# IMPORTANT CONTACTS & HOURS of OPERATION

Please refer to the following contact information and service hours.

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<tr>
<th>Service</th>
<th>Level</th>
<th>Contact Information</th>
</tr>
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<tr>
<td>Registration</td>
<td>Level 1</td>
<td><a href="mailto:info@msboston2014.org">info@msboston2014.org</a></td>
</tr>
<tr>
<td>Abstracts Upload of Posters</td>
<td>Level 2 Service Area</td>
<td><a href="mailto:MSBoston2014@abstractserver.com">MSBoston2014@abstractserver.com</a></td>
</tr>
<tr>
<td>Mobile App Questions</td>
<td>Level 2 Service Area</td>
<td><a href="mailto:MSBoston2014@abstractserver.com">MSBoston2014@abstractserver.com</a></td>
</tr>
<tr>
<td>Program Questions</td>
<td>Room 209</td>
<td><a href="mailto:info@actrims.org">info@actrims.org</a>; Tel: (617) 954-2953</td>
</tr>
<tr>
<td>General Information</td>
<td>Level 2 (info desk)</td>
<td><a href="mailto:info@msboston2014.org">info@msboston2014.org</a></td>
</tr>
<tr>
<td>Exhibition Management</td>
<td>Hall D</td>
<td><a href="mailto:logistics@msboston2014.org">logistics@msboston2014.org</a></td>
</tr>
<tr>
<td>Poster Assistance</td>
<td>Level 2 Service Area</td>
<td><a href="mailto:societytposter@learnersdigest.com">societytposter@learnersdigest.com</a></td>
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<td>CME Claim</td>
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<td><a href="mailto:manderson@learnersdigest.com">manderson@learnersdigest.com</a></td>
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<tr>
<td>Speakers</td>
<td>Room 309</td>
<td><a href="mailto:info@actrims.org">info@actrims.org</a></td>
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<tr>
<td>Media queries</td>
<td>Room 201</td>
<td><a href="mailto:media@msboston2014.org">media@msboston2014.org</a></td>
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<tr>
<td>Housing</td>
<td>1-800-293-8019</td>
<td><a href="mailto:msboston2014@onpeak.co">msboston2014@onpeak.co</a></td>
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<tr>
<td>Need help after hours?</td>
<td>After-hours hotline: 608-807-7609</td>
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*If you have an existing reservation, please have your onPeak Attendance/Group ID number available. For after hours questions regarding housing, contact 1-800-293-8019.

www.msboston2014.org
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Every three years, ACTRIMS and ECTRIMS jointly host a conference, bringing together researchers, physicians, investigators, patient advocates and allied health professionals from all over the world in a forum to share, educate, debate and discuss advances related to basic and clinical issues in MS research.

It is our pleasure and honor to warmly welcome you to the sixth triennial Joint ACTRIMS-ECTRIMS Meeting - MSBoston 2014 at the John B. Hynes Veterans Memorial Convention Center, 10-13 September 2014.

Gathered for this meeting are some of the most distinguished researchers, dedicated medical professionals, and passionate advocates in the field of multiple sclerosis, all of whom play an important role toward helping enhance the health and quality of life of those living with MS and those who care for them. We applaud you for your commitment and appreciate the valuable contributions you are making to the field of MS.

While we anticipate this year’s meeting will have the largest number of participants ever — close to 7,000 — we do hope that our colleagues from the ACTRIMS and ECTRIMS Organizing Committee will have the opportunity to engage with many of you during the conference.

The joint ACTRIMS and ECTRIMS Scientific and Teaching Courses Committees have assembled a premiere program covering a wide range of tracks and presentation topics including genetics, pathogenesis, factors that determine MS susceptibility and treatment strategies, to study outcomes and research advances, to the latest in regeneration and rehabilitation. For instance, we will hear more about remyelination and stem cell research, as well as emerging treatments for progressive MS where there is tremendous unmet need. Given the breadth of this year’s program, you are sure to find many topics that will pique your interest, stimulate your thinking and further enhance the work that you are currently conducting.

For this triennial, we offer attendees:
• 14 teaching courses taught by 40 expert faculty
• 42 invited scientific program speakers
• 94 platform presenters
• 981 poster presentations
• 7 late-breaking abstracts platform presentations
• 22 late-breaking news submissions presented as e-posters
• 12 satellite symposia including the European Charcot Foundation symposium

We are also taking advantage of social media by hosting Burning Debates and Question Time Hangout discussions, live-streamed on the ACTRIMS and ECTRIMS websites throughout the meeting.

This international gathering offers an amazing opportunity to share knowledge, new findings, and best practices so that we can all build on our own professional development; implement strategies that have been successful for others; and accelerate research advances in this field.

We encourage you to take this opportunity to network, exchange information and build alliances that will enable us to achieve our common goal of finding the solutions, strategies and treatment that will help those living with MS.

In particular, we would like to point out that, in our midst, we have many young clinicians who are filled with energy, fresh ideas, and new innovations. There is much to be gained from their contagious dynamism, new concepts and approaches.

We awarded over 200 educational grants to highly rated abstracts submitted by our young investigators. To our younger attendees, we encourage you to take the time to speak with the veterans in the field who have extensive knowledge, research successes and much wisdom to share.

We are also happy to have many pharmaceutical and biotech companies here, as well as advocacy groups who support research and education in MS. You are a major part of our formula for success.

And to the media who have come from near and far, we appreciate your coverage that helps us reach broader audiences worldwide. We are available to provide you with the insights and content to help inform your stories.

Visit www.msboston2014.org to access full abstracts, presentations and a poster gallery including a link to MS Journal Online where abstracts of all posters and platform presentations presented at the meeting are published.

Knowing you can’t see everything, we offer delegates ACTRIMS-ECTRIMS On Demand – a digital library of sessions offered at the meeting, where you can watch presenters’ slides while listening to fully synchronized audio, available for your online viewing at any time.

In closing, we wish to thank you for attending. We sincerely salute the contributions and commitment you have made to this meeting, to the field of MS and to those living with this disease.

We look forward to a successful meeting!
ABOUT ACTRIMS and ECTRIMS

MEETING ORGANIZERS
Every three years ACTRIMS and ECTRIMS organize a joint meeting to encourage knowledge exchange and bring together MS professionals from around the world. The triennial joint meeting is alternately hosted in North America and Europe.

Americas Committee for Treatment and Research in Multiple Sclerosis (ACTRIMS): www.actrims.org

ACTRIMS was established in 1995 and provides leadership in the field of MS and other demyelinating diseases. Guided by a volunteer Board of Directors, ACTRIMS offers thought leadership and collaboration, including an annual forum for MS clinicians and researchers in North America to learn about, discuss and debate advances in MS research and clinical care. ACTRIMS met jointly with ECTRIMS for the first time during the 1999 meeting, held in Basel, Switzerland, and continues to do so every three years. This triennial meeting in 2014 marks the sixth collaboration with ECTRIMS.

European Committee for Treatment and Research in Multiple Sclerosis (ECTRIMS): www.ectrims.eu

ECTRIMS was established in 1984 and has the mission to foster collaboration of clinicians and researchers to elucidate the pathophysiology and cause of MS and develop new treatments. It offers an annual meeting that attracts MS neurologists and researchers from around the world. ECTRIMS activities are governed by an Executive Committee elected from delegates of MS societies from 33 European countries. 2014 marks the 30th meeting of ECTRIMS.

JOINT MEETING HISTORY
1999 First triennial meeting hosted by ECTRIMS, Basel, Switzerland
2002 Second triennial meeting hosted by ACTRIMS, Baltimore, Maryland, USA
2005 Third triennial meeting hosted by ECTRIMS, Thessaloniki, Greece
2008 Fourth triennial meeting hosted by ACTRIMS in collaboration with LACTRIMS, Montréal, Canada
2011 Fifth triennial meeting hosted by ECTRIMS in collaboration with LACTRIMS, Amsterdam, Netherlands
2014 Sixth triennial meeting hosted by ACTRIMS, Boston, Massachusetts, USA

2014 JOINT ACTRIMS-ECTRIMS MEETING COMMITTEE MEMBERS

<table>
<thead>
<tr>
<th>STEERING COMMITTEE</th>
<th>SCIENTIFIC PROGRAM COMMITTEE (SPC)</th>
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<tbody>
<tr>
<td>Suhayl Dhib-Jalbut (US)</td>
<td>Jeffrey Cohen (US) Chair</td>
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<tr>
<td>Jack Antel (CA)</td>
<td>Peter Calabresi (US)</td>
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<tr>
<td>Mark Freedman (CA)</td>
<td>Jorge Correale (AR)</td>
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<td>Jerry Wolinsky (US)</td>
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<td>Jeffrey Cohen (US)</td>
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<td>Maria Trojano (IT)</td>
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<td>Xavier Montalban (ES)</td>
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<td>Emmanuelle Waubant (US)</td>
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# SCIENTIFIC REVIEW COMMITTEE (SRC)

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<th>Name</th>
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<td>Chair</td>
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<td>Maria Pia Amato</td>
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<td>Doug Arnold</td>
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<td>Alberto Ascherio</td>
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<td>Helen Tremlett</td>
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<td>Daniel Pelletier</td>
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<td>Frauke Zipp</td>
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LOCAL ORGANIZING COMMITTEE (LOC)

Howard Weiner (US), Chair
Rohit Bakshi (US)
Tanuja Chitnis (US)
Philip de Jager (US)

TEACHING COURSES COMMITTEE

Jerry Wolinsky (US), Chair
Per Soelberg Sørensen (DK), Co-Chair
Amit Bar-Or (CA)
Roland Liblau (FR)
Catherine Lubetzki (FR)
Samuel Ludwin (CA)
Aaron Miller (US)
David Miller (UK)

COLLABORATING PARTNERS

Association Management Partners & Executive Directors (AMPED)
www.manageassociations.com

AMPED provides full association management services for ACTRIMS and principal oversight of the 2014 Joint ACTRIMS-ECTRIMS Meeting.

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ACTRIMS Managing Director

Marechiel Santos-Lang
Director of Meetings & Education

Brittany Marsala Olson
Exhibit & Support Manager

Kim Striebel
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Emily Viles
Program Assistant

Jeanne Rosen
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Communications Specialist

Emily Wiseman
Administrative Support

Trish Larson
Administrative Support

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Opus 3 inc is a Montréal based professional congress organizer engaged by ACTRIMS to handle all of the logistics for the 2014 Joint ACTRIMS-ECTRIMS Meeting.

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www.mscare.org

The Consortium of Multiple Sclerosis Centers is the joint sponsor acting as the ACCME-accredited provider of CME and in that role is responsible for ensuring that the content of this educational activity conforms to the ACCME Criteria for Accreditation and Standards for Commercial Support.

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The Consortium of Multiple Sclerosis Centers (CMSC) designates this live activity for a maximum of 15.75 AMA PRA Category 1 Credits™. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

Certificate of Participation
For physicians, a certificate will be issued upon completion of course requirements based on credits claimed by attendees, including the evaluation, enabling participants to register their credit with the appropriate licensing boards or associations. Non-physician participants will receive a certificate of attendance, which may be applied for other accreditations using the procedure established by their specific organization(s).

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# PROGRAM OVERVIEW*

## WEDNESDAY, 10 SEPTEMBER

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>07:00</td>
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<tr>
<td>08:00</td>
<td>Teaching Courses 1-7</td>
</tr>
<tr>
<td>08:00-09:30</td>
<td>*TC1 - Current Controversy in Management: Interactive Case Discussion CME</td>
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<tr>
<td></td>
<td>*TC2 - How do I choose the correct disease-modifying treatment? CME</td>
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<td>*TC3 - Symptom management CME</td>
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<tr>
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<td>*TC4 - Management during pregnancy CME</td>
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<td></td>
<td>*TC5 - Clinically isolated syndromes (CIS) CME</td>
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<tr>
<td></td>
<td>*TC6 - Neuromyelitis optica (NMO) CME</td>
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<tr>
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<td>*TC7 - Imaging small parts of the nervous system (MAGNIMS) CME</td>
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<td>09:00</td>
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<td>09:00-10:00</td>
<td>Coffee Break</td>
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<tr>
<td>10:00-11:30</td>
<td>Teaching Courses 8-14</td>
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<tr>
<td></td>
<td>*TC8 - Update in pediatric MS CME</td>
</tr>
<tr>
<td></td>
<td>*TC9 - Differential diagnoses and diagnostic dilemmas CME</td>
</tr>
<tr>
<td></td>
<td>*TC10 - Neuroimmunology in relation to MS pathophysiology and immunotherapy CME</td>
</tr>
<tr>
<td></td>
<td>*TC11 - MRI issues in clinical practice (MAGNIMS) CME</td>
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<tr>
<td></td>
<td>*TC12 - Neuro-ophthalmology update CME</td>
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<tr>
<td></td>
<td>*TC13 - Assessing the drug efficacy: Challenges in study design CME</td>
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<td>*TC14 - Neuropsychiatric manifestations and cognitive impairment CME</td>
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<td>11:00</td>
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<tr>
<td>11:30-14:00</td>
<td>Exhibit Hall Opening Lunchan</td>
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<tr>
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<td>*QT1 - Question Time Hangout 1- Social Media Session</td>
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<td>12:00</td>
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<tr>
<td>12:00-13:00</td>
<td>European Charcot Foundation Symposium</td>
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<td>*QT2 - Question Time Hangout 2- Social Media Session</td>
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<tr>
<td>14:00-15:30</td>
<td>YI1 - Young Investigators 1 CME</td>
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<td>15:30-16:00</td>
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<tr>
<td>16:00-17:15</td>
<td>YI2 - Young Investigators 2 CME</td>
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<tr>
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<tr>
<td>17:30-18:30</td>
<td>SS1 - Industry Supported Satellite Symposia 1</td>
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<tr>
<td>18:45-19:45</td>
<td>SS2 - Industry Supporter Satellite Symposia 2 CME</td>
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<td><a href="http://www.msboston2014.org">www.msboston2014.org</a></td>
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## THURSDAY, 11 SEPTEMBER

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<tbody>
<tr>
<td>07:15-08:15</td>
<td>SS3 - Industry Supported Satellite Symposia 3 CME</td>
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<tr>
<td>08:00-17:00</td>
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<tr>
<td>08:30-09:00</td>
<td>Opening Ceremony</td>
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<tr>
<td>09:00-10:00</td>
<td>PL1 - Plenary Session 1 ACTRIMS-ECTRIMS</td>
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<tr>
<td></td>
<td>Opening Lecture CME</td>
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<tr>
<td>10:00-12:00</td>
<td>Parallel Sessions 1-3</td>
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<tr>
<td></td>
<td>*PS1 - Call-based therapies CME</td>
</tr>
<tr>
<td></td>
<td>*PS2 - MS subpopulations and disease variants CME</td>
</tr>
<tr>
<td></td>
<td>*PS3 - MRI CME</td>
</tr>
<tr>
<td>12:00</td>
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<tr>
<td>12:00-13:00</td>
<td>SS4 - Industry Supported Satellite Symposia 4 CME</td>
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<tr>
<td>14:00</td>
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<tr>
<td>14:00-15:30</td>
<td>Parallel Sessions 4-6</td>
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<tr>
<td></td>
<td>*PS4 - EAE and other animal models CME</td>
</tr>
<tr>
<td></td>
<td>*PS5 - Comorbidities and risk behaviors CME</td>
</tr>
<tr>
<td></td>
<td>*PS6 - Risk management with MS therapies CME</td>
</tr>
<tr>
<td>15:30</td>
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<tr>
<td>15:30-17:00</td>
<td>Poster Session 1 (P001 - P490)</td>
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<td></td>
<td>*QT2 - Question Time Hangout 2- Social Media Session</td>
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<tr>
<td>17:00</td>
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<tr>
<td>17:00-17:45</td>
<td>Hot Topics 1-3</td>
</tr>
<tr>
<td></td>
<td>*HT1 - Genetics of MS CME</td>
</tr>
<tr>
<td></td>
<td>*HT2 - New routes of drug development CME</td>
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<tr>
<td></td>
<td>*HT3 - Symptomatic and rehabilitation strategies CME</td>
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<tr>
<td>18:00</td>
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<tr>
<td>18:00-19:00</td>
<td>SS5 - Industry Supported Satellite Symposia 5 CME</td>
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<tr>
<td>19:15-20:15</td>
<td>SS6 - Industry Supported Satellite Symposia 6</td>
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**FRIDAY, 12 SEPTEMBER**

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<tbody>
<tr>
<td>07:00</td>
<td>SS7 - Industry Supported Satellite Symposia 7</td>
<td>Room 312</td>
</tr>
<tr>
<td>07:00</td>
<td>Exhibit Hall Open</td>
<td>Halls C &amp; D</td>
</tr>
<tr>
<td>08:00</td>
<td>FC1 - Free Communication 1 • Aqu conditioned, Levels 2 &amp; 3</td>
<td>Auditorium, Levels 2 &amp; 3</td>
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<tr>
<td>08:00</td>
<td>FC2 - Free Communication 2 • Small Balroom, Level 3</td>
<td>Small Balroom, Level 3</td>
</tr>
<tr>
<td>08:00</td>
<td>FC3 - Free Communication 3 • Grand Ballroom, Level 3</td>
<td>Grand Ballroom, Level 3</td>
</tr>
<tr>
<td>08:00</td>
<td>FC4 - Free Communication 4 • Room 312</td>
<td>Room 312</td>
</tr>
<tr>
<td>08:45-11:15</td>
<td>Parallel Sessions 7-9 • PS7 - Biomarkers  • PS8 - Assessing neuroprotection  • PS9 - Treatment strategies in clinical practice</td>
<td>Small Balroom, Level 3</td>
</tr>
<tr>
<td>11:15</td>
<td>Poster Viewing</td>
<td>Hall C</td>
</tr>
<tr>
<td>11:15</td>
<td>Coffee Break</td>
<td>Halls C &amp; D</td>
</tr>
<tr>
<td>12:00</td>
<td>Lunch</td>
<td>Halls C &amp; D</td>
</tr>
<tr>
<td>12:00</td>
<td>SS8 - Industry Supported Satellite Symposia 8 • Advanced</td>
<td>Auditorium, Levels 2 &amp; 3</td>
</tr>
<tr>
<td>12:00</td>
<td>QT5 - Question Time Hangout 3 • Social Media Session</td>
<td>Room 312</td>
</tr>
<tr>
<td>13:15</td>
<td>Parallel Sessions 10-12 • PS10 - Immune mechanisms  • PS11 - Gray matter pathology and mechanisms of progression  • PS12 - Study design and endpoints</td>
<td>Small Balroom, Level 3</td>
</tr>
<tr>
<td>14:45-16:15</td>
<td>Poster Session 2 (P491-P980) • BD3 - Burning Debate 3- Social Media Session</td>
<td>Auditorium, Levels 2 &amp; 3</td>
</tr>
<tr>
<td>15:00</td>
<td>Coffee Break</td>
<td>Halls C &amp; D</td>
</tr>
<tr>
<td>16:15</td>
<td>Hot Topics 4-6 • HT4 - Remyelination  • HT5 - Inflammation and neurodegeneration  • HT6 - Society and MS</td>
<td>Small Balroom, Level 3</td>
</tr>
<tr>
<td>17:00</td>
<td>SS9 - Industry Supported Satellite Symposia 9</td>
<td>Auditorium, Levels 2 &amp; 3</td>
</tr>
<tr>
<td>18:00</td>
<td>SS10 - Industry Supported Satellite Symposia 10</td>
<td>Small Balroom, Level 3</td>
</tr>
<tr>
<td>19:00</td>
<td>Closing Networking Event at JFK Presidential Library &amp; Museum</td>
<td>Shuttle service provided</td>
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**SATURDAY, 13 SEPTEMBER**

<table>
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<th>Time</th>
<th>Event</th>
<th>Location</th>
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<tbody>
<tr>
<td>07:15</td>
<td>SS10 - Industry Supported Satellite Symposia 11 CME</td>
<td>Small Balroom, Level 3</td>
</tr>
<tr>
<td>08:30-10:00</td>
<td>LB - Late Breaking News • Paty Closing Lecture CME</td>
<td>Auditorium, Levels 2 &amp; 3</td>
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<tr>
<td>10:00-10:30</td>
<td>LBP - Late Breaking News e-Poster Session</td>
<td>Outside Hall C</td>
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<tr>
<td>10:30-12:45</td>
<td>PL2 - Plenary Session 2  • Paty Closing Lecture CME  • ACTRIMS-ECTRIMS Clinical Research Highlights CME  • ACTRIMS-ECTRIMS Basic Research Highlights CME</td>
<td>Auditorium, Levels 2 &amp; 3</td>
</tr>
<tr>
<td>12:00-13:00</td>
<td>SS11 - Industry Supported Satellite Symposia 11 CME</td>
<td>Auditorium, Levels 2 &amp; 3</td>
</tr>
<tr>
<td>13:00-14:45</td>
<td>Parallel Sessions 10-12  • PS10 - Immune mechanisms  • PS11 - Gray matter pathology and mechanisms of progression  • PS12 - Study design and endpoints</td>
<td>Small Balroom, Level 3</td>
</tr>
<tr>
<td>14:45-16:15</td>
<td>Poster Session 2 (P491-P980) • BD3 - Burning Debate 3- Social Media Session</td>
<td>Auditorium, Levels 2 &amp; 3</td>
</tr>
<tr>
<td>15:00-16:00</td>
<td>BD3 - Burning Debate 3- Social Media Session</td>
<td>Room 312</td>
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**PLENARY LECTURES**

