Liaisons: Shengdi Chen, *People's Republic of China*
Steven Frucht, *USA*

In this interactive session, experienced faculty will describe some of the important lessons they have learned from their patients. The discussion will focus on misleading presentations in some cases, the complexity of individualizing care, and the role that patients sometimes play in reaching a correct diagnosis or treatment strategy.

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

1. Recognize unusual and sometimes misleading presentations of movement disorders
2. Discuss the complexity of delivering individualized patient care
3. Describe the role patients play in educating their physicians

Recommended Audience: Clinical academicians, Non-physician Health Professionals, Practitioners, Students/Residents/Trainees

4516 Video Session **TICKET**

Video Demonstration of Pediatric Movement Disorders

17:30 – 19:00

Location: Méditerranée 1, Level 1
Miryam Carecchio, *Italy*
Rose Pons, *Greece*

CSPC Liaison: Maria Stamelou, *Greece*

In this interactive session, the presenters will demonstrate with illustrative videos the wide phenotypic spectrum of pediatric movement disorders and their evolution into adulthood. The audience will also observe video cases of potentially treatable pediatric movement disorders that are important not to miss.

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

1. Describe the phenotypic spectrum of movement disorders in children
2. Recognize the evolution of pediatric movement disorders into adulthood
3. Determine potentially treatable pediatric movement disorders

Recommended Audience: Clinical academicians, Practitioners, Students/Residents/Trainees

4617 Special Topics in Movement Disorders **TICKET**

Sleep Disorders: REM Sleep Behavior Disorder

17:30 – 19:00

Location: Méditerranée 3, Level 1
Michael Howell, *USA*
Michele Hu, *United Kingdom*

CSPC Liaison: Claudia Trenkwalder, *Germany*

In this interactive session the presenters will give insights into RBD symptoms, showing videos, defining the risk factors for prodromal Parkinson's disease and discussing the future role of RBD for clinical trials, focused on the problems of conversion from RBD.

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

1. Identify the clinical symptomatology of RBD and its assessment
2. Illustrate the evolution of RBD into alpha-synucleinopathies
3. Define the role of RBD for potential therapeutic trials

Recommended Audience: Basic scientists, Clinical academicians, Non-physician Health Professionals, Practitioners, Students/Residents/Trainees

4618 Special Topics in Movement Disorders **TICKET**

Normal Pressure Hydrocephalus for Movement Disorders Neurologists

17:30 – 19:00

Location: Les Muses 2, Level 3
Alfonso Fasano, *Canada*
Joachim Krauss, *Germany*

CSPC Liaison: Beomseok Jeon, *South Korea*

In this interactive session, the presenters will discuss clinical features, diagnostic tools, surgery and their limitations in diagnosing and managing normal pressure hydrocephalus.

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

1. Describe the clinical features and tools useful for diagnosis and differential diagnosis of normal pressure hydrocephalus
2. Describe the heterogeneity and pathophysiological dilemmas of normal pressure hydrocephalus
3. Select and inform possible surgical candidates for shunting

Recommended Audience: Basic scientists, Clinical academicians, Non-physician Health Professionals, Practitioners, Students/Residents/Trainees

MDS Video Challenge Pre-Event Gathering

19:00 – 20:00

Location: Agora 2 and Agora 3, Level 2, 3

MDS Video Challenge

20:00 – 22:00

Location: Apollon Auditorium, Level 2, 3
MDS Experts: Stewart Factor, *USA*
Manju Kurian, *United Kingdom*
Tiago Mestre, *Canada*
Francesca Morgante, *United Kingdom*
Martin Paucar Arce, *Sweden*
See page 27 for more information.

Thursday, September 26, 2019

5101 Themed Plenary Session

Synuclein in Parkinson's Disease and Atypical Parkinsonism: From Bench to Bedside

8:00 – 9:30

Location: Apollon Auditorium, Level 2, 3

Chairs: Etienne Hirsch, *France*

Werner Poewe, *Austria*

8:00 Is Synucleinopathy a Single Entity?

Glenda Halliday, *Australia*

8:30 Pathogenic Spreading in the Synucleinopathies

Erwan Bezard, *France*

9:00 Clinical Trials in Synucleinopathies

Brit Mollenhauer, *Germany*

CSPC Liaison: Etienne Hirsch, *France*

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

1. Analyze the clinical and pathological features of Parkinson's disease and atypical parkinsonism
2. Debate the role of α -synuclein in the initiation and progression of Parkinson's disease and atypical parkinsonism
3. Summarize new clinical trials for synucleinopathies

Recommended Audience: Basic scientists, Clinical academicians, Non-physician Health Professionals, Practitioners, Students/Residents/Trainees

5102 Plenary Session

Controversies in Movement Disorders

10:00 – 11:00

Location: Apollon Auditorium, Level 2, 3

Chairs: Oscar Gershanik, *Argentina*

Antonio Strafella, *Canada*

10:00 Is There a Role for Cannabinoids in Movement Disorders?

(YES)

Benzi Kluger, *USA*

10:15 Is There a Role for Cannabinoids in Movement Disorders?

(NO)

Janis Miyasaki, *Canada*

10:30 Early Deep Brain Stimulation in Parkinson's Disease?

(YES)

Patricia Limousin, *United Kingdom*

10:45 Early Deep Brain Stimulation in Parkinson's Disease?

(NO)

Beomseok Jeon, *South Korea*

CSPC Liaison: Antonio Strafella, *Canada*

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

1. Debate the advantages and disadvantages of cannabinoids in movement disorders
2. Debate the advantages and disadvantages of early Deep Brain Stimulation in Parkinson's disease

Recommended Audience: Basic scientists, Clinical academicians, Practitioners, Students/Residents/Trainees

5103 Plenary Session

Highlights for 2019: Looking Towards 2020

11:00 – 12:00

Location: Apollon Auditorium, Level 2, 3

Chairs: Vincenzo Bonifati, *Netherlands*

Christopher Goetz, *USA*

11:00 Basic Sciences

Etienne Hirsch, *France*

11:30 Clinical Sciences

Claudia Trenkwalder, *Germany*

CSPC Liaisons: Vincenzo Bonifati, *Netherlands*

Claudia Trenkwalder, *Germany*

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

1. Critically review high impact scientific discoveries from the past year and important areas of scientific focus for 2020 research
2. Critically review high impact clinical studies from the past year and important ongoing trials with anticipated completion in 2020

Recommended Audience: Basic scientists, Clinical academicians, Non-physician Health Professionals, Practitioners, Students/Residents/Trainees

Non-CME Educational Activities

NEW – Science of Industry Session (non-CME)

These interactive sessions will provide delegates with a non-CME educational opportunity to learn about novel therapeutic agents under development by industry. Sessions may incorporate basic scientists or clinicians working in industry, and topics may address the biological rationale or development process for specific therapeutics in development within the field of Movement Disorders.

