Scientific Programme

Wednesday, 11 September 2019

Hot Topic, Hall B

08:00 - 08:45

Hot Topic 1: Is MS becoming a milder disease, and, if so, why?

Chairs
O. Andersen (Gothenburg, SE)
A. Scalfari (London, UK)

08:00 - 08:15

1 Trend for decreasing MS disability with increasing calendar year
I. Kister (New York, US)

08:15 - 08:30

2 Slower MS disability progression than previously reported
H. Tremlett (Vancouver, CA)

08:30 - 08:45

3 Increasing incidence of RRMS, decreasing incidence of PPMS, changing gender ratio and decreasing mortality
M.-L. Sumelahti (Tampere, FI)

Educational Session, Hall C

08:00 - 09:30

Educational Session 4: Disease modifying treatments in MS

Level: Basic
(Basic = neurologists in training, non MS-specialists / Intermediate = board examined neurologists / Advanced = MS specialists)

Chairs
A. Green (San Francisco, US)

08:00 - 08:30

13 Modifying the immunological milieu in MS - the development of platform therapeutic agents - success and limits of understanding
J. Sabatino (San Francisco, US)

08:30 - 09:00

14 Keeping injury from the CNS - therapeutic agents that impact immune cell trafficking - prominent efficacy and pitfalls
A. Green (San Francisco, US)

09:00 - 09:30

15 Depleting the source of immunological injury in MS - therapeutic agents that target the source of injury - robust effect and risks
A.-K. Pröbstel (San Francisco, US)
Scientific Programme

Educational Session, Hall D

08:00 - 09:30  
**Educational Session 2: Paediatric MS**

**Level:** Basic  
(Basic = neurologists in training, non MS-specialists / Intermediate = board examined neurologists / Advanced = MS specialists)

**Chairs**
J. Gärtner (Göttingen, DE)  
C. Hemingway (London, UK)

08:00 - 08:30  
7  The management of anti-MOG positive ADS  
R. Neuteboom (Rotterdam, NL)

08:30 - 09:00  
8  How to prevent secondary progression in children with MS  
J. Gärtner (Göttingen, DE)

09:00 - 09:30  
9  Differential diagnosis  
C. Hemingway (London, UK)

Educational Session, Hall F

08:00 - 09:30  
**Educational Session 3: B cell therapy of MS – pathology, immunology, clinical effects**

**Level:** Basic  
(Basic = neurologists in training, non MS-specialists / Intermediate = board examined neurologists / Advanced = MS specialists)

**Chairs**
C. Stadelmann (Göttingen, DE)  
K. Schmierer (London, UK)

08:00 - 08:30  
10  Insights from pathology underpinning B cell-targeted therapy  
C. Stadelmann (Göttingen, DE)

08:30 - 09:00  
11  Are B cells all that matters?  
D. Baker (London, UK)

09:00 - 09:30  
12  Relapses, inflammation, progression: mind our life-changing language  
K. Schmierer (London, UK)
### Educational Session, Hall G

**08:00 - 09:30**  
**Educational Session 1 (MAGNIMS): Update on MAGNIMS guidelines on the use of MRI in the diagnosis and monitoring of multiple sclerosis**

**Level:** Basic  
*(Basic = neurologists in training, non MS-specialists / Intermediate = board examined neurologists / Advanced = MS specialists)*

**Chairs**  
A. Rovira (Barcelona, ES)  
O. Ciccarelli (London, UK)

<table>
<thead>
<tr>
<th>Time</th>
<th>Topic</th>
<th>Speaker</th>
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<tbody>
<tr>
<td>08:00 - 08:30</td>
<td>How and when to obtain brain MRI in the diagnosis and monitoring of multiple sclerosis?</td>
<td>M. Wattjes (Hannover, DE)</td>
</tr>
<tr>
<td>08:30 - 09:00</td>
<td>Value of spinal cord MRI</td>
<td>O. Ciccarelli (London, UK)</td>
</tr>
<tr>
<td>09:00 - 09:30</td>
<td>When and how to use gadolinium?</td>
<td>A. Rovira (Barcelona, ES)</td>
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### Educational Session, Hall H

**08:00 - 09:30**  
**Educational Session 5 (RIMS): Rehabilitation in progressive MS**

**Level:** Basic  
*(Basic = neurologists in training, non MS-specialists / Intermediate = board examined neurologists / Advanced = MS specialists)*

**Chairs**  
J. Freeman (Plymouth, UK)  
P.L. Eelen (Melsbroek, BE)

<table>
<thead>
<tr>
<th>Time</th>
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<tbody>
<tr>
<td>08:00 - 08:30</td>
<td>Rehabilitation approaches in progressive MS</td>
<td>J. Freeman (Plymouth, UK)</td>
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<tr>
<td>08:30 - 09:00</td>
<td>Bladder and bowel in progressive MS</td>
<td>P.L. Eelen (Melsbroek, BE)</td>
</tr>
<tr>
<td>09:00 - 09:30</td>
<td>Caregiver burden in progressive MS</td>
<td>V. Matthews (Herts, UK)</td>
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### Hot Topic, Hall B

**08:55 - 09:40**  
**Hot Topic 2: MS Pregnancy in the treatment era**

**Chairs**  
M.P. Amato (Florence, IT)  
T. Kümpfel (Munich, DE)
Scientific Programme

08:55 - 09:10  19  The maternal perspective - when to stop/resume treatment and risks for progression  
E. Portaccio (Florence, IT)

09:10 - 09:25  20  The fetal/child perspective - risks related drug exposure of the child, breastfeeding and when to reassume medication  
K. Hellwig (Bochum, DE)

09:25 - 09:40  21  Patient awareness about family planning represents a major knowledge gap in multiple sclerosis  
M. D’Hooghe (Melsbroek, BE)

09:00 - 10:15  Young Scientific Investigators' Session, Hall E

09:00 - 10:15  Young Scientific Investigators' Session 1 - Biomarkers

Chairs
R. Diem (Heidelberg, DE)  
C. Teunissen (Amsterdam, NL)

09:00 - 09:15  22  Serum neurofilament light chain levels are increased within three months of new gadolinium enhancing lesions in multiple sclerosis  
M. Rosso (Brookline, US)

09:15 - 09:30  23  Serum neurofilament light chain is associated with MS outcomes and comorbidity in a large population of people with multiple sclerosis  
K. Fitzgerald (Baltimore, US)

09:30 - 09:45  24  Neurofilament light chains in serum in biopsied multiple sclerosis patients  
A.-S. Beutler (Göttingen, DE)

09:45 - 10:00  25  The extent and distribution of fibrinogen deposition in progressive MS correlate with meningeal and choroid plexus inflammation  
A. Poli (Verona, IT)

10:00 - 10:15  26  Polygenic risk for multiple sclerosis and multi-modal brain imaging among 8-12 year old children in the general population  
C.L. de Mol (Rotterdam, NL)

09:45 - 10:30  Hot Topic, Hall B

09:45 - 10:30  Hot Topic 3: Should we recommend vitamin D supplementation to our MS patients?

Chairs
P. Sundström (Umeå, SE)  
K. Munger (Boston, US)

09:45 - 10:00  27  MS patients should be advised to take vitamin D for MS  
A. Ascherio (Boston, US)
Scientific Programme

10:00 - 10:15  28  Why vitamin D supplementation is not a general advice in MS
J. Smolders (Nijmegen, NL)

10:15 - 10:30  29  Comments on the use of vitamin D in clinical practice, pros and cons
E. Mowry (Baltimore, US)

Hot Topic, Hall C

09:45 - 10:30  Hot Topic 4: HSCT and stem cell treatment in MS

Chairs
P.A. Muraro (London, UK)
J. Oh (Toronto, CA)

09:45 - 10:00  30  HSCT for MS - we are ready for prime time
J. Burman (Uppsala, SE)

10:00 - 10:15  31  Hold your horses - HSCT is still an experimental treatment
S. Hauser (San Francisco, US)

10:15 - 10:30  32  Mesenchymal stem cell treatment in MS
A. Uccelli (Genoa, IT)

Hot Topic, Hall D

09:45 - 10:30  Hot Topic 5: Imaging: lesion formation and assessment

Chairs
M.A. Rocca (Milan, IT)
A. Rovira (Barcelona, ES)

09:45 - 10:00  33  Evolution of white matter in MS and the role of gadolinium-based
contrast agents
D.S. Reich (Bethesda, US)

10:00 - 10:15  34  Evolution of cortical lesions in MS
J. Geurts (Amsterdam, NL)

10:15 - 10:30  35  A place for PET imaging in MS
B. Bodini (Paris, FR)

Educational Session, Meeting Room T3

09:45 - 10:30  Case-based Educational Session 6: How to manage
urogenital problems and spasticity

Chairs
P. Flachenecker (Bad Wildbad, DE)
I. Kleiter (Berg, DE)
Scientific Programme

09:45 - 10:05  36  Case #1: multimodal management of spasticity
P. Flachenecker (Bad Wildbad, DE)

10:05 - 10:25  37  Case #2: diagnosis and therapy of voiding difficulties
I. Kleiter (Berg, DE)

Educational Session, Meeting Room T4

09:45 - 10:30  Case-based Educational Session 7: How to manage non response to induction therapies?

Chairs
A.J. Coles (Cambridge, UK)
J. Sastre-Garriga (Barcelona, ES)

09:45 - 10:05  38  Case #1
A.J. Coles (Cambridge, UK)

10:05 - 10:25  39  Case #2
J. Sastre-Garriga (Barcelona, ES)

Educational Session, Meeting Room T5

09:45 - 10:30  Case-based Educational Session 8: Progressive MS: who should be treated and what should patients expect?

Chairs
J. Chataway (London, UK)
R.J. Fox (Cleveland, US)

09:45 - 10:05  40  Case #1
J. Chataway (London, UK)

10:05 - 10:25  41  Case #2
R.J. Fox (Cleveland, US)

Plenary Session, Hall A

11:00 - 12:15  Plenary Session 1: Welcome and ECTRIMS Lecture

Chairs
M.P. Amato (Florence, IT)
B. Hemmer (Munich, DE)
J. Hillert (Stockholm, SE)

11:00 - 11:30  42  Welcome to ECTRIMS 2019
B. Hemmer (Munich, DE)
J. Hillert (Stockholm, SE)
Scientific Programme

11:30 - 12:15  43  ECTRIMS Lecture: Beyond RCTs - why and how observational studies will guide the future of MS treatment
M. Trojano (Bari, IT)

Satellite Symposium, Hall A

12:30 - 13:30  Satellite Symposium 1: Sustained control of MS: what have we learned?
Supported by Merck

Chairs
G. Giovannoni (London, UK)
A.H. Cross (St. Louis, US)

12:30 - 12:35  44  Welcome and objectives
A.H. Cross (St. Louis, US)

12:35 - 12:50  45  Recent advances in MS immune targeting
F. Piehl (Stockholm, SE)

12:50 - 13:10  46  Is sustained disease control in MS achievable?
M. Magyari (Copenhagen, DK)

13:10 - 13:25  47  How can we monitor sustained disease control in MS?
G. Giovannoni (London, UK)

13:25 - 13:30  48  Closing
G. Giovannoni (London, UK)

Satellite Symposium, Hall C

12:30 - 13:30  Satellite Symposium 2: The evolution of MS study outcomes: relevance to clinical practice today
Supported by Celgene

Chairs
G. Comi (Milan, IT)

12:30 - 12:35  49  Welcome and introductions
G. Comi (Milan, IT)

12:35 - 12:40  50  Implementation of novel MS study endpoints in the clinic
G. Comi (Milan, IT)

12:40 - 12:55  51  Quantitative brain volume change and lesion assessment using MRI imaging
R. Zivadinov (Buffalo, US)
Scientific Programme

12:55 - 13:10  52  Patient-reported outcomes and cognition assessment as new measures of disability progression  
P. Matthews (London, UK)

T. Ziemssen (Dresden, DE)

13:25 - 13:30  54  Summary and closing  
G. Comi (Milan, IT)

Scientific Session, Hall B

13:45 - 15:15  Scientific Session 1: Remyelination in the course of MS

Chairs  
L. Brundin (Stockholm, SE)  
R. Franklin (Cambridge, UK)

13:45 - 14:05  55  Is remyelination possible in MS?  
J. Frisen (Stockholm, SE)

14:05 - 14:25  56  Remyelination from cell based screening to clinical trial  
A. Green (San Francisco, US)

Platform presentations of related original papers

14:25 - 14:37  57  Single nuclei transcriptomics of human white matter oligodendroglia in multiple sclerosis  
E. Agirre (Stockholm, SE)

14:37 - 14:49  58  Microglial interaction with nodes of Ranvier: a role in repair?  
T. Roux (Paris, FR)

14:49 - 15:01  59  Periventricular remyelination is associated with grey matter atrophy in MS  
M. Tonietto (Paris, FR)

15:01 - 15:13  60  A phase 1b, open-label study to evaluate the safety and tolerability of the putative remyelinating agent, liothyronine, in individuals with multiple sclerosis  
S.D. Newsome (Baltimore, US)

Scientific Session, Hall C

13:45 - 15:15  Scientific Session 2: Safety assessment in the post-approval phase - real world evidence

Chairs  
O. Gray (Dundonald, UK)  
C. Pozzilli (Rome, IT)
Scientific Programme

13:45 - 14:05  61  To use clinical registries in the phase 4 of disease modifying treatment
S. Vukusic (Lyon, FR)

14:05 - 14:25  62  Genes, environment and safety monitoring in using registries
T. Olsson (Stockholm, SE)

Platform presentations of related original papers

14:25 - 14:37  63  Determinants of clinical outcomes for patients with natalizumab-associated progressive multifocal leukoencephalopathy
C. McGuigan (Dublin, IE)