Opening Plenary
ACTRIMS-ECTRIMS Lecture
**PL1.1 Approaching the cause of multiple sclerosis**
Prof. David A. Hafler
Yale School of Medicine
Thursday, September 11
09:30-10:30
Auditorium, Levels 2 & 3

Closing Plenary
Paty Lecture
**PL2.1 Neuroprosthetics for paralysis**
Prof. Andrew B. Schwartz
University of Pittsburgh
Saturday, September 13
10:30-11:30
Auditorium, Levels 2 & 3

*Schedule subject to change. For up-to-date information, check the Online Session Planner.*
SCIENTIFIC PROGRAM

WEDNESDAY, 10 SEPTEMBER

08:00 – 09:30 Room 304
TC1: Current controversy in management: Interactive case discussion\textsuperscript{CME} (TC1.1)
Faculty from both sides of the Atlantic will use a series of interactive cases to highlight current controversy in the management of MS. The course will emphasize real-world decision-making regarding disease-modifying therapy selection as well as other critical issues that arise in MS clinical practice. The use of an audience response system will enable participants to compare their own decisions with those of the faculty and their fellow registrants. Learners gain 1.50 continuing medical education (CME) credit. Convener: A. Miller, New York, NY, US

08:00 – 09:30 Room 312
TC2: How do I choose the correct disease-modifying treatment?\textsuperscript{CME} (TC2.1 - TC2.3)
This course will explore the pros and cons of initiating therapies in clinically isolated syndrome and early relapsing MS, how to choose the correct therapy for an individual patient, and when and how treatment should be switched or escalated under various circumstances. Learners gain 1.50 continuing medical education (CME) credit. Convener: R. Fox, Cleveland, OH, US

08:00 – 09:30 Room 310
TC3: Symptom management\textsuperscript{CME} (TC3.1 - TC3.3)
This year’s course will concentrate on the theme of symptom management and therapy of motor function – focusing on weakness and spasticity, and discussing the contribution exercise can make. Learners gain 1.50 continuing medical education (CME) credit. Convener: A. Goodman, Rochester, NY, US

08:00 – 09:30 Room 311
TC4: Management during pregnancy\textsuperscript{CME} (TC4.1)
As a disease predominantly affecting women of childbearing age, issues of conception, pregnancy, delivery and breastfeeding are major concerns for MS patients and treating physicians. The risks and benefits of ongoing therapies for the health of the mother and the fetus must be considered. This course reviews the modulatory effects on pregnancy in relapsing MS and its long-term disease course. The risks and benefits of disease-modifying treatments around conception and during pregnancy, relapse management during pregnancy, and questions related to breastfeeding will be addressed. Learners gain 1.50 continuing medical education (CME) credit. Convener: M. Houtchens, Brookline, MA, US

08:00 – 09:30 Room 313
TC5: Clinically isolated syndromes\textsuperscript{CME} (CIS) (TC5.1 - TC5.3)
CIS is the first manifestation of MS in the majority of adults and children. This course reviews the challenges of diagnosis, prediction of outcome and clinical management of patients with CIS. Similarities and differences of clinical characteristics of CIS between children and adults, and risk factors used in clinical practice to predict the evolution from CIS to MS are considered. Treatments that delay the clinical onset of MS and those currently under testing in clinical trials are reviewed. Where radiologically isolated syndrome (RIS) fits in the spectrum of early MS is debated. Learners gain 1.50 continuing medical education (CME) credit. Convener: M. Tintore, Barcelona, ES
TC5.3 How can we treat and manage CIS patients?
M Tintore1
1MS Center of Catalunya.Vall d Hebron University Hospital, Neurology/Neuroimmunology Dept, Barcelona, ES

08:00 – 09:30 Room 302

TC6: Neuromyelitis optica (NMO)CME
(TC6.1 - TC6.3)
The diagnostic criteria for NMO are under rapid evolution and refinement – approaches based on the most current iteration will be considered in depth. The differential diagnosis of NMO can be difficult and how to approach opticospinal MS and AQP4 antibody-negative NMOSD (including MOG antibody-positive cases) will be covered. Considerations for treatment in clinical practice and controversy surrounding trial designs to explore new approaches will provide very practical yet highly topical information for clinicians.
Learners gain 1.50 continuing medical education (CME) credit.
Convener: J. Palace, Oxford, GB

TC6.1 Diagnostic criteria for neuromyelitis optica: an update
BG Weinshenker1
1Mayo Clinic, Neurology, Rochester, MN, US

TC6.2 AQP4 antibody-seronegative NMOSD: the clinical dilemma
K Fujihara1
1Tohoku University Graduate School of Medicine, Dept of MS Therapeutics, Sendai, JP

TC6.3 Treatments in NMO: current algorithms, future therapies and trial designs
J Palace1
1Oxford University Hospitals Trust, Oxford, GB

09:30 – 10:00 302, 304, 306, 310, 311, 312, 313

Coffee Break

10:00 – 11:30 Room 310

TC7: Imaging small parts of the nervous system (MAGNIMS)CME
(TC7.1 - TC7.3)
Accurate imaging of small parts of the central nervous system (CNS) such as the spinal cord, optic nerve and deep grey matter is relevant for a better understanding of the underlying pathology in MS. Imaging these demanding structures can provide new outcome measures useful for clinical studies and drug trials. However, advanced imaging is challenging and must overcome several technical limitations. This course will review recent technical developments in the field of advanced imaging that enable quantitative imaging of difficult regions of CNS, and discuss the advantages of using these techniques in both clinical setting and patient studies.
Learners gain 1.50 continuing medical education (CME) credit.
Convener: M. Rocca, Milan, IT

TC7.1 Optic nerve imaging: pathophysiological insights
A Toosy1
1UCL Institute of Neurology, Brain Repair and Rehabilitation, London, GB

TC7.2 Deep grey matter: current and new technologies
MA Rocca1
1Hospital San Raffaele, Neuroimaging Research Unit, Milan, IT

TC7.3 Imaging the small parts of the nervous system: spinal cord
DS Reich1
1National Institute of Neurological Disorders and Stroke, NIH, Translational Neuroradiology Unit, Bethesda, MD, US

TC8: Update in pediatric MS CME
(TC8.1 - TC8.3)
This year’s update will focus on the diagnosis of MS and acute demyelinating disorders in children, emerging therapies and clinical trials in pediatric MS, and the role of MRI in the assessment of disease activity and its impact in patients with childhood onset MS.
Learners gain 1.50 continuing medical education (CME) credit.
Convener: B. Banwell, Philadelphia, PA, US

TC8.1 Diagnosis of MS and acute demyelinating disorders in children
C Hemingway1
1Great Ormond Street Hospital for Children, London, GB

TC8.2 Emerging therapies and clinical trials in pediatric MS
T Chitnis1
1Harvard Medical School, Massachusetts General Hospital, Partners Pediatric MS Center, Boston, MA, US

TC8.3 MRI: role in assessment of MS disease activity and disease impact in patients with MS onset during childhood
B. Banwell1
1The Children's Hospital of Philadelphia, University of Pennsylvania, Neurology and Pediatrics, Philadelphia, PA, US
TC9: Differential diagnoses and diagnostic dilemmasCME (TC9.1 - TC9.3)
Diagnostic approach to multiple sclerosis (MS) includes clinical and paraclinical assessments emphasizing the need to demonstrate dissemination in time and dissemination in space and to exclude alternative diagnoses. Although, the diagnosis can be made on clinical grounds alone, MRI can support, implement or even replace some clinical criteria. Diagnostic approaches have identified some clinical and paraclinical red flags that should signal particular caution. Many metabolic, vascular, or inflammatory diseases can mimic MS. A few biomarkers, as NMO-IgG targeting aquaporin-4, or other antibodies directed against central nervous system targets now define specific entities. Differentiation of acute disseminated encephalomyelitis remains problematic. Those attending this course will come away with a better approach to diagnostic precision.

Learners gain 1.50 continuing medical education (CME) credit.
Convener:
P. Vermersch, Lille, FR

TC9.1 Diagnostic approach to MS
P. Vermersch
1University of Lille, Neurology, Lille, FR

TC9.2 Red flags in MS: zebras or horses?
S. Galetta
1NYU Langone, Neurology, New York, NY, US

TC9.3 MS differential diagnoses
E. Waubant
1UCSF, Neurology and Pediatrics, San Francisco, CA, US

TC10: Neuroimmunology in relation to MS pathophysiology and immunotherapyCME (TC10.1 - TC10.3)
This session provides basic principles on how the immune system can go awry and promote CNS tissue damage in MS. We discuss how an inadequate activation of the adaptive immune response takes place in the periphery. The possible impact of genetic and environmental factors is presented with new data that begins to identify the antigenic targets of this deleterious response. How blood-CNS barriers control the migration of different immune cell subsets into the CNS is also explored to illustrate the pathways used by immune cells to enter the CNS and introduce the molecules involved. An integrated view on the mechanisms by which immune cells induce demyelination and axonal damage, suggests number of promising therapeutic targets.

Learners gain 1.50 continuing medical education (CME) credit.
Convener:
R. Liblau, Toulouse, FR

TC10.1 Inadequate activation of T cells in MS: possible mechanisms involved
R. Liblau
1Toulouse University, Immunology, Toulouse, FR

TC10.2 Contribution of B cell: T cell interactions to CNS inflammation in MS
A. Bar-Or
1Montreal Neurological Institute and Hospital, McGill University, Montreal, QC, CA

TC10.3 Immune cell trafficking to the CNS, mechanisms and therapeutic implications
M. H. Hirai
1Stanford University, Neurology and Neurological Sciences, Stanford, CA, US

TC11: MRI issues in clinical practice (MAGNIMS)CME (TC11.1 - TC11.3)
Brain and spinal cord MRI are recognized as the most important paraclinical tool for the diagnosis and management of MS. Understanding how pathology evolves in patients with MS, is essential as it leads to neurological deficits and clinical progression. Imaging is an important tool that allows detecting the dynamic changes in the pathological processes. It provides biomarkers that can be used in clinical trials to test the efficacy of new medications and that enable monitoring of patients in the clinical setting. This course will review and discuss the imaging biomarkers currently used for clinical studies. It is focused on the macroscopic pathological changes by summarizing what is known for each of them, and describing the insights provided by imaging. Established biomarkers and new, emerging and biomarkers, will be discussed.

Learners gain 1.50 continuing medical education (CME) credit.
Convener:
N. De Stefano, Siena, IT

TC11.1 Lesions: can we go beyond counts and volumes?
N. De Stefano
1University of Siena, Siena, IT

TC11.2 Brain atrophy: an outcome measure in clinical studies
E. Fisher
1Cleveland Clinic, Biomedical Engineering, Cleveland, OH, US

TC11.3 Imaging biomarkers of normal-appearing brain
D. Pelletier
1Yale University, Depts of Neurology and Radiology, New Haven, CT, US
10:00 – 11:30 Room 313

**TC12: Neuro-ophthalmology update**<sup>CME</sup> (TC12.1 - TC12.3)

This course implements a case-based format to provide participants with a practical understanding of how the afferent and efferent visual systems can be used to localize clinical symptoms and measure disease activity in MS and related disorders. Emerging ocular imaging and ophthalmic testing techniques are discussed. At the conclusion of the course, participants will be able to distinguish visual pathway manifestation of MS from neuromyelitis optica (NMO), identify visual manifestations that can help diagnose NMO spectrum disorder, and recognize the evolving role of visual outcomes in MS clinical trials.

*Learners gain 1.50 continuing medical education (CME) credit.*

Convener:
F. Costello, Calgary, AB, CA

**TC12.1 Visual manifestations of CNS demyelinating disorders**
FE Costello<sup>1</sup>
University of Calgary/Hotchkiss Brain Institute, Clinical Neurosciences and Surgery, Calgary, AB, CA

**TC12.3 Neuromyelitis optica: new diagnostic criteria enlarge the spectrum**
J de Seze<sup>1</sup>
CHU de Strasbourg, Strasbourg, FR

**TC12.3 The role of visual outcomes in MS clinical trials**
LJ Balcer<sup>1</sup>
New York University School of Medicine, Neurology, New York, NY, US

11:30 – 14:00 Halls C & D

**Exhibit Hall Opening Luncheon**

11:30 – 17:00 Halls C & D

**Exhibit Hall Open**

12:00 – 13:00 Room 312

**QT1: Social Media Session-Question Time Hangout**
A discussion between MS Researchers & MSers broadcast on Google+

Chairs:
D. Baker, London, UK
A. Thomson, London, UK

12:30 – 14:00 Auditorium

**CS1: European Charcot Foundation Symposium**

Chairs:
H.-P. Hartung, Düsseldorf, DE
G. Comi, Milan, IT

**CS1.1 Introduction: What have we learned from clinical trials?**
H.P. Hartung<sup>1</sup>
Heinrich-Heine University, Dept of Neurology and Center for Neuropsychiatry, Düsseldorf, DE
12:40–13:00  
**CS1.2**  Where we are with potential autoantigens?  
H. P. Hartung1  
1Heinrich-Heine University, Dept of Neurology and Center for Neuropsychiatry, Düsseldorf, DE

13:00–13:20  
**CS1.3**  Multiple Peptides  
A. Luthe1  
1Zurich, CH

13:20–13:45  
**CS1.4**  MS treatment with myelin peptides skinpatches  
K. Selma1  
1Medical University of Lodz, Lodz, PL

13:40–13:45  
**CS1.5**  Conclusions

14:00–15:30  
**Auditorium, Level 2**

**YI1:** Young Investigators Session 1CME  
(YI1.1 - YI1.7)  
Learners gain 1.50 continuing medical education (CME) credit.  
Chairs:  
G. Edan, Rennes, FR  
L. Metz, Calgary, AB, CA

14:00–14:12  
**YI1.1**  The novel TH17-associated cytokine IL-26 mediates BBB breakdown and neuroinflammation  
B. Broux1, L. Hachehouche1, H. Kebir1, S. Terouz1, L. Bourbonniere1, A. Prat1  
1Université de Montréal, CRCHUM, Montréal, QC, CA

14:12–14:24  
**YI1.2**  DICAM: a novel molecular effector in neuroinflammation  
S. Ghannam1, J. Alvarez2, H. Kebir2, L. Bourbonniere1, A. Prat1  
1CRCHUM, Neuroimmunology, Montreal, QC, CA, 2CRCHUM, Montreal, QC, CA

14:24–14:36  
**YI1.3**  Clinical disease burden predicts myelin water fraction in multiple sclerosis  
E. Monohan1, SM Hurtado Rúa1, K. Fujimoto1, S. Pandya1, EM LoCastro1, M. Dayan2, J. Perumal1, N. Nealon1, T. Vartanian1, TD Nguyen1, A. Raj1, S. A. Gauthier1,  

14:36–14:48  
**YI1.4**  In vivo 7T MRI characterization of leptomeningeal enhancement in multiple sclerosis  
L. Vuolo1, P. Sati1, M. Absinta1, I. Cortese1, D. S. Reich1  
1National Institutes of Health (NIH), National Institute of Neurological Disorders and Stroke (NINDS), Translational Neuroradiology Unit, Bethesda, MD, US, 2University of Florence, Depts of Neurology and Radiology, Florence, Italy, 3Scientific Institute, Vita-Salute San Raffaele University, Neuroimaging Research Unit, Institute of Experimental Neurology, Milan, Italy, 4National Institutes of Health (NIH), National Institute of Neurological Disorders and Stroke (NINDS), Bethesda, MD, US

14:48–15:00  
**YI1.5**  Multiple sclerosis deep grey matter: the relation between demyelination, neurodegeneration, inflammation and iron  
J. M. Frischer1, L. Haider1, C. Simeonidou2, G. Steinberger1, S. Hameet1, N. Grigoriadis1, G. Deretzi1, GG Kovacs2, A. Kutzelnigg1, H. Lassmann1  
1Medical University Vienna, Center for Brain Research, Vienna, AT, 2Aristotle University of Thessaloniki, Thessaloniki, GR, 3Medical University Vienna, Institute of Neurology, Vienna, AT

15:00–15:12  
**YI1.6**  Regional thalamic damage and cognitive impairment in patients with multiple sclerosis: a multicenter study  
A. Bisecco1, MA Rocca1,2, E. Pagani1, F. Barkhof2, N. Muhlert1, N. De Stefano1, C. Zinzinger1, A. Gallo1, H. Huls1, K. Abdel-Aziz1,2, ML Stromillo1, F. Fazekas1, G. Tesch1, G. Comi1, M. Filippi1,  
1San Raffaele Scientific Institute, Vita-Salute San Raffaele University, Neuroimaging Research Unit, Institute of Experimental Neurology, Milan, Italy, 2San Raffaele Scientific Institute, Vita-Salute San Raffaele University, Dept of Neurology, Milan, Italy, 3VU Medical Centre, Radiology and Image Analysis Centre (IAC), Amsterdam, NL, 4Institute of Neurology, UCL, NMR Research Unit, London, GB, 5University of Siena, Dept. of Medicine, Surgery and Neuroscience, Siena, Italy, 6Medical University of Graz, Dept of Neurology, Graz, AT, 7Second University of Naples, Dept of Neurology, Naples, Italy

15:12–15:24  
**YI1.7**  Changes in thalamic resting-state functional connectivity induced by a home-based cognitive rehabilitation program in patients with multiple sclerosis  
L. De Giglio1, F. Tona1, N. Petsas1, F. De Luca1, L. Prosperini1, C. Pozzilli1, P. Pantano1  
1Sapienza University of Rome, Rome, IT

15:00–16:00  
**Room 312**

**BD1:** Social Media Session - Burning Debate  
Chair:  
B. Bebo, Portland, US

**BD1.1**  Debate: (TOWIP) The only way is Pharma: Academic trials go nowhere.  
V. Knappertz1, B. Bielekova2  

15:30–16:00  
**Halls C & D**

**Coffee Break**

16:00–17:15  
**Auditorium, Level 2**

**YI2:** Young Investigators Session 2CME  
(YI2.1 - YI2.6)  
Learners gain 1.25 continuing medical education (CME) credit.  
Chairs:  
B. Banwell, Philadelphia, PA, US  
P. Vermersch, Lille, FR
16:00 – 16:12
YI2.1 Is focal leptomeningeal enhancement an in vivo imaging biomarker for meningeal inflammation?
M Absinta1,2, L Vuolo1, G Nair1, P Sat1, M Dragan3, MI Reyes-Mantilla4, M Filippi2, PA Calabresi2, CA Pardo4, DS Reich1,4
1Translational Neuroradiology Unit, National Institute of Neurological Disorders and Stroke (NINDS), National Institutes of Health (NIH), Bethesda, MD, US, 2Neuroimaging Research Unit, Institute of Experimental Neurology, Division of Neuroscience, San Raffaele Scientific Institute, Vita-Salute San Raffaele University, Milan, IT, 3Flow Cytometry Core Facility, Institute of Neurological Disorders and Stroke (NINDS), National Institutes of Health (NIH), Bethesda, MD, US, 4Dept of Neurology, Johns Hopkins School of Medicine, Baltimore, MD, US

16:12 – 16:24
YI2.2 Retinal measures reflect global neurodegeneration and inflammation: a 4-year longitudinal study of optical coherence tomography and MRI in MS
S Saidha1, O Omar Al-Louzi1, J Ratchford1, P Bhargava1, J Oh1, S Newsome1, J Prince2, D Pham3, J Roy1, P Van Zijl3, L Balcer4, E Frohman5, D Reich5, C Crainiceanu8, P Calabresi7
1Johns Hopkins University School of Medicine, Dept of Neurology, Baltimore, MD, US, 2Johns Hopkins University School of Medicine, Dept of Electrical and Computer Engineering and Dept of Computer Science, Baltimore, MD, US, 3Johns Hopkins University School of Medicine, Dept of Radiology and Radiological Sciences, Baltimore, MD, US, 4University of Muenster, Neurology, Muenster, DE, 5University of Muenster, Anaesthesiology, Muenster, DE, 6University of Texas Southwestern, Dept of Neurology and Ophthalmology, Dallas, TX, US, 7National Institute of Neurological Disorders and Stroke, Translational Neuroradiology Unit, Bethesda, MD, US, 8Johns Hopkins University, Dept of Biostatistics, Baltimore, MD, US

16:24 – 16:36
YI2.3 A comparison of cognitive performances between multiple sclerosis patients with pediatric- versus adult-onset disease
B Hakiki1, C Niccolai2, E Portaccio1, B Goretta1, M Giannini1, L Pasto1, C Pecori1, ML Stromillo2, A Giorgio2, F Rossi2, N De stefano2, MP Amato1
1University of Florence, Dept NEUROFARBA, Section Neurosciences, Florence, IT, 2University of Siena, Dept of Medicine, Surgery and Neuroscience, Siena, IT

16:36 – 16:48
YI2.4 Normal visual acuity is retained in a subset of pediatric patients with demyelinating disease of the optic nerve
S Hughes2, D Conger2, A Conger1, T Frohman1, E Frohman5, B Greenberg2, D Graves2
1UT Southwestern Medical Center, Dallas, TX, US, 2Children’s Medical Center, Dallas, TX, US

16:48 – 17:00
YI2.5 An investigation of cervical spinal cord lesion location and extent in subtypes of multiple sclerosis
H Kearney1, KA Miszkiel2, MC Yiannakas1, DR Altmann3, O Ciccarelli4,5, DH Miller4,5
1UCL Institute of Neurology, NMR Research Unit, London, GB, 2National Hospital for Neurology and Neurosurgery, Dept of Neuroradiology, London, GB, 3London School of Hygiene and Tropical Medicine, Medical Statistics Dept, London, GB, 4NIHR University College London Hospitals Biomedical Research Centre, London, GB

17:00 – 17:12
YI2.6 VLA-4 blockade promotes differential routes into human CNS involving PSGL-1-rolling of T-cells and MCAM-adhesion of TH17-cells
T Schneider-Hohendorf1, J Rossaint2, J Breuer1, A Zarbock1, N Schwab1, H Wiendl1
1University of Muenster, Neurology, Muenster, DE, 2University of Muenster, Anaesthesiology, Muenster, DE

17:30 – 18:30    Auditorium, Levels 2 & 3
Industry Supported Satellite Symposia
SSI1: Emerging Trends in MS Pathophysiology: The Role of Mitochondria
This non-CME activity is supported by Genzyme, A Sanofi Company.