Monday, September 23, 2019

2205 Science of Industry Session (non-CME)

Novel Treatment Strategies for Rare Movement Disorders

15:30 – 17:30

Location: Méditerranée 3, Level 1

Chairs: David Devos, *France*
H.A. Jinnah, *USA*

- 15:30 PKAN: A Comparison of Multiple Potential Mechanisms and Treatment Strategies for Addressing the Biochemical Defect
Thomas Klopstock, *Germany*
- 16:10 GLUT1: A Comparison of Treatment Strategies for Bypassing the Glucose Transporter Defect
Emmanuel Roze, *France*
- 16:50 Reducing Brain Iron in Degenerative Disorders
Massimo Pandolfo, *Belgium*

CSPC Liaison: H.A. Jinnah, *USA*

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

1. Describe the biological rationale for new drugs being developed to address the underlying biochemical defect in pantothenatekinase-associated neurodegeneration
2. Compare the biological basis and clinical outcomes for different treatment strategies being used for GLUT1-related disorders
3. Summarize the biological rationale and clinical outcomes for treatment strategies focusing on reducing brain iron in movement disorders

Recommended Audience: Basic scientists, Clinical academicians, Non-physician Health Professionals, Practitioners, Students/Residents/Trainees

Tuesday, September 24, 2019

3208 Science of Industry Session (non-CME)

Translating Scientific Discovery into Novel Treatments for Movement Disorders

15:30 – 17:30

Location: Les Muses 3, Level 3

Chairs: Stanley Fahn, *USA*
H.A. Jinnah, *USA*

- 15:30 How Does Industry Decide Which Scientific Discoveries to Pursue?
Jesse Cedarbaum, *USA*
- 16:10 Targeting LRRK2 for Parkinson's Disease
Carole Ho, *USA*
- 16:50 The Biology of Pathological Oscillations in the Brain: Potential Novel Targets for Tremor Disorders?
Margaret Lee, *USA*

CSPC Liaison: H.A. Jinnah, *USA*

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

1. Summarize the criteria used by industry to pursue clinical development of scientific discoveries
2. Describe the pathogenesis of LRRK2-related Parkinson's disease and its rationale as a therapeutic target
3. Describe how understanding the biological basis for neuronal oscillations points to novel therapeutics for tremor disorders

Recommended Audience: Basic scientists, Clinical academicians, Non-physician Health Professionals, Practitioners, Students/Residents/Trainees

Corporate Therapeutic Symposia Schedule

These company-based informational sessions provide delegates with non-CME educational opportunities to learn the latest in therapeutics.

Sunday, September 22

Britannia Pharmaceuticals Ltd

The Time is NOW. Do Our Current Treatment Decisions Ensure PD Patients Live Their Best Lives?

13:15-14:15

Location: Méditerranée 1, Level 1

Sunovion Pharmaceuticals Inc.

Debating Therapeutic Advancements in Parkinson's Disease: Are You a Realist or an Idealist?

13:15-14:15

Location: Méditerranée 2, Level 1

Monday, September 23

Bial

Beyond Motor Wearing-Off: What Are We Missing?

12:45-13:45

Location: Les Muses 1, Level 3

Biogen

Differentiating PSP

12:45-13:45

Location: Méditerranée 2, Level 1

Zambon

Safinamide: From Pre-Clinical Data to Real World Evidence

12:45-13:45

Location: Les Muses 2, Level 3

Tuesday, September 24

AbbVie, Inc.

Shining a Light: Early Recognition of Advanced Parkinson's Disease and Real-World Considerations for Treatment Options

12:45-13:45

Location: Les Muses 1, Level 3

Acorda Therapeutics

Rethinking the Approach to Managing Off Periods

12:45-13:45

Location: Les Muses 2, Level 3

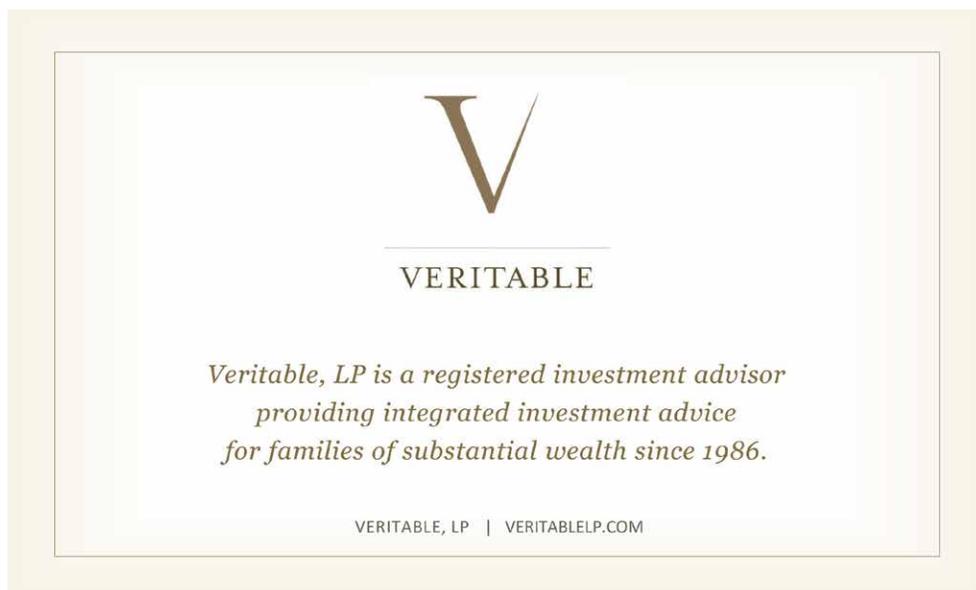
Roche

One Thing in Mind, Protecting What Makes Us Who We Are

12:45-13:45

Location: Méditerranée 1, level 1

The International Parkinson and Movement Disorder Society acknowledges Veritable LP for their assistance in managing its investment portfolio.