14:37 - 14:49  64  Risk of hypogammaglobulinemia in long-term treatment with rituximab in multiple sclerosis
S. Hallberg (Stockholm, SE)

14:49 - 15:01  65  Serum immunoglobulin levels and risk of serious infections in the pivotal phase III trials of ocrelizumab in multiple sclerosis and their open-label extensions
T. Derfuss (Basel, CH)

15:01 - 15:13  66  Incidence of any malignancies in patients treated for multiple sclerosis. A Danish registry-based cohort
M. Sabidó (Darmstadt, DE)

Educational Session, Hall F

13:45 - 15:15  Educational Session 9: Neurofilament light chains and other fluid biomarkers in MS
Level: Intermediate
(Basic = neurologists in training, non MS-specialists / Intermediate = board examined neurologists / Advanced = MS specialists)

Chairs
J. Kuhle (Basel, CH)
F. Piehl (Stockholm, SE)

13:45 - 14:15  67  Setting the scene: the relevance of conventional CSF and imaging biomarkers in MS
F. Piehl (Stockholm, SE)

14:15 - 14:45  68  Assay stability and preanalytics of neurofilament determinations.
E. Willemse (Amsterdam, NL)

14:45 - 15:15  69  Blood neurofilament light chain: ready for the clinic?
J. Kuhle (Basel, CH)
Scientific Programme

Educational Session, Hall G

13:45 - 15:15  

**Educational Session 10: NMO-spectrum disorders: current concepts and clinical management**

Level: Intermediate  
(Basic = neurologists in training, non MS-specialists / Intermediate = board examined neurologists / Advanced = MS specialists)

**Chairs**
J. Palace (Oxford, UK)  
F. Paul (Berlin, DE)

13:45 - 14:15  
**70 NMOSD: an update**  
J. Palace (Oxford, UK)

14:15 - 14:45  
**71 Making the diagnosis in challenging cases with case studies**  
K. Fujihara (Sendai, JP)

14:45 - 15:15  
**72 Treatment challenges in NMOSD with case studies**  
F. Paul (Berlin, DE)

Educational Session, Hall H

13:45 - 15:15  

**Educational Session 11: Getting it right – accurate diagnosis and avoiding misdiagnosis of MS**

Level: Basic  
(Basic = neurologists in training, non MS-specialists / Intermediate = board examined neurologists / Advanced = MS specialists)

**Chairs**
G. Arrambide (Barcelona, ES)  
W. Brownlee (London, UK)

13:45 - 14:05  
**73 MS: What’s typical, what’s not?**  
W. Brownlee (London, UK)

14:05 - 14:25  
**74 Applying the 2017 McDonald criteria to make an accurate diagnosis**  
G. Arrambide (Barcelona, ES)

14:25 - 14:45  
**75 Tips for avoiding misdiagnosis**  
A. Solomon (Burlington, US)

14:45 - 15:15  
**76 Interactive case presentations for discussion**  
G. Arrambide (Barcelona, ES)  
W. Brownlee (London, UK)  
A. Solomon (Burlington, US)
Satellite Symposium, Hall A

14:00 - 15:00

**European Charcot Foundation Symposium: Explaining environmental impact in MS**

**Chairs**
G. Comi (Milan, IT)
M.P. Amato (Florence, IT)

14:00 - 14:15  77  **New epidemiological evidence of the role of environment on MS risk and evolution**
A. Ascherio (Boston, US)

14:15 - 14:30  78  **Role of intestinal microbiome**
G. Krishnamoorty (Martinsried, DE)

14:30 - 14:45  79  **Smoke and air pollution exposure: impact on MS**
L. Alfredsson (Stockholm, SE)

14:45 - 15:00  80  **Discussion**

Young Scientific Investigators' Session, Hall D

14:00 - 15:15

**Young Scientific Investigators' Session 2 - Clinical**

**Chairs**
L. Airas (Turku, FI)
D. Ontaneda (Cleveland, US)

14:00 - 14:15  81  **Supra- and infratentorial atrophy following clinically isolated syndromes: a 30-year follow-up study**
L. Haider (London, UK)

14:15 - 14:30  82  **Evaluating the risk of macrovascular events and mortality in individuals with multiple sclerosis in England: a population-based nested case-control study**
R. Palladino (London, UK)

14:30 - 14:45  83  **Infusion-related events during natalizumab: no need for post-infusion monitoring**
F.C. Loonstra (Amsterdam, NL)

14:45 - 15:00  84  **IFNβ is NOT effective in MOG-IgG+ disease: a study in 26 MOG-IgG+ Japanese patients**
K. Kaneko (Miyagi, JP)

15:00 - 15:15  85  **Inflammatory activity associated with increased rate of retinal and brain neuro-axonal injury in early MS: results from dynamic evolution in Barcelona MS-Visualpath cohort study**
I. Pulido-Valdeolivas (Barcelona, ES)
Scientific Programme

14:00 - 15:15

Nurses' Session 1: MS nurses practice nursing in many different ways

Chairs
B. Porter (London, UK)
J. Deacon (Christchurch, NZ)

14:00 - 14:25  86
Cognitive empowerment and psycho-education for MS patients. The role of Athens Naval Hospital "Cognitive Empowerment Center" in MS care.
E. Koukiotou (Athens, GR)

14:25 - 14:50  87
Yoga's influence in MS patients’ well-being, life quality and body awareness
S.G. Kristensen (Copenhagen, DK)

14:50 - 15:15  88
Title to be announced
M.A. Robles (Barcelona, ES)

15:45 - 17:15

Scientific Session 3: DMT in RRMS

Chairs
F. Sellebjerg (Copenhagen, DK)
E. Kubala Havrdová (Prague, CZ)

15:45 - 16:05  89
DMTs in RRMS 2019 - what remains to be achieved
G. Giovannoni (London, UK)

16:05 - 16:25  90
Comparative effectiveness studies in RRMS in the real world
T. Spelman (Stockholm, SE)

Platform presentations of related original papers

16:25 - 16:37  91
A Bayesian design to increase the power of multiple sclerosis clinical trials
L. Carmisciano (Genoa, IT)

16:37 - 16:49  92
Effect of ocrelizumab versus interferon β-1a on retinal thinning and association with brain volume loss in the OPERA I and OPERA II phase III trials in relapsing multiple sclerosis
A. Green (San Francisco, US)

16:49 - 17:01  93
Efficacy and safety of ponesimod compared to teriflunomide in patients with relapsing multiple sclerosis: results of the randomized, active-controlled, double-blind, parallel-group phase 3 OPTIMUM study
L. Kappos (Basel, CH)

17:01 - 17:13  94
Big multiple sclerosis data network: marginal structural models confirm the long-term impact of DMTs on disability progression
G. Lucisano (Pescara, IT)
Scientific Programme

Scientific Session, Hall B

15:45 - 17:15  
Scientific Session 4: What determines the long-term outcome of MS?

Chairs  
M. Magyari (Copenhagen, DK)  
R.A. Marrie (Winnipeg, CA)

15:45 - 16:05  
Course of MS in the era of disease modification  
A. Manouchehrinia (Stockholm, SE)

16:05 - 16:25  
Co-morbidities and the course of MS  
R.A. Marrie (Winnipeg, CA)

Platform presentations of related original papers

16:25 - 16:37  
Radiologically Isolated Syndrome: a 10-year follow-up study to identify factors predicting a clinical event  
C. Lebrun-Frenay (Nice, FR)

16:37 - 16:49  
Long term outcomes. Changes in MS prognosis through the CIS Barcelona cohort: a 25-year tale  
M. Tintoré (Barcelona, ES)

16:49 - 17:01  
Introduction of new diagnostic criteria for multiple sclerosis and time interval between disease onset and MS diagnosis  
L. Stawiarz (Stockholm, SE)

17:01 - 17:13  
Spectral-domain optical coherence tomography predicts disability in multiple sclerosis up to 10 years later  
J. Lambe (Baltimore, US)

Scientific Session, Hall C

15:45 - 17:15  
Burning Debate: It is inappropriate to prescribe interferon-beta and glatiramer acetate for active relapsing MS

This burning debate will address the topical motion: From a healthcare provider perspective, it is now inappropriate to prescribe 1st generation injectables (interferon-beta and glatiramer acetate) to newly diagnosed patients with active relapsing MS.

The live audience are encouraged to participate in the session by tweeting comments and questions using #burningdebate. At the end of the two presentations, the audience can vote on who should win the debate through twitter.

Chairs  
J. Palace (Oxford, UK)

15:45 - 15:50  
Introduction  
J. Palace (Oxford, UK)

15:50 - 16:10  
Against  
M. Zakaria (Cairo, EG)
Scientific Programme

16:10 - 16:30  103  For
G. Kobelt (Stockholm, SE)

16:30 - 17:15  104  Discussion
J. Palace (Oxford, UK)
M. Zakaria (Cairo, EG)
G. Kobelt (Stockholm, SE)

15:45 - 17:00  Young Scientific Investigators' Session, Hall D

15:45 - 17:00  Young Scientific Investigators' Session 3 - MRI

15:45 - 16:00  105  Subtyping and staging progressive MS using MRI
A. Eshaghi (London, UK)

16:00 - 16:15  106  Manganese-enhanced magnetic resonance imaging of multiple sclerosis: a case series
D.S. Reich (Bethesda, US)

16:15 - 16:30  107  Functional imaging biomarkers of cognitive impairment in multiple sclerosis: a resting-state magnetoencephalography study
S.D. Kulik (Amsterdam, NL)

16:30 - 16:45  108  The central vein sign and iron rings: insights from a large cohort of patients with multiple sclerosis and mimicking disorders
M. Clarke (Barcelona, ES)

16:45 - 17:00  109  Hippocampal regional vulnerability to damage differs between MS and neuromyelitis optica
L. Cacciaguerra (Milan, IT)

15:45 - 17:00  Nurses' Session, Hall E

15:45 - 17:00  Nurses' Session 2: Understanding patient experience to help improve care

15:45 - 16:10  110  Taming the beast: exploring the lived experience of RRMS using a life history approach
T. Burke (Sydney, AU)

16:10 - 16:35  111  Capturing patient experience and team challenges in delivery of quality services to people living with multiple sclerosis and severe spasticity
L. Keenan (London, UK)
### Scientific Programme

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Details</th>
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<tr>
<td>16:35 - 17:00</td>
<td>Finding patients with progressive MS who are lost in the system, a team approach</td>
<td>N. Barker (London, UK)</td>
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</table>
| 15:45 - 17:15 | **Educational Session 12 (MAGNIMS): Big data and deep learning: new avenues for MRI research in MS?** | Level: Advanced  
Basic = neurologists in training, non MS-specialists /  
Intermediate = board examined neurologists /  
Advanced = MS specialists  
Chairs:  
M.A. Rocca (Milan, IT)  
H. Vrenken (Amsterdam, NL) |
| 15:45 - 16:15 | Big data in MRI research in MS | M.A. Rocca (Milan, IT) |
| 16:15 - 16:45 | Collaborative research environments and crowd-sourced science in MRI in MS | H. Vrenken (Amsterdam, NL) |
| 16:45 - 17:15 | Machine learning in MRI research in MS | D. Pareto (Barcelona, ES) |
| 15:45 - 17:15 | **Educational Session 13: Pregnancy management in MS** | Level: Basic  
Basic = neurologists in training, non MS-specialists /  
Intermediate = board examined neurologists /  
Advanced = MS specialists  
Chairs:  
M.K. Houtchens (Brookline, US)  
K. Hellwig (Bochum, DE) |
| 15:45 - 16:15 | Reproductive counseling in MS: guidance and guidelines in 2019 | M.K. Houtchens (Brookline, US) |
| 16:15 - 16:45 | Disease modifying medications in women with MS planning a pregnancy: 2019 update | K. Hellwig (Bochum, DE) |
| 16:45 - 17:15 | Postpartum management in women with MS | R. Bove (San Francisco, US) |
Scientific Programme

Educational Session, Hall H

**15:45 - 17:15**

**Educational Session 14: Diagnosis and management of other neuroinflammatory diseases (CLIPPERS, anti-GFAP, neurosarcoïdosis, other systemic autoimmune diseases with CNS involvement)**

Level: Basic
(Basic = neurologists in training, non MS-specialists / Intermediate = board examined neurologists / Advanced = MS specialists)

**Chairs**
D.M. Wingerchuk (Scottsdale, US)
E. Flanagan (Rochester, US)

**15:45 - 16:15**

**119**

Autoimmune GFAP astrocytopathy: characteristics and comparison to AQP4 and MOG-related disease
E. Flanagan (Rochester, US)

**16:15 - 16:45**

**120**

Neurosarcoïdosis, CNS vasculitis, and Behcet’s disease
J. Gelfand (San Francisco, US)

**16:45 - 17:15**

**121**

CLIPPERS and other rare CNS inflammatory syndromes
D.M. Wingerchuk (Scottsdale, US)

Poster Sessions, Poster Exhibition

**17:15 - 19:15**

**Poster Session 1**

**P347**

Optic nerve topography in CIS: does the use of visual evoked potentials improve the diagnosis of MS?
A. Vidal-Jordana (Barcelona, ES)

**P348**

The MAGNIMS dissemination in space criteria: do they improve the 2017 McDonald criteria?
V. Camera (Modena, IT)

**P349**

Factors influencing patient satisfaction with the first diagnostic consultation in multiple sclerosis: a Swiss Multiple Sclerosis Registry (SMSR) study
C.P. Kamm (Lucerne, CH)

**P350**

A Fully Automated Approach for Differential Diagnosis Support in Multiple Sclerosis Based on the Central Vein Sign
M.J. Fartaria (Lausanne, CH)