18:45 – 19:45    Auditorium, Level 2
Industry Supported Satellite Symposia
SSI2: Beyond Diagnosis: The Essential Role of MRI in Clinical Management of Multiple Sclerosis
This CME activity is jointly provided by the Elsevier Office of Continuing Medical Education and Miller Medical Communications, LLC. This activity is supported by an educational grant from Biogen Idec.
Chair:
F. Barkhof, Amsterdam, NL
THURSDAY, 11 SEPTEMBER

07:15 – 08:15    Auditorium, Levels 2 & 3
Industry Supported Satellite Symposia
SS3: Aligning Treatment Selection with Goals in Multiple Sclerosis: How Can We Optimize Established and Emerging Therapy Use in Clinical Practice?
This CME activity is jointly provided by the University of Florida College of Medicine and PVI, PeerView Institute for Medical Education. This activity is supported by an educational grant from Genzyme, A Sanofi Company.
Chair:
A. Miller, New York, NY, US

07:15-07:20
SS3.1 Welcome and Introduction
A. Miller
1Icahn School of Medicine at Mount Sinai, Corinne Goldsmith Dickinson Center for Multiple Sclerosis, New York, NY, US

07:20-07:40
SS3.2 Practical Considerations for the Initial Management of CIS or MS
A. Miller
1Icahn School of Medicine at Mount Sinai, Corinne Goldsmith Dickinson Center for Multiple Sclerosis, New York, NY, US

07:40-08:00
SS3.3 Optimizing Treatment for Highly Active Disease in Patients with MS
A. Coles
1University of Cambridge, Cambridge, GB

08:00 – 17:00    Halls C & D
Exhibit Hall Open

08:30 – 10:00    Auditorium, Levels 2 & 3
PL1: Opening Ceremony & Plenary Session 1CME (PL1.1)
Learners gain 1.0 continuing medical education (CME) credit.
Chairs:
S. Dhib-Jalbut, New Brunswick, NJ, US
M. Trojano, Bari, IT
H. Weiner, Boston, MA, US

PL1.1 Approaching the cause of multiple sclerosis
DA Haffer
1Yale School of Medicine, New Haven, CT, US, 2Broad Institute of MIT and Harvard University, Cambridge, MA, US

10:00 – 10:30    Halls C & D
Coffee Break

10:30 – 12:00    Auditorium, Levels 2 & 3
PS1: Cell-based TherapiesCME (PS1.1 - PS1.6)
Learners gain 1.50 continuing medical education (CME) credit.
Chairs:
M. Freedman, Ottawa, ON, CA
N. Scolding, Bristol, GB

10:30 – 10:50
PS1.1 How stem cells speak with the host immune system
S. Pluchino
1John van Geest Centre for Brain Repair and Welcome Trust-Medical Research Council Stem Cell Institute, Cambridge, GB

10:50 – 11:10
PS1.2 Assessing myelin repair in multiple sclerosis: Is imaging useful? Usable? Are we there yet?
C. Laule
1University of British Columbia, Radiology / Pathology and Laboratory Medicine, Vancouver, BC, CA

11:10 – 11:22
PS1.3 Injection of next-generation directly-induced neural stem cells (iNSCs) induces recovery in a chronic mouse model of multiple sclerosis
L. Peruzzotti-Jametti
1INSERM U1127, Centre de Recherche de l’Institut du Cerveau et de la Moelle Épinière, Paris, FR, 2Sorbonne Universités UPMC Univ Paris 06, UM 75, Paris, FR, 3CNRS, UMR 7225, Paris, FR, 4Institute of Experimental Neurology–DIBIT 2, Division of Neuroscience, San Raffaele Scientific Institute, Milan, IT

11:34 – 11:46
PS1.5 Phase I trial of intravenous autologous culture-expanded mesenchymal stem cell transplantation in multiple sclerosis
J. Cohen
1Cleveland Clinic, Mellen Center, Cleveland, OH, US, 2Cleveland Clinic, Quantitative Health Sciences, Cleveland, OH, US, 3Cleveland Clinic, Biomedical Engineering, Cleveland, OH, US, 4McGill University, Montreal Neurological Institute, Montreal, QC, CA, 5Case Western Reserve University, Case Comprehensive Cancer Center and National Center for Regenerative Medicine, Cleveland, OH, US, 6University Hospitals Case Medical Center, Seidman Cancer Center, Cleveland, OH, US
**PS1.6** Intrathecal administration of mesenchymal stem cell-neural progenitors in multiple sclerosis: an interim analysis of a phase 1 clinical trial
VK Harris1, T Vyshkina1, S Chirls1, SA Sadiq1
1Tisch MS Research Center of New York, New York, NY, US

**10:30 – 12:00** Small Ballroom (302-304-306)

**PS2: MS subpopulations and disease variants**

**PS2.1** Radiologically isolated syndrome
C Lebrun
1Hopital Pasteur, Neurology, Nice, FR

**10:30 – 10:50**

**PS2.2** NMO spectrum disorders: evolution and current concept
K Fujihara
1Tohoku University Graduate School of Medicine, Dept of MS Therapeutics, Sendai, JP

**10:50 – 11:10**

**PS2.3** Bright spotty lesions of spinal cord: another MRI clue for neuromyelitis optica spectrum disorder?
J-W Hyun1, S-H Kim1, IH Jeong1, SH Lee1, HJ Kim1
1National Cancer Center, Neurology, Goyang, KR, 2National Cancer Center, Radiology, Goyang, KR

**11:10 – 11:22**

**PS2.4** Assessment of iron deposition pattern in multiple sclerosis and neuromyelitis optica lesions with ultra-high field quantitative susceptibility mapping
S Chawla1, I Kister1, J Herbert1, JC Brisset1, P Dusek1, JT Wuerfel1, F Paul1, Y Ge1

**11:22 – 11:34**

**PS2.5** Autoantibodies against MOG and aquaporin-4 identify distinct neuromyelitis optica spectrum disorders subgroups
DK Sato1, D Callegaro2, MA Lana-Peixoto2, PJ Waters3, S Tanaka4, FMH Jorge5, T Takahashi6, T Misu6, SL Apostolos-Pereira7, N Talim7, RF Simm7, I Nakashima1, K Nomura5, M Aoki1, K Fujihara1
1Tohoku University, Neurology, Sendai, JP, 2Johns Hopkins University, Neurology, Baltimore, MD, US, 3Oxford University, Nuffield Dept of Clinical Neurosciences, Oxford, GB, 4Federal University of Minas Gerais, CIEM MS Research Center, Belo Horizonte, BR, 5Oxford University, Nuffield Dept of Clinical Neurosciences, Oxford, GB, 6Saitama Medical University, Neurology, Saitama, JP, 7Tohoku University, Multiple Sclerosis Therapeutics, Sendai, JP

**11:46 – 11:58**

**PS2.6** Anti-MOG immune response characterizes a subgroup of AQP4-seronegative patients with a NMO phenotype
A-K Pröbstel1,2, G Rudolf1, N Sanderson1, K Dornmair3, N Collongues1, J-B Chanson1, L Kappos1, J de Seze3, T Derfuss4
1University Hospital Basel, Dept of Neurology, Basel, CH, 2University Basel, Dept of Biomedicine, Basel, CH, 3Hopitaux Universitaires de Strasbourg, Hopital de Hautpierre, Dept of Neurology, Strasbourg, FR, 4University Hospital Grosshadern, Institute of Clinical Neuroimmunology, Munich, DE

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**PS3: MRI**

**PS3.1** Ultra-high-field MRI
DS Reich
1National Institute of Neurological Disorders and Stroke, NIH, Translational Neuroradiology Unit, Bethesda, MD, US

**10:30 – 10:50**

**PS3.2** Advanced imaging of the spinal cord: current applications and future developments
O Ciccarelli
1UCL, Institute of Neurology, London, GB

**10:50 – 11:10**

**PS3.3** Longitudinal change in quantitative spinal cord MRI in multiple sclerosis patients: preliminary results of a 2-year study
J Ohi1,2, M Chen3, A Vidal-Jordana4,4, A Carass5, SD Newsome6, M Diener-West1, S Saidha1, K Zackowski6,7, CK Jones8,9, PCM van Zijl8,9, J Prince10,11, PA Calabresi12, DS Reich12,13
1University of Toronto, Neurology, Toronto, ON, CA, 2Johns Hopkins University, Neurology, Baltimore, MD, US, 3Johns Hopkins University, Electrical and Computer Engineering, Baltimore, MD, US, 4Multiple Sclerosis Centre of Catalonia (Cemcat), Hospital Universitari Vall d’Hebron, Neurology, Barcelona, ES, 5Johns Hopkins University, Biostatistics, Baltimore, MD, US, 6Johns Hopkins University, Physical Medicine and Rehabilitation, Baltimore, MD, US, 7Kennedy Krieger Institute, Motion Analysis Laboratory, Baltimore, MD, US, 8Johns Hopkins University, Computer Science, Baltimore, MD, US, 9Johns Hopkins University, Radiology and Radiological Science, Baltimore, MD, US, 10Johns Hopkins University, Computer Science, Baltimore, MD, US, 11Johns Hopkins University, Radiology and Radiological Science, Baltimore, MD, US, 12National Institute of Neurological Disorders and Stroke, Translational Neuroradiology Unit, Bethesda, MD, US

**11:22 – 11:34**

**PS3.4** Functional brain networks: linking thalamic atrophy to clinical disability in multiple sclerosis
P Tewarie1, M Schoonheim1, D Schouten1, CH Polman1, BM Uitdehaag1, JJG Geurts1, A Hillebrand1, F Barkhof1, CJ Stam1
1VU University Medical Center, Amsterdam, NL

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**SCIENTIFIC PROGRAM**

**Thursday, 11 September**
11:34 – 11:46
PS3.5  Double Inversion Recovery (DIR) sequence of the cervical spinal cord in multiple sclerosis
I Riederer1, DC Karampinos2, M Settles3, C Preibisch1,2, JS Bauer4, J Kleine5, M Mühlau4,5, C Zimmer1
1Klinikum rechts der Isar, Technische Universität München, Dept of Neuroradiology, Munich, DE, 2Klinikum rechts der Isar, Technische Universität München, Dept of Diagnostic and Interventional Radiology, Munich, DE, 3Klinikum rechts der Isar, Technische Universität München, TUM-NIC, TUM Neuroimaging Center, Munich, DE, 4Klinikum rechts der Isar, Technische Universität München, Dept of Neurology, Munich, DE

11:46 – 11:58
PS3.6  Magnetisation transfer ratio of intracortical lesions and normal-appearing cortical grey matter in multiple sclerosis subtypes
Ö Yaldizli1,2, M Pardini1,2, V Sethi1, N Muhlert1, Z Liu1, TA Yousry1,2, DJ Tozer1, RS Samson1, C Wheeler-Kingshott1, DH Miller1, DT Chard1
1University College London, Institute of Neurology, Dept of Neuroinflammation, NMR Research Unit, London, GB, 2University Hospital Basel, Dept of Neurology, Basel, CH

12:00 – 14:00    Hall C
Poster Viewing 1

12:00 – 14:00    Halls C & D
Lunch

12:00 – 13:00    Room 312
QT2: Social Media Session-Question Time Hangout
A discussion between MS Researchers & MSers broadcast on Google+
Chairs:
D. Baker, London, UK
A. Thomson, London, UK

12:30 – 13:30    Auditorium, Levels 2 & 3
Industry Supported Satellite Symposia
SS4: Time for Change: Advancing Our Understanding of MS
This non-CME activity is supported by Novartis Pharma AG.

14:00 – 14:20
PS4.1  What can EAE teach us about MS?
JM Goverman1, MC Johnson1, ER Pierson1, SB Simmons1
1University of Washington, Immunology, Seattle, WA, US

14:20 – 14:40
PS4.2  New animal models and human studies are necessary to understand MS
H Lassmann1
1Medical University of Vienna, Center for Brain Research, Wien, AT

14:40 – 14:52
PS4.3  The multiple sclerosis risk gene IL22RA2 contributes to a more severe murine autoimmune neuroinflammation
H Laaksonen1, A Ortlieb1, M Zeitelhofer Adzemovic1, R Parsa1, M Zeitelhofer1, M Jagodic1, T Olsson1
1Karolinska Institutet, Stockholm, SE

14:52 – 15:16
PS4.4  In vivo administration of Clostridium perfringens epsilon toxin targets cells associated with multiple sclerosis
J Linden1, KR Ruma1, T Vartanian1
1Weill Cornell Medical College, New York, NY, US

15:04 – 15:16
PS4.5  Co-expressed astrocytic ECGF1/TP and VEGF-A cooperatively promote blood-brain barrier breakdown in inflammatory CNS disease
A Tadesse Argaw1, C Chapouly1, S Horn1, K Castro2, John1
1Corinne Goldsmith Dickinson Center for MS, Friedman Brain Institute and Neurology, Mount Sinai School of Medicine, New York, NY, US, 2Corinne Goldsmith Dickinson Center for MS, Neurology, Mount Sinai School of Medicine, New York, NY, US

15:16 – 15:28
PS4.6  Cerebellar changes in synaptic plasticity are mediated by the MyD88 signaling pathway in a toxic murine model of demyelination
A Barrantes Freer1, LS Mortensen1, M Lohrberg1, C Stadelmann1
1University Medical Center Göttingen, Neuropathology, Göttingen, DE, 2Max-Planck Institute of Experimental Medicine, Molecular Neurobiology, Göttingen, DE, 3University Medical Center Göttingen, Master’s Program Molecular Medicine, Göttingen, DE

14:00 – 15:30    Grand Ballroom, Level 3
PS5: Comorbidities and risk behaviors
(PS5.1 - PS5.6)
Learners gain 1.50 continuing medical education (CME) credit.
Chairs:
S. Khoury, Beirut, LB
P. Soelberg Sørensen, Copenhagen, DK

14:00 – 14:20
PS5.1  Effects of comorbid disease and health behaviors on MS susceptibility and prognosis
RA Marrie1
1University of Manitoba, Internal Medicine, Winnipeg, MB, CA
PS5.2  Leptin and other adipokines in EAE and MS
AH Cross

1Washington University School of Medicine, Neurology, Saint Louis, MO, US

PS5.3  Dietary patterns not associated with the risk of multiple sclerosis
DL Rotstein1, S Chiuve2, T Chitnis1, T Fung2, KL Munger2

1Brigham and Women’s Hospital, Harvard Medical School, Neurology, Boston, MA, US, 2Harvard School of Public Health, Boston, MA, US

PS5.4  Smokers run increased risk of developing anti-natalizumab antibodies
T Olsson1, AK Hedström2, L Alfredsson2, M Ryner1, A Fogdell-Hahn1, J Hillert1

1Karolinska Institutet, Dept of Clinical Neuroscience, Stockholm, SE, 2Karolinska Institutet, Institute of Environmental Medicine, Stockholm, SE

PS5.5  Level of education and multiple sclerosis risk after adjustment for known risk factors: the EnViMS study
K Bjørnevik1,2, T Riise1,2, J Kirkeleit3, M Cortese1,2,4, T Holmøy5,6, MT Kampman7,8, S Magalhaes9, K-M Myhr2,4, C Wolfson10, M Pugliatti1,11

1University of Bergen, Dept of Global Public Health and Primary Care, Bergen, NO, 2HaGBeland University Hospital, Dept of Neurology, Norwegian Multiple Sclerosis Competence Center, Bergen, NO, 3University of Bergen, Dept of Clinical Science, Bergen, NO, 4University of Bergen, KG Jebsen Centre for MS-Research, Dept of Clinical Medicine, Bergen, NO, 5University of Oslo, Institute of Clinical Medicine, Faculty of Medicine, Oslo, NO, 6Akershus University Hospital, Dept of Neurology, Lørenskog, NO, 7University of Tromsø, Institute of the McGill University Health Centre, Tromsø, NO, 8University Hospital of North NO, Dept of Neurology, Tromsø, NO, 9McGill University, Dept of Epidemiology, Biostatistics and Occupational Health, Montreal, QC, CA, 10McGill University, Research Institute of the McGill University Health Centre, Montreal, QC, CA, 11University of Sassari, Dept of Clinical and Experimental Medicine, Sassari, IT

PS6.2  Rebound after natalizumab discontinuation
BAC Cree1

1University of California San Francisco, Neurology, San Francisco, CA, US

PS6.3  Natalizumab-associated JC virus granule cell neuronopathy complicated by immune reconstitution inflammatory syndrome in a patient with MS
S Agnihotri1, X Dang2, J Carter3, T Fife3, E Bord2, S Batson2, I Koralnik1

1Beth IL Deaconess Medical Center, Neurology, Boston, MA, US, 2Beth IL Deaconess Medical Center, Boston, MA, US, 3University of Arizona College of Medicine, Neurology, Phoenix, AZ, US

PS6.4  Pathogenesis of JC virus reactivation during natalizumab treatment
S Chalkias1, X Dang1, E Bord3, M Stein1, RP Kinkel1, J Sloan1, M Donnelly1, C Jonet1, M Houghtens1, G Buckle1, S Batson1, I Koralnik1

1Beth IL Deaconess Medical Center, Harvard Medical School, Boston, MA, US, 2University of Massachusetts Memorial Medical Center, Boston, MA, US, 3Bethlehem and Women's Hospital, Harvard Medical School, Boston, MA, US

PS6.5  JCV index and L-selectin for natalizumab-associated PML risk stratification
N Schwab1, T Schneider-Hohendorf1, J Breuer2, A Posevitz-Fefar1, H Wiendl2

1University of Münster, Neurology, Münster, DE, 2University of Münster, Münster, DE

PS6.6  Evolving dark band on T2* weighted high resolution MRI is characteristic of PML
J Ohayon1, I Cortese1, A Nath3, DS Reich1

1NIH, Bethesda, MD, US, 2NINDS, NIH, Translational Neu Radiology Unit, Neuroimmunology Branch, Bethesda, MD, US, 3NINDS, NIH, Bethesda, MD, US, 4NINDS, NIH, Section of Infections of the Nervous System, Bethesda, MD, US

PS6: Risk management with MS Therapy

14:20 - 14:40

Auditorium, Levels 2 & 3

Learners gain 1.50 continuing medical education (CME) credit.

Chair:

A. Goodman, Rochester, NY, US

1Ruhr University Bochum, Bochum, DE

14:00 - 14:20

PML with novel immunotherapies: Is there light at the end of the tunnel?
R Gold1

1Ruhr University Bochum, Bochum, DE

15:30 - 17:00

Hall C

Poster Session 1 (P001-P490)

15:30 - 17:00

Halls C & D

Coffee Break

15:30 - 16:30

Room 312

BD2: Social Media Session - Burning Debate

Chair:

A. Bowden, London, UK

BD2: Debate: Repair from within or outside in...is transplating stem cells the best way forward?