Abstract Information

Abstract Publication

All regular accepted abstracts are published as a supplement to the MDS Journal and are available utilizing a searchable feature on the International Congress website, www.mdscongress.org/Congress-2019/Abstracts.htm, as of September 21, 2019. Please also visit www.movementdisorders.org to access *Movement Disorders*, where a PDF of accepted abstracts can be downloaded.

All registered International Congress delegates will also receive the published abstracts on a USB, available for pickup at the Poster Information Desk at Agora 3 West, Level 3 during regular Congress hours.

Late-Breaking Abstracts and MDS Study Group Abstracts are published as an online supplement on the International Congress website, www.mdscongress.org/Congress-2019/Abstracts.htm. These abstracts are available for download as of September 21, 2019.

Guided Poster Tours

Guided Poster Tours give groups of delegates an opportunity to hear discussion on a select group of abstracts in several sub-categories.

Late-Breaking Abstracts

All accepted Late-Breaking Abstract posters are displayed in Agora 2 South, Level 2, Monday - Wednesday of the International Congress. Late-Breaking

Abstract poster presentations will take place Wednesday, September 25, from 13:15 - 14:45.

MDS Study Group Abstracts

Abstracts presented on behalf of an MDS Study Group, or formal MDS Task Force or Committee, are indicated with special signage and displayed throughout the poster areas during the scheduled poster sessions.

Poster Sessions

Poster sessions give each delegate an opportunity to view their colleagues' posters on the most current research in the field of Movement Disorders. Authors will be present for 90 minutes to explain their work and answer questions. All accepted abstracts are presented as a poster at the 2019 International Congress.

Basic Science abstracts will be flagged within each category.

Poster sessions are held Monday - Wednesday. Posters are available for viewing in Agora 2, Agora 3, Les Muses and Les Muses Terrace, from 8:00 - 17:30 Monday and Tuesday, and 8:00 - 17:00 on Wednesday. Poster session topics and schedules vary by date; please see the complete listing of scheduled poster presentation dates and times on page 24.

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International Parkinson and
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Non-members attending the International Congress have the opportunity to receive membership with MDS absolutely free for a year. To sign up today, stop by the MDS Member Center or e-mail membership@movementdisorders.org for more information.

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Poster Session Schedule

	Poster Numbers	Abstract Category	Location
Monday, September 23 13:45 - 15:15	1 - 56	Huntington's Disease	Agora 3 West, Level 3
	57 - 231	Clinical Trials, Pharmacology and Treatment	Agora 3, Level 3 Les Muses, Level 3
	232 - 295	Ataxia	Les Muses, Level 3
	296 - 315	Choreas (Non-Huntington's Disease)	Les Muses, Level 3
	316 - 327	Myoclonus	Les Muses, Level 3
	328 - 330	Neuroanatomy	Les Muses, Level 3
	331 - 358	Neuropharmacology	Les Muses Terrace, Level 3
	359 - 385	Psychiatric Manifestations	Les Muses Terrace, Level 3
	386 - 408	Functional (Psychogenic) Movement Disorders	Les Muses Terrace, Level 3
	409 - 497	Genetics	Les Muses Terrace, Level 3
	498 - 552	Rare Genetic and Metabolic Diseases	Les Muses Terrace, Level 3
	553 - 564	Gene and Cell-Based Therapies	Les Muses Terrace, Level 3
	565 - 600	Restless Leg Syndrome, RBD and Other Sleep Disorders	Les Muses Terrace, Level 3
	601 - 639	Quality of Life	Les Muses Terrace, Level 3
	640 - 647	Caregiver Burden	Les Muses Terrace, Level 3
	648 - 685	Physical and Occupational Therapy	Les Muses Terrace, Level 3
	686 - 757	Other	Agora 2 East, Level 2
Tuesday, September 24 13:45 - 15:15	758 - 1165	Parkinsonisms and Parkinson-Plus	Agora 3, Level 3 Les Muses, Level 3 Les Muses Terrace, Level 3
	1166 - 1178	Classification of Movement Disorders	Les Muses Terrace, Level 3
	1179 - 1196	Rating Scales	Les Muses Terrace, Level 3
	1197 - 1244	Neurophysiology	Les Muses Terrace, Level 3
	1245 - 1361	Dystonia	Les Muses Terrace, Level 3
	1362 - 1378	Spasticity	Les Muses Terrace, Level 3
	1379 - 1390	Tics/Tourette	Les Muses Terrace, Level 3
	1391 - 1447	Tremor	Les Muses Terrace, Level 3
	1448 - 1476	Drug-Induced Movement Disorders	Agora 2 East, Level 2
	1477 - 1494	Education / History in Movement Disorders	Agora 2 East, Level 2
	1495 - 1511	Pediatric Movement Disorders	Agora 2 East, Level 2
1512 - 1521	Environmental Causes	Agora 2 East, Level 2	
Wednesday, September 25 13:15 - 14:45	1522 - 1650	Non-Motor Symptoms	Agora 3 West, Level 3 Agora 3 East, Level 3 Agora 3 North, Level 3
	1651 - 1750	Cognition and Cognitive Disorders	Agora 3 East, Level 3 Agora 3 North, Level 3 Les Muses, Level 3
	1751 - 1793	Physiology and Pathophysiology	Les Muses, Level 3
	1794 - 1847	Epidemiology	Les Muses, Level 3
	1848 - 2001	Neuroimaging	Les Muses Terrace, Level 3
	2002 - 2092	Surgical Therapy	Les Muses Terrace, Level 3
	2093 - 2139	Non-Pharmacological Interventions	Les Muses Terrace, Level 3
	2140 - 2198	Phenomenology and Clinical Assessment of Movement Disorders	Les Muses Terrace, Level 3
	LBA 1 - LBA 22	Late-Breaking Abstracts	Agora 2 East, Level 2