**P351**

Differential distribution of oligoclonal bands in CSF of MS patients compared to other demyelinating diseases and vasculitis
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<td>P. Preziosa (Milan, IT)</td>
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<td>S. Nessler (Göttingen, DE)</td>
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<td>M. Ben Hamou (Tel Aviv, IL)</td>
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<td>A. Sánchez Sanz (Madrid, ES)</td>
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<td>D. MacCannell (Cambridge, US)</td>
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<td>J. Mellergård (Linköping, SE)</td>
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<td>G. Comi (Milan, IT)</td>
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<td>L. Forsberg (Stockholm, SE)</td>
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<td>L. Forsberg (Stockholm, SE)</td>
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Scientific Programme

P649  Safety and Effectiveness of Delayed-Release Dimethyl Fumarate Maintained Over 4-years in Multiple Sclerosis Patients Treated in Routine Medical Practice
K. Pandey (Hackensack, US)

P650  An analysis of the relationship between cladribine dose and risk of malignancies in patients with multiple sclerosis
S. Cook (Newark, US)

P651  Long-term efficacy and safety of alemtuzumab in patients with RRMS: 12-year follow-up of the CAMMS223 study
O. Fernández (Málaga, ES)

P652  The Burden of Treatment Monitoring for Patients and Physicians in Multiple Sclerosis (MS) in Europe and The United States
J. White (London, UK)

P653  Pharmacovigilance of urinary tract infections in Alemtuzumab cohort
K. Allen-Philibey (London, UK)

P654  Should I stay or should I go (on). Disease modifying therapies in patients with no evidence of disease activity for more than five years
T. Monschein (Vienna, AT)

P655  The association between an active disease course and later risk of losing income from salaries and risk of early disability pension for patients with multiple sclerosis
T.A. Chalmers (Copenhagen, DK)

P656  Twenty-Seven Years of Continuous Treatment of Multiple Sclerosis With Glatiramer Acetate: Long-term Efficacy Results of the US Open-Label Extension Study
C. Ford (Albuquerque, US)

P657  Real-world performance of oral disease-modifying therapies: A longitudinal study comparing fingolimod, teriflunomide and dimethyl fumarate in Chile
E. Ciampi (Santiago, CL)

P658  No changes in anti-JCV antibody status after Natalizumab discontinuation in a large population of Multiple Sclerosis patients
E. Sgarlata (Rome, IT)

P659  Long-term efficacy including clinical NEDA and safety of three-times-weekly dosing regimen of glatiramer acetate: 7-year results of the Glatiramer Acetate Low-Frequency Administration (GALA) open-label extension study
P. Rieckmann (Loipl, DE)

P660  Adherence and Persistence Among MS Patients Treated with First-Line Disease Modifying Therapies in Finland
M. Soilu-Hänninen (Turku, FI)

P661  Real-world experience with Cladribine in the MSBase Registry
H. Butzkueven (Melbourne, AU)
P662  A swedish post-market surveillance study of the long-term effectiveness and safety of alemtuzumab (IMSE 3) for patients treated at least 24 months  
A. Fält (Stockholm, SE)

P663  Real-world effectiveness of fingolimod in Polish group of patients with relapsing-remitting multiple sclerosis  
A. Walczak (Lodz, PL)

P664  Long term outcome of NMOSD and efficacy of long-term immunosuppression - A single center study from Southern India  
S.R. Komandla (Hyderabad, IN)

P665  Very early detection of progressive multifocal leukoencephalopathy: should we perform cerebrospinal fluid analysis before switching from natalizumab to ocrelizumab?  
I. Meinl (Munich, DE)

P666  Evaluation of anti-JC virus index values in multiple sclerosis patients on natalizumab extended interval dosing and standard interval dosing: an analysis of the TOUCH (R) Prescribing Program database  
J. Foley (Salt Lake City, US)

P667  Disease reactivation following fingolimod cessation  
C.B. Malpas (Melbourne, AU)

P668  Traffic Lights Intervention reduces Therapeutic Inertia: A Randomized Controlled trial in Multiple Sclerosis care  
G. Saposnik (Toronto, CA)

P669  Effect of HLA class II alleles on JCV infection in Japanese patients with multiple sclerosis  
M. Watanabe (Fukuoka, JP)

P670  Switching from Natalizumab to Anti-CD20 Monoclonal Antibodies: Optimal Timing and Safety Analysis  
S. Levin (New York, US)

P671  Accelerated hepatitis B vaccination regimen resulted in poor sero-protection rate in MS patients  
A. Wundes (Seattle, US)

P672  Lymphopenia is not associated with efficacy and risk of adverse events in a real-life MS population treated with fingolimod and dimethyl fumarate  
N. Bruschi (Genova, IT)

P673  Low risk of natalizumab-associated progressive multifocal leukoencephalopathy in patients who were anti-jC virus antibody negative at baseline  
L. Mason (Cambridge, US)

P674  Incidence of relapses in patients with purified high dose biotin-treated progressive multiple sclerosis (IPBio-SeP study): a second intermediate analysis of a French, multicenter study  
X. Moisset (Clermont-Ferrand, FR)
P675 Fatal outcome from thrombocytopenia purpura associated with alemtuzumab treatment  
K. Edwards (Latham, US)

P676 Exploration of factors which influence treatment decisions of patients with Multiple Sclerosis  
B. Bardsley (Heidelberg, AU)

P677 Severe multiple sclerosis relapse with tumefactive lesion while transitioning between fingolimod and rituximab  
K. Rimmer (New York, US)

P678 Comparison of In vivo Toxicity and Anti-glatiramer acetate IgG Antibody Titers in Rats Treated with Glatiramer Acetate (Copaxone) and Follow-on Glatiramer Acetate (FOGA) Products  
A. Konya (Debrecen, HU)

P679 Temporary left ventricular dysfunction due to fingolimod treatment  
G. Tekgol (Eskişehir, TR)

P680 Predictors of response to high-efficacy therapies in relapsing-remitting multiple sclerosis  
L. Midaglia (Barcelona, ES)

P681 High-throughput immunophenotyping and subsequent bulk data analysis can reveal prognostic markers in alemtuzumab treatment of MS patients  
T. Ruck (Münster, DE)

P682 Evaluation of spinal cord atrophy in different MS subtypes using icospine  
W. Van Hecke (Leuven, BE)

P683 A mass cytometry study of natalizmab treated MS patients  
G.H. Bringeland (Bergen, NO)

P684 Clinical characteristics predicting relapses following disease modifying therapies discontinuation in Multiple Sclerosis: a monocentric cohort study  
M. Pasca (Florence, IT)

P685 Short term disease activity after switching from natalizumab to fingolimod does not predict long term fingolimod efficacy - a retrospective study  
C. Coclitu (Grenoble, FR)

P686 Effects of Ocrelizumab treatment in peripheral blood leukocyte subsets of Primary Progressive Multiple Sclerosis patients  
J.I. Fernandez Velasco (Madrid, ES)

P687 Peg-Interferon beta 1a elicits a sustained and long lasting overexpression of interferon related genes: a whole transcriptome sequencing analysis  
A. Bertolotto (Orbassano, IT)

P688 Machine learning models using multi-dimensional digital data and PROs predict driving difficulties and falls in people with MS  
M. Gudesblatt (Patchogue, US)
P689  Title: miRNA profiling in Teriflunomide treated multiple sclerosis (MS) patients
A. Paul (Boston, US)

P690  Efficacy and safety of ocrelizumab in patients with relapsing-remitting multiple sclerosis with a suboptimal response to previous disease-modifying therapies (1-year interim results)
P. Vermersch (Lille, FR)

P691  Efficacy of Transcutaneous Posterior Tibial Nerve Stimulation and Pelvic Floor Muscle Training in Female MS Patients with Overactive Bladder
C. Polat Dunya (Istanbul, TR)

K.M. Krysko (San Francisco, US)

P693  Effectiveness and safety of tetrahydrocannabinol - cannabidiol oromucosal spray in Belgian patients with multiple sclerosis spasticity: a retrospective data collection
V. Popescu (Pelt, BE)

P694  Determining how and when to stop a placebo-controlled study for efficacy in NMOSD: An IDMC perspective
F. Lublin (New York, US)

P695  The use of Registration of Interest portals to streamline MS Trials Recruitment
S. Alexander (London, UK)

P696  Risk factors of leaving employment due to multiple sclerosis and changes in risk over the past decades: survival analysis with competing risks
J. Chen (Hobart, AU)

P697  PATIENTS WITH NEUROMYELITIS OPTICA SPECTRUM DISORDER TREATED WITH TOCILIZUMAB FOR 2 YEARS
E. Carreón Guarnizo (Murcia, ES)

P698  Cladribine is not mutagenic to mitochondrial DNA and RNA in leukemic cell lines
E. Järvinen (Espoo, FI)

P699  An Oral Gavage Model for Cuprizone - Induced Brain Demyelination: Improved Repeatability Along With Robust and Specific Phenotype
J. Toivanen (Kuopio, FI)

P700  Assessing pharmacists’ preferences towards efficacy attributes of multiple sclerosis disease-modifying therapies
J. Maurino (Madrid, ES)

P701  User-centered development of an integrated disease management portal for patients with multiple sclerosis: results of patient & physician surveys
M. Wunderlich (Dresden, DE)
New Master's Program: Multiple Sclerosis Management  
I. Voigt (Dresden, DE)

Discontinuation of disease-modifying therapy and its clinical impact in MS patients over 60 years  
F. Ladeira (Lisbon, PT)

Telemedicine reaches MS patients living with disabilities: At-home telerehabilitation with remotely-supervised transcranial direct current stimulation (RS-tDCS)  
L. Charvet (New York, US)

Neuro rehabilitation effectiveness based on virtual reality and tele rehabilitation in patients with multiple sclerosis in Argentina. 'Reavitelem' study  
F.J. Caceres (Buenos aires, AR)

Walk ratio as a window to the cerebellum in multiple sclerosis: a structural MRI study  
A. Kalron (Tel-Aviv, IL)

Different network functional connectivity characteristics of responders and non-responders to attention training in MS  
S.E. Prouskas (Amsterdam, NL)

Mixed methods study of the upper extremity: forgotten and not prioritized in MS rehabilitation  
K. Wadden (St. John's, CA)

The use of fNIRS to characterize cognitive and motor processing in early stage patients with multiple sclerosis  
R.B. Thomaz (São Paulo, BR)

POSITIVE EFFECTS OF EXERCISE ON COGNITION ARE ENHANCED BY THE TRANSCRANIAL DIRECT CURRENT STIMULATION  
G. Coghe (Cagliari, IT)

Mapping the MRI substrates of hand motor impairment: focus on motor structural networks  
C. Cordani (Milan, IT)

The effects of aerobic exercise on sleep quality measures and sleep-related biomarkers in individuals with Multiple Sclerosis: a pilot randomised controlled trial  
A. Al-Sharman (Irbid, JO)

The effects of maximal aerobic exercise on serum neurotrophins and inflammatory cytokines in progressive Multiple Sclerosis  
A.J. Devasahayam (St.John's, CA)
Satellite Symposium, Hall B

**18:15 - 19:15**  
**Satellite Symposium 3: Harnessing the digital health revolution**  
Supported by Roche  

**Chairs**  
J. Oh (Toronto, CA)

**18:15 - 18:35**  
126  
**Digital transformations in healthcare and research**  
A. Atreja (New York City, US)

**18:35 - 18:55**  
127  
**Navigating complexity to aid practical decisions**  
H. Butzkueven (Melbourne, AU)

**18:55 - 19:15**  
128  
**Integrating digital tools into the MS clinic**  
J. Oh (Toronto, CA)

Satellite Symposium, Hall D

**18:15 - 19:15**  
**Satellite Symposium 4: Relapses in neuromyelitis optica spectrum disorder: why do they matter?**  
Supported by Alexion Pharmaceuticals Inc  

**Chairs**  
F. Paul (Berlin, DE)

**18:15 - 18:20**  
122  
**Welcome and introductions**  
F. Paul (Berlin, DE)

**18:20 - 18:35**  
123  
**Understanding the burden of NMOSD relapse**  
J. Lycke (Gothenburg, SE)

**18:35 - 19:00**  
124  
**The pathophysiology of NMOSD and its implications**  
H. Wiendl (Münster, DE)  
S. Pittock (Rochester, US)

**19:00 - 19:15**  
125  
**Panel discussion, questions and close**  
F. Paul (Berlin, DE)  
J. Lycke (Gothenburg, SE)  
H. Wiendl (Münster, DE)  
S. Pittock (Rochester, US)
Scientific Programme

Thursday, 12 September 2019

07:30 - 08:30
Satellite Symposium, Hall C
Satellite Symposium 5: The road not (yet) taken: targeting new pathways of MS pathophysiology
Supported by Sanofi Genzyme

Chairs
J. Hillert (Stockholm, SE)

07:30 - 07:35 129
Welcome and introduction
J. Hillert (Stockholm, SE)

07:35 - 07:45 131
Mapping “MS”: neurodegeneration throughout the disease course
B. Trapp (Cleveland, US)

07:45 - 08:05 130
The road we’re on: current therapeutic targets
J. Hillert (Stockholm, SE)

08:05 - 08:25 132
The road ahead: emerging targets and disease pathways in MS
A. Bar-Or (Philadelphia, US)

08:25 - 08:30 132a
Closing remarks
J. Hillert (Stockholm, SE)

08:00 - 09:30
Educational Session, Hall E
Educational Session 15: How do our treatments impact the immune system?