MS Freedman1,2, A Green3

1University of Ottawa, Biochemistry, Microbiology and Immunology, Ottawa, ON, CA, 2Ottawa Hospital Research Institute, Neuroscience, Ottawa, ON, CA, 3Ottawa Hospital, Neurology, Ottawa, ON, CA

1University of California San Francisco, San Francisco, US

1University of California San Francisco, Neurology, San Francisco, CA, US
www.msboston2014.org

17:00 – 17:45    Grand Ballroom, Level 3

HT1: Genetics of MS\textsuperscript{CME} (HT1.1 - HT1.3)
Learners gain 0.75 continuing medical education (CME) credit.
Chairs:
  P. De Jager, Boston, MA, US
  T. Olsson, Stockholm, SE

17:00 – 17:15
HT1.1  Genetics of adult-onset MS and interaction with environmental risk factors for MS
  I Kockum\textsuperscript{1}
  \textsuperscript{1}Karolinska Insitutet, Clinical Neuroscience, Stockholm, SE

17:15 – 17:30
HT1.2  Genetic studies of pediatric onset MS
  LF Barcellos\textsuperscript{1,2}
  \textsuperscript{1}University of California, School of Public Health, Berkeley, CA, US, \textsuperscript{2}Kaiser Permanente, Division of Research, Oakland, CA, US

17:30 – 17:45
HT1.3  HLA-DRB1*15:01/03 modifies association of vitamin D level with relapse rate in pediatric MS
  J Graves\textsuperscript{1}, L Barcellos\textsuperscript{2}, M Milazzo\textsuperscript{1}, E Mowry\textsuperscript{1}, A Belman\textsuperscript{3}, M Rodriguez\textsuperscript{4}, B Webstock-Guttman\textsuperscript{5}, M Gorman\textsuperscript{1}, L Benson\textsuperscript{6}, J Ness\textsuperscript{7}, T Lotze\textsuperscript{8}, G Aaen\textsuperscript{9}, T Chitnis\textsuperscript{10}, J Rose\textsuperscript{11}, TC Casper\textsuperscript{12}, L Krupp\textsuperscript{13}, E Waubant\textsuperscript{14}, \textsuperscript{1}UCSF, San Francisco, CA, US, \textsuperscript{2}University of California, Berkeley, CA, US, \textsuperscript{3}Stonybrook University, Stonybrook, NY, US, \textsuperscript{4}Johns Hopkins University, Baltimore, MD, US, \textsuperscript{5}Mayo Clinic, Rochester, NY, US, \textsuperscript{6}The Pediatric MS Center of the Jacobs Neurological Institute at the University of Buffalo, Buffalo, NY, US, \textsuperscript{7}Children's Hospital Boston, Boston, MA, US, \textsuperscript{8}Boston Children's Hospital, Boston, MA, US, \textsuperscript{9}The Center for Pediatric-Onset Demyelinating Diseases at Children's Hospital of Alabama, Birmingham, AL, US, \textsuperscript{10}Texas Children's Hospital, Baylor College of Medicine, Houston, TX, US, \textsuperscript{11}Loma Linda University, San Bernardino, CA, US, \textsuperscript{12}The Partners Pediatric MS Center at the Massachusetts General Hospital for Children, Boston, MA, US, \textsuperscript{13}Dept of Pediatrics, University of Utah, Salt Lake City, UT, US, \textsuperscript{14}The Regional Pediatric MS Center at the University of California San Francisco, San Francisco, CA, US

17:00 – 17:45    Auditorium, Levels 2 & 3

HT2: New routes of drug development\textsuperscript{CME} (HT2.1 - HT2.3)
Learners gain 0.75 continuing medical education (CME) credit.
Chairs:
  M. Hutchinson, Dublin, IE
  R. Naismith, St. Louis, MO, US

17:00 – 17:15
HT2.1  Repurposing drugs for disease modification in multiple sclerosis
  K Schmierer\textsuperscript{1}
  \textsuperscript{1}Queen Mary, University of London, Blizard Institute (Neuroscience and Trauma), London, GB

17:15 – 17:30
HT2.2  A perspective on generic medications to treat MS
  JA Cohen\textsuperscript{1}
  \textsuperscript{1}Cleveland Clinic, Neurological Institute, Cleveland, OH, US

17:30 – 17:45
HT2.3  From genetic findings to drug discovery: taking the first step
  NA Patsopoulos\textsuperscript{12,3}, JM Replogle\textsuperscript{12,3}
  \textsuperscript{1} Brigham & Women's Hospital, Neurology, Boston, MA, US, \textsuperscript{2}Harvard Medical School, Boston, MA, US, \textsuperscript{3}Broad Institute, Cambridge, MA, US

17:00 – 17:45    Small Ballroom (302-304-306)

HT3: Symptomatic and rehabilitation strategies\textsuperscript{CME} (HT3.1 - HT3.3)
Learners gain 0.75 continuing medical education (CME) credit.
Chairs:
  C. Bever, Baltimore, MD, US
  A. Thompson, London, GB

17:30 – 17:45
HT3.3  Autonomic symptom burden is associated with MS-related fatigue and quality of life
  M Cortez\textsuperscript{2,3}, B Goodman\textsuperscript{1}, S Nagi Reddy\textsuperscript{3}, J Carter\textsuperscript{1}, D WingerchGB\textsuperscript{1}
  \textsuperscript{1}Mayo Clinic Arizona, Neurology, Scottsdale, AZ, US, \textsuperscript{2}University of Utah, Neurology, Salt Lake City, UT, US, \textsuperscript{3}Mayo Clinic Arizona, Scottsdale, AZ, US

18:00 – 19:00    Auditorium, Levels 2 & 3

Industry Supported Satellite Symposia
SS5: Evolving Insights into MS Pathology: Can We Ever Stop Disease Worsening?
This CME activity is provided by Medscape. This activity is supported by an educational grant from Teva Pharmaceuticals.
Chair:
  L. Kappos, Basel, CH

18:00-18:05
SS5.1  Welcome and Introduction
  L Kappos\textsuperscript{1}
  \textsuperscript{1}University Hospital Basel, Basel, CH

18:05-18:20
SS5.2  Do We Understand the Pathological Basis of Progressive MS?
  W. Brück\textsuperscript{1}
  \textsuperscript{1}Institute for Neuropathology, University Medical Centre Göttingen, Göttingen, DE

18:20-18:35
SS5.3  Measuring Disease Progression in MS: Role of Clinical and MRI Outcomes
  B. Cree\textsuperscript{1}
  \textsuperscript{1}Multiple Sclerosis Center, University of California San Francisco, San Francisco, CA, US
**SCIENTIFIC PROGRAM**

**Thursday, 11 September - Friday, 12 September**

18:35-18:50  
**SS5.4** New Treatment Targets for MS  
G. Giovannoni  
1Center for Neuroscience and Trauma, Barts and The London School of Medicine and Dentistry, London, GB

18:50-19:00  
**SS5.5** Panel Discussion and Q&A

19:15 – 20:15  
**Small Ballroom (302-304-306)**  
Industry Supported Satellite Symposia  
**SS6: Innovation and Optimization: Engaging Today’s Patients**  
This non-CME activity is supported by Merck KGaA, Darmstadt, Germany.

**FRIDAY, 12 SEPTEMBER**

07:00 – 08:00  
Industry Supported Satellite Symposia  
**SS7: Grant for Multiple Sclerosis Innovation (GMSI) Awards**  
This non-CME activity is supported by Merck KGaA, Darmstadt, Germany.

08:00 – 17:00  
**Exhibit Hall Open**

08:15 – 09:15  
**Auditorium, Levels 2 & 3**  
**FC1.4** Free Communication 1 (FC1.1 - FC1.5) Chairs:  
G. Comi, Milan, IT  
T. Chitnis, Boston, MA, US  
08:15  
**FC1.1** Primary results of DECIDE: a randomized, double-blind, double-dummy, active-controlled trial of daclizumab HYP vs. Interferon β-1a in RRMS patients  
L Kappos1, K Selmaj2, DL Arnold3,4, E Havrdova5,  
A Boyko6, M Kaufman7, H Wiendl8, J Rose9, S Greenberg10, S Demirhan11, M Sweetser11, K Riester11, J Elkins11  
1University Hospital, Basel, Basel, CH, 2Medical University of Lodz, Lodz, PL, 3NeuroRx Research, Montreal, QC, CA, 4First School of Medicine, Charles University, Prague, Czech Republic, 5Medical University of Lodz, Lodz, PL, 6McGill University, Montreal, QC, CA, 7First School of Medicine, Charles University, Prague, Czech Republic, 8Moscow Multiple Sclerosis Center, Moscow, RU, 9Carolinas Medical Center, Charlotte, NC, US, 10University of Münster, Münster, DE, 11University of Utah Medical School, Salt Lake City, UT, US, 12Abbvie Biotherapeutics Inc, Redwood City, CA, US, 13Biogen Idec, Cambridge, MA, US  
08:27  
**FC1.2** Generic glatiramer acetate is equivalent to copaxone on efficacy and safety: results of the randomized double-blind GATE trial in multiple sclerosis  
JA Cohen1, A Belova2, K Selmaj3, C Wolf3, JLL Obryé3,  
ERW van den Tweel3, NP Koper3, G Voortman3, F Barkhøf4, on behalf of the GATE Study Group  
1Cleveland Clinic, Mellen Center, Cleveland, OH, US, 2Research Institute of Traumatology and Orthopaedy, Functional Diagnostics, Nizhniy Novgorod, RU, 3Medical University of Lodz, Lodz, PL, 4Lycalis sprl, Brussels, BE, 5Synthon B.V., Clinical Development, Nijmegen, NL, 6VU Medical Center, Radiology, Amsterdam, NL  
08:39  
**FC1.3** Long-term follow-up of laquinimod in patients with relapsing-remitting multiple sclerosis  
G Comi1, TL Vollmer2, N Ashtamker3, Y Sidi1, D Ladkani1, T Gorfine4, PS Sørensen5  
1San Raffaele Scientific Institute and Vita-Salute San Raffaele University, Milan, IT, 2University of Colorado, Aurora, CO, US, 3Teva Pharmaceutical Industries, Netanya, IL, 4Teva Pharmaceutical Industries, Petach Tiqva, IL, 5Copenhagen University Hospital, Rigshospitalet, Copenhagen, DK  
08:51  
**FC1.4** Disease-free outcomes with alemtuzumab: 3-year follow-up of the CARE-MS studies  
E Havrdova1, DL Arnold2,3, J Palmer4, DH Margolin4,  
on behalf of CARE-MS I and CARE-MS II Study Investigators  
1Charles University, Prague, CZ, 2Montreal Neurological Institute and Hospital, Montreal, QC, CA, 3NeuroRx Research, Montreal, QC, CA, 4Genzyme, a Sanofi Company, Cambridge, MA, US  
09:03  
**FC1.5** Inclusion of brain volume loss in a revised measure of multiple sclerosis disease-activity freedom: the effect of fingolimod  
L Kappos1, E-W Radue2, MS Freedman3, B Cree4, MP Sormani5, N Sfikas6, G Francis7, D Tomic6, D Piani Meier8, N De Stefano9  
1University Hospital Basel, Basel, CH, 2University Hospital Basel, Medical Image Analysis Centre, Basel, CH, 3University of Ottawa and the Ottawa Hospital Research Institute, Ottawa, ON, CA, 4University of California San Francisco, Dept of Neurology, San Francisco, CA, US, 5University of Genoa, Biostatistics Unit, Dept of Health Sciences, Genoa, IT, 6Novartis Pharma AG, Basel, CH, 7Novartis Pharmaceuticals Corporation, East Hanover, NJ, US, 8University of Siena, Dept of Medicine, Surgery and Neuroscience, Siena, IT
08:15 – 09:15  Small Ballroom (302-304-306)

**FC2: Free Communication 2 (FC2.1 - FC2.5)**

Chairs:
- P. O’Connor, Toronto, ON, CA
- M. Tintore, Barcelona, ES

08:15 – 08:27

**FC2.1**

*Maximal lifetime brain growth (estimated with intracranial volume) predicts disability progression measured with the expanded disability status scale*

JF Sumowski1, MA Rocca2, VM Leavitt3, J Dackovic4, S Mesaros5, J Drulovic5, G Riccitelli5, CS Riley5, G Comi5, M Filippi5

1Kessler Foundation, Neuropsychology and Neuroscience, West Orange, NJ, US, 2Vita-Salute San Raffaele University, San Raffaele Scientific Institute, Milan, IT, 3Manhattan Memory Center, New York, NY, US, 4University of Belgrade, Clinic of Neurology, Faculty of Medicine, Belgrade, RS, 5Columbia University Medical Center, Neurology, New York, NY, US

08:27 – 08:39

**FC2.2**

*Alemtuzumab improves MRI outcomes in treatment-naive active relapsing-remitting multiple sclerosis patients: three-year follow-up from CARE-MS I*

DL Arnold1,2, F Barkhof3, JA Cohen4, EJ Fox5, KW Selmaj6, J Palmer7, E Fisher8, on behalf of CARE-MS I Investigators

1NeuroRx Research, Montréal, QC, CA, 2Dept of Neurology and Neurosurgery, Montréal Neurological Institute, McGill University, Montréal, QC, CA, 3VU University Medical Centre, Amsterdam, NL, 4Mellen Center and Dept of Biomedical Engineering, Cleveland Clinic, Cleveland, OH, US, 5University of Texas Medical Branch, Round Rock, TX, US, 6Medical University of Łódź, Dept of Neurology, Łódź, PL, 7Genzyme, a Sanofi Company, Cambridge, MA, US, 8Dept of Biomedical Engineering, Cleveland Clinic, Cleveland, OH, US

08:39 – 08:51

**FC2.3**

*Brain volume change by quartile and disability progression in multiple sclerosis: a 4-year analysis of the phase 3 FREEDOMS trial and its extension*

D Jeffery1, E Verdun1, D Piani Meier1, S Ritter1, P Chin1, E-W Radue2, W Camu2

1Piedmont Health Care, Mooresville, NC, US, 2Novartis Pharmaceuticals Corporation, East Hanover, NJ, US, 3University Hospital Basel, Medical Image Analysis Centre, Basel, CH, 4Hôpital Gui de Chauliac, Neurology Dept, Montpellier, FR

08:51 – 09:03

**FC2.4**

*Safety and pharmacokinetics of MOR103, a human antibody to granulocyte-macrophage colony-stimulating factor, in patients with multiple sclerosis*

CS Constantinescu1, A Asher2, W Fryze3, W Kozubski4, P Wagner5, JJ Aram6, R Tansescu6, RP Korolikiewicz7, S Steidl8, T Sprenger8, WE Radue9

1University of Nottingham, Queen’s Medical Centre, Division of Clinical Neuroscience, Research Group in Clinical Neurology, Nottingham, GB, 2MAC Clinical Research Ltd., Manchester, GB, 3Pomorskie Centrum Traumatologii im. M. Kopernika w Gdansku, Oddzial Neurologiczny i Udarowy, Gdansk, PL, 4Medical University of Poznan, Oddzial Kliniczny Neurologii, Poznan, PL, 5Charité Research Organisation GmbH, Berlin, DE, 6Queen’s Medical Center, Nottingham, GB, 7Morphosys AG, Clinical Research, Planegg, DE, 8Morphosys AG, Preclinical Research, Planegg, DE, 9MIAA AG, Basel, CH

08:15 – 09:15  Grand Ballroom, Level 3

**FC3: Free Communication 3 (FC3.1 - FC3.5)**

Chairs:
- D. Conway, Cleveland, OH, US
- K. Selmaj, Lodz, PL

08:15 – 08:27

**FC3.1**

*Characteristics of PML cases in multiple sclerosis patients switching to fingolimod from natalizumab*

N Putzki1, DB Clifford2, DL Arnold3, L Balcer4, A Boyko5, J Pelletier5, S Liu6, Y Zhu7, SI Sheikh8, A Seddighzadeh8, A Deykin9, S Hung9

1Novartis Pharma AG, Basel, CH, 2MAC Clinical Research Ltd., Manchester, GB, 3Novartis Pharmaceuticals Corporation, East Hanover, NJ, US, 4University Hospital Basel, Medical Image Analysis Centre, Basel, CH, 5Hôpital Gui de Chauliac, Neurology Dept, Montpellier, FR, 6Biogen Idec Inc., Cambridge, MA, US

www.msboston2014.org
08:27 – 08:51

**FC3.2**  GLACIER: open-label, randomized safety/tolerability study of glatiramer acetate 40mg/mL three times weekly versus 20mg/mL daily in RRMS

J. S. Wolinsky1, D. W. Dietrich2, T. E. Borresen3, B. F. Gilder4, J. R. Steinerman5, Y. Sidi6, A. Vainstein6, S. Kolodny7, V. Knappertz8,9, GLACIER Study Group

1University of Texas, Health Science Center at Houston, Houston, TX, US, 2Advanced Neurological Specialists, Great Falls, MT, US, 3Mecklenburg Neurological Associates, Charlotte, NC, US, 4Swedish Medical Center, Littleton, CO, US, 5Teva Pharmaceutical Industries, Frazer, PA, US, 6Teva Pharmaceutical Industries, Netanya, IL, 7Teva Pharmaceutical Industries, Cleveland, OH, US, 8Heinrich-Heine Universität Düsseldorf, Düsseldorf, DE

08:39 – 08:51

**FC3.3**  A combination trial of estriol plus glatiramer acetate in relapsing-remitting multiple sclerosis: effect on disabilities

R. Voskuhl1, H. Wang1, G. Lee1, B. Giesser1, C. H. Tse1, R. Elashoff1, Estriol Relapse Trial Study Group

1University of California, Los Angeles, CA, US

08:51 – 09:03

**FC3.4**  Treatment with cyclic oral methylprednisolone in progressive multiple sclerosis – results of an open-label phase 2A proof-of-concept study

P. Ratzer1, J. R. Christensen1, L. Børnsen1, C. Ammitzbøll1, P. Iverson2, T. B. Dyrbø1, H. R. Sjøberg1, C. Gøbel Madsen1, E. Garde1, B. Andersen1, L. Hyldestrup1, P. Sørensen1, F. Sellebjerg1

1Rigshospitalet, Neurology, Copenhagen, DK, 2Hvidovre Hospital, Danish Research Center for Magnetic Resonance, Hvidovre, DK, 3Rigshospitalet, Neurophysiology, Copenhagen, DK, 4Hvidovre Hospital, Endocrinology, Hvidovre, DK

09:03 – 09:15

**FC3.5**  Long-term follow-up of the effect of delayed-release dimethyl fumarate on no evident disease activity in patients with multiple sclerosis


1Queen Mary University of London, Blizard Institute, Barts and the London School of Medicine and Dentistry, London, GB, 2St. Joseph Hospital, Ruhr University, Bochum, DE, 3Cleveland Clinic, Mellen Center for Multiple Sclerosis Treatment and Research, Cleveland, OH, US, 4University Hospital Basel, Basel Neurology, Basel, CH, 5Baylor Institute for Immunology Research, Multiple Sclerosis Program, Dallas, TX, US, 6Biogen Idec Inc., Cambridge, MA, US, 7Charles University, Dept of Neurology, First Faculty of Medicine, Prague, CZ

**08:15 – 09:15**  Room 312

**FC4.4**  Exploring phase contrast mechanisms of multiple sclerosis lesions at 7T

W. Ban1, B. C. Cree2, Y. Li1, R. Schlaeger1, A. Zhu2, A. Jakary1, D. Leppert4, N. Seneca5, S. J. Nelson5, R. G. Henry1,2,3


08:39 – 08:51

**FC4.3**  Two-year follow-up study assessing cortical and deep gray matter loss in benign multiple sclerosis

A. Ruet1, K. F. Bendfeldt2, T. Sprenger3, A. Versteeg1, L. Kappos1, E. W. Radue2, BMJ Uitdehaag6,7, F. Barkhof8,9, H. Vrenken1,8,9

1VU University Medical Center, Dept of Radiology and Nuclear Medicine, Amsterdam, NL, 2University Hospital Basel, Medical Image Analysis Centre, Basel, CH, 3University Hospital Basel, Dept of Neurology, Basel, CH, 4University Hospital Basel, Dept of Radiology, Division of Neuroradiology, Basel, CH, 5VU University Medical Center, Dept of Neurology, Amsterdam, NL, 6Neuroscience Campus Amsterdam, Amsterdam, NL, 7VU University Medical Center, Dept of Epidemiology and Biostatistics, Amsterdam, NL, 8VU University Medical Center, Dept of Physics and Medical Technology, Amsterdam, NL

08:08 – 09:15  Room 312

**FC4.2**  Exploring phase contrast mechanisms of multiple sclerosis lesions at 7T

W. Ban1, B. C. Cree2, Y. Li1, R. Schlaeger1, A. Zhu2, A. Jakary1, D. Leppert4, N. Seneca5, S. J. Nelson5, R. G. Henry1,2,3


08:27 – 08:39

**FC4.1**  MCAM defines a subpopulation of inflammatory CD8 T lymphocytes presenting a high encephalitogenic potential and cytotoxic capacity

C. Larochelle1, M-A. Lécuyer1, J-I. Alvarez1, M. Charabati1, O. Saint-Laurent1, H. Kebir1, R. Caryl1, P. Duquette2, J. Poirier2, K. Flanagan3, N. Arbour1, A. Prat1,2

1CRCHUM-Université de Montréal, Montréal, QC, CA, 2CHUM-Université de Montréal, Montréal, QC, CA, 3Prothena, San Francisco, CA, US
**SCIENTIFIC PROGRAM**