Guided Poster Tour Schedule

Date & Time	Guided Poster Tour Session	Abstract Category(s)	Meet at Poster Number	Location
Monday, September 23 13:45 – 15:15	GPT 1: Rare Inherited Disorders	Huntington's Disease; Rare Genetic and Metabolic Diseases	1	Agora 3 West, Level 3
	GPT 2: Treatment <i>Supported by an unrestricted educational grant from Adamas Pharmaceuticals Inc.</i>	Clinical Trials, Pharmacology and Treatment; Gene and Cell-Based Therapies	57	Agora 3 West, Level 3
	GPT 3: Genetics	Genetics	409	Les Muses Terrace, Level 3
Tuesday, September 24 13:45 – 15:15	GPT 4: Parkinsonisms and Parkinson-Plus <i>Supported by an unrestricted educational grant from Biogen</i>	Parkinsonisms and Parkinson-Plus	758	Agora 3 West, Level 3
	GPT 5: Parkinsonisms and Parkinson-Plus <i>Supported by an unrestricted educational grant from Adamas Pharmaceuticals Inc.</i>	Parkinsonisms and Parkinson-Plus	962	Les Muses, Level 3
	GPT 6: Neurophysiology	Neurophysiology	1197	Les Muses Terrace, Level 3
	GPT 7: Dystonia	Dystonia	1245	Les Muses Terrace, Level 3
	GPT 8: Hyperkinetic Disorders	Classification of Movement Disorders; Drug-Induced Movement Disorders; Tremor	1166	Les Muses Terrace, Level 3
Wednesday, September 25 13:15 – 14:45	GPT 9: Non-Motor Symptoms	Non-Motor Symptoms	1522	Agora 3 West, Level 3
	GPT 10: Cognition and Cognitive Disorders	Cognition and Cognitive Disorders	1651	Agora 3 East, Level 3
	GPT 11: Neuroimaging	Neuroimaging	1848	Les Muses Terrace, Level 3
	GPT 12: Phenomenology and Epidemiology of Movement Disorders	Epidemiology; Phenomenology and Clinical Assessment of Movement Disorders	1794	Les Muses, Level 3

MDS Pavilion Schedule

The MDS Pavilion is an interactive presentation space designed to provide International Congress delegates with a comfortable atmosphere while presenting valuable information regarding the Society. Learn about various MDS initiatives and programs, gain MDS expert advice, and discover ways to get involved with MDS.

The MDS Pavilion will be located in Les Muses Terrace, Level 3.

Monday, September 23, 2019

LIVE Demo: How to Initiate a Movement Disorders Exam

10:00 – 10:30

Presenters: Kailash Bhatia, *United Kingdom*
Philip Thompson, *Australia*

MDS experts will provide useful tips and advice to make the most out of your patient exam time.

Tips for a Successful Presentation and Distinguishing Yourself from the Crowd

12:30 – 12:45

Presenters: Stanley Fahn, *USA*
David Burn, *United Kingdom*

MDS Experts will discuss the best techniques for a successful live presentation and pitfalls to avoid.

Journal Editors Guide: How to Submit a Paper and Get it Accepted in *Movement Disorders*

15:15 – 15:30

Presenters: José Obeso, *Spain*
Kailash Bhatia, *United Kingdom*
Marcelo Merello, *Argentina*
A. Jon Stoessl, *Canada*

MDS Journal Editors will provide step-by-step instructions and advice to get a paper published.

Tuesday, September 24, 2019

Developing a Private Practice for Deep Brain Stimulation (DBS)

12:30 – 12:45

Presenters: Arif Dalvi, *USA*
Valerie Fraix, *France*

Learn the approach to developing DBS in a private practice.

Young Members Group

15:15 – 15:30

Presenters: Thiago Cardoso Vale, *Brazil*
Margherita Fabbri, *Portugal*

Learn about the MDS Young Members Group and other young delegate offerings.

Wednesday, September 25, 2019

How to Advance as a Young Movement Disorders Researcher

9:30 – 10:00

Presenters: David Standaert, *USA*
Andrew Siderowf, *USA*

MDS experts will provide useful tips and advice on advancing in the field of Movement Disorders research.

Multidisciplinary Care: Parkinson's Disease

12:00 – 12:30

Presenters: Suketu Khandhar, *USA*
Bastiaan Bloem, *Netherlands*

Learn the approach to identifying, evaluating and treating those living with Parkinson's disease by incorporating primary care, general neurology, mental health, therapy services and neurosurgery (among other disciplines) for every patient.

Getting to Know MDS Leadership

14:30 – 15:00

Presenter: Claudia Trenkwalder, *Germany*
Francisco Cardoso, *Brazil*

MDS leadership will explain their professional journey and provide insight on their success.

The MDS Pavilion is sponsored by Medtronic.

International Congress Events

Sunday, September 22, 2019

Welcome Ceremony

19:30 – 21:30

Location: Apollon Auditorium, Level 2, 3

All International Congress delegates are warmly invited to attend the International Congress Welcome Ceremony. This event is open to all registered delegates. MDS does not allow exhibitors and guests to attend this event.

Tuesday, September 24, 2019

Young Delegates Networking Event

19:30 – 21:30

Location: Le Palace (about 600m away from the Nice Acropolis Convention Centre)

MDS invites all registered International Congress delegates to attend the Young Delegates Networking Event. This event is located within walking distance of the Convention Centre.

This event will provide an excellent opportunity for delegates who are in the beginning phase of their career to network and socialize with other up-and-coming experts in the field.

MDS does not allow exhibitors and guests to attend this event.

The Young Delegates Networking Event is sponsored by Acorda Therapeutics and Medtronic.

Wednesday, September 25, 2019

MDS Video Challenge

19:00 – 22:00

Location: Apollon Auditorium, Level 2, 3

Please join Masters of Ceremony, Anthony Lang and Kapil Sethi, as they host a world-renowned panel of Movement Disorders experts in guiding participants through unique Movement Disorder cases. The cases will be presented by representatives from Movement Disorder Centers around the world and discussed by the Panel of Experts. Awards will be given for the most interesting and challenging cases. Country pride will add an enjoyable spirit of competition to this event. The goal of this session is for delegates to learn from a series of unusual, highly interesting patients and see how senior experts approach these types of challenging cases.