Level: Basic
(Basic = neurologists in training, non MS-specialists / Intermediate = board examined neurologists / Advanced = MS specialists)

Chairs
R. Liblau (Toulouse, FR)
L. Klotz (Münster, DE)

08:00 - 08:30 133
Impact of first-line MS treatments on the immune system
L. Klotz (Münster, DE)

08:30 - 09:00 134
Migration-targeting therapies in MS: impact on immune responses
R. Liblau (Toulouse, FR)

09:00 - 09:30 135
Cell-depleting strategies in MS: impact on immune responses
A. Bar-Or (Philadelphia, US)
Scientific Programme

Educational Session, Hall F

08:00 - 09:30

Educational Session 16 (IMSCOGS): Cognitive dysfunction in MS

Level: Basic
(Basic = neurologists in training, non MS-specialists / Intermediate = board examined neurologists / Advanced = MS specialists)

Chairs
R.H. Benedict (Buffalo, US)
M.P. Amato (Florence, IT)

08:00 - 08:30  137

How to diagnose and monitor in clinical practice
R.H. Benedict (Buffalo, US)

08:30 - 09:00  138

How to manage: recent developments
J. DeLuca (West Orange, US)

09:00 - 09:30  136

Epidemiology and risk factors: an update
M.P. Amato (Florence, IT)

Free Communications, Hall A

08:30 - 09:30

Free Communication 1: New treatment options in NMO

Chairs
J. Palace (Oxford, UK)
S. Khoury (Beirut, LB)

08:30 - 08:42  139

The N-MOmentum Study--A Randomised, Placebo-Controlled, Double-Blind Trial of Inebilizumab for Neuromyelitis Optica Spectrum Disorder: Randomised Controlled Period and Open-label Extension Results
B.A. Cree (San Francisco, US)

08:42 - 08:54  140

Tocilizumab versus azathioprine in highly relapsing neuromyelitis optica spectrum disorders (TANGO): a head-to-head comparative study
F.-D. Shi (Tianjin, CN)

08:54 - 09:06  141

Efficacy of satralizumab as monotherapy in pre-specified subgroups of SAkuraStar, a double-blind placebo-controlled Phase 3 clinical study in patients with neuromyelitis optica spectrum disorder (NMOSD)
J.L. Bennett (Aurora, US)

09:06 - 09:18  142

Long-term safety and effectiveness of eculizumab in neuromyelitis optica spectrum disorder
D.M. Wingerchuk (Scottsdale, US)

09:18 - 09:30  143

Autologous Hematopoietic Stem Cell Transplant in Patients with Severe Refractory Neuromyelitis Optica Spectrum Disease: The Ottawa Experience
J. Brooks (Ottawa, CA)
Scientific Programme

Free Communications, Hall B

08:30 - 09:30  Free Communication 2: Comorbidities

Chairs
A.J. Thompson (London, UK)
E. Gulowsen Celius (Oslo, NO)

08:30 - 08:42  144  The Survival of Patients with Multiple Sclerosis in Turkey
M. Kürüncü (Istanbul, TR)

08:42 - 08:54  145  A large exploratory case-control study on the multiple sclerosis prodrome
A. Hapfelmeier (Munich, DE)

08:54 - 09:06  146  Vascular disease in Multiple Sclerosis: a whole body approach
R. Geraldes (Oxford, UK)

09:06 - 09:18  147  Obesity is not associated with MS in a socially and ethnically diverse population
R. Dobson (London, UK)

09:18 - 09:30  148  Cardiovascular disease in patients with multiple sclerosis: a nationwide cohort study in Sweden
F. Piehl (Stockholm, SE)

Free Communications, Hall C

08:30 - 09:30  Free Communication 3: Pathology, pathogenesis and biomarkers

Chairs
A. Achiron (Tel Aviv, IL)
C. Lebrun (Nice, FR)

08:30 - 08:42  152  Blood neurofilament light levels are lowered to a healthy donor range in patients with RMS and PPMS following ocrelizumab treatment
A. Bar-Or (Philadelphia, US)

08:42 - 08:54  149  Gut microbiota-reactive IgA plasma cells traffic to the CNS in multiple sclerosis
A.-K. Pröbstel (San Francisco, US)

08:54 - 09:06  150  Iron rim lesions in Multiple Sclerosis at 7 Tesla Magnetic Resonance Imaging: a 7 year prospective longitudinal study
A. Dal-Bianco (Vienna, AT)

09:06 - 09:18  151  Paramagnetic phase rims and serum neurofilaments in relapsing-remitting and progressive multiple sclerosis patients: a combined laboratory-imaging marker of chronic inflammation
P. Maggi (Lausanne, CH)

09:18 - 09:30  153  Elevated body mass index is associated with accelerated ganglion cell + inner plexiform layer atrophy in multiple sclerosis
A.G. Filippatou (Baltimore, US)
Scientific Programme

Scientific Session, Hall A

10:00 - 11:30

Scientific Session 5: DMT in progressive MS

Chairs
R.J. Fox (Cleveland, US)
B. Bielekova (Bethesda, US)

10:00 - 10:20  154

DMTs in progressive MS 2019 - what remains to be achieved
X. Montalban (Toronto, CA)

10:20 - 10:40  155

How to design RCTs for SPMS
J. Chataway (London, UK)

10:40 - 11:04

Defining the risk factors for the conversion to secondary progressive multiple sclerosis: a retrospective cohort study of the Italian MS register
P. Iaffaldano (Bari, IT)

Indications of neuroprotective effects in progressive multiple sclerosis following autologous mesenchymal stem cells (MSC) transplantation: report of a randomised phase IIb double blind trial
D. Karussis (Jerusalem, IS)

11:04 - 11:16  158

Siponimod delays the time to wheelchair in patients with SPMS: results from the EXPAND study
P. Vermersch (Lille, FR)

11:16 - 11:28  159

Sustained reduction in confirmed disability progression in patients with primary progressive multiple sclerosis treated with ocrelizumab in the open-label extension period of the Phase III ORATORIO trial: 6.5-study year follow-up data
J.S. Wolinsky (Houston, US)

Scientific Session, Hall B

10:00 - 11:30

Scientific Session 6: Genes and progression/course

Chairs
S. Sawcer (Cambridge, UK)
L. Barcellos (Berkeley, US)

10:00 - 10:20  160

In search of genetic regulation of progression and severity of MS
I. Kockum (Stockholm, SE)

10:20 - 10:40  161

HLA variation and MS
L. Fugger (Oxford, UK)

10:40 - 11:04

Post-mortem multiple sclerosis lesion pathology is influenced by single nucleotide polymorphisms
N.L. Fransen (Amsterdam, NL)
Scientific Programme

10:52 - 11:04  163  RNA-sequencing of leukocortical lesions from multiple sclerosis patients reveals little overlap in gene expression between white and grey matter demyelination
T.A. van Wageningen (Amsterdam, NL)

11:04 - 11:16  164  Utilizing epigenetics to understand mechanisms underlying primary progressive multiple sclerosis
M. Pahlevan Kakhki (Stockholm, SE)

11:16 - 11:28  165  Influence of ultraviolet radiation and diminished-function melanocortin 1 receptor variants on multiple sclerosis disease severity in two large multicenter cohort studies
P. Ostkamp (Münster, DE)

10:00 - 11:30  Scientific Session, Hall C
Scientific Session 7: How to achieve a structured assessment and quality assurance in MS care

Chairs
K. Fink (Stockholm, SE)
P. Matthews (London, UK)

10:00 - 10:20  166  Patient monitoring by wearable devices integrated in MS care
T. Chitnis (Boston, US)

10:20 - 10:40  167  To design, implement and sustain big data collection in MS
H. Butzkueven (Melbourne, AU)

10:40 - 10:52  168  Functional and structural visual pathway assessment in CIS patients
A. Vidal-Jordana (Barcelona, ES)

10:52 - 11:04  169  The progressive multiple sclerosis score: a prognostic assistant tool in multiple sclerosis disease
A. I. Pisani (Verona, IT)

11:04 - 11:16  170  The relationship of change in neuro-QoL to change in neuroperformance tests and MRI
M. McGinley (Cleveland, US)

11:16 - 11:28  171  Introducing machine learning for full MS patient trajectories improves predictions for disability score progression
L. Peeters (Diepenbeek, BE)
Scientific Programme

10:00 - 11:30
Scientific Session, Hall D

**Scientific Session RIMS 1: How can rehabilitation influence the progression of MS?**

**Chairs**
S. Johansson (Stockholm, SE)
J. Freeman (Plymouth, UK)

10:00 - 10:20  172
**Exercise therapy in MS - a disease modifying role?**
U. Dalgas (Aarhus, DK)

10:20 - 10:40  173
**Coping strategies when living with MS progression**
L.B. Strober (East Hanover, US)

10:40 - 10:52  174
**Multiple sessions of transcranial direct current stimulation (tDCS) combined with aerobic physical activity improves walking speed**
G. Pilloni (Cagliari, IT)

10:52 - 11:04  175
**Virtual Reality(VR)-based cognitive rehabilitation: cognitive games are complementary to physical training for an optimum rehabilitation strategy in patients with multiple sclerosis (MS)**
S.-M. Khaligh-Razavi (London, UK)

11:04 - 11:16  176
**Effects of PR-fampridine on gait pattern and patient-reported outcomes: a cross-over, randomized, placebo-controlled trial**
M. Valet (Bruxelles, BE)

11:16 - 11:28  177
**Detection of subtle gait disturbance and future fall risk in early multiple sclerosis**
V. Leavitt (New York, US)

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10:00 - 11:30
Educational Session, Hall E

**Educational Session 17: Pharmacovigilance and multiple sclerosis in the post-marketing setting: opportunity and lessons learned**

**Level:** Advanced
(Basic = neurologists in training, non MS-specialists / Intermediate = board examined neurologists / Advanced = MS specialists)

**Chairs**
H. Tremlett (Vancouver, CA)
M. Magyari (Copenhagen, DK)

10:00 - 10:30  178
**Using linked health administrative and clinical data to investigate drug safety in MS**
H. Tremlett (Vancouver, CA)

10:30 - 11:00  179
**Using registry data to investigate drug safety in MS**
M. Magyari (Copenhagen, DK)
Scientific Programme

11:00 - 11:30 180  Evolution of biological agents: how established drugs can become less safe
D. Hunt (Edinburgh, UK)

Educational Session, Hall F

10:00 - 11:30  Educational Session 18: Antibodies and complement in MS spectrum disorders
Level: Intermediate
(Basic = neurologists in training, non MS-specialists / Intermediate = board examined neurologists / Advanced = MS specialists)

Chairs
J.L. Bennett (Aurora, US)
J. Lünemann (Münster, CH)

10:00 - 10:30 181  Antibody- and complement-mediated effector functions
J. Lünemann (Münster, CH)

10:30 - 11:00 182  Antibody-mediated pathogenesis in central and peripheral neuroinflammatory disorders
J.L. Bennett (Aurora, US)

11:00 - 11:30 183  Therapeutic complement inhibition in neuroinflammatory diseases
R. Mantegazza (Milan, IT)

Meet the Expert, Hall G

10:00 - 11:00  Meet the Expert 1 - NMO / MOG
Meet the Expert Sessions are the ideal opportunity to meet with some of the biggest names in the field of MS in an interactive setting driven by audience participation. The experts will provide answers to cases and challenging questions on four different topics.

Chairs
J. de Seze (Strasbourg, FR)
H.J. Kim (Goyang, KR)

Hot Topic, Hall A

11:45 - 12:30  Hot Topic 6: B-cells in the pathogenesis of MS
Chairs
A. Svenningsson (Stockholm, SE)
R. Magliozzi (Verona, IT)

11:45 - 12:00 184  Rationale of B-cell therapy in MS
D. Baker (London, UK)
Scientific Programme

12:00 - 12:15  185  Rituximab is a reasonable alternative in MS treatment  
F. Piehl (Stockholm, SE)

12:15 - 12:30  186  Rituximab is not a reasonable alternative in MS treatment  
M.T. Wallin (Washington, US)

Hot Topic, Hall B

11:45 - 12:30  Hot Topic 7: Symptomatic treatment

Chairs  
A.-M. Landtblom (Uppsala, SE)  
R. Papais-Alvarenga (Rio de Janeiro, BR)

11:45 - 12:00  187  Main challenges in symptomatic MS treatment  
E. Maillart (Paris, FR)

12:00 - 12:15  188  Neuromodulation: a potential approach to management of symptoms in MS  
L. Leocani (Milan, IT)

12:15 - 12:30  189  Symptomatic pharmacotherapy and patient education strategies in progressive MS - an inventory  
J. Sastre-Garriga (Barcelona, ES)

Hot Topic, Hall C

11:45 - 12:30  Hot Topic 8: Neuromyelitis optica spectrum disorders

Chairs  
R. Marignier (Lyon, FR)  
A. Bar-Or (Philadelphia, US)

11:45 - 12:00  190  New emerging treatments in NMOSD  
B. Weinshenker (Rochester, US)

12:00 - 12:15  191  The spectrum of demyelinating diseases in children  
B. Banwell (Philadelphia, US)

12:15 - 12:30  192  Pathogenesis of human antibodies against MOG  
E. Meinl (Martinsried, DE)

Hot Topic, Hall D

11:45 - 12:30  Hot Topic 9: Patients' voice to develop MS care: MS PROMs

Chairs  
J. Cohen (Cleveland, US)  
P.F. Zaratin (Genoa, IT)
Scientific Programme

11:45 - 12:00  193  20 years of MSIS-29 – importance of an MS specific QoL scale
J. Hobart (Plymouth, UK)

12:00 - 12:15  194  PROMS: supporting patient-centred care
M. Finlayson (Kingston, CA)

12:15 - 12:30  195  PROMs in standardized MS care
A. Solari (Milan, IT)

Meet the Expert, Hall G

11:45 - 12:45  Meet the Expert 2 - Differential diagnosis
Meet the Expert Sessions are the ideal opportunity to meet with some of the
biggest names in the field of MS in an interactive setting driven by audience
participation. The experts will provide answers to cases and challenging questions
on four different topics.

Chairs
B. Stankoff (Paris, FR)
M. Tintoré (Barcelona, ES)

Educational Session, Meeting Room T3

11:45 - 12:45  Case-based Educational Session 19: When to stop
treatment?