**Friday, 12 September**

**8:51 – 09:03**  
**FC4.4**  
*Vitamin D as a predictor of multiple sclerosis activity and progression in patients with multiple sclerosis on interferon beta-1b*  
A Ascherio1, K Fitzgerald1, K Munger1, K Kochert2, B Amason3, S Cook1, G Comi3, F Filippi4, D Goodin5, H-P Hartung6, D Jeffery7, P O’Connor2, G Suarez2, R Sandbrink2, L Kappos5, C Pohl8, The BEYOND Study Group  
1Harvard School of Public Health, Boston, MA, US, 2Bayer Pharma AG, Berlin, DE, 3University of Chicago Surgery Brain Research Institutes, Dept of Neurology, Chicago, IL, US, 4Rutgers, The State University of New Jersey, Dept of Neurology and Neurosciences, Newark, NJ, US, 5Università Vita-Salute San Raffaele, Dept of Neurology and Institute of Experimental Neurology, Milan, IT, 6Neuroimaging Research Unit, Division of Neurosciences, Scientific Institute and University Hospital San Raffaele, Milan, IT, 7University of California, Dept of Neurology, San Francisco, CA, US, 8Heinrich-Heine University, Dept of Neurology, Düsseldorf, DE, 9Wake Forest University School of Medicine, Winston-Salem, NC, US, 10Division of Neurology, St. Michael’s Hospital, University of Toronto, Toronto, ON, CA, 11Bayer HealthCare Pharmaceuticals, Whippany, NJ, US, 12University of Basel and University Hospital, Basel, CH, 13University Hospital of Bonn, Dept of Neurology, Bonn, DE

**9:03 – 09:15**  
**FC4.5**  
*Assessment of 2010 and 2005 McDonald criteria for diagnosis of multiple sclerosis in patients with clinically isolated syndromes*  
G Arambide1, M Tintoré1, C Auger2, E Simón3, J Sastre-Garriga4, J Castillo5, J Río6, A Vidal-Jordana7, I Galán8, F Palavra9, L Negrotto10, C Nos11, M Comabella12, Á Rovira13, X Montalban14  
1Vall Hebron University Hospital, Multiple Sclerosis Centre of Catalonia, Neuroimmunology Dept, Barcelona, ES, 2Vall Hebron University Hospital, Multiple Sclerosis Centre of Catalonia, Neuroimmunology Dept, Barcelona, ES

**9:15 – 09:45**  
**Poster Viewing 2**

**9:15 – 09:45**  
**Hall C**  
**Coffee Break**

**9:45 – 11:15**  
**Small Ballroom (302-304-306)**  
**PS7: Biomarkers** *(CME) (PS7.1 - PS7.6)*  
Learners gain 1.50 continuing medical education (CME) credit.  
Chairs:  
B. Hemmer, Munich, DE  
V.W. Yong, Calgary, CA

**9:45 – 10:05**  
**PS7.1**  
*Cholesterol and related molecules: potential biomarkers for treatment safety and disease progression in multiple sclerosis*  
C Teunissen1  
1VU University Medical Center Amsterdam, Neurochemistry Laboratory and Biobank, Dept of Clinical Chemistry, Amsterdam, NL

**10:05 – 10:25**  
**PS7.2**  
*Biomarkers of treatment response to MS disease therapies*  
S Dhib-Jalbut1  
1Rutgers Robert Wood Johnson Medical School, New Brunswick, NJ, US

**10:25 – 10:37**  
**PS7.3**  
*Immunological biomarkers that identify MS patients with high probability of being free of disease activity if treated with IFN-beta*  
JC Alvarez-Cermeno1, R Alenda2, L Costa-Frossard3, R Alvarez-Lafuente4, C Picón5, M Espiño5, E Roldán6, R Arroyo6, E Rodríguez-Martin1, LM Villar2  
1Hospital Ramon y Cajal, Neurology, Madrid, ES, 2University Alcala de Henares, Medicine, Alcala de Henares, ES, 3Hospital Ramon y Cajal, Immunology, Madrid, ES, 4Hospital Clínico San Carlos, Neurology, Madrid, ES

**10:37 – 10:49**  
**PS7.4**  
*Role of high mobility group box protein 1 (HMGB1) in patients with multiple sclerosis*  
S Malhotra1, NM Fissolo1, J Castillo2, Á Vidal-Jordana2, X Montalban3, M Comabella2  
1Vall Hebron University Hospital, Multiple Sclerosis Centre of Catalonia, Neuroimmunology Dept, Barcelona, ES

**10:49 – 11:01**  
**PS7.5**  
*Anoctamin 2, a novel autoimmune target candidate in multiple sclerosis*  
B Ayoglu1, N Mitsiou2, M Khademi3, L Alfredsson4, M Uhlen5, J Mulder6, T Olsson6, JM Schwenk1, P Nilsson1  
1Scilifelab, KTH-Royal Institute of Technology, Affinity Proteomics, Stockholm, SE, 2Scilifelab, Karolinska Institute, Affinity Proteomics, Stockholm, SE, 3Karolinska Institute, Neuroimmunology Unit, Dept of Clinical Neuroscience, Stockholm, SE, 4Karolinska Institute, Institute of Environmental Medicine, Stockholm, SE

**11:01 – 11:13**  
**PS7.6**  
*Potassium channel Kir4.1: a novel target for neuromyelitis optica autoantibodies?*  
R Marignier1,2, A Ruiz1, S Cavagna1, C Benetollo1, F Durand-Dubief2, S VGBusic1,2, P Giraudon1  
1INSERM, Unit 1028 ONCOFLAM, Lyon, FR, 2Hospices Civils de Lyon, Neurologie A - Hopital Neurologique, Lyon-Bron, FR, 3Lyon Neuroscience Research Centre, Plateau Neurogénétique Fonctionnelle & Optogénétique, Lyon, FR

**10:45 – 11:15**  
**Grand Ballroom, Level 3**  
**PS8: Assessing neuroprotection** *(CME)* *(PS8.1 - PS8.6)*  
Learners gain 1.50 continuing medical education (CME) credit.  
Chairs:  
D. Miller, London, GB  
E. Waubant, San Francisco, CA, US

**09:45 – 10:05**  
**PS8.1**  
*Pathways to neurodegeneration: insights from imaging in MS and other neurodegenerative disorders*  
M Inglese1  
1Cahn School of Medicine at Mount Sinai, Neurology, New York, NY, US
PS8.2 Update on completed and ongoing neuroprotection and repair trials
J Chataway¹
¹Queen Square Multiple Sclerosis Centre, National Hospital for Neurology and Neurosurgery, London, GB

PS8.3 Retinal ganglion cell injury in MS occurs most rapidly early in the course of disease
L J Balk¹, A Cruz-Herranz², P Albrecht¹, S Arnow², JM Gelfand¹, P Tewarie¹, J Killestein¹, CH Polman¹, BM Uitdehaag¹, A Petzold¹, A Green²
¹VU University Medical Centre, Amsterdam, NL, ²UCSF, San Francisco, CA, US, ³Heinrich Heine University, Düsseldorf, DE

PS8.4 Thalamic and basal ganglia volumes correlate with walking performance in multiple sclerosis
RW Motl¹, B Sutton¹, E Hubbard¹, N Sreekumar¹, LA Pilatti¹, JJ Sosnoff², RH Benedict²
¹University of Illinois at Urbana-Champaign, Urbana, IL, US, ²SUNY Buffalo School of Medicine, Buffalo, NY, US

PS8.5 [11C]-PBR28 MR-PET imaging detects in vivo inflammation in normal appearing white matter and cortical sulci in multiple sclerosis
C Gianni¹, ST Govindarajan¹, AP Fan¹, M Loggia¹, C Catana¹, E Tinelli¹, J Hooker¹, J Sloanen¹, RP Kinkel¹, C Mainiero¹
¹Athinoula A.Martinos Center for Biomedical Imaging, Massachusetts General Hospital, Charlestown, MA, US, ²University of Illinois at Urbana-Champaign, Urbana, IL, US, ³Massachusetts Institute of Technology, Cambridge, MA, US, ⁴Sapienza, University of Rome, Rome, IT, ⁵University HospitalPontchaillou, Neurosciences, Rennes, FR, ⁶Army Hospital, Neurosciences, Nice, FR, ⁷General Hospital, Neurosciences, St Brieuc, FR, ⁸General Hospital, Neurosciences, Breth, FR, ⁹General Hospital, Neuroimmunology, Quimper, FR

PS9.1 Is no evidence of disease activity a realistic treatment target?
H-P Hartung¹
¹Heinrich-Heine-University, Dept of Neurology, Düsseldorf, DE

PS9.2 Treatment algorithms in patients with ongoing disease activity
X Montalban¹
¹University Hospital Vall d’Hebron, Neurology-Neuroimmunology, Barcelona, ES

PS9.3 Efficacy and safety of oral versus intravenous high-dose methylprednisolone in multiple sclerosis relapses, a randomized double blind trial (COPOUSEP)
E Le Page¹, D Veillard², D Laplaud³, R Ward³, C Lebrun³, F Zagnoli⁴, S Wiertelkiewic†, V Deburghgraeve⁵, M Coustans⁶, G Edan⁷, West Neurosciences Network of Excellence (WENNE)
¹University Hospital Pontchaillou, Neurosciences, Rennes, FR, ²University Hospital Pontchaillou, Epidemiology and Public Health, Rennes, FR, ³University Hospital, Neurosciences, Nantes, FR, ⁴General Hospital, Neurosciences, St Brieuc, FR, ⁵General Hospital, Neurosciences, Nice, FR, ⁶Army Hospital, Neurosciences, Breth, FR, ⁷General Hospital, Neuroimmunology, Quimper, FR

PS9.4 Factors that determine disease course: early changes contribute to predict long-term prognosis, the ‘Barcelona inception cohort’
M Tintoré¹, A Rovira², S Otero-Romero³, G Arrambide³, C Tur³, M Comabella³, C No³, M-J Arévalo⁴, L Negrotto¹, I Galán⁴, Á Vidal-Jordana⁴, J Castillo⁴, F Palavra⁴, E Simón⁴, R Mitjana⁴, C Auger⁴, J Sastre-Garriga⁴, X Montalban⁴
¹Vall Hebron University Hospital, Multiple Sclerosis Centre of Catalonia, Neuroimmunology Dept, Barcelona, ES, ²Vall Hebron University Hospital, Magnetic Resonance Unit, Neuroradiology Dept, Barcelona, ES, ³Vall Hebron University Hospital, Preventive Medicine and Epidemiology Dept, Barcelona, ES

PS9.5 Independent predictors of time to relapse after CIS in high-risk patients
T Spelman¹, C Meyniel¹, M Trojano¹, A Lugaresi¹, G Izquierdo¹, F GrandMaison¹, C Boz¹, R Alroughani¹, E Havrdova¹, G Iuliano¹, P Duquette¹, M Terzi², P Grammond³, JA Cabrera-Gomez³, R Hupperts³, J Lechner-Scott³, H Butzkueven³, on behalf of the MSBASIS (an MSBase Substudy) Investigators
¹University of Melbourne, Melbourne Brain Centre, Parkville, AU, ²CHU Nantes, Nantes, FR, ³University of Bari, Dept of Basic Medical Sciences, Neuroscience and Sense Organs, Bari, IT, ⁴University ‘G. d’Annunzio’, MS Center, Dept of Neuroscience and Imaging, Chieti, IT, ⁵Hospital Universitario Virgen Macarena, Sevilla, ES, ⁶Neuro Rive-Sud, Hôpital Charles LeMoyne, Greenfield Park, QC, CA, ⁷Karadeniz Technical University, Trabzon, TR, ⁸Amiri Hospital, KW, KW, ⁹General University Hospital and Charles University, Dept of Neurology and Center of Clinical Neuroscience, Prague, CZ, ¹⁰Ospedali Riuniti di Salerno, Salerno, IT, ¹¹Hôpital Notre Dame, Montreal, QC, CA, ¹²Mayis University, Samsun, TR, ¹³Center de R´eadaptation D´eficience Physique Chaudh´eire-Appalache, Levis, QC, CA, ¹⁴Centro Internacional de Restauracion Neurologica, Havana, CU, ¹⁵Orbis Medical Centre, Sittard-Geleen, NL, ¹⁶John Hunter Hospital, Newcastle, AU
11:01 – 11:13
PS9.6 Early on-treatment T2 and T1 subtraction MRI predicts imaging and clinical outcomes in the CombiRx cohort
F Lalys¹, L Freeman¹, TD Staewen², JA Lincoln¹, F Nelson², S Datta², PA Narayana³, SS Cofield², T Gustafson³, GR Cutter³, FD Lublin⁴, JS Wolinsky⁵, CombiRx Investigators
¹University of Texas Health Science Center, Neurology, Houston, TX, US, ²University of Texas Health Science Center, Diagnostic and Interventional Imaging, Houston, TX, US, ³University of Alabama at Birmingham, Biostatistics, Birmingham, TX, US, ⁴Icahn School of Medicine at Mount Sinai, Corinne Goldsmith Dickinson Center for Multiple Sclerosis, Dept of Neurology & Friedman Brain Institute, New York, NY, US

11:15 – 11:30
Poster Viewing 2
Hall C

11:15 – 13:15
Lunch
Halls C & D

12:00 – 13:00
Room 312
QT3: Social Media Session-Question Time Hangout
A discussion between MS Researchers & MSers broadcast on Google+
Chairs:
D. Baker, London, UK
A. Thomson, London, UK

12:00 – 13:00
Auditorium, Levels 2 & 3
Industry Supported Satellite Symposia
SS8: Evolving Strategies to Improve Patient-Clinician Communication and Treatment Adherence in Multiple Sclerosis
This CME activity is provided by Med-IQ. This activity is supported by an educational grant from TEVA Neuroscience.
Chair:
S. Köpke, Lübeck, DE

12:00-12:05
SS8.1 Introduction
P.S. Sørensen¹
¹Danish Multiple Sclerosis Center, Copenhagen University and Department of Neurology, Rigshospitalet, Copenhagen, DK

12:05-12:10
SS8.2 Case Vignette
P.S. Sørensen¹
¹Danish Multiple Sclerosis Center, Copenhagen University and Department of Neurology, Rigshospitalet, Copenhagen, DK

12:10-12:30
SS8.3 Existing DMTs for MS
F. Lublin¹
¹Corinne Goldsmith Dickinson Center for Multiple Sclerosis, Icahn School of Medicine at Mount Sinai, New York, NY, US

12:40-1:00
SSS.4 Individual Patient Factors to Consider When Prescribing
P.S. Sørensen¹
¹Danish Multiple Sclerosis Center, Copenhagen University and Department of Neurology, Rigshospitalet, Copenhagen, DK

12:40-13:00
SS8.5 Treatment Adherence in MS & Conclusions
S. Köpke¹
¹Nursing Research Group, Institute of Social Medicine and Epidemiology, University of Lübeck, Lübeck, DE

13:15 – 14:45
Small Ballroom (302-304-306)
PS10: Immune mechanismsCHE (PS10.1 - PS10.6)
Learners gain 1.50 continuing medical education (CME) credit.
Chairs:
A. Miller, Haifa, IL
A. Prat, Montreal, QC, CA

13:15 – 13:35
PS10.1 Circulating miRNAs as disease biomarkers in multiple sclerosis
HL Weiner¹
¹Brigham and Women's Hospital / Harvard Medical School, Boston, MA, US

13:35 – 13:55
PS10.2 Fibrin and microglia in MS
K Akassoglou¹
¹University of California, Dept of Neurology and Gladstone Institute of Neurological Disease, San Francisco, CA, US

13:55 – 14:15
PS10.3 Demyelinating lesions in multiple sclerosis: experimental evidence indicating why, how and where they may form
RA Desai¹, AL Davies¹, M Kast¹, F Laulund¹, KJ Smith¹
¹UCL Institute of Neurology, Neuroinflammation, London, GB

14:07 – 14:19
PS10.4 Molecular characterisation and suppressive capacity of human CD4+HLA-G+ regulatory T cells
T Ruck¹, S Pankratz¹, S Bittner¹, AM Herrmann¹, SG Meuth¹, H Wiendl¹
¹University of Muenster, Neurology, Muenster, DE, ²University of Muenster, Institute of Physiology I - Neuropathophysiology, Muenster, DE

14:19 – 14:31
PS10.5 Deep sequencing of T-cell receptor repertoire reveals enrichment of highly expanded clonotypes in cerebrospinal fluid from multiple sclerosis patients
A De Paula Alves Sousa², R Nicholas³, K Johnson³, S Darko², D Price², DC Douek², S Jacobson¹, PA Muraro²
¹National Institute of Neurological Disorders and Stroke, Bethesda, MD, US, ²Imperial College, London, GB, ³National Institute of Neurological Disorders and Stroke, Bethesda, GB, ⁴National Institute of Allergy and Infectious Diseases, Bethesda, MD, US, ⁵University of Cardiff, Cardiff, GB

14:31 – 14:43
PS10.6 Combinatorial actions of Tgfβ and Activin ligands promote oligodendrocyte development and CNS myelination
DJ Dutta¹, A Zameer¹, JN Mariani¹, J Zhang¹, L Asp¹, J Huyhn¹, S Mahase¹, BM Laitman¹, A Tadesse Argaw¹, N Mitiku¹, M Urbanski¹
¹Danish Multiple Sclerosis Center, Copenhagen University and Department of Neurology, Rigshospitalet, Copenhagen, DK
Melendez-Vasquez4, P Casaccia2,3,5, F Hayot1,3,6, EP Bottinger7,8, CW Brown10,10, GR John11,12
1Icahn School of Medicine at Mount Sinai, Neurology, New York, NY, US, 2Icahn School of Medicine at Mount Sinai, Corrine Goldsmith Dickinson Center for MS, New York, NY, US, 3Icahn School of Medicine at Mount Sinai, Friedman Brain Institute, New York, NY, US, 4Hunter College, Biological Sciences, New York, NY, US, 5Icahn School of Medicine at Mount Sinai, Neuroscience, New York, NY, US, 6Icahn School of Medicine at Mount Sinai, Systems Biology, New York, NY, US, 7Icahn School of Medicine at Mount Sinai, Nephrology, New York, NY, US, 8Icahn School of Medicine at Mount Sinai, Charles Bronfman Institute for Personalized Medicine, New York, NY, US, 9Baylor College of Medicine, Molecular and Human Genetics, Houston, TX, US, 10Baylor College of Medicine, Pediatrics, Houston, NY, US

13:15 – 14:45    Grand Ballroom, Level 3

PS11: Gray matter pathology and mechanisms of progressionCME (PS11.1 - PS11.6)
Learners gain 1.50 continuing medical education (CME) credit.
Chairs:
W. Brück, Göttingen, DE
R. Fox, Cleveland, OH, US

13:15 – 13:35
PS11.1  Heterogeneity and significance of gray matter pathology
JJ Geurts1
1VU University Medical Center, Dept. of Anatomy and Neurosciences, Section of Clinical Neuroscience, Amsterdam, NL

13:35 – 13:55
PS11.2  Is primary progressive MS a distinct disease?
S VGBusic1
1Hôpital Neurologique, Bron cedex, FR

13:55 – 14:07
PS11.3  Is GABA abnormal in progressive multiple sclerosis?
N Cawley1, B Solanky1, N Muhler2, T Schneider1, C Wheeler-Kingshott1, A Thompson1,2, C Ciccarelli1,2
1Institute of Neurology, London, GB, 2Cognitive Neuroscience, Cardiff University, Cardiff, GB

14:07 – 14:19
PS11.4  The loss of neurons over the whole MS neocortex
D Carassiti1, M Papachatzaki1, F Scaravilli1, B Pakkenberg2, K Schmierer1
1Queen Mary University London, Experimental Medicine, Neuroscience and Trauma, London, GB, 2Bispebjerg University Hospital, Research Laboratory for Stereology and Neuroscience, Copenhagen, DK

14:19 – 14:31
PS11.5  Complement activation is associated with synaptic alterations in the multiple sclerosis hippocampus
J Michailidou1, JGP Willems2,3,4, E-J Kooi1, C van Eden1, JJ Geurts5, F Baas1, I Huitinga1, V Ramaglia1,2
1Academic Medical Center, Dept of Genome Analysis, Amsterdam, NL, 2NL Institute for Neuroscience, Dept of Neuroimmunology, Amsterdam, NL, 3VU University Medical Center, Dept of Anatomy and Neurosciences, Amsterdam, NL, 4NIHR University College London Hospitals, Biomedical Research Centre, London, GB

13:15 – 14:45    Auditorium, Levels 2 & 3

PS12: Study design and endpointsCME (PS12.1 - PS12.6)
Learners gain 1.50 continuing medical education (CME) credit.
Chairs:
M. Goldman, Virginia, VA, US
L. Kappos, Basel, CH

13:15 – 13:35
PS12.1  Patient-centered care: patient-reported health status and self-administered performance testing
RA Bermel1
1Cleveland Clinic, Mellen Center, Cleveland, OH, US

13:35 – 13:55
PS12.2  Pragmatic clinical trials and observational studies
M Trojano1
1Basic Medical Science, Neuroscience and Sense Organs, University of Bari “Aldo Moro” Policlinico, Bari, IT

13:55 – 14:07
PS12.3  Defining brain volume cut-offs to predict disability progression in MS: an analysis of a large cohort of relapsing-remitting MS patients
MP Sormani1, L Kappos2, EW Radue3, J Cohen4, F Barkhof5, T Sprenger2,3, D Piani Meier5, D Häring6, D Tomic7, N De Steffano7
1University of Genoa, Genoa, IT, 2University Hospital, Dept of Neurology, Basel, CH, 3Medical Image Analysis Center (MIAC), University Hospital, Basel, CH, 4Cleveland Clinic, Neurological Institute, Cleveland, OH, US, 5VU University Medical Center, Amsterdam, NL, 6Novartis Pharma AG, Basel, CH, 7University of Siena, Siena, IT

14:07 – 14:19
PS12.4  Postural control analysis in multiple sclerosis with perceptive computing based on Microsoft’s Kinect
JR Beihans1, L Gusho1, S Mertens1, K Otte1, S Mansow-Model1, F Paul1, A Brandt2
1NeuroCure Clinical Research Center- Charite-Universitätsmedizin Berlin, Neurology, Berlin, DE, 2Motognosis UG (haftungsbeschränkt), Berlin, DE

14:19 – 14:31
PS12.5  Reliability of clinically feasible gait analysis in multiple sclerosis
JJ Sosnow1, RE Klaren1, L Pilutti1, D Dlugonski2, RW Motl1
1University of Illinois at Urbana-Champaign, Urbana, IL, US, 2East Carolina University, Kinesiology, Greenville, NC, US
SCIENTIFIC PROGRAM

Friday, 12 September - Saturday, 13 September

14:31 – 14:43 PS12.6 Evaluation of common criteria of progression of disability in a large observational cohort

14:45 – 16:15 Halls C & D Coffee Break

14:45 – 16:15 Hall C Poster Session 2 (P491-P981)

15:00 – 16:00 Room 312 BD3: Social Media Session - Burning Debate

15:00 – 16:00 Small Ballroom (302-304-306) HT4: RemyelinationCME (HT4.1 - HT4.3)

16:15 – 16:30 Grand Ballroom, Level 3 HT5: Inflammation and neurodegenerationCME (HT5.1 - HT5.3)

16:15 – 17:00 Hall C BD3.1 Debate: Early affective therapy is the only way forward

16:15 – 17:00 Small Ballroom (302-304-306) HT4.1 Epigenome-wide studies: what can we learn from them?