The Panel of Experts:

Stewart Factor, USA

Manju Kurian, United Kingdom

Tiago Mestre, Canada

Francesca Morgante, United Kingdom

Martin Paucar Arce, Sweden

This event is open to all registered delegates. MDS does not allow exhibitors and guests to attend this event.

The MDS Video Challenge is sponsored by Boston Scientific.



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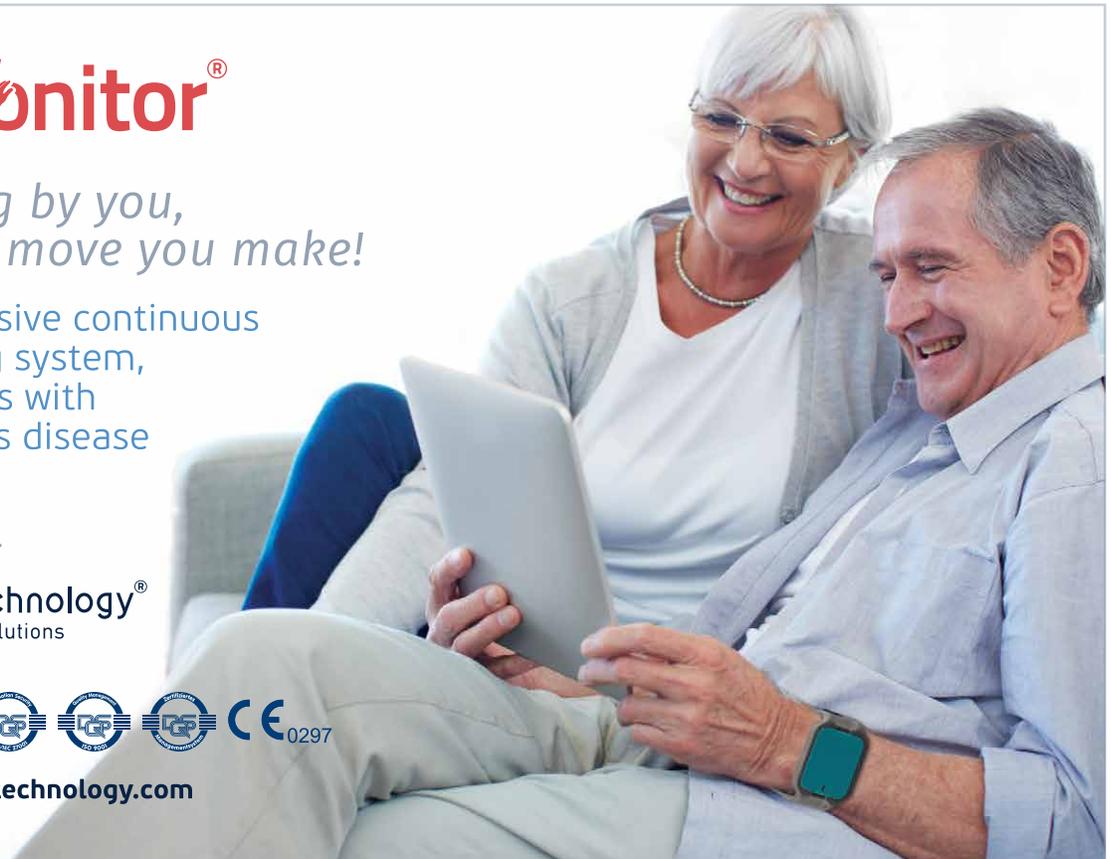


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SAVE THE DATE



International Parkinson and
Movement Disorder Society



**INTERNATIONAL CONGRESS OF
PARKINSON'S DISEASE AND
MOVEMENT DISORDERS®**

ean
congress

6th Congress of the
European Academy
of Neurology

Paris
2020

May 23 – 26

A
bientôt
à Paris

Abstract submission deadline
08 January 2020
Early registration deadline
16 March 2020

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www.ean.org/paris2020

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A corporate therapeutic symposium at the International Congress of Parkinson's Disease and Movement Disorders, Nice, France:

Inbrija[™]
(levodopa inhalation powder)
42 mg capsules

RETHINKING THE APPROACH TO MANAGING OFF PERIODS

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Georgetown University Hospital
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Tuesday, September 24, 2019, 12:45-13:45
Les Muses 2, Level 3, Nice Acropolis
Convention Centre
Lunch will be provided

Visit **Booth #78** to find out more

Inbrija is approved in the US and not approved in the EU/France

Selected Important Safety Information

INBRIJA is contraindicated in patients taking or who have recently taken (within 2 weeks) nonselective monoamine oxidase (MAO) inhibitors (e.g., phenelzine and tranylcypromine) due to risk of hypertension. Discontinue use of nonselective MAO inhibitors at least 2 weeks prior to initiating INBRIJA.

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At Adamas, we work every day to meaningfully enhance the daily living experience of those affected by Parkinson's disease.



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Bial

Keeping life
in mind.

A symposium at the International
Congress of Parkinson's Disease
and Movement Disorders, Nice, France

BEYOND MOTOR WEARING-OFF: WHAT ARE WE MISSING?