Chairs
G. Edan (Rennes, FR)
E. Le Page (Rennes, FR)

11:45 - 12:15  196  Case #1: when to stop in relapsing remitting multiple sclerosis (RRMS)
patient
E. Le Page (Rennes, FR)

12:15 - 12:45  197  Case #2: when to stop in secondary progressive multiple sclerosis
(SPMS) patient
G. Edan (Rennes, FR)

Satellite Symposium, Hall A

13:00 - 14:00  Satellite Symposium 6: MS: time to shift our focus
Supported by Roche

Chairs
F. Piehl (Stockholm, SE)

13:00 - 13:20  198  Understanding MS disease progression
J.S. Wolinsky (Houston, US)
Scientific Programme

13:20 - 13:40  199  The changing treatment paradigm
F. Piehl (Stockholm, SE)

13:40 - 14:00  200  Preserving patient function
R. Bermel (Cleveland, US)

Satellite Symposium, Hall B
13:00 - 14:00  Satellite Symposium 7: Challenging our understanding of the MS spectrum: an expert panel discussion
Supported by Novartis

Chairs
S. Fredrikson (Stockholm, SE)

13:00 - 13:05  201  Chair’s opening and welcome
S. Fredrikson (Stockholm, SE)

13:05 - 13:20  202  A perspective change: reframing progression in MS
E. Havrdová (Prague, CZ)

13:20 - 13:35  203  "Looking beyond the obvious: unmasking progression early in the disease"
B.A. Cree (San Francisco, US)

13:35 - 13:50  204  "The full portrait: individualising care in response to disease progression"
G. Giovannoni (London, UK)

13:50 - 13:55  205  Q&A
E. Havrdová (Prague, CZ)
B.A. Cree (San Francisco, US)
G. Giovannoni (London, UK)
S. Fredrikson (Stockholm, SE)

13:55 - 14:00  206  Closing remarks
S. Fredrikson (Stockholm, SE)

Scientific Session, Hall A
14:15 - 15:45  Scientific Session 8: Pathological correlates of progression in MS

Chairs
L. Bø (Bergen, NO)
C. Stadelmann (Göttingen, DE)

14:15 - 14:35  207  Multiple sclerosis pathogenesis: what are the missing pieces?
W. Brück (Göttingen, DE)
Potential biological mechanisms behind MS progression
J. Van Horssen (Amsterdam, NL)

Long-term follow-up on clinical, radiographic and cognitive outcomes in pathologically confirmed CNS inflammatory demyelinating disease
A. Kalinowska-Lyszczarz (Rochester, US)

Inflammatory lesion activity in chronic progressive MS is related to the accumulation and infiltration of tissue resident memory T cells
N.L. Fransen (Amsterdam, NL)

Molecular signatures of different lesions types in the white matter of SPMS
M.L. Elkjaer (Odense C, DK)

High levels of perivascular inflammation and active white matter lesions at time of death are associated with rapidly progressive multiple sclerosis
D. Marastoni (London, UK)

Cognitive assessment in MS - rationale and tools
D. Langdon (London, UK)

Neuro-QoL in MS - tomorrow’s standard outcome?
D. Miller (Cleveland, US)

Multiple sclerosis performance test (MSPT): a demographically stratified normative database (N = 517) of healthy subjects ages 15-89 to aid clinical interpretation of MS patient neuroperformance
M. Sokolowski (Cleveland, US)

Advancing walking measurement in multiple sclerosis clinical trials: a new patient-reported outcome measure
J. Hobart (Plymouth, UK)

Remotely monitored ambulatory activity correlates with MS disability not only for ambulation but also for MRI atrophy metrics, cognition and quality of life: baseline analysis from the SPI2 clinical trial of MD1003 in progressive MS
V. Block (San Francisco, US)
Scientific Programme

15:31 - 15:43  218  A multiple sclerosis disease progression measure based on rate of cumulative disability
R. Ramanujam (Stockholm, SE)

Scientific Session, Hall C

14:15 - 15:45  Scientific Session 10: Infections and the pathogenesis of MS

Chairs
A. Fogdell-Hahn (Stockholm, SE)
R. Hohlfeld (Munich, DE)

14:15 - 14:35  219  A role for HHV-6 in MS is still a valid hypothesis
S. Jacobson (Bethesda, US)

14:35 - 14:55  220  The role of EBV in MS immunology?
C. Münz (Zurich, CH)

Platform presentations of related original papers

14:55 - 15:07  221  MS risk loci are underrepresented in EBV induced DNA hypomethylation
L. Ong (Westmead, AU)

15:07 - 15:19  222  Serological response against HHV-6A is associated with increased risk for multiple sclerosis
A. Fogdell-Hahn (Stockholm, SE)

X. Zhou (San Francisco, US)

15:31 - 15:43  224  A large case-control study on vaccination as risk factor of multiple sclerosis
C. Gasperi (Munich, DE)

Scientific Session, Hall D

14:15 - 15:45  Scientific Session RIMS 2: Challenges in cognitive rehabilitation

Chairs
A. Solari (Milan, IT)
J. Sastre-Garriga (Barcelona, ES)

14:15 - 14:35  225  Cognitive strategy training - a curse or blessing?
P. Hämäläinen (Masku, FI)

14:35 - 14:55  226  Cognitive rehabilitation for attention and memory in multiple sclerosis: results of the CRAMMS trial
R. das Nair (Nottingham, UK)
### Scientific Programme

**Platform presentations of related original papers**

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<th>Speaker</th>
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<tr>
<td>14:55 - 15:07</td>
<td>227</td>
<td>Memory improvement after a cognitive rehabilitation program in multiple sclerosis</td>
<td>H. Brissart (Nancy, FR)</td>
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<tr>
<td>15:19 - 15:31</td>
<td>229</td>
<td>Study of mental rotation in a cohort of patients with relapsing remitting multiple sclerosis: case control study</td>
<td>M. Fratino (Roma, IT)</td>
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**Educational Session, Hall E**

**Educational Session 20: Immunisation in MS**

- **Level**: Basic  
  (Basic = neurologists in training, non MS-specialists / Intermediate = board examined neurologists / Advanced = MS specialists)

- **Chairs**
  S. Vukusic (Lyon, FR)  
  J. Correale (Buenos Aires, AR)

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<td>14:15 - 14:45</td>
<td>231</td>
<td>Vaccines and the risk of MS</td>
<td>J. Correale (Buenos Aires, AR)</td>
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<td>14:45 - 15:15</td>
<td>232</td>
<td>Vaccines and the risk of relapses</td>
<td>J. Frederiksen (Copenhagen, DK)</td>
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<td>15:15 - 15:45</td>
<td>233</td>
<td>Vaccines and DMTs</td>
<td>S. Vukusic (Lyon, FR)</td>
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**Educational Session, Hall F**

**Educational Session 21: Comprehensive appraisal of MS studies**

- **Level**: Advanced  
  (Basic = neurologists in training, non MS-specialists / Intermediate = board examined neurologists / Advanced = MS specialists)

- **Chairs**
  M.P. Sormani (Genoa, IT)  
  F. Deisenhammer (Innsbruck, AT)
Scientific Programme

14:15 - 14:45  234  How to assess and summarize study
E. Hernández Martínez-Lapiscina (Barcelona, ES)

14:45 - 15:15  235  Data analyses, interpretation, misinterpretation, and biases
M.P. Sormani (Genoa, IT)

15:15 - 15:45  236  Interpretation of analytical/deductive statistics
F. Deisenhammer (Innsbruck, AT)

Meet the Expert, Hall G

14:15 - 15:15
Meet the Expert 3 - Treatment

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biggest names in the field of MS in an interactive setting driven by audience
participation. The experts will provide answers to cases and challenging questions
on four different topics.

Chairs
K. Selmaj (Olsztyn, PL)
R. Gold (Bochum, DE)

Free Communications, Hall A

16:15 - 17:15  Free Communication 4: Clinical aspects, neuroprotection
and repair

Chairs
M. Tintoré (Barcelona, ES)
M. Pugliatti (Ferrara, IT)

16:15 - 16:27  237  Higher efficacy therapies appear to have a disproportionately larger
effect in younger patients
E. Alvarez (Aurora, US)

16:27 - 16:39  238  Population-based head-to-head comparative studies of the epidemiology
of neuromyelitis optica spectrum disorder (NMOSD) in Europe
V. Papp (Aabyhøj, DK)

16:39 - 16:51  239  A large international aquaporin-4 antibody data set: combines individual
factors to predict prognosis, identifies the risk of post-onset attack
disability and calculates the power for future clinical trials
I. Nakashima (Sendai, JP)

16:51 - 17:03  240  Environmental enrichment induces microglia polarization and
neurotrophin production in a focal chronic cortical model of multiple
sclerosis
B.A. Silva (Buenos Aires, AR)

17:03 - 17:15  241  Oxcarbazepine as a neuroprotective agent in MS: a phase Ila trial
(PROXIMUS)
M. Marta (London, UK)
**Scientific Programme**

### Free Communications, Hall B

**16:15 - 17:15**

**Free Communication 5: MOG**

**Chairs**  
P.S. Sørensen (Copenhagen, DK)  
D. Horáková (Prague, CZ)

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<tr>
<td>16:15 - 16:27</td>
<td>MOG-antibodies and multiple sclerosis in adults: a large multicentre cross-sectional study</td>
<td>A. Cobo-Calvo (Lyon, FR)</td>
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<td>16:39 - 17:03</td>
<td>Perivenous inflammatory demyelination with MOG-dominant myelin loss is a characteristic feature of MOG antibody-associated disease</td>
<td>Y. Takai (Sendai, JP)</td>
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### Free Communications, Hall C

**16:15 - 17:15**

**Free Communication 6: Paediatric MS - Memorial Session to honor Rogier Hintzen**

**Chairs**  
H.F. Harbo (Oslo, NO)  
J. Correale (Buenos Aires, AR)

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<td>16:15 - 16:27</td>
<td>Everything is possible: a memorial honoring a pioneer in pediatric multiple sclerosis</td>
<td>B. Banwell (Philadelphia, US)</td>
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<td>16:27 - 16:39</td>
<td>Anti-AQP4 antibodies positive neuromyelitis optica syndrome in children: an European-Brazilian collaborative study</td>
<td>R.B. Paolillo (Sao Paulo, BR)</td>
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<tr>
<td>16:39 - 17:03</td>
<td>Real-world effectiveness of initial treatment with newer versus injectable disease-modifying therapies in pediatric multiple sclerosis in the US</td>
<td>K.M. Krysko (San Francisco, US)</td>
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<tr>
<td>17:03 - 17:15</td>
<td>Cognitive processing speed in pediatric-onset MS: baseline characteristics of impairment and predictors of decline</td>
<td>L. Krupp (Stony Brook, US)</td>
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17:03 - 17:15  251  School performance and psychiatric morbidity 6 years after paediatric acute disseminated encephalomyelitis: a nationwide population-based cohort study  
M.S. Boesen (Herlev, DK)

16:15 - 17:00  Hot Topic, Hall D

16:15 - 17:00  Hot Topic 10: Epigenetics in MS: implications for pathogenesis and disease management

Chairs  
G. Castelo-Branco (Stockholm, SE)  
V. Maltby (Callaghan, AU)

16:15 - 16:30  252  Can we learn about MS brain from epigenetic changes?  
M. Jagodic (Stockholm, SE)

16:30 - 16:45  253  Epigenetics as a therapeutic/environmental mediator in MS  
V. Maltby (Callaghan, AU)

16:45 - 17:00  254  Non-invasive blood epigenetic biomarkers of CNS cell loss  
E. Akirav (Stony Brook, US)

16:15 - 17:15  Meet the Expert, Hall G

16:15 - 17:15  Meet the Expert 4 - Pregnancy

Details will follow shortly.

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Chairs  
S. Vukusic (Lyon, FR)  
K. Hellwig (Bochum, DE)

16:15 - 17:15  Educational Session, Meeting Room T3

16:15 - 17:15  Case-based Educational Session 22 (RIMS): Progressive MS: losing mobility

Chairs  
V. de Groot (Amsterdam, NL)  
A. Guldhammer Skjerbæk (Ry, DK)

16:15 - 16:35  255  Diagnosing and treating gait problems using gait analysis  
V. de Groot (Amsterdam, NL)
Scientific Programme

16:35 - 16:55 256  Ensuring an effective training to deal with mobility loss  
A. Guldhammer Skjerbæk (Ry, DK)

Poster Sessions, Poster Exhibition

17:15 - 19:15  Poster Session 2

P714  The diagnostic value of susceptibility-weighted imaging in multiple sclerosis: the central vein sign and iron rings are specific markers of multiple sclerosis lesions  
M. Clarke (Barcelona, ES)

P715  Misdiagnosis of Multiple Sclerosis  
L. Midaglia (Barcelona, ES)

P716  The role of pons lesion location in differentiating multiple sclerosis from vascular risk factor related cerebral small vessel disease  
R. Geraldes (Oxford, UK)

P717  Impact of the McDonald 2017 vs. the McDonald 2010 criteria in patients with a first demyelinating event - a retrospective study  
M. Pawlitzki (Münster, DE)

P718  Relevance of antibodies to Myelin Oligodendrocyte Glycoprotein in CSF of seronegative cases  
S. Mariotto (Verona, IT)

P719  Checkpoint Inhibitor-Induced Longitudinally Extensive Transverse Myelitis: A Report on Two Cases  
S. Makkawi (Calgary, CA)

P720  Cranial Nerve Enhancement in Multiple Sclerosis is Associated with Younger Age at Onset and More Severe Disease  
L. Haider (London, UK)

P721  Clinical And Paraclinical Markers Of Disability Progression After A First Neurological Event: A Long Term Follow-Up Study  
G. Dalla Costa (Milan, IT)

P722  Subtyping lymphocytes in cerebrospinal fluid helps to differentiate inflammatory from non-inflammatory CNS disorders  
A. Wallach (New York, US)