16:15 – 17:00 Grand Ballroom, Level 3 HT5.1 Metabolomics, mitochondria and energy imbalance in MS

16:15 – 17:00 Grand Ballroom, Level 3 HT5.2 Parasitic infections and MS

16:15 – 17:00 Grand Ballroom, Level 3 HT5.3 Neuro-axonal damage in MS may be mediated by interaction of innate immunity and anti-axonal antibodies
SATURDAY, 13 SEPTEMBER

07:15 – 08:15  Small Ballroom (302-304-306)

Industry Supported Satellite Symposia
SS11: Shifting the Paradigm in Multiple Sclerosis Treatment by Targeting New Pathways

This CME activity is provided by Vindico Medical Education. This activity is supported by an educational grant from Genentech, Inc.

Chair:
S. Hauser, San Francisco, CA, US

07:15-07:20
SS11.1  Introduction and Pretest
S. Hauser1
1University of California at San Francisco, San Francisco, CA, US

07:20-07:30
SS11.2  B-cells in the Pathogenesis of MS
S. Hauser1
1University of California at San Francisco, San Francisco, CA, US

07:30-07:40
SS11.3  Assessing B-cell Targeted Therapies in MS
O. Khan1
1Wayne State University of School of Medicine Director, Multiple Sclerosis Center and Sastry Foundation Advanced Imaging Laboratory, Detroit, MI, US

07:40-07:50
SS11.4  A B-cell Perspective of the Current MS Therapeutic Landscape
F. Lublin1
1The Corinne Goldsmith Dickinson Center for Multiple Sclerosis, Icahn School of Medicine at Mount Sinai, New York, NY, US

07:50-08:00
SS11.5  B-cell Targeted Therapies for Progressive MS: Rationale and Opportunities
P. Calabresi1
1Johns Hopkins Multiple Sclerosis Center, Division of Neuroimmunology and Neuroinfectious Diseases, Baltimore, MD, US

08:00-08:05
SS11.6  Posttest
S. Hauser1
1University of California at San Francisco, San Francisco, CA, US

08:05-08:15
SS11.7  Question & Answer

16:15 – 17:00  Auditorium, Levels 2 & 3

HT6: Society and MS CME (HT6.1 - HT6.3)
Learners gain 0.75 continuing medical education (CME) credit.

Chairs:
F. Costello, Calgary, ON, CA
G. Giovannoni, London, GB

16:15 – 16:30
HT6.1  The interaction among patients and their advocates, medicine, science, the media, social media, politics, and granting agencies: the complicated new world of medicine in the Facebook era in which anecdotes can trump reason and science, and in which millions of dollars must be expended to disprove biologically implausible hypotheses
M Rasinsky
1McGill University, Neurology and Neurosurgery, Montreal, QC, CA

16:30 – 16:45
HT6.2  Patients as partners in clinical research – Does the Internet harm or help?
P. Wicks
1PatientsLikeMe, Cambridge, MA, US

16:45 – 17:00
HT6.3  Parents' experience of pediatric multiple sclerosis
D. Rintell1, T. Cross1, A. Shanks1, C. Fico1, L. Duffy3, S. Camposano1, T. Chitnis1
1Massachusetts General Hospital, Partners Pediatric Multiple Sclerosis Center, Boston, MA, US
2University of Illinois at Urbana-Champaign, Children and Family Research Center, Urbana, IL, US
3Boston Childrens Hospital, Boston, MA, US

17:15 – 18:15  Auditorium, Levels 2 & 3

Industry Supported Satellite Symposia
SS9: Treatment Decisions at the Intersection of Trials and Practice

This non-CME activity is supported by Biogen Idec.

18:30 – 19:30  Small Ballroom (302-304-306)

Industry Supported Satellite Symposia
SS10: Treating to Target and Beyond: Is Improvement in Functioning a Realistic Treatment Goal in Multiple Sclerosis?

This non-CME activity is supported by AbbVie.

19:30 – 21:00  Departs at Boylston Street

Closing Networking Event: Offsite at JFK Presidential Library & Museum*
Shuttle service departs for the JFK Museum beginning 19:00.
*Admission is limited to delegates who registered to attend the event.
08:30 – 10:00    Auditorium, Levels 2 & 3

LB1: Late Breaking News (LB1.1 – LB1.7)

Chairs:
B. Uddehaag, Amsterdam, NL
J. Wolinsky, Houston, TX, US

LB1.1  Phase 2 results of the RADIANCE trial: a randomized, double-blind, placebo-controlled trial of oral RPC1063 in relapsing multiple sclerosis

J Cohen1, DL Arnold2,3, G Comi4, A Bar-Or1, S Gujrathi5, JP Hartung1, A Olson6, M Cravets6, PA Frohna6, K Selmaj2

1Cleveland Clinic, Mellen Center for MS Treatment and Research, Cleveland, OH, US, 2NeuroRx Research, Montreal, QC, CA, 3McGill University, Montreal, QC, CA, 4San Raffaele Scientific Institute, Vita-Salute San Raffaele University, Neurology, Milan, IT, 5Montreal Neurological Institute, Dept of Neurology and Neurosurgery, Montreal, QC, CA, 6Receptos, Inc., Clinical Development, San Diego, CA, US, 7Medical University of Lodz, Dept of Neurology, Lodz, PL

LB1.2  The long-term effectiveness and cost-effectiveness of interferon-beta and glatiramer acetate: 6-year analysis of the GB MS risk-sharing scheme

J Palace1, M Duddy2, T Bregenzer3, M Lawton4, F Zhu5, B Piske3, J Oger5, M Boggild6, N Robertson7, K Tilling4, H Tremlett5, Y Ben-Shlomo4, C Dobson8

1Oxford University Hospitals Trust, Clinical Neurology, Oxford, GB, 2The Newcastle Upon Tyne Hospitals, Newcastle Upon Tyne, GB, 3Parexel International, Berlin, DE, 4School of Social and Community Medicine, Bristol, GB, 5UBC Hospital, Vancouver, BC, CA, 6The Townsville Hospital, Townsville, AU, 7Institute of Psychological Medicine and Clinical Neuroscience, Cardiff, GB, 8Dept of Health, Leeds, GB

LB1.3  Effect of THC-CBD oromucosal spray (Sativex) on measures of spasticity in multiple sclerosis: a double-blind, placebo-controlled, crossover study

L Leocani1, A Nuara1, E Houdayer1, U Del Carro1, L Straffi1, V Martinelli1, P Rossii, I Schiavetti2, S Amadio1, MP Sormani2, G Comi1

1San Raffaele Hospital, Institute of Experimental Neurology (INSPE), Milan, IT, 2University of Genoa, Health Sciences (DISASA) - Biostatistics Unit, Genoa, IT

LB1.4  The Genomic map of multiple sclerosis: over 45 novel susceptibility variants and translation of genetics to biology

P De Jager1, International MS Genetics Consortium

1Brigham & Women’s Hospital and Harvard Medical School, Boston, MA, US

LB1.5  Co-associations of multiple sclerosis with schizophrenia and bipolar disorder: record linkage studies

S Ramagopalan1, U Meier2, R Goldacre1, M Goldacre1


LB1.6  Genetic determinants of multiple sclerosis in African Americans

N Isono1, L Madireddy1, P Khankhanian1, T Matsushita12, SJ Caillier1, JM More1, P-A Gourraud1, JL McCauley1, S Onengut-Gumuscu4, SS Rich4, SL Hauser1, S Sawcer7, J Rogers8

1Brigham and Women’s Hospital, Boston, MA, US, 2Kyushu University, Neurology, Fukuoka, JP, 3University of Miami, Miller School of Medicine, John P. Hussman Institute for Human Genomics, Miami, FL, US, 4University of Virginia, Center for Public Health Genomics, Charlottesville, VA, US, 5University of Cambridge, Clinical Neurosciences, Cambridge, GB

LB1.7  The life extension protein Klotho enhances remyelination following cuprizone-induced demyelination

C. Abraham1, C-D Chen1, S Medicetty2, E Zeidich1

1Boston University School of Medicine, Biochemistry, Boston, MA, US, 2Renovo Neural Inc., Cleveland, OH, US

10:00 – 10:30    Outside Hall C

Late Breaking News (LB1 - LBP22)

10:00 – 10:30    Outside Hall C

Coffee Break

10:30 – 12:30    Auditorium, Levels 2 & 3

PL2: Closing Plenary Session (PL2.1)

ECTRIMS 2015 Presentation

Learners gain 1.50 continuing medical education (CME) credit.

Chairs:
J. Cohen, Cleveland, OH, US
X. Montalban, Barcelona, ES

PL2.1  Paty lecture: neuroprosthetics for paralysis

AB Schwartz1

1University of Pittsburgh, Systems Neuroscience Institute, Pittsburgh, PA, US

PL2.2  ACTRIMS-ECTRIMS Clinical Research Highlights

E Mowry1, R Berme1

1Johns Hopkins University, Baltimore, MA, US, 2Cleveland Clinic, Mellen Center, Cleveland, OH, US

PL2.3  ACTRIMS-ECTRIMS Basic Research Highlights

F Sellebjerg1, F Piehl1

1Rigshospitalet, University of Copenhagen, Danish Multiple Sclerosis Center, Dept of Neurology, Copenhagen, DK, 2Karolinska Institutet, Clinical Neuroscience, Stockholm, SE
POSTERS

POSTER SCHEDULE
There are two scheduled print poster sessions in Hynes Convention Center Hall C and one scheduled ePoster session for Late Breaking Abstracts outside Hynes Convention Center Hall C.

Authors must stand by their posters during their assigned session:

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SET-UP
Poster Session 1
Posters assigned to Poster Session 1 can be mounted beginning at 07:00 on Thursday, 11 September and must be removed by 18:00 on Thursday, 11 September following the poster session.

Poster Session 2
Posters assigned to Poster Session 2 can be mounted beginning at 07:00 on Friday, 12 September and must be removed by 18:00 on Friday, 12 September following the poster session.

Attendees
Attendees will have access to the Hall C from 08:00 to 18:00. Poster presenters are encouraged to mount their posters early to increase exposure and interest in their research.

Late Breaking Abstracts
Late Breaking Abstracts will be presented as ePosters accessible through Program Terminals during the conference. On Saturday, 13 September, presenting authors will stand by individual computer monitors outside Hall C showcasing their work.

NOTE
All print posters left up after the designated removal times will be put in a poster drop-off area in the poster session room in Hall C and discarded at the end of the day.

POSTER GALLERY
View an online gallery of posters at www.msboston2014.org. For questions on how to upload posters, go to the ePoster Upload desk at the Service Area, Main Lobby, Level 2 or email msboston2014@abstractserver.com.

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Late Breaking Abstracts
ePoster Presentation | LBPI - LBP22
THURSDAY, 11 SEPTEMBER

15:30 – 17:00  Hall C

Poster Session 1 (P001-P490)

P001  Caregiver’s burden in multiple sclerosis is higher in Mexican population
P. Lorenzo Arenas1, L. Nuñez-Orozco1
1CMN 20 de Noviembre, Neurology, MX, MX

P002  How do MS patients’ sickness absence and disability pension trajectories develop over time? A nationwide cohort study of 3 543 MS patients
P. Tinghög1, K. Alexanderson1, M. Wiberg1, J. Hillert1, C. Björkenstam1
1Karolinska Institutet, Stockholm, SE

P003  Knowledge and attitude towards multiple sclerosis in TR
S. Canbaz Kabay1,2, H. Ozışık Karaman2, S. Ayas1, E. Mestan1, M. Çetiner1
1Dumlupınar University Faculty of Medicine, Department of Neurology, Kutahya, TR, 2Canakkale 18 Mart University Faculty of Medicine, Department of Neurology, Canakkale, TR

P004  Early loss of working capability in a Swiss cohort of patients with multiple sclerosis
O. Fidling1, M. Baltisberger2, CP. Kamm1, HP. Mattt1, J. Sellner3,4
1Inselspital, University Hospital Bern and University of Bern, Neurology, Bern, CH, 2Christian-Doppler-Klinik, Paracelsus Medical University, Neurology, Salzburg, AT, 3Klinikum rechts der Isar, Technische Universität München, Neurologie, München, DE

P005  Profile of social participation of multiple sclerosis adults in Québec city
N. Lacroix1,2, N. Boucher1,2, P. Villeneuve2
1Université Laval, CIRRIS (Center for Interdisciplinary Research in Rehabilitation and Social Integration), Quebec, QC, CA, 2Université Laval, School of Social Work, Quebec, QC, CA

P006  Determinants of stigma experienced by patients suffering from multiple sclerosis. A Hellenic population study
M. Anagnostouli1, S. Katsovas1, A. Artemiadis1, M. Zacharis1, P. Argiro1, I. Theotoka2, F. Christidi1, I. Zalonis1, A. Rombos1, I. Liappas2, E. Stamboulis1
1Medical School of National and Kapodistrian University, 1st Dept of Neurology, Athens, GR, 2Medical School of National and Kapodistrian University, 1st Dept of Psychiatry, Athens, GR

P007  A 10-year longitudinal study of use of and satisfaction with health care in a population-based sample of people with MS
C. Chruzander1,2, S. Johansson1,2, L. Widén Holmqvist1,2, K. Gottberg1, U. Einarsson1, C. Ytterberg1,2
1Karolinska Institute, Neurobiology, Care Science and Society, Stockholm, SE, 2Karolinska University Hospital, Department of Physiotherapy, Stockholm, SE, 3Karolinska Institutet, Neurobiology, Care Science and Society, Division of Nursing, Huddinge, SE

P008  Differences in health care utilization over 10 years between people with MS who entered a nursing home and those who did not
M. Finlayson1, RA. Marrie2, GS. Finlayson1, O. Ekuma1, D. Jiang1
1Queen’s University, Kingston, ON, CA, 2University of Manitoba, Winnipeg, ON, CA, 3Manitoba Centre for Health Policy, Winnipeg, ON, CA

P009  Multiple sclerosis relapses: economic impact of oral high-dose corticosteroids
D. Veillard1, C. Beauchamp1, E. Le Page2, G. Edan2
1Rennes University Hospital, Epidemiology and Public Health, Rennes, FR, 2Rennes University Hospital, Neurology, Rennes, FR

P010  Treatment patterns and budget impact of dalfampridine in multiple sclerosis: a retrospective claims database analysis
S. Palli1, M. Sidovar2, M. Grabner1, A. Guo2

P011  Greater cost savings associated with disability improvement in patients treated with alemtuzumab versus interferon beta-1a
L. Steinman1, V. Herrera2, M. Selzer1, Q. Zhang2, D.H. Margolin3, on behalf of the CARE MS II Investigators

P012  Economic burden of multiple sclerosis: a systematic review of the literature
AO. Ashayel1, S. Cadarette1, ET. Kinter2

P013  Cost-effectiveness of alemtuzumab vs subcutaneous interferon beta-1a for treatment of active relapsing-remitting multiple sclerosis: payer perspective
C. Celestin1, GR. Cutter1, AJ. Coles4, A. Reimers4, DH. Margolin3, on behalf of the CARE-MS I and II Investigators
1Genzyme, a Sanofi Company, Cambridge, MA, US, 2University of Alabama at Birmingham, Department of Biostatistics, Birmingham, AL, US, 3University of Cambridge, Addenbrooke’s Hospital, Cambridge, GB, 4Genzyme, a Sanofi Company, Stockholm, SE

P014  Sources of income for individuals with multiple sclerosis: a nationwide population-based study in SE
M. Wiberg1, E. Friberg1, K. Alexanderson1, M. Stenbeck1, A. Norlund1, J. Hillert1, P. Tinghög1
1Karolinska Institutet, Stockholm, SE

P015  Prevalence of complications in hospitalized multiple sclerosis patients among different age groups: national perspective
AA. Patel1, M. Davé2, S. Lahewala3, S. Arora4, S. Mehta5, A. Badheka6, V. Jani7
1Icahn School of Medicine at Mount Sinai, New York, NY, US, 2Houston Methodist Hospital, Houston, TX, US, 3Mount Sinai Hospital, New York, NY, US, 4Mount Sinai St. Luke’s, New York, NY, US, 5Saint Louis University, Saint Louis, MO, US, 6Detroit Medical Center, Detroit, MI, US, 7Michigan State University, East Lansing, MI, US
P016  Brain MRI lesions and atrophy are associated with employment status in patients with multiple sclerosis
S Tauhid1, R Chu1, R Sasane3, BI Glanz1, M Neema1, JR Miller1, G Kim1, JE Sigornivich1, BC Healy1, T Chitnis1, HL Weiner1, R Bakshi3
1Harvard/BWH, Boston, MA, US, 2Novartis Pharmaceuticals, East Hanover, NJ, US, 3Analysis Group, Boston, MA, US

P017  Treatment patterns and cost in multiple sclerosis – a cross-sectional study from SK
V Donath1, M Ondrusova2
1F.D.Roosevelt Teaching Hospital, Neurology, Banska Bystrica, SK, 2Pharm-In, Bratislava, SK

P018  Multiple sclerosis and variation in health utilities: a systematic review of the literature
AO Ashaye1, S Cadarette1, ET Kinter2

P019  Cost of MS – patients’ burden in NO
BO Svendsen1, K-M Myhr2, NG Torkildsen1, T Smedal1, L Boe1, JH Aarseth1
1Haukeland University Hospital, Department of Neurology, Bergen, NO, 2University of Bergen, Department of Clinical Medicine, Bergen, NO

P020  Updates from the Sonya Slifka longitudinal multiple sclerosis study and the comprehensive analysis of the direct and indirect costs of MS study
SL Minden1
1Brigham and Women’s Hospital, Harvard Medical School, Psychiatry, Boston, MA, US

P021  Improving clinical outcomes and healthcare resources utilization in multiple sclerosis: a Portuguese hospital perspective
D Viriato1, J Carrasco1, J Fonseca1, R Pacheco1
1Novartis Farma – Produtos Farmacêuticos S.A., Porto Salvo, PT

P022  The economic cost of a multiple sclerosis relapse
K O’Connell1, SB Kelly1, E Fogarty2, M Duggan3, L Buckley1, M Hutchinson1, C McGuigan1, N Tubridy1
1St Vincent’s University Hospital, Dublin, Ireland, 2National Centre for Pharmacoeconomics, St James’ Hospital, Dublin, Ireland

P023  MS disease severity does not affect patient or clinician satisfaction with clinic visits when using the FILMS quality of life assessment
S Koster1, M Wesson2, M Kirk-Junior1, V Nolan1, E Fox4, L Mayer5, E Frohman2, G Remington3, A Courtney4, L Jehle1, J Cooper3
1Jordan Research and Education Institute, Berkeley, CA, US, 2Kaiser Permanente, Oakland, CA, US, 3Alta Bates Summit Medical Center, Berkeley, CA, US, 4Central Texas Neurology Consultants, Round Rock, TX, US, 5UT Southwestern Medical Center at Dallas, Dallas, TX, US

P024  People with multiple sclerosis unmet perceived needs point toward a personalized intervention
M Ponzio1, P Zaratin1, C Vaccaro2, MA Battaglia1
1Italian Foundation of Multiple Sclerosis, Scientific Research Area, Genoa, IT, 2Fondazione CENSIS, Rome, IT, 3University of Siena, Department of Physiotherapy, Experimental Medicine and Public Health, Siena, IT