AGENDA

Professor Olivier Rascol
TOULOUSE, FRANCE

Chairman's introduction

Professor Hubert Fernandez
CLEVELAND, USA

The spectrum of OFF

Professor Per Odin
LUND, SWEDEN

The time course of
non-motor complications

Professor Joaquim Ferreira
LISBON, PORTUGAL

The time course of
motor complications

Panel discussion

Lunch bags available for symposium attendees

Monday
23 September 2019
12:45-13:45

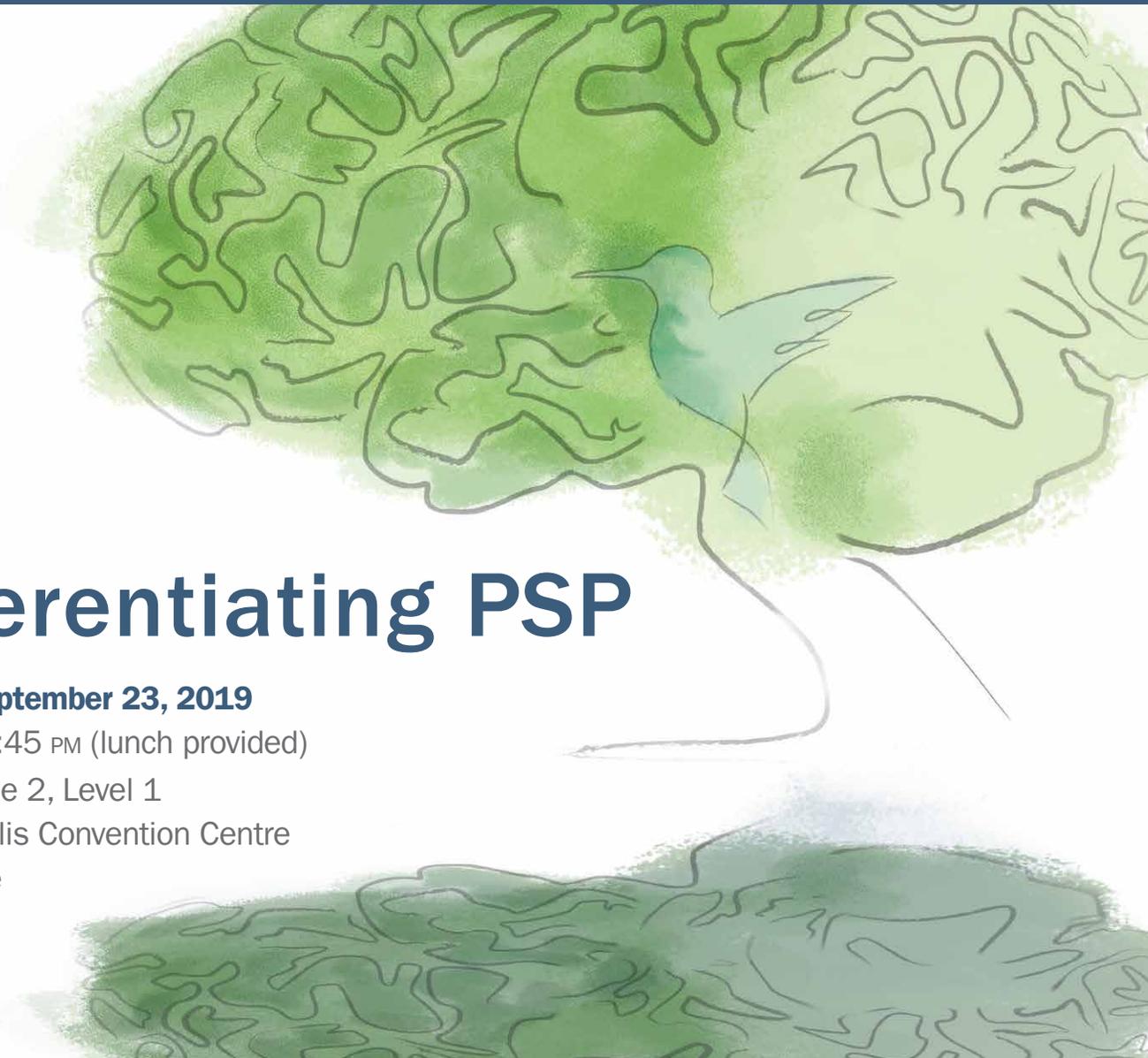
Les Muses 1,
Nice Acropolis
Convention Centre

This symposium is organised and fully sponsored by BIAL
ON/JUL19/G/239 Date of preparation: July 2019

Biogen invites you to join an engaging panel discussion on

PROGRESSIVE SUPRANUCLEAR PALSY (PSP).

This interactive presentation will help attendees understand the early clinical presentation of PSP, differentiate PSP from Parkinson's disease, and understand the burden of disease.



Differentiating PSP

Monday, September 23, 2019

12:45 PM–1:45 PM (lunch provided)

Méditerranée 2, Level 1

Nice Acropolis Convention Centre

Nice, France

Chairperson

Jean-Christophe Corvol, MD, PhD

Hôpital Pitié-Salpêtrière

Speakers

Irene Litvan, MD, MSc, FAAN, FANA

University of California San Diego Health

Anette Schrag, PhD, FRCP

University College London Queen Square Institute of Neurology





INTRODUCING THE M-STAR TRIAL

A PHASE 3 CLINICAL TRIAL FOR PEOPLE WITH **MSA**

**A RANDOMIZED, DOUBLE-BLIND, PLACEBO-CONTROLLED,
PARALLEL-GROUP STUDY TO EVALUATE THE EFFICACY AND
SAFETY OF THE MYELOPEROXIDASE INHIBITOR BHV-3241 IN
SUBJECTS WITH MULTIPLE SYSTEM ATROPHY**

Enrolling patients with MSA in the US and EU (AUSTRIA, FRANCE, GERMANY, and UK) to investigate whether a new investigational study drug (BHV-3241) may potentially slow the progression of the disease. Key inclusion criteria include the following:

1. Diagnosis of probable or possible MSA according to consensus clinical criteria (Gilman et al 2008), including subjects with MSA of either subtype (MSA-P or MSA-C).
2. Able to ambulate without the assistance of another person, defined as the ability to take at least 10 steps. Use of assistive devices (e.g., walker or cane) is allowed.
3. Anticipated survival of at least 3 years at the time of Screening, as judged by the Investigator.

For more information about the study please search on
clinicaltrials.gov for **NCT03952806**
or visit the website at
www.MSAresearchstudy.com



Incisionless Thalamotomy for Medication-Refractory Essential Tremor

MR-guided focused ultrasound is a next generation incisionless thalamotomy for patients who don't get acceptable tremor relief from medications. With no incisions or implants, the risk of infection is minimized or eliminated, hospitalization is minimized or avoided altogether, and patients can return quickly to their lives.

Thermal ablation of the ventral intermediate nucleus (Vim) of the thalamus is done under MR imaging for visualization of patient anatomy, real-time thermometry as well as immediate confirmation of treatment outcome.