P723  Diagnostic relevance of free light chain indices and their relation to the clinical presentation of multiple sclerosis  
J. Magdic (Maribor, SI)

P724  Kynurenine in cerebrospinal fluid as a biomarker in differential diagnosis of Multiple Sclerosis  
K.-W. Sühs (Hannover, DE)

P725  An experimental model of Neuromyelitis Optica Spectrum Disorder (NMOSD)-Optic Neuritis: Insights into disease mechanisms  
S. Forsberg Soerensen (Odense, DK)
P726  Is benign MS 'benign'?
D. Ellenberger (Hannover, DE)

P727  Associations between neuropathic pain and thalamic ventral posterior nucleus volume in neuromyelitis optica spectrum disorders
S. Asseyer (Berlin, DE)

P728  Long term outcomes in Myelin Oligodendrocyte Glycoprotein-IgG (MOG-IgG) Associated Disorders
A.S. Lopez-Chiriboga (Rochester, US)

P729  Efficacy and Safety of Tocilizumab for the Treatment of Refractory Neuromyelitis Optica
G. Dalla Costa (Milan, IT)

P730  Recurrence within the same anatomical location in patients with MOG antibody associated disease
J.-W. Hyun (Goyang, KR)

P731  Aggressive and refractory MOG IgG associated encephalomyelitis treated with autologous hematopoietic stem cell transplantation: first case worldwide
C. Rush (Ottawa, CA)

P732  Neuromyelitis optica and the puerperal gravid cycle
R. Alvarenga (Rio De Janeiro, BR)

P733  Opticspinal MS is a Neuromyelitis Optica spectrum disorder, a MS phenotype or a oligodendrocyte glycoprotein anti myelin antibody syndrome?
R. Alvarenga (Rio De Janeiro, BR)

P734  Intravenous Immunoglobulin as a maintenance Immunotherapy in refractory Myelin Oligodendrocyte Glycoprotein-Antibody Associated Disorder
V. Karthikeayan (Liverpool, UK)

P735  Treatment of MOG antibody associated disorders: results of an international survey
D.H. Whittam (Liverpool, UK)

P736  Neuromyelitis spectrum disorders in Argentina: baseline data from the Argentinean MS Registry (RelevarEM)
J.I. Rojas (Buenos Aires, AR)

P737  Histopathological patterns of Multiple Sclerosis and characteristics from cerebrospinal fluid analysis
R. Dersch (Freiburg, DE)

P738  The absence of cortical lesions after a partial myelitis with CSF-restricted IgG0B reduces the probability of Multiple Sclerosis as final diagnosis
A. De Zanet (Padova, IT)

P739  Clinical characteristics of neuromyelitis optica spectrum disorders in Polish population
A. Podlecka-Pietowska (Warsaw, PL)
P740  Myelin oligodendrocyte glycoprotein-IgG-positive disease associated with herpes simplex virus infection to central nervous system: distinct clinical and radiological features in 2 cases
K. Kaneko (Miyagi, JP)

P741  Long term effect of delayed treatment on disability in patients with paediatric onset multiple sclerosis: A prospective Danish cohort study
T.I. Kopp (Copenhagen, DK)

P742  ATOMIC feasibility study: Using wearable technology with a theory-informed physical activity promotion program in youth with MS
E.A. Yeh (Toronto, CA)

P743  Determinants of quality of life in paediatric- and adult-onset multiple sclerosis: A nationwide cohort study
K.A. McKay (Stockholm, SE)

P744  Paediatric Patients with Multiple Sclerosis: Effect of Fingolimod on Lymphocyte Counts and its Relationship with Infection from the PARADIGMS Study
T. Chitnis (Boston, US)

P745  Advanced MRI to Evaluate Remyelination in Pediatric Multiple Sclerosis by Q-Space Myelin Map - an exploratory study
D.K. Sato (Porto Alegre, BR)

P746  Paediatric primary progressive multiple sclerosis: fact or fiction?
O. Abdel-Mannan (London, UK)

P747  Alemtuzumab as exit strategy of choice for natalizumab-treated pediatric onset multiple sclerosis patients
M. Margoni (Padua, IT)

P748  Demographic and clinical aspects of pediatric-onset multiple sclerosis in Turkey
Y. Şimşek (Izmir, TR)

P749  The MS Atlas - A molecular map of brain lesion stages in secondary progressive MS
T. Frisch (Odense, DK)

P750  Efficacy of Siponimod in Secondary Progressive Multiple Sclerosis Patients with Active Disease: The EXPAND Study Subgroup Analysis
R. Gold (Bochum, DE)

P751  Progression Independent of Relapse Activity (PIRA) in relapsing-remitting multiple sclerosis patients on first-line immunomodulatory treatment with fingolimod vs. platform injectables
V. von Wyl (Zurich, CH)

P752  Disease activity has a significant impact in progression of Primary Progressive Multiple Sclerosis
M. Marrodan (Buenos Aires, AR)
P753 The Canadian Prospective Cohort (CanProCo) Study to Understand Progression in Multiple Sclerosis: Rationale, Aims, and Study Design
J. Oh (Toronto, CA)

P754 Patient Reported Outcomes and Performance Measures at Secondary Progressive Multiple Sclerosis Diagnosis
D. Conway (Cleveland, US)

P755 Systematic mapping of the global educational offerings for multiple sclerosis patients on the topic of disease progression
T. Bharadia (London, UK)

P756 Long term effect of MD1003 (high dose Pharmaceutical grade biotin) in a cohort of patients with progressive non-active multiple sclerosis
C. Donzé (Lille, FR)

P757 Secondary progressive MS in the United Kingdom: a prospective cohort study
K. Harding (Newport, UK)

P758 FlywheelMS: a novel, patient-centred study to better understand multiple sclerosis using electronic health records and other real-world data sources
M. Williams (Atlanta, Georgia, US)

P759 MS disability scales in the aging population
S. Lynch (Kansas City, US)

P760 Factors underlining the increased rate of hospital deaths in MS
E. Nicholas (London, UK)

P761 Risk of osteoporosis and fractures in patients with multiple sclerosis: a nationwide cohort study in Sweden
S. Montgomery (Stockholm, SE)

P762 Infections in patients with multiple sclerosis: a nationwide cohort study in Sweden
S. Montgomery (Stockholm, SE)

P763 Diagnosis-specific sickness absence and disability pension in the years before and after multiple sclerosis diagnosis: an 8-year nationwide cohort study with a matched reference group
C. Murley (Stockholm, SE)

P764 Socioeconomic deprivation is associated with conflicting MS risk/protective factors in Scotland: the missing protective factor(s) are independently associated with household overcrowding
P. Kearns (Edinburgh, UK)

P765 SOCIOECONOMIC FACTORS AS PREDICTORS FOR MS SUSCEPTIBILITY AND DISEASE PROGRESSION - VALIDATION OF A NEW NORWEGIAN QUESTIONNAIRE
H.Ø. Flemmen (Skien, NO)
P766  Non-compliance with Disease Modifying Therapies in Multiple Sclerosis patients: A Qualitative Analysis  
L. Lee (Toronto, CA)

P767  High titers of human herpes virus 6 variant A interact with common lifestyle factors to increase MS risk  
J. Wu (Solna, SE)

P768  Epidemiology of Neuromyelitis optica spectrum disorder in Tehran province, Iran: A population-based study  
S. Eskandarieh (Tehran, IR)

P769  Sex ratio of multiple sclerosis in Tehran, Iran, 2006-2017: A population-based study  
S. Eskandarieh (Tehran, IR)

P770  Supplements consumption risk factors in neuromyelitis optica spectrum disorder: a case-control study  
S. Eskandarieh (Tehran, IR)

P771  Cigarette smoking and alcohol consumption are risk factors in primary progressive multiple sclerosis: A case-control study  
S. Eskandarieh (Tehran, IR)

P772  No difference in quality of life (QoL) among people who switched from injectable to oral disease modifying treatment (DMT) compared to those who stayed on injectable in a community cohort: a propensity score matched (PSM) analysis  
T. Stuchiner (Portland, US)

P773  MS cohorts and treatment utilization in academic centres in the Middle East  
N. Moradi (Melbourne, AU)

P774  A cross-sectional survey of cannabis use by people with MS in Oregon and Washington, states where cannabis is legal for medical and recreational use  
J. Rice (Portland, US)

P775  Epidemiology of Multiple Sclerosis in Ourense, Northwest Spain  
J.M. Prieto - González (Santiago de Compostela, ES)

P776  Postpartum relapse after first on-study pregnancy in RRMS patients treated with alemtuzumab in the phase 2 and 3 clinical development program over 8 years  
E.G. Celius (Oslo, NO)

P777  Disease activity in women with multiple sclerosis treated with rituximab and natalizumab  
N. Razaz (Stockholm, SE)

P778  Perinatal outcomes in women with multiple sclerosis: a population based cohort study in Sweden  
N. Razaz (Stockholm, SE)
P779  The Influence of Family Planning on Treatment Decisions in Relapsing-Remitting Multiple Sclerosis (RRMS) in Europe and the United States  
J. White (London, UK)

P780  Pregnancy outcomes in patients treated with ocrelizumab  
C. Oreja-Guevara (Madrid, ES)

P781  What is the best time to stop natalizumab in patients with active RRMS planning pregnancy?  
S. Demortiere (Marseille, FR)

P782  Tocilizumab during pregnancy for Neuromyelitis Optica Spectrum Disorder: a case report  
M. Capobianco (Orbassano, IT)

P783  Pregnancy outcomes in Multiple Sclerosis patients from Chile  
B. Soler (Santiago, CL)

P784  Treatment with natalizumab during pregnancy: risks of withdrawal and preservation of therapy  
M. Shumilina (Saint-Petersburg, RU)

P785  The evolution of cognitive function in MS over ten years and the association with MRI findings  
D. Pinter (Graz, AT)

P786  Comparison of Neuropathic Pain in Neuromyelitis Optica Spectrum Disorder and Multiple Sclerosis  
J.-W. Hyun (Goyang, KR)

P787  Prevalence of Bowel and Bladder dysfunctions in Multiple Sclerosis: an Italian Multicenter Study  
A. Bisecco (Napoli, IT)

P788  A novel classification of fatigue in multiple sclerosis based on longitudinal assessments  
M. Palotai (Boston, US)

P789  Cognitive Aging: Multiple sclerosis as a moderator of brain structure and function across the adult lifespan  
V. Leavitt (New York, US)

P790  Comparing cognitive and quality of life parameters in patients with MS-like neurological symptoms, but without any neurological disorder, and MS patients  
C. Constantinescu (Gothenburg, SE)

P791  Personality Traits in Multiple Sclerosis Patients: Association with Anxiety, Depression and Quality of Life  
C. Polat Dunya (Istanbul, TR)

P792  Novel biomechanical outcomes derived from a technology enabled adaptation of the 9-hole peg test  
M. McGinley (Cleveland, US)
P793  The RECIS (Risk Estimate in CIS) study: a novel model to early predict clinically isolated syndrome evolution  
G. Mallucci (Pavia, IT)

P794  Plasma neurofilament light levels are associated with impairments to information processing efficiency in multiple sclerosis  
A. Manouchehrinia (Stockholm, SE)

P795  Longitudinal changes in cognitive processing speed in multiple sclerosis clinical practice  
G. Macaron (Cleveland, US)

P796  Correlations between four common measures of cognition in patients with secondary progressive multiple sclerosis  
R.H. Benedict (Buffalo, US)

P797  Prediction of disability progression in SPMS is outperformed by EDSS analyzed as a categorical variable rather than a continuous variable  
M. Law (Vancouver, CA)

P798  Concurrent validity of the computerised cognitive battery MSReactor and the Processing Speed Test in relapsing-remitting multiple sclerosis  
C. Yam (Melbourne, AU)

P799  Comparing the DYMUS dysphagia screening questionnaire with the video fluoroscopic swallow study in MS: a pilot study  
W. Conte (Chicago, US)

P800  Smartphone-based assessment of fatigue and fatigability in multiple sclerosis  
K.H. Lam (Amsterdam, NL)

P801  Optimizing time management in a specialized multiple sclerosis unit: experience based on a real-time computerized healthcare process  
R. Robles-Cedeño (Girona/Salt, ES)

P802  Exploring and Quantifying Performance Differences in Real World Ambulation Parameters in People with Multiple Sclerosis: Multi-Dimensional Objective Gait Parameters  
J. Srinivasan (Patchogue, US)

P803  Enhancing Multiple Sclerosis Management: Investigation into the Relationship between Quantitative OCT and Digital MRI Measurements in People with Multiple Sclerosis  
J. Srinivasan (Patchogue, US)

P804  Walking In People With Multiple Sclerosis: Objective Gait Parameters During Varied Walking Paradigms Across the EDSS Reflects Real World Disease Impact  
J. Srinivasan (Patchogue, US)

P805  Investigating independent Gait Domains in Patients with Multiple Sclerosis  
K. Otte (Berlin, DE)
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E. Riser (Birmingham, US) |
| P807 | Ecological Validity of the Two Minute Walk Test in Persons with Multiple Sclerosis  
V. Weiß (Erlangen, DE) |
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Satellite Symposium, Hall A

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Satellite Symposium 8: Sustained control of MS: lessons from the real world

Supported by Merck

Chairs
J. Hillert (Stockholm, SE)
M. Williams (Atlanta, Georgia, US)
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Supported by MedDay Pharmaceuticals

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Chairs
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Disability progression unrelated to relapses in relapsing-remitting multiple sclerosis: Insights from the Swiss multiple sclerosis cohort study
J. Lorscheider (Basel, CH)

Excess mortality in patients with relapsing-onset multiple sclerosis depends on age rather than disease duration: new insights from an innovative flexible model applied on French OFSEP data ('Observatoire Français de la Sclerose en Plaques')
E. Leray (Rennes, FR)