P025  A health resource utilization in Thai patients with idiopathic inflammatory demyelinating central nervous system disorders
C Chanatittarat1, S Siritho3,4, N Prayoonwiwat2, U Chaikledkaew1, P Pasogpakdee6
1Social and Administrative Pharmacy Excellence Research (SAPER) Unit, Pharmacy, Mahidol University, Bangkok, TH, 2Division of Neurology, Siriraj Hospital, Bangkok, TH, 3Bumrungrad International Hospital, Neurology Dept., Bangkok, TH, 4Sriphat Medical Center, Chiang Mai University, Chiang Mai, TH

P026  The impact of persistence with therapy on hospitalization and emergency room visits in the US among patients with multiple sclerosis
A Farr1, S Curkendall2, E Yu1, N Thomas3
1Truven Health Analytics, Life Sciences, Cambridge, MA, US, 2Independent Consultant, Bend, OR, US, 3Genentech, San Francisco, CA, US

P027  National estimates on the prevalence and characteristics of Medicare patients using treatments for multiple sclerosis and related symptoms in the USA
S Chahin1, X Yu2, AL Pengxiang2, N Dahodwala1, J Doshi7
1University of Pennsylvania, Department of Neurology, Philadelphia, PA, US, 2University of Pennsylvania, Department of Medicine, Philadelphia, PA, US

P028  MS with versus without relapse – the economic perspective in the PEARL study
SV Vormfelde1, S Seibert1, T van Lokven1, S Ortler1, S Moser1, A Fuchs1, T Ziemsen2
1Novartis Pharma GmbH, Nuremberg, DE, 2Universitätsklinikum Karl Gustav Carus, Dresden, DE

P029  Impact of improved adherence to disease-modifying therapies on healthcare resource utilization and medical costs for patients with multiple sclerosis
S Yermakov1, M Davis1, M Calnan1, M Fay2, B Buckley2, S Sarada1, MS Duh1, R Iyer7
P030 Application of the RAND/UCLA method to explore the appropriateness of current and emerging treatments for relapsing-remitting multiple sclerosis
HJ Stoevelaar1, F Barkhof1, T Berger2, D Centonze3, C Papeix4, A Tourbah5, T Ziemssen6
1Ismar Healthcare, Centre for Decision Analysis and Support, Lier, BE, 2VU University Medical Center, Department of Radiology, Amsterdam, NL, 3Innsbruck Medical University, Clinical Department of Neurology, Innsbruck, AT, 4U.O.C. Neurologia, Department of Neuroscience, Rome, IT, 5Salpetrière Hospital, Department of Neurology, Paris, FR, 6CHU de Reims, Department of Neurology, Reims, FR, 7University Clinic Carl Gustav Carus, Department of Neurology, Dresden, DE

P031 Presenteeism and quality of life between MS patients and healthy workers
A Ferreira1, AM Passos1, MR Neves1, C Sousa1, MJ Sá2
1Istituto Universitário de Lisboa (ISCTE-IUL), Business Research Unit, Lisboa, PT, 2Hospital de São João, Porto, PT

P032 Patterns of use of tests to monitor disease activity among patients with relapsing remitting multiple sclerosis in the US and Europe
P O’Meara1, S Narayanan2, J White3, J Chan4, S Gabriele5

P033 Video-based paired-comparison ranking: a validation tool for fine-grained measures of motor dysfunction in multiple sclerosis
J Burggraaff1, M D’Souza2, J Dorn3, C Kamm4, P Tewarie2, P Kontschieder4, C Morrison4, T Vogel5, A Sellen5, M Machacek5, P Chin5, A Criminisi6, F Dahlke3, L Kappos2, B Uitdehaag1
1VU University Medical Center, Amsterdam, NL, 2University Hospital Basel, Basel, CH, 3Novartis Pharma AG, Basel, CH, 4Microsoft Research, Cambridge, GB, 5Novartis Pharmaceuticals Corporation, East Hanover, NJ, US

P034 eEDSS – an electronic capturing of standardized neurological assessments with real time feedback as a tool to improve consistency. A validation study
M D’Souza1, O Yaldizli1, B Gersbach2, D Vogt3, R John4, A Papadopoulou5, E Lucassen1, M Menegola1, M Andelova1, F Dahlke3, L Kappos2, B Uitdehaag1
1University Hospital Basel, Neurology, Basel, CH, 2Definition12, Basel, CH, 3University Hospital Basel, Clinical Trial Unit, Basel, CH, 4Claudiabasel GmbH, Basel, CH, 5Novartis Pharma AG, Basel, CH

P035 Infrared depth sensor based automated classification of motor dysfunction in multiple sclerosis – a proof-of-concept study
M D’Souza1, J Burggraaff2, C Kamm2, P Tewarie2, P Kontschieder4, J Dorn5, C Morrison4, T Vogel5, A Sellen4, M Machacek5, P Chin5, A Criminisi5, F Dahlke4, B Uitdehaag2, L Kappos1
1University Hospital Basel, Neurology, Basel, CH, 2VU University Medical Center, Neurology, Amsterdam, NL, 3Microsoft Research, Cambridge, GB, 4Novartis Pharma AG, Basel, CH, 5Novartis Pharmaceuticals Corporation, East Hanover, NJ, US

P036 The squares test as a measure of hand function in multiple sclerosis
J Gielen1, J Laton2, J Van Schependom1, PP De Deyn3,4, G Nagel5,6
1Free University of Brussels, NEUR, Brussel, BE, 2University of Antwerp, Institute Born-Bunge, Antwerp, BE, 3University Medical Center, Alzheimer Research Center Groningen, Groningen, NL, 4ZNA Middelheim, Neurology, Antwerp, BE, 5Université de Mons, Service d’Orthopédagogie Clinique, Faculté de Psychologie et des Sciences de l’Education, Mons, BE, 6National MS Center, Melsbroek, BE

P037 Influence of method of analysis on responsiveness to change of an IRT score of global disability derived from NARCOMS performance scales
E Chamot1, AR Salter2, I Kister3, GR Cutter4
1University of Alabama at Birmingham, Epidemiology, Birmingham, AL, US, 2University of Alabama at Birmingham, Biostatistics, Birmingham, AL, US, 3New York University, Neurology, New York, NY, US

P038 Assessment of upper extremity function using the manual dexterity component of the multiple sclerosis performance test: validation of novel metrics
F Bethoux1, D Schindler2, J Alberts2, D Miller1, S Rao3, J-C Lee4, D Stough1, C Reece1, B Mamone1, R Rudick1
1Cleveland Clinic, Mellen Center for MS Treatment and Research, Cleveland, OH, US, 2Cleveland Clinic, Biomedical Engineering, Cleveland, OH, US, 3Cleveland Clinic, Center for Brain Health, Cleveland, OH, US, 4Cleveland Clinic, Quantitative Health Sciences, Cleveland, OH, US

P039 Improvement in MRI outcomes across subgroups with alemutzumab versus interferon beta-1a in treatment-naive relapsing-remitting multiple sclerosis
X Montalban1, DL Arnold2,3, E Fisher4, DH Margolin5, J Palmer6, on behalf of the CARE-MS I Investigators
1Edifici Cemcat, Vall d’Hebron University Hospital and Research Institute, Barcelona, ES, 2NeuroRx Research, Montréal, QC, CA, 3Montréal Neurological Institute, McGill University, Department of Neurology and Neurosurgery, Montréal, QC, CA, 4Cleveland Clinic, Department of Biomedical Engineering, Cleveland, OH, US, 5Genzyme, a Sanofi Company, Cambridge, MA, US
PO40  MRI outcomes in patients with early multiple sclerosis treated with teriflunomide: subgroup analyses from the TOPIC phase 3 study
JS Wolinsky1, P Truffinet2, D Bauer3, AE Miller4, for the Investigators of the TOPIC Study and the MRI-AC in Houston, TX
1University of Texas Health Science Center at Houston, Houston, TX, US, 2Genzyme, a Sanofi Company, Chilly-Mazarin, FR, 3Sanofi, Bridgewater, NJ, US, 4ICahn School of Medicine at Mount Sinai, New York, NY, US

PO41  Effect of laquinimod on gray matter and white matter atrophy in relapsing-remitting multiple sclerosis: analysis of the BRAVO phase III trial
K Nakamura1, TL Vollmer2, T Gorfine3, V Knappertz4, DL Arnold5
1McGill University, Montreal, QC, CA, 2University of Colorado, Aurora, CO, US, 3Teva Pharmaceutical Industries, Netanya, IL, 4Teva Pharmaceutical Industries, Frazer, PA, US, 5Heinrich-Heine Universität Düsseldorf, Düsseldorf, DE, 6NeuroRx Research, Montreal, QC, CA

PO42  Peginterferon beta-1a may improve recovery following relapses: data from the 2-year ADVANCE relapsing-remitting multiple sclerosis study
BC Kiesele1, TF Scott2,3, SD Newsome4, SI Sheikh5, S Hung6, X You7, B Sperling7
1Heinrich-Heine University, Department of Neurology, Düsseldorf, DE, 2Allegany General Hospital, Department of Neurology, Pittsburgh, PA, US, 3Drexel University College of Medicine, Department of Neurology, Pittsburgh, PA, US, 4Johns Hopkins School of Medicine, Department of Neurology, Baltimore, MD, US, 5Biogen Idec Inc., Cambridge, MA, US

PO43  Efficacy and safety of alemtuzumab in patients with relapsing-remitting MS who relapsed on prior therapy: four-year follow-up of the CARE-MS II study
H-P Hartung1, DL Arnold2, JA Cohen3, AJ Coles4, EJ Fox5, E Havrdova6, KW Selma7, DH Margolin8, J Palmer9, P Oyuela9, MA Panzara9, DAS Compston9, on behalf of the CARE-MS II Investigators
1Department of Neurology and Center for Neuropsychiatry, Heinrich-Heine University, Düsseldorf, DE, 2Department of Neurology and Neurosurgery, Montréal Neurological Institute, McGill University, Montréal, QC, CA, 3Mellen Center and Department of Biomedical Engineering, Cleveland Clinic, Cleveland, OH, US, 4University of Cambridge, Addenbrooke's Hospital, Cambridge, GB, 5University of Texas Medical Branch, Round Rock, TX, US, 6Department of Neurology, First School of Medicine, Charles University, Prague, CZ, 7Medical University of Lódz, Department of Neurology, Lódz, PL, 8Genzyme, a Sanofi Company, Cambridge, MA, US, 9Department of Clinical Neurosciences, University of Cambridge, Cambridge, GB

PO44  Alemtuzumab improves quality of life in relapsing-remitting multiple sclerosis patients who relapsed on prior therapy: 3-year follow-up of CARE-MS II
T Moreau1, DH Margolin2, L Kasten3, B Singer4, on behalf of the CARE-MS II Investigators
1Burgundy University, Dijon University Hospital, Dijon, FR, 2Genzyme, a Sanofi Company, Cambridge, MA, US, 3PROMETRIKA, LLC, Cambridge, MA, US, 4MS Center for Innovations in Care, St. Louis, MO, US

PO45  Larger treatment effects in early multiple sclerosis: a meta analysis of randomized trials
A Signori1, MP Sormani1
1University of Genoa, Health Sciences, Section of Biostatistics, Genoa, IT

PO46  Evaluating the effect of teriflunomide in subgroups defined by prior treatment: pooled analyses of the phase 3 TEMSO and TOWER studies
MS Freedman1, D Dukovic2, M Benamor3, P Truffinet4, K Kappos5
1University of Ottawa and the Ottawa Hospital Research Institute, Ottawa, ON, CA, 2Sanofi, Bridgewater, NJ, US, 3Genzyme, a Sanofi Company, Chilly-Mazarin, FR, 4University Hospital Basel, Basel, CH

PO47  The effects of age and gender on brain volume in FREEDOMS, FREEDOMS II and TRANSFORMS phase 3 studies
E-W Radue1, JS Wolinsky2, D Tomic3, DA Häring3, P Chinn4, F Barkhof5
1University Hospital Basel, Medical Image Analysis Centre, Basel, CH, 2University of Texas Health Science Center at Houston, Department of Neurology, Houston, TX, US, 3Novartis Pharma AG, Basel, CH, 4Novartis Pharmaceuticals Corporation, East Hanover, NJ, US, 5VU Medical Centre, Image Analysis Centre, Amsterdam, NL

PO48  Follow-up data from the Mirror study: a dose-ranging study of subcutaneous ofatumumab in subjects with relapsing-remitting multiple sclerosis
PS Sørensen1, ST Kavanagh2, DJ Austin3, RA Grove4, MC Lopez5, JM Tolson6, SA Van Meter7, A Bar-Or8
1Copenhagen University Hospital, Rigshospitalet, Department of Neurology, Copenhagen, DE, 2GlaxoSmithKline, Clinical Statistics, Neurosciences, Research Triangle Park, NC, US, 3GlaxoSmithKline, Clinical Pharmacology, Stockley Park West, GB, 4GlaxoSmithKline, Clinical Statistics, Neurosciences, Stockley Park West, GB, 5GlaxoSmithKline, Stiefel Global Clinical Dev US, Research Triangle Park, NC, US, 6GlaxoSmithKline, RD Projects Clinical Platforms and Sciences, Research Triangle Park, NC, US, 7GlaxoSmithKline, Neurosciences Therapy Area Unit, Research Triangle Park, NC, US, 8McGill University and McGill University Health Center, Montreal Neurological Institute and Hospital, Montreal, QC, CA

PO49  Safety, tolerability and efficacy of Boswellic acids in relapsing-remitting multiple sclerosis – the SABA proof-of-concept trial
KH Stürner1, J-P Stellmann1, F Paul2, J Dörr2, R Martin1, C Heesen1
1University Medical Center Hamburg-Eppendorf, Institute for Neuroimmunology and Multiple Sclerosis Research (INIMS), Hamburg, DE, 2Charité Universitätsmedizin Berlin, NeuroCure Clinical Research Center (NCRC), Berlin, DE, 3University Hospital Zürich, Department of Neuroimmunology and MS Research, Zürich, CH
PO50  Modeling dose-PK-lymphocytes relationship under siponimod (BAF312) treatment to infer time to immune reconstitution
C Sarr1, M Savelleva1, G Ette1, C Petry1, E Legangneux1, E Wallström1
1Novartis Pharma AG, Basel, CH

PO51  Brain MRI results of DECIDE: a randomized, double-blind trial of DAC HYP vs. IFNβ-1a in RRMS patients
DL Arnold1,2, L Kappos3, E Havrdova4, K Selmaï5, A Boyko6, M Kaufman7, H Wiendl8, J Rose8, S Greenberg9, E Demirhan9, M Sweetser9, K Riester9, J Elkins9
1NeuroRx Research, Montreal, QC, CA, 2McGill University, Montreal, QC, CA, 3University Hospital, Basel, CH, 4First School of Medicine, Charles University, Prague, CZ, 5Medical University of Lodz, Lodz, PL, 6Moscow Multiple Sclerosis Center, Moscow, RU, 7Carolina Medical Center, Charlotte, NC, US, 8University of Münster, Münster, DE, 9University of Utah Medical School, Salt Lake City, UT, US, 10Abbvie Biotherapeutics Inc, Redwood City, CA, US, 11Biogen Idec, Cambridge, MA, US

PO52  Effect of bismuth subsalicylate on gastrointestinal events associated with delayed-release dimethyl fumarate: a double-blind, placebo-controlled study
C Tornatore1, J Li1, TS Ma1, C von Hehn1, J Zambrano1
1Department of Neurology, Georgetown University Hospital, Washington, DC, US, 2Biogen Idec, Inc., Cambridge, MA, US, 3PharmStats, Ltd., Escondido, CA, US

PO53  Comparable clinical and MRI efficacy of glatiramer acetate 40mg/mL TIW and 20mg/mL QD: results of a systematic review and meta-analysis
G Cutter1, JS Wolinsky2, G Comi3, D Ladkani4, V Knappertz5, A Vainstein6, N Sasson7, O Khan8, J Zambrano9
1University of Alabama at Birmingham, Birmingham, AL, US, 2University of Texas, Health Science Center at Houston, Houston, TX, US, 3San Raffaele Scientific Institute and Vita-Salute San Raffaele University, Milan, IT, 4Teva Pharmaceutical Industries, Petach Tiqva, IL, 5Teva Pharmaceutical Industries, Frazer, PA, US, 6Heinrich-Heine Universität Düsseldorf, Düsseldorf, DE, 7Teva Pharmaceutical Industries, Netanya, IL, 8Multiple Sclerosis Center, Wayne State University School of Medicine, Detroit, MI, US, 9Sastry Foundation Advanced Imaging Laboratory, Wayne State University School of Medicine, Detroit, MI, US

PO54  Switching from interferon β-1a IM to laquinimod: safety and efficacy results from the BRAVO study extension
TL Vollmer1, N Ashtamker2, Y Sidi2, D Ladkani3, T Gorfine1, PS Sørensen3
1University of Colorado, Aurora, CO, US, 2Teva Pharmaceutical Industries, Netanya, IL, 3Teva Pharmaceutical Industries, Petach Tiqva, IL, 4Copenhagen University Hospital, Rigshospitalet, Copenhagen, DK

PO55  Effects of a very low fat, plant-food-based diet on fatigue in multiple sclerosis: report of a pilot trial
V Yadav1,2, G Maracci1,2, E Kim1,2, R ES1,2, M Cameron1,2, S Overs1, A Lewis1, J McDougall1, J Lovera1,2, C Murchison1, DN Bourdette2,3

PO56  Results from a randomized double-blind crossover study comparing oral L-carnitine versus placebo for the treatment of fatigue in multiple sclerosis
J-C Ouallet1, D Laplaud2, S Wiertlewski1, M Deboeverie1, S Pitton1, C Lebrun-Frenay1, M Cohen1, P Cabre2, S Jeannin2, D Brassat2, G Chêne2, J Asselineau2, A Saubusse2, D Djigo3, J Chateau rajayn4, B Brochet4
1Service de Neurologie, Hôpital Pellegrin CHU de Bordeaux, Bordeaux, FR, 2Service de Neurologie, Université de Nantes, Nantes, FR, 3CHU de Nancy, Service de Neurologie, Hôpital Central, Nancy, FR, 4CHU de Nice, Service de Neurologie, Hôpital Pasteur, Nice, FR, 5CHU de Fort-de-FR, Service de Neurologie, Hôpital Pierre Zobda-Quilman, Fort-de-FR, Martinique, 6CHU de Toulouse, Service de Neurologie, Hôpital Purpan, Toulouse, FR, 7CHU de Bordeaux, Université de Bordeaux, Unité de Soutien à la Recherche Clinique et Épidémiologique du CHU de Bordeaux, Bordeaux, FR, 8CHU de Bordeaux, Service de Neurologie, Hôpital Pellegrin, Bordeaux, FR

PO57  Delayed-release dimethyl fumarate and disability assessed by the multiple sclerosis functional composite: integrated analysis of DEFINE and CONFIRM
G Giovannoni1, R Gold2, L Kappos1, DL Arnold4, A Bar-Or5, NC Kurukulasuriya5, M Yang5, SP Sarda5
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PO58  The efficacy of teriflunomide is evident before steady-state plasma concentrations are reached
JS Wolinsky1, D Dukovic2, P Truffinet3, L Kappos4, for the investigators of the Phase 2 Proof-of-Concept, TEMSO, TOWER and TOPIC Studies, and the MRI-AC in Houston, TX
1University of Texas Health Science Center at Houston, Houston, TX, US, 2Sanofi, Bridgewater, NJ, US, 3Genzyme, a Sanofi Company, Chilly-Mazarin, FR, 4University Hospital Basel, Basel, CH
**P059** Five-year follow-up of delayed-release dimethyl fumarate in relapsing-remitting multiple sclerosis: MRI outcomes from DEFINE, CONFIRM, and ENDORSE

DL Arnold1, RJ Fox3, R Gold4, E Havrdova5, L Kappos6, T Yousry7, D MacManus4, R Zhang8, M Yang9, **NC Kurukulasuriya4**, V Vigilietta4

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**P060** Effect of teriflunomide on lymphocyte and neutrophil counts: pooled analyses from four placebo-controlled studies

G Comi1, MS Freedman1, L Kappos3, AE Miller2, TP Olsson3, JS Wolinsky6, M Benamor2, D Dukovic6, P Truffinet7, PW O’Connor8

1University Vita-Salute San Raffaele, Milan, IT, 2University of Ottawa and the Ottawa Hospital Research Institute, Ottawa, ON, CA, 3University Hospital Basel, Basel, CH, 4Icahn School of Medicine at Mount Sinai, New York, NY, US, 5Karolinska Institute, Stockholm, SE, 6University of Texas Health Science Center at Houston, Houston, TX, US, 7Genzyme, a Sanofi Company, Chilly-Mazarin, FR, 8Sanofi, Bridgewater, NJ, US, 9University of Toronto, Toronto, ON, CA

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**P061** Consistent effect of laquinimod on relapse-related and disability progression-related endpoints