LEARN MORE @ BOOTH #54

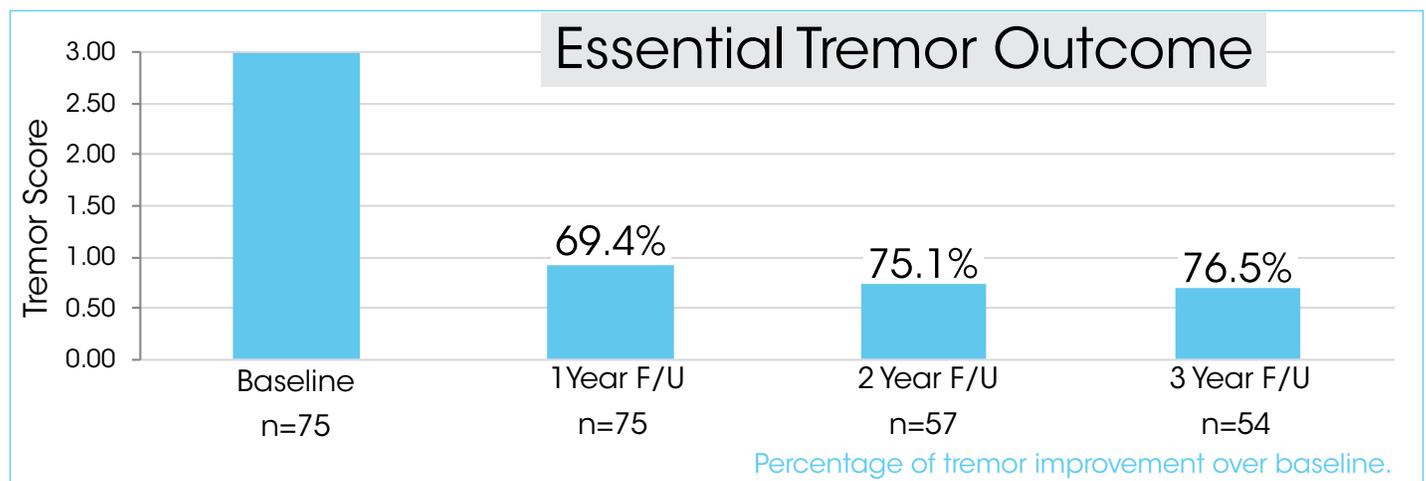
CLINICAL STUDY RESULTS¹

A randomized, blinded sham pivotal study was performed to assess the safety and efficacy of unilateral focused ultrasound thalamotomy for patients with essential tremor. During the clinical trial, 56 subjects received focused ultrasound treatment and 19 received the sham procedure and then crossed over. Of these 75 subjects, a total of 54 are included in the 3-year analysis of the long-term study results.

HAND TREMOR. The tremor severity score (CRST Part A posture score) improved 76.5% over baseline at 3-year follow-up for combined (focused ultrasound and crossover) subjects.

FUNCTIONAL DISABILITY. Improvement in tremor/motor function (CRST Part A & B) was 53% at three years. Functional disability (CRST Part C) showed a 56.9% improvement from baseline at three years.

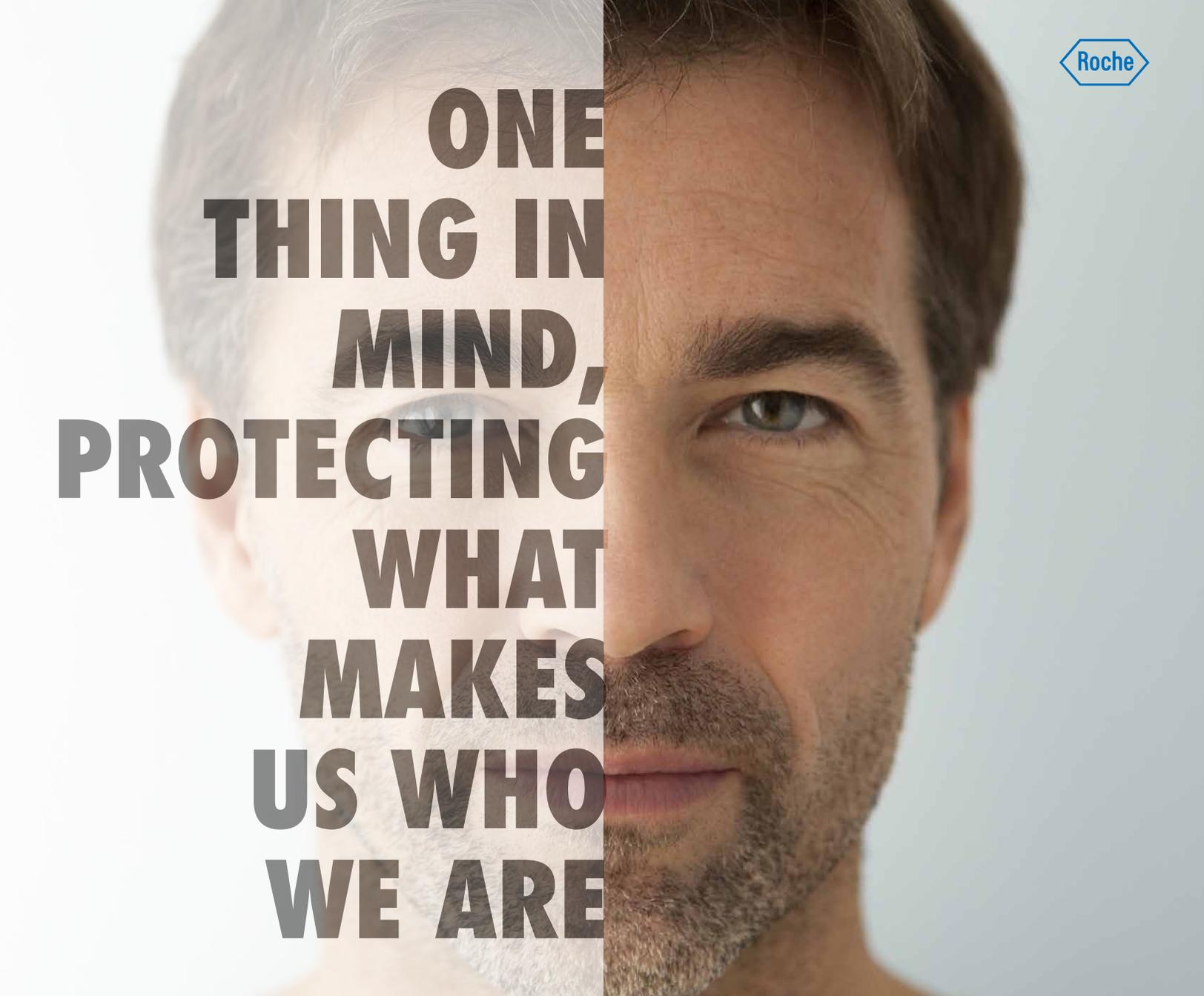
SAFETY. Long-term safety profile confirms that 74% of adverse events (AEs) were mild and the rest were moderate. Of the total AEs, 48% resolved within 30 days of the procedure. AEs that persisted at 3 years included gait disturbance (2%), imbalance (4%), musculoskeletal weakness (2%), unsteadiness (4%) and numbness (9%). The number in parenthesis is the percentage of active subjects experiencing these adverse events.