Excess mortality of people suffering from multiple sclerosis in Germany
P. Albrecht (Düsseldorf, DE)

Scientific Session, Hall B

08:30 - 10:00

Scientific Session 12: Immunopathogenesis and antigen-specific therapies

Chairs
E. Iacobaeus (Stockholm, SE)
F. Zipp (Mainz, DE)

Antigen-specific MS treatment revisited - recent development and prospects
R. Martin (Zurich, CH)

A future for antigen-specific immunotherapy for multiple sclerosis
D. Wraith (Birmingham, UK)

Platform presentations of related original papers

Specialized pro-resolving lipid mediator production in the cerebrospinal fluid is impaired in multiple sclerosis: implications for its pathogenesis and therapy
G. Kooij (Amsterdam, NL)

Arginase 1- expressing myeloid cells regulate Th17- mediated EAE
J. Atkinson (Columbus, US)

Myelin-specific CD8+ T cells in MS exhibit a unique activated phenotype and are depleted by anti-CD20 therapy
J. Sabatino (San Francisco, US)

High dose vitamin D worsens experimental CNS autoimmune disease by raising T cell-excitatory calcium
D. Häusler (Goettingen, DE)
Scientific Programme

08:30 - 10:00  
**Scientific Session, Hall C**

### Scientific Session 13: Soluble and electrophysiological biomarkers

**Chairs**  
J. Salzer (Umeå, SE)  
S. Gnanapavan (London, UK)

08:30 - 08:50  
**282**  
*Moving from CSF to blood: monitoring disease activity in MS using serum neurofilament light protein*  
J. Lycke (Gothenburg, SE)

08:50 - 09:10  
**283**  
*OCT as a prognostic marker*  
P. Calabresi (Baltimore, US)

**Platform presentations of related original papers**

09:10 - 09:22  
**284**  
*Serum neurofilament light chain as a presymptomatic biomarker in multiple sclerosis*  
K. Bjornevik (Boston, US)

09:22 - 09:34  
**285**  
*Serum neurofilament light chain levels correlate with peripapillary retinal nerve fibre layer thinning as measured by optical coherence tomography in multiple sclerosis*  
G. Bsteh (Vienna, AT)

09:34 - 09:46  
**286**  
*Markers of glial processes and axonal damage in CSF and serum help to differentiate between relapsing-remitting and progressive forms of MS*  
A. Huss (Ulm, DE)

09:46 - 09:58  
**287**  
*Soluble CD27 a biomarker of T cell activity in intrathecal inflammation in patients with relapsing-remitting multiple sclerosis*  
M.T. Cencioni (London, UK)

08:30 - 10:00  
**Scientific Session, Hall D**

### Scientific Session 14: Socioeconomic outcomes in MS

**Chairs**  
K. Alexanderson (Stockholm, SE)  
P. Flachenecker (Bad Wildbad, DE)

08:30 - 08:50  
**288**  
*Burden and cost of multiple sclerosis*  
G. Kobelt (Stockholm, SE)

08:50 - 09:10  
**289**  
*Socioeconomy - accessible and valid outcome measures in MS*  
J. Hillert (Stockholm, SE)

**Platform presentations of related original papers**

09:10 - 09:22  
**290**  
*The economic impact of multiple sclerosis: a preliminary look at the North American registry for care and research in multiple sclerosis*  
Y. Mao-Draayer (Ann Arbor, US)
Scientific Programme

09:22 - 09:34  291  Real-world evidence on the influence of relapses and relapse associated progression on societal economic costs in patients with multiple sclerosis  
N.-H. Ness (Dresden, DE)

09:34 - 09:46  292  Health service utilization in immigrants compared to long-term residents with MS in Ontario, Canada  
D. Rotstein (Toronto, CA)

09:46 - 09:58  293  Identifying disability level in multiple sclerosis patients in a U.S.-based health plan claims database  
R. Berkovich (Los Angeles, US)

08:30 - 10:00  Educational Session, Hall E  

08:30 - 10:00  Educational Session 23: Radiologically Isolated Syndrome (RIS): incidental MRI findings or subclinical MS?  
Level: Basic  
(Basic = neurologists in training, non MS-specialists / Intermediate = board examined neurologists / Advanced = MS specialists)

Chairs  
N. De Stefano (Siena, IT)  
C. Lebrun (Nice, FR)

08:30 - 09:00  294  RIS: just incidental MRI findings or a real disease entity?  
D. Okuda (Dallas, US)

09:00 - 09:30  295  Can we diagnose subclinical MS?  
N. De Stefano (Siena, IT)

09:30 - 10:00  296  The management of RIS  
C. Lebrun (Nice, FR)

08:30 - 10:00  Educational Session, Hall F  

08:30 - 10:00  Educational Session 24: Pathology of MS  
Level: Advanced  
(Basic = neurologists in training, non MS-specialists / Intermediate = board examined neurologists / Advanced = MS specialists)

Chairs  
H. Lassmann (Wien, AT)  
O. Howell (Swansee, UK)

08:30 - 09:00  297  The inflammatory response in the MS brain: implications for pathogenesis and therapy  
H. Lassmann (Wien, AT)

09:00 - 09:30  298  The spectrum of cortical pathology in the MS brain: when, where and why  
O. Howell (Swansee, UK)
Scientific Programme

09:30 - 10:00  299  Pathological correlates of 7T MRI: how far can we image MS pathology in the living patient
S. Hametner (Vienna, AT)

Scientific Session, Hall A

10:30 - 12:00  Scientific Session 15: How to optimise long term benefit of MS treatment, therapeutic strategy

Chairs
T. Ziemssen (Dresden, DE)
E. Kingwell (Vancouver, CA)

10:30 - 10:50  300  Why induction therapy is the preferred principle over treatment escalation
A.J. Coles (Cambridge, UK)

10:50 - 11:10  301  Why escalation therapy is the preferred principle over treatment induction
E. Waubant (San Francisco, US)

platform presentations of related original papers

11:10 - 11:22  302  Age at disease onset and clinical outcomes in patients with multiple sclerosis on immunomodulatory treatment
V. von Wyl (Zurich, CH)

11:22 - 11:34  303  Exposure to disease modifying drugs reduces disability progression in pediatric-, adult- and late-onset relapsing multiple sclerosis: real world data from the early multiple sclerosis Italian cohort (E-MUSIC)
M. Fonderico (Florence, IT)

11:34 - 11:46  304  Predicting long-term sustained disability progression in multiple sclerosis
S. Sharmin (Melbourne, AU)

11:46 - 11:58  305  Treatment response scoring systems to assess long term prognosis in relapsing-remitting multiple sclerosis patients
J. Rio (Barcelona, ES)

10:30 - 12:00  Scientific Session 16: Quantitative imaging biomarkers

Chairs
T. Granberg (Stockholm, SE)
C. Granziera (Basel, CH)

10:30 - 10:50  306  Quantification and interpretation of brain atrophy in MS
N. De Stefano (Siena, IT)
Scientific Programme

10:50 - 11:10 307 Quantitative MRI and imaging biomarkers of the spinal cord in MS
O. Ciccarelli (London, UK)
platform presentations of related original papers

11:10 - 11:22 308 Can post-mortem MRI be used as a proxy for in-vivo?
M.D. Steenwijk (Amsterdam, NL)

11:22 - 11:34 309 Modeling the effect of white matter lesions on grey matter atrophy in MS
based on data from the human connectome project
M. Bussas (München, DE)

11:34 - 11:46 310 In vivo characterization of cortical lesion demyelination and remyelination in early multiple sclerosis by quantitative 7 Tesla MRI
V. Barletta (Boston, US)

11:46 - 11:58 311 In-vivo mapping of thalamic pathological mechanisms in pediatric patients with MS
E. De Meo (Milan, IT)

Scientific Session, Hall C

10:30 - 12:00 ECTRIMS - EAN Session: Emerging concepts of relapsing and progressive MS

Chairs
C. Enzinger (Graz, AT)
M.P. Amato (Florence, IT)

10:30 - 11:00 312 The contribution of relapses to progression - what do we learn from biomarker studies?
L. Kappos (Basel, CH)

11:00 - 11:30 313 Assessing and understanding relapse independent progression in different disease stages
G. Comi (Milan, IT)

11:30 - 12:00 314 MRI measures of neuroinflammation and neurodegeneration
M.A. Rocca (Milan, IT)

Scientific Session, Hall D

10:30 - 12:00 Scientific Session RIMS 3: Rehabilitation: one size doesn’t fit all

Chairs
S. Coote (Limerick, IR)
V. de Groot (Amsterdam, NL)

10:30 - 10:50 315 Patient centered approach in rehabilitation
D. Kos (Leuven, BE)
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<td>10:50 - 11:10</td>
<td>316</td>
<td>Wearable technology: how can we use it to measure and improve functioning in MS</td>
<td>G. Brichetto (Genoa, IT)</td>
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<td>11:10 - 11:22</td>
<td>317</td>
<td>Perceived fatigue is a barrier to physical activity participation in people with multiple sclerosis and minimal disability</td>
<td>L. Frid (Tel-Hashomer, IL)</td>
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<td>11:22 - 11:34</td>
<td>318</td>
<td>Effect of continuous positive airway pressure treatment of obstructive sleep apnea-hypopnea on fatigue in multiple sclerosis: a randomized, placebo-controlled trial (SAMS-PAP study)</td>
<td>D. Trojan (Montreal, CA)</td>
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<td>11:34 - 11:46</td>
<td>319</td>
<td>Psychosocial explanatory factors of balance confidence in persons with multiple sclerosis</td>
<td>Z. Abasiyanik (Izmir, TR)</td>
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**Educational Session, Hall E**

**10:30 - 12:00**

**Educational Session 25: Preventing, monitoring and managing infectious complications of MS therapies**

- **Level:** Basic
  - (Basic = neurologists in training, non MS-specialists / Intermediate = board examined neurologists / Advanced = MS specialists)

**Chairs**
- A. Vidal-Jordana (Barcelona, ES)
- L. Prosperini (Rome, IT)

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<td>10:30 - 11:00</td>
<td>321</td>
<td>Prevention of infectious complications of MS therapies</td>
<td>A. Vidal-Jordana (Barcelona, ES)</td>
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<td>11:00 - 11:30</td>
<td>322</td>
<td>Monitoring MS therapies to rapidly detect infectious complications</td>
<td>L. Prosperini (Rome, IT)</td>
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<td>11:30 - 12:00</td>
<td>323</td>
<td>Managing infectious complications of MS therapies</td>
<td>E. Ciampi (Santiago, CL)</td>
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Scientific Programme

**Educational Session, Hall F**

10:30 - 12:00

**Educational Session 26: Which remyelination strategies are most promising?**

Level: Advanced  
(Basic = neurologists in training, non MS-specialists / Intermediate = board examined neurologists / Advanced = MS specialists)

**Chairs**
M. Simons (Munich, DE)  
G. Castelo-Branco (Stockholm, SE)

10:30 - 11:00  324

**Remyelination: insights from mouse models and transcriptomic studies**
G. Castelo-Branco (Stockholm, SE)

11:00 - 11:30  325

**Remyelination: insights from human neuropathology**
C. Stadelmann (Göttingen, DE)

11:30 - 12:00  326

**Remyelination: molecular mechanisms and therapeutic developments**
M. Simons (Munich, DE)

**Scientific Session, Hall F**

12:00 - 13:00

**Google Hangout**
A google hangout broadcast from ECTRIMS with Barts MS researchers with people with MS sharing highlights from the meeting.  
View the livestream on the BartsMS YouTube page!

**Chairs**
R. Aldam (London, UK)  
M. Marta (London, UK)

12:00 - 13:00  327

**ECTRIMS 2019 highlights**
D. Baker (London, UK)  
S. Gnanapavan (London, UK)

**Poster Sessions, Poster Exhibition**

12:15 - 14:15

**Poster Session 3**

P1081  Validation of the multiple sclerosis diagnosis codes of patients aged 16-64 years recorded in the Swedish National Patient Register in 2001-2013 by two sequential register-based case-definition algorithms  
C. Murley (Stockholm, SE)

P1082  Visual Evoked Potentials Improve the Prediction of Multiple Sclerosis in Patients with Clinically Isolated Syndromes  
G. Dalla Costa (Milan, IT)

P1083  Multiple sclerosis misdiagnosis in a reference MS center in Argentina  
M.I. Gaitán (Buenos Aires, AR)
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<td>Screening for differential diagnoses in MS: evaluation of inclusion</td>
<td>R. Schmidt (Leipzig, DE)</td>
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<td>criteria for extensive diagnostic workup</td>
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<td>18F-3,4-dihydroxyphenylalanine positron emission tomography features</td>
<td>E. Sbragia (Genoa, IT)</td>
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<td>in brain tumefactive demyelinating lesions</td>
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<td>CSF kappa free light chains detection: comparison with oligoclonal</td>
<td>F. Montarolo (Orbassano, IT)</td>
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<td>bands in Multiple Sclerosis diagnosis</td>
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<td>Should we systematically test patients with clinically isolated</td>
<td>B. Rodríguez-Acevedo (Barcelona, ES)</td>
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<td>syndrome for HIV, borrelia and syphilis?</td>
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<td>Multiple sclerosis and Fabry Disease, overlooked in the differential</td>
<td>S. Guler (Edirne, TR)</td>
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<td>diagnosis of multiple sclerosis? in Turkish population</td>
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<td>Hemorrhagic Longitudinally Extensive Transverse Myelitis: Characteristic</td>
<td>R. Karabudak (Ankara, TR)</td>
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<td>Features and Long-term Follow-up</td>
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<td>Physicians’ perspectives on the identification and diagnosis of</td>
<td>T. Vollmer (Denver, US)</td>
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<td>secondary progressive multiple sclerosis during the clinical</td>
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<td>encounter</td>
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<td>Long-term outcome of pregnant women with neuromyelitis optica</td>
<td>S.-H. Kim (Goyang, KR)</td>
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<td>spectrum disorder</td>
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<td>Distinction of double seronegative neuromyelitis optica spectrum</td>
<td>H.W. Kim (Seoul, KR)</td>
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<td>disease from AQP4-IgG seropositive and MOG-IgG seropositive cases</td>
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<td>Cervical Cord Atrophy in AQP4-Ab NMOSD, MOG-Ab Disease &amp; MS</td>
<td>R. Mariano (Oxford, UK)</td>
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<td>Causes of death in AQP4-IgG neuromyelitis optica spectrum disorder</td>
<td>E. Gibbons (Liverpool, UK)</td>
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<td>(NMOSD) in the United Kingdom NMOSD Service</td>
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<td>The emerging role of T cells in NMOSD disease pathogenesis</td>
<td>M. Lindner (Münster, DE)</td>
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<td>Blood-brain barrier-activation in anti-myelin oligodendrocyte</td>
<td>F. Shimizu (Ube, JP)</td>
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<td>glycoprotein antibody associated disorders</td>
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<td>Characterization of B cell subset changes following treatment of</td>
<td>J.L. Bennett (Aurora, US)</td>
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<td>Neuromyelitis Optica Spectrum Disorder with inebilizumab: Results</td>
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<td>from the N-MOmentum study randomized control period</td>
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P1098 Late-onset multiple sclerosis: is it a rare entity?
I. Sereike (Vilnius, LT)

P1099 Brain histopathological study and prognosis in two patients with MOG-antibody-associated demyelinating pseudotumor
Y. Shu (Guangzhou, CN)

P1100 Stroke-like presentation of Baló’s Concentric Sclerosis and fatal outcome in a patient with Common Variable Immunodeficiency
R.B. Thomaz (São Paulo, BR)

P1101 Brain magnetic resonance imaging features in MS and neuromyelitis optica spectrum disorders (NMOSD) patients with or without aquaporin-4 antibody in a Latin American population
F. Silveira (Buenos Aires, AR)

P1102 Retrospective analysis of chronic relapsing inflammatory optic neuropathy
A. Thuringer (Kansas City, US)

P1103 Diagnostic procedures in suspected attacks in patients with neuromyelitis optica spectrum disorders: results of an international survey
M. D’Souza (Basel, CH)

P1104 Clinicoradiological features of the cerebellum in Japanese cohorts of MS and NMOSD
T. Wakasugi (Niigata, JP)

P1105 Children with a first demyelination syndrome: the importance of applying the 2017 McDonald criteria together with biomarkers
T. Armangue (Barcelona, ES)

P1106 Recovery of pediatric patients after first multiple sclerosis relapse is associated with suppression of antigen presenting mechanism
M. Gurevich (Ramat-Gan, IL)

P1107 Contribution of Age to Severity of First Multiple Sclerosis Relapse and Short-term Clinical Outcome
M. Gurevich (Ramat-Gan, IL)

P1108 Long-term follow up of an Italian cohort of pediatric Multiple Sclerosis patients: real world data from San Raffaele Hospital
C. Zanetta (Milan, IT)

P1109 No evidence of disease activity including cognitive evaluation (NEDA-3 plus status) in naïve pediatric multiple sclerosis patients treated with natalizumab for 2-years: a longitudinal prospective study
M. Margoni (Padua, IT)

P1110 White matter lesion volume is correlated with changes in thalamic volume in proximity to the white matter interface but not in proximity to the CSF interface in pediatric MS
G. Fadda (Philadelphia, US)
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<td>Clinical predictors of relapse in children with the first demyelinating event</td>
<td>K. Nevmerzhitskaya (Ekaterinburg, RU)</td>
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<td>P1112</td>
<td>Seamless phase II-III adaptive trial design elements for progressive MS: Neurofilament light chain (phase II/interim endpoint), phase III endpoints and patient populations</td>
<td>D.R. Lieberman (London, UK)</td>
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<td>P1113</td>
<td>Microglial activation associates with previous relapse activity in a cohort of relapsing-remitting multiple sclerosis patients at risk of progression</td>
<td>S. Laaksonen (Turku, FI)</td>
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<td>P1115</td>
<td>Positive behavioral impact of high dose Pharmaceutical grade Biotin, MD1003, in mitochondrial mutant mice with neuron-specific respiratory deficiency</td>
<td>D.J. Mahad (Edinburgh, UK)</td>
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<td>P1116</td>
<td>Leptomeningeal enhancement is common in progressive Multiple Sclerosis patients in 1.5T MRI and correlates with age and disease progression</td>
<td>M. Vercellino (Torino, IT)</td>
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<td>P1117</td>
<td>The Delay In Diagnosing Secondary Progressive Multiple Sclerosis (SPMS) in Relapsing Remitting Multiple Sclerosis (RRMS) Patients Who Show Potential Signs Of Progression in Europe and the United States</td>
<td>J. White (London, UK)</td>
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<td>P1118</td>
<td>The impact of pain and lower limb spasticity to functionality and quality of life in patients with progressive forms of Multiple Sclerosis</td>
<td>S. Rodic (Belgrade, RS)</td>
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<td>P1119</td>
<td>Thirty years outcomes of 2295 patients with relapsing at onset multiple sclerosis and low disability ten years after diagnosis: a population-based observational study</td>
<td>G. Mathey (Nancy, FR)</td>
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<td>P1120</td>
<td>Understanding disability trajectories in a contemporary multiple sclerosis cohort using multistate models</td>
<td>K. Harding (Newport, UK)</td>
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<td>P1121</td>
<td>Aging with MS - physical and mental function in women with MS compared to non-affected peers in two US cohorts</td>
<td>M. Cortese (Boston, US)</td>
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<td>P1122</td>
<td>Aggressive form of multiple sclerosis can be predicted early after disease onset</td>
<td>C.B. Malpas (Melbourne, AU)</td>
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<td>P1123</td>
<td>Ageing with MS: a cross sectional study</td>
<td>D. Michelis (Genova, IT)</td>
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P1124 Fatigue, sleep disorders, anaemia and pain in the five years preceding the first demyelinating event or onset of multiple sclerosis
F. Yusuf (Vancouver, CA)

P1125 Comparing DMT and non-DMT adherence in a population-based multiple sclerosis cohort
C. Evans (Saskatoon, CA)

P1126 Epidemiology of multiple sclerosis and neuromyelitis optica spectrum disorder in South Korea
J.-H. Min (Seoul, KR)

P1127 Relationship between environment and genetic factors with MS risk in Spain
P. Urbaneja-Romero (Málaga, ES)

P1128 Description of the living population with multiple sclerosis in the Danish Multiple Sclerosis Registry
M. Magyari (Copenhagen, DK)

P1129 Multiple Sclerosis and awareness in Turkey
S. Demir (Istanbul, TR)

P1130 Temporal trends in the diagnosis of neuromyelitis optica spectrum disorder in US claims databases from 2001-2017
C. Costantino (Basel, CH)

P1131 The North American Registry for Care and Research in Multiple Sclerosis
K. Rammohan (Miami, US)

P1132 Who are we missing? Barriers to recruitment and participation in MS physical rehabilitation research
R. Pretty (St. John’s, CA)

P1133 Positive history of diseases and risk factors in neuromyelitis optica spectrum disorder: a case-control study
S. Eskandarieh (Tehran, IR)

P1134 Economic sanctions threaten MS patient’s health in Iran
S. Eskandarieh (Tehran, IR)

P1135 Hormonal and delivery risk factors among females in neuromyelitis optica spectrum disorder: case-control study
S. Eskandarieh (Tehran, IR)

P1136 Multiple sclerosis clinic utilization is associated with reduced emergency department visits in Alberta
J.I. Roberts (Calgary, CA)

P1137 Demographics and clinical characteristics of Neuromyelitis Optica and Neuromyelitis Optica Spectrum Disorder in Egypt: First retrospective longitudinal study in a tertiary referral centre
N. Kishk (Cairo, EG)
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<td>Baseline and longitudinal sex differences in 2465 patients in the placebo arms of pivotal trials for MS (MSOAC)</td>
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<td>Prevalence of infant outcomes at birth after exposure to interferon beta prior to or during pregnancy: A register-based cohort study in Finland and Sweden among women with MS</td>
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<td>P1145</td>
<td>Pregnancy related and perinatal outcomes among Danish women with multiple sclerosis. A nationwide population-based registry study</td>
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<td>P1146</td>
<td>Pregnancy outcomes in female partners of male patients treated with teriflunomide or leflunomide (an in vivo precursor of teriflunomide)</td>
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<td>P1147</td>
<td>An International Registry Tracking Pregnancy Outcomes in Women Treated with Dimethyl Fumarate</td>
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<td>P1148</td>
<td>Pregnancy outcomes in patients treated with leflunomide, an in vivo precursor of the multiple sclerosis drug teriflunomide</td>
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<td>Cytokine profile during pregnancy predicts puerperium relapses in multiple sclerosis: a prospective cohort study</td>
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<td>Assisted Reproductive Technologies and the Risk of Peripartum Relapses: Interim Data from PREG-MS Cohort</td>
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<td>P1151</td>
<td>Family planning decision making in people with multiple sclerosis</td>
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P1152 First line injectable disease-modifying drugs, received in utero, and multiple sclerosis mother’s infants
D. Kasatkin (Yaroslavl, RU)

P1153 A systematic review of morbidities and symptoms prior to the onset or diagnosis of multiple sclerosis
F. Yusuf (Vancouver, CA)

P1154 The evaluation of pain and pain management in patients with multiple sclerosis attending specialist neurology clinic in St George’s Hospital, London
V. Wallace (London, UK)

P1155 Cognitive relapses in multiple sclerosis. Clinical-radiological approach to their diagnosis and management
J.E. Meca-Lallana (Murcia, ES)

P1156 eSupport: A feasibility RCT of internet-based support group participation to reduce loneliness in persons with multiple sclerosis
V. Leavitt (New York, US)

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**Satellite Symposium, Hall A**

**13:00 - 14:00**

**Satellite Symposium 11: From pediatric MS to immunosenescence: an interactive discussion**

Supported by Biogen

**Chairs**

D. Bates (Newcasle upon Tyne, UK)

J. Lycke (Gothenburg, SE)

**13:00 - 13:05**

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**Introduction**

D. Bates (Newcasle upon Tyne, UK)

J. Lycke (Gothenburg, SE)
Scientific Programme

13:05 - 13:50  329  Immunological insights and clinical considerations across the age-span of MS
A. Bar-Or (Philadelphia, US)
J. Oh (Toronto, CA)

13:50 - 13:55  330  Q&A
J. Lycke (Gothenburg, SE)

13:55 - 14:00  331  Closing
D. Bates (Newcasle upon Tyne, UK)
J. Lycke (Gothenburg, SE)

13:00 - 14:00  Satellite Symposium 12: The NMOSD treatment landscape - a sea change
Supported by Viela Bio

Chairs
B.A. Cree (San Francisco, US)
M. Tintoré (Barcelona, ES)

13:00 - 13:10  332  Lessons learned from current therapy
F. Paul (Berlin, DE)

13:10 - 13:25  333  The changing landscape - The new therapies
M. Levy (Boston, US)

13:25 - 13:45  334  Looking forward - new horizons for management of NMOSD patients
A. Jacob (Liverpool, UK)
J. Palace (Oxford, UK)

13:45 - 14:00  335  Open round table discussion
F. Paul (Berlin, DE)
M. Levy (Boston, US)
A. Jacob (Liverpool, UK)
J. Palace (Oxford, UK)

14:15 - 15:30  Scientific Session 17: Late Breaking News

Chairs
T. Derfuss (Basel, CH)
M. Zeineddine (Beirut, LB)

14:15 - 14:27  336  Efficacy and safety of ofatumumab versus teriflunomide in relapsing multiple sclerosis: results of the phase 3 ASCLEPIOS I and II trials
S. Hauser (San Francisco, US)
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A. Solari (Milan, IT) |
| 14:39 - 14:51 | Continuation of natalizumab versus interruption is associated with lower risk of relapses during pregnancy and postpartum in women with MS  
D. Landi (Rome, IT) |
| 14:51 - 15:03 | Establish tolerance in MS with myelin-peptide coupled red blood cells - the phase Ib ETIMSredtrial  
A. Lutterotti (Zurich, CH) |
| 15:03 - 15:15 | Widening the spectrum of autoimmune astrocytopathies: a role for CSF glutamine synthetase and glial fibrillary acidic protein?  
I. Kleerekooper (LONDON, UK) |
| 15:15 - 15:27 | Cell-type-specific transcriptomics identifies neddylation as a novel therapeutic target in multiple sclerosis  
A.-K. Pröbstel (San Francisco, US) |

Plenary Session, Hall A

16:00 - 18:00 | Plenary Session 2 - ECTRIMS Awards, ECTRIMS Honorary Members, Charcot Lecture and ECTRIMS 2019 Highlights  
Chairs  
M.P. Amato (Florence, IT)  
B. Hemmer (Munich, DE)  
J. Hillert (Stockholm, SE) |
| 16:00 - 16:45 | Presentation of selected poster awards, awards for best oral presentations by young researchers, awards for best RIMS poster and best RIMS oral presentation, the MSIF award as well announcement of ECTRIMS Honorary Members |
| 16:45 - 17:15 | Charcot Lecture: New prospects for repair in multiple sclerosis  
C. Lubetzki (Paris, FR) |
| 17:15 - 17:35 | Clinical highlights  
C.A. Young (Liverpool, UK)  
A. Siva (Istanbul, TR) |
| 17:35 - 17:55 | Scientific highlights  
A.E. Miller (New York, US)  
C. Lubetzki (Paris, FR) |
| 17:55 - 18:00 | Welcome to MSWashingtonDC2020  
J. Cohen (Cleveland, US) |