G Comi1, TL Vollmer2, L Kappos3, X Montalban4, T Gorfin3, N Sasson5, V Knappertz6,7

1San Raffaele Scientific Institute and Vita-Salute San Raffaele University, Milan, IT, 2University of Colorado, Aurora, CO, US, 3Clinical Research and Biomedicine, University Hospital Basel, Basel, CH, 4Hospital Universitari de la Vall d’Hebron, Barcelona, ES, 5Teva Pharmaceutical Industries, Netanya, IL, 6Teva Pharmaceutical Industries, Frazer, PA, US, 7Heinrich-Heine Universität Düsseldorf, Düsseldorf, DE

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**P062** Clinical efficacy of laquinimod 0.6mg once-daily in worsening relapsing-remitting multiple sclerosis defined by baseline EDSS over 3

TL Vollmer1, G Comi2, L Kappos3, X Montalban4, G Cutter6, JR Steinerman4, N Sasson5, T Gorfin6, V Knappertz6,7

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**P063** The POPARTMUS French-Italian multicentric trial of postpartum progestin and estradiol in multiple sclerosis: MRI findings

F Durand-Dubief2, M El-Etri3, I Ionescu1, L Bracoud4, F Cotton5,6, H Merle1, C Cornu1, B Frangoulis1, L Remontet4, N Bossard4, L Durelli5, E-E Baulieu1, C Confavreux5,6,7, S Vukusic5,6,8 for the Investigators of the POPARTMUS Study

1Hôpital Neurologique Pierre Wertheimer, Hospices Civils de Lyon, Neurologie A et Fondation Eugène Devic EDMUS pour la Sclérose en Plaques, Bron Cedex - Lyon, FR, 2CREATIS-LRMN, UMR 5220 CNRS & U 1044 INSERM & Université de Lyon, Villeurbanne, FR, 3INSERM, Le Kremlin-Bicêtre, FR, 4Bioclinica, Lyon, FR, 5Service de Radiologie - CHU Lyon, Centre Hospitalier de Lyon Sud, Pierre Bénite, FR, 6Université de Lyon, Lyon, FR, 7Hôpital Cardiologique Louis Pradel, Hospices Civils de Lyon, Centre d’Investigations Cliniques, Bron Cedex - Lyon, FR, 8Service de Biostatistique des Hospices Civils de Lyon, Lyon, FR, 9University of Torino, Torino, IT, 10Centre des Neurosciences de Lyon, INSERM 1028 et CNRS UMR 5292, Equipe Neuro-Oncologie et Neuro-Inflammation, Lyon, FR

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**P064** Long-term efficacy of delayed-release dimethyl fumarate in newly diagnosed patients with RRMS: an integrated analysis of DEFINE, CONFIRM, and ENDORSE

R Gold1, G Giovannoni2, JT Phillips3, RJ Fox4, A Zhang5, **NC Kurukulasuriya6**

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**P065** Efficacy of delayed-release dimethyl fumarate for RRMS in prior interferon users in the DEFINE and CONFIRM studies

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PO66 Long-term follow-up of the safety of delayed-release dimethyl fumarate in RMS: interim results from the ENDORSE extension study
C Pozzilli1, JT Phillips2, RJ Fox3, K Selmi3, R Zhang2, M Novas1, MT Sweetser3, R Gold4
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1Biogen Idec Inc., Cambridge, MA, US, 2St. Josef Hospital, Ruhr University, Bochum, DE

PO67 Effect of peginterferon beta-1a on MRI measures and freedom from measured disease activity: 2-year results from the phase 3 ADVANCE study
DL Arnold2, PA Calabresi2, BC Kieseier1, SI Sheikh6, A Deykin5, S Liu4, X You4, B Sperling2, S Hung5
1Montreal Neurological Institute, McGill University, Montreal, QC, CA, 2NeuroRx Research, Montreal, QC, CA, 3Johns Hopkins University, Department of Neurology, Baltimore, MD, US, 4Heinrich-Heine University, Department of Neurology, Düsseldorf, DE, 5Biogen Idec Inc., Cambridge, MA, US

PO68 Ambulation benefit with laquinimod in patients with worsening MS (EDSS over 3) is consistent with reduction in confirmed disability progression
TL Vollmer1, G Comi2, G Cutter1, G Giovannoni4, JR Steinerman2, N Sasson3, T Garfone6, V Knappertz3,6
1University of Colorado, Aurora, CO, US, 2San Raffaele Scientific Institute and Vita-Salute San Raffaele University, Milan, IT, 3University of Alabama at Birmingham, Birmingham, AL, US, 4Hospital Universitari de la Vall d’Hebron, Barcelona, ES, 5Teva Pharmaceutical Industries, Frazer, PA, US, 6Teva Pharmaceutical Industries, Netanya, IL, 7Heinrich-Heine Universität Düsseldorf, Düsseldorf, DE

PO69 Laquinimod effect on confirmed disability progression: minimal mediation by relapse or T2 lesions reduction
MP Sormani1, TL Vollmer2, G Comi3, Y Sidi1, JR Steinerman2, T Garfone4, V Knappertz3,6
1University of Genoa, Genoa, IT, 2University of Colorado, Aurora, CO, US, 3San Raffaele Scientific Institute and Vita-Salute San Raffaele University, Milan, IT, 4Teva Pharmaceutical Industries, Netanya, IL, 5Teva Pharmaceutical Industries, Frazer, PA, US, 6Heinrich-Heine Universität Düsseldorf, Düsseldorf, DE

PO70 Laquinimod disability progression effects are maintained with increasingly rigorous confirmation time intervals
G Comi1, TL Vollmer2, L Kappos3, X Montalban4, N Sasson3, T Garfone4, V Knappertz3,6
1San Raffaele Scientific Institute and Vita-Salute San Raffaele University, Milan, IT, 2University of Colorado, Aurora, CO, US, 3Clinical Research and Biomedicine, University Hospital Basel, Basel, CH, 4Hospital Universitari de la Vall d’Hebron, Barcelona, ES, 5Teva Pharmaceutical Industries, Netanya, IL, 6Teva Pharmaceutical Industries, Frazer, PA, US, 7Heinrich-Heine Universität Düsseldorf, Düsseldorf, DE

PO71 Temporal pattern of laboratory changes with laquinimod treatment
TL Vollmer1, G Comi2, PS Sørensen3, N Sasson4, T Gorfine3, V Knappertz3,6
1University of Colorado, Aurora, CO, US, 2San Raffaele Scientific Institute and Vita-Salute San Raffaele University, Milan, IT, 3Copenhagen University Hospital, Rigshospitalet, Copenhagen, DE, 4Teva Pharmaceutical Industries, Netanya, IL, 5Teva Pharmaceutical Industries, Frazer, PA, US, 6Heinrich-Heine Universität Düsseldorf, Düsseldorf, DE

PO72 Effect of high-dose erythropoietin on clinical disability and MRI in patients with progressive multiple sclerosis
KI Schreiber, M Magyari1, FT Sellebjerg2, P Iversen2, L Børnsen3, RL Ratzer1, CG Madsen3, JR Christensen4, H Siebner5, E Garde4, PS Sørensen6
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PO73 Quantifying the effect of natalizumab on the total disability burden of MS patients in AFFIRM using an exploratory area under the curve analysis
RA Rudick1, S Shang2, Q Dong2, D Paes2, D Mikol2, S Belachew2
1Mellen Center, Cleveland Clinic Foundation, Cleveland, OH, US, 2Biogen Idec, Cambridge, MA, US

PO74 Impact of peginterferon beta-1a treatment and disease factors on risk of physical deterioration in patients with multiple sclerosis: ADVANCE study
ET Kinter1, S Guo2, A Altincal1, I Proskorovsky2, G Phillips3, B Sperling4, G Sabatella5
1Biogen Idec Inc., Cambridge, MA, US, 2Evidera, Lexington, MA, US, 3Evidera, Montreal, QC, CA

PO75 Alemtuzumab improves MRI outcomes regardless of subgroup versus interferon beta-1a in relapsing-remitting MS patients who relapsed on prior therapy
F Barkhof1, E Fisher1, J Palmer1, DH Margolin2, DL Arnold3, on behalf of the CARE-MS II Investigators
1VU University Medical Center, Amsterdam, NL, 2Cleveland Clinic, Department of Biomedical Engineering, Cleveland, OH, US, 3Genzyme, a Sanofi Company, Cambridge, MA, US, 4NeuroRx Research, Montréal, QC, CA, 5Department of Neurology and Neurosurgery, Montréal Neurological Institute, McGill University, Montreal, QC, CA

PO76 Double-blind, placebo- and active comparator-controlled study in healthy males to assess the safety, pharmacokinetics and -dynamics of 2B3-201
W Gladdings1, K Khahn1, L Stavrakaki1, RJZA Zinker2, PJ Gaillard3, GJ Groeneveld4, F Lönnqvist1
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**POSTERS 1**

**P077** Lymphocyte count reductions with delayed-release dimethyl fumarate: integrated analysis of the phase 2, phase 3, and extension studies  
RJ Fox, A Chan, R Gold, JT Phillips, K Selmaï, R Zhang, H Yuan, M Novais, V Viglietta, NC Kurukulasuriya  
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2St. Josef Hospital, Ruhr University, Bochum, DE  
3Multiple Sclerosis Program, Baylor Institute for Immunology Research, Dallas, TX, US  
4Medical University of Lodz, Lodz, PL  
5Biogen Idec, Inc., Cambridge, MA, US

**P078** Teri-PRO: study design and US patients’ baseline characteristics  
PK Coyte, KR Edwards, BO Khatri, C LaGanke, S Brette, S Cavaliere  
1Stony Brook University Medical Center, Stony Brook, NY, US  
2Multiple Sclerosis Center of Northeastern New York, Latham, NY, US  
3Regional MS Center, Center for Neurological Disorders, Milwaukee, WI, US  
4North Central Neurology Associates, Cullum, AL, US  
5Lincoln, Boulogne-Billancourt, FR  
6Genzyme, a Sanofi Company, Cambridge, MA, US

**P079** Long-term MRI outcomes from patients treated with teriflunomide: results from a phase 2 extension study  
DBK Li, AL Trabousee, P Truffinet, D Dudovic, P O’Connor  
1University of British Columbia and MS/MRI Research Group, Vancouver, BC, CA  
2Genzyme, a Sanofi Company, Chilly-Mazarin, FR  
3Sanofi, Bridgewater, NJ, US  
4University of Toronto, Toronto, ON, CA

**P080** Convenience of glatiramer acetate 40mg/mL three times weekly: evidence from the GLACIER study  
DBK Li, AL Trabousee, P Truffinet, D Dudovic, P O’Connor  
1University of British Columbia and MS/MRI Research Group, Vancouver, BC, CA  
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3Sanofi, Bridgewater, NJ, US  
4University of Toronto, Toronto, ON, CA

**P081** Time to brain atrophy is prolonged in continuously fingolimod-treated MS patients vs placebo or interferon beta 1-a in phase 3 studies of fingolimod  
D Häring, D Tomic, D Piani Meier, N Sifkas, P Chin, G Francis  
1Novartis Pharma AG, Basel, CH  
2Novartis Pharmaceuticals Corporation, East Hanover, NJ, US

**P082** A randomized, double-blind, placebo-controlled phase IIa study of alpha B-crystallin in multiple sclerosis  
JM van Noort, M Bsibsi, PJ Nacken, R Verbeek, EH Venneker  
1Delta Crystallin, Leiden, NL

**P083** Safety and tolerability of fingolimod in relapsing-remitting multiple sclerosis: results from a large open-label clinical trial  
A Laroni, D Brogi, V Brescia Morra, L Guidi, C Pozzilli, G Comi, A Lugaresi, R Turrini, D Raimondi, A Uccelli, GL Mancardi, EAP Investigators  
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2University Federico II, Department of Neurological Sciences, Naples, IT  
3Si Giuseppe Hospital, Neurology Unit, Empoli, IT  
4University La Sapienza, Department of Neurology, Roma, IT  
5Vita-Salute San Raffaele University, Scientific Institute San Raffaele, Department of Neurology, INSEPE, Milano, IT  
6University ‘G. D’Annunzio’, Department of Neuroscience and Imaging, Chieti, IT  
7Novartis Farma, Origgio, IT

**P084** Dose-response and safety of high dose vitamin D supplementation: subgroup analysis of an exploratory randomized double blind placebo controlled trial  
K O’Connell, K Mulready, J Brady, O Kenny, K Kinsella, S Jordan, C McKenna, C Muldowney, S Basdeo, J Fletcher, D Murphy, E Heffernan, R O’Laide, L Cassidy, K O’Rourke, N Tubridy, C McGuigan, M Hutchinson  
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2Mater University Hospital, Department of Biochemistry, Dublin, IE  
3St Vincent’s University Hospital, Pharmacy Department, Dublin, IE  
4Trinity College Dublin, Department of Immunology, Dublin, IE  
5St Vincent’s University Hospital, Department of Radiology, Dublin, IE  
6Royal Victoria Eye and Ear Hospital, Dublin, IE  
7Mater University Hospital, Department of Neurology, Dublin, IE

**P085** Safety and tolerability of peginterferon beta-1a in patients with relapsing-remitting multiple sclerosis: 2-year data from the ADVANCE study  
BC Kieseier, PA Calabresi, Y Cui, Y Zhu, S Hung, A Deykin, A Seddighzadeh  
1Heinrich-Heine University, Department of Neurology, Düsseldorf, DE  
2Johns Hopkins University, Department of Neurology, Baltimore, MD, US  
3Biogen Idec Inc., Cambridge, MA, US

**P086** An interim analysis of the German START-study confirms the good cardiac safety profile of fingolimod  
V Limrhoth, S Hoyer, M Lang, S Schmidt, T Ziemssen  
1Neurologische Klinik, Kliniken der Stadt Köln, Cologne, DE  
2Novartis Pharma GmbH, Nuremberg, DE  
3Neurologische Praxis, NTD Study Group, Ulm, DE  
4Neurologische Gemeinschaftspraxis, NTD Study Group, Bonn, DE  
5Neurologische Klinik, Universität Dresden, Dresden, DE

**P087** Vitamin D levels in multiple sclerosis in correlation to age, sex, EDSS and dosage of substitution. First results of a prospective study  
WL Poellmann, M Starck, J Koehler  
1Marianne Strauss Klinik, Berg, DE
PO88  Alem替zumab reduces disease activity in treatment-naive patients with highly active relapsing-remitting multiple sclerosis
S Krieger1, C Lubetzki2, J Palmer1, DH Margolin3, on behalf of CARE-MS I Study Investigators
1Mount Sinai Medical Center, New York, NY, US, 2Hôpital de la Salpêtrière, Paris, FR, 3Genzyme, a Sanofi Company, Cambridge, MA, US

PO89  Interferon beta-1b in treatment-naive paediatric patients with relapsing-remitting MS: baseline data from the BETAPAEDIC study
J Gärtner1, W Brück1, A Weddige1, K Reinhardt1, JP Bugge2, The BETAPAEDIC Study Group
1University Medical Center, Göttingen, DE, 2Bayer Pharma AG, Berlin, DE

PO90  Efficacy of teriflunomide in patients with early stage MS: analysis of the TOPIC study using 2010 McDonald diagnostic criteria
JS Wolinsky1, P Truffinet2, D Bauer3, AE Miller4, for the Investigators of the TOPIC Study and the MRI-AC in Houston, TX
1University of Texas Health Science Center at Houston, Houston, TX, US, 2Genzyme, a Sanofi Company, Chilly-Mazarin, FR, 3Sanofi, Bridgewater, NJ, US, 4Icahn School of Medicine at Mount Sinai, New York, NY, US

PO91  Differentiation recovery from demyelination and repair in relapsing-remitting MS: results of the CONFIRM study of dimethyl fumarate
A Chan1, JT Phillips2, RJ Fox3, A Zhang4, M Okwuokenye5, NC Kurukulasuriya6
1St. Joseph Hospital, Ruhr University, Bochum, DE, 2Baylor Institute for Immunology Research, Multiple Sclerosis Program, Dallas, TX, US, 3Mellen Center for Multiple Sclerosis Treatment and Research, Cleveland Clinic, Cleveland, OH, US, 4Icahn School of Medicine at Mount Sinai, New York, NY, US, 5University Vita-Salute San Raffaele, Milan, IT

PO92  PGnba1C1, a monoclonal antibody against the MSRV envelope protein, pharmacodynamic responses in patients with multiple sclerosis
F Curtin1
1GeNeuro, Plan les Ouates, CH

PO93  First-in-human phase 1 study of invariant NKT cell ligand OCH
D Noto1, M Araki2, W Sato1, T Okamoto1, M Murata1, S Miyake2, T Yamamura2
1National Institute of Neuroscience, National Center of Neurology and Psychiatry (NCNP), Department of Immunology, Kodaira, JP, 2National Center Hospital, NCNP, Multiple Sclerosis Center, Kodaira, JP, 3National Center Hospital, NCNP, Department of Neurology, Kodaira, JP, 4Juntendo University Graduate School of Medicine, Department of Immunology, Bunkyo-ku, JP

PO94  Safety and tolerability of daclizumab HYP treatment in relapsing-remitting multiple sclerosis: results of the DECIDE study
K Selma1, J Kappos2, DL Arnold3, E Havrdova5, A Boyko6, M Kaufman7, H Wiendll7, J Rose8, S Greenberg9, E Demirhan10, K Riester11, J Elkins12
1Medical University of Lodz, Lodz, PL, 2University Hospital Basel, CH, 3NeuroRx Research, Montreal, QC, CA, 4McGill University, Montreal, QC, CA, 5First School of Medicine, Charles University, Prague, CZ, 6Moscow Multiple Sclerosis Center, Moscow, RU, 7Carolinas Medical Center, Charleston, NC, US, 8University of Münster, Münster, DE, 9University of Utah Medical School, Salt Lake City, UT, US, 10Abbvie Biotherapeutics Inc, Redwood City, CA, US, 11Biogen Idec, Cambridge, MA, US

PO95  Efficacy of alemtuzumab in treatment-naive patients with highly active relapsing-remitting multiple sclerosis: four-year follow-up of the CARE-MS I study
AJ Coles1, DL Arnold2, JA Cohen3, EJ Fox4, H-P Hartung5, E Havrdova6, KW Selma7, DH Margolin8, J Palmer9, P Oyuela9, MA Panzara9, DAS Compston10, on behalf of the CARE-MS I Investigators
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PO96  Efficacy of alemtuzumab in treatment-naive patients with highly active relapsing-remitting multiple sclerosis: results of the DECIDE study
K Selma1, J Kappos2, DL Arnold3, E Havrdova5, A Boyko6, M Kaufman7, H Wiendll7, J Rose8, S Greenberg9, E Demirhan10, K Riester11, J Elkins12
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PO97  Efficacy of teriflunomide in patients with early stage MS: analysis of the TOPIC study using 2010 McDonald diagnostic criteria
JS Wolinsky1, P Truffinet2, D Bauer3, AE Miller4, for the Investigators of the TOPIC Study and the MRI-AC in Houston, TX
1University of Texas Health Science Center at Houston, Houston, TX, US, 2Genzyme, a Sanofi Company, Chilly-Mazarin, FR, 3Sanofi, Bridgewater, NJ, US, 4Icahn School of Medicine at Mount Sinai, New York, NY, US

PO98  Safety and tolerability of daclizumab HYP treatment in relapsing-remitting multiple sclerosis: results of the DECIDE study
K Selma1, J Kappos2, DL Arnold3, E Havrdova5, A Boyko6, M Kaufman7, H Wiendll7, J Rose8, S Greenberg9, E Demirhan10, K Riester11, J Elkins12
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PO99  Efficacy of alemtuzumab in treatment-naive patients with highly active relapsing-remitting multiple sclerosis: results of the DECIDE study
K Selma1, J Kappos2, DL Arnold3, E Havrdova5, A Boyko6, M Kaufman7, H Wiendll7, J Rose8, S Greenberg9, E Demirhan10, K Riester11, J Elkins12
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PO100  Efficacy of alemtuzumab in treatment-naive patients with highly active relapsing-remitting multiple sclerosis: results of the DECIDE study
K Selma1, J Kappos2, DL Arnold3, E Havrdova5, A Boyko6, M Kaufman7, H Wiendll7, J Rose8, S Greenberg9, E Demirhan10, K Riester11, J Elkins12
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PO101  Efficacy of alemtuzumab in treatment-naive patients with highly active relapsing-remitting multiple sclerosis: results of the DECIDE study
K Selma1, J Kappos2, DL Arnold3, E Havrdova5, A Boyko6, M Kaufman7, H Wiendll7, J Rose8, S Greenberg9, E Demirhan10, K Riester11, J Elkins12
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PO102  Efficacy of alemtuzumab in treatment-naive patients with highly active relapsing-remitting multiple sclerosis: results of the DECIDE study
K Selma1, J Kappos2, DL Arnold3, E Havrdova5, A Boyko6, M Kaufman7, H Wiendll7, J Rose8, S Greenberg9, E Demirhan10, K Riester11, J Elkins12
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P098  TRUST study design—a study to evaluate an integrated approach for optimizing patient management in multiple sclerosis patients treated with natalizumab
H-P Hartung1, T Ziemssen1, A