¹For up to date clinical data, refer to the Information for Prescribers: <https://www.insighttec.com/media/31393/exablateneuroinformationfor-prescribers0usa.pdf>

CE Intended Use: The Exablate System 4000 Transcranial MR guided focused ultrasound is intended for thermal ablation of targets in the thalamus, sub thalamus and pallidum regions of the brain.

Safety Information: <https://www.insighttec.com/us/safety-information>



ONE THING IN MIND, PROTECTING WHAT MAKES US WHO WE ARE

TUESDAY, SEPTEMBER 24, 2019 12:45–13:45 • MEDITERRANNEE 1 (MED 1) LEVEL 1

Ever wondered how digital technology changing our day-to-day life is also changing the way we assess and understand disorders such as Huntington's disease and Parkinson's disease?

Join us for this symposium for a unique opportunity to hear leading experts in the field discuss how remote, digital monitoring outcomes correlate with clinical data, providing a longitudinal, continuous and objective assessment of disease progression, enhancing our understanding of these disorders beyond clinic visits.

We will discuss how digital monitoring technologies are being used today in clinical trials, will show evidence of reliability and validity of the technology, and will address the opportunities and challenges of bringing these technologies into the clinical setting.

We will look for your input too! What are your thoughts and questions about remote assessments? How can this lead to better outcomes for patients?

We look forward to welcoming you to this thought-provoking symposium!

Chair

Sohini Chowdhury,

The Michael J. Fox Foundation for Parkinson's Research, New York, NY, USA

Faculty

Huntington's disease

Dr Ralf Reilmann, George Huntington Institute, Muenster, Germany

Dr Edward Wild, University College London Huntington's Disease Centre, London, UK

Parkinson's disease

Professor Bastiaan R. Bloem, Radboud University Medical Center, Nijmegen, The Netherlands

Dr Tanya Simuni, Northwestern University, Feinberg School of Medicine Chicago, IL, USA



Debating Therapeutic Advancements In Parkinson's Disease: Are You A Realist Or An Idealist?

Organized And Supported By Sunovion

Sunday, September 22
13:15 – 14:15pm
Optional lunch to be provided

Nice Acropolis Convention Centre
Mediterranee 2 Room – Level 1
Nice, France

Topic/Speakers:

The Realist – We Are So Close: Continued Advances In Treating Motor Fluctuations Provide The Most Impactful Improvements In Parkinson's Disease.

Speaker: Alberto Espay, M.D.

The Idealist – It Is Now Time To Focus Our Attention On The Greatest Unmet Needs In Parkinson's Disease: Dementia And Psychosis.

Speaker: Daniel Weintraub, M.D.

Moderator: Hubert H. Fernandez, M.D.

This is an educational, non-CME program sponsored by Sunovion Pharmaceuticals Inc. and the speakers are paid consultants of Sunovion.



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MAKE A PARKINSON'S HOUSE CALL

at the Sunovion Booth

Make a *Parkinson's House Call* to learn more about life with Parkinson's disease (PD) and OFF episodes through the eyes of Maggie,* a patient with moderate-to-severe PD.



**Fictional patient for illustration only.*



While you're there, see what's new on Sunovion's exciting innovation platform, Little Big Things™, which celebrates the latest innovations, ideas, and events that could have a big impact on the Parkinson's community.



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VERCISE™

Deep Brain Stimulation Systems

GUIDE XT VISUALIZATION EMPOWERED



GUIDE XT is DBS Visualization Software that provides the ability to see implanted leads and Stimulation Field Models (SFMs) in the patient's own segmented anatomy.

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CAUTION: The law restricts these devices to sale by or on the order of a physician. Indications, contraindications, warnings and instructions for use can be found in the product labeling supplied with each device. Information for the use only in countries with applicable health authority registrations.

Material not intended for use in France.

Product available in the European Economic Area (EEA) only. Please check availability with your local sales representative or customer service. Guide XT is intended to display medical images and simulate stimulation output. It includes functions for image manipulation and 3D visualization (reconstructions and volume rendering). Features include the display of a simulated DBS lead from a patient's CT scan compared to an anatomical atlas. The Vercise™ Deep Brain Stimulation (DBS) Systems are indicated for use in unilateral or bilateral stimulation of the subthalamic nucleus (STN) or internal globus pallidus (GPi) for treatment of levodopa-responsive Parkinson's disease which is not adequately controlled with medication and also for treatment of intractable primary and secondary Dystonia, for persons 7 years of age and older.

Thalamic stimulation using the Boston Scientific Vercise™ DBS Systems is indicated for the suppression of tremor not adequately controlled by medications in patients diagnosed with Essential Tremor or Parkinson's disease.

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See the device manual for detailed information regarding the instructions for use, the implant procedure, indications, contraindications, warnings, precautions, and potential adverse events. If using an MRI SureScan™ device, see the MRI SureScan™ technical manual before performing an MRI. For further information, contact your local Medtronic representative and/or consult the Medtronic website at www.medtronic.com.

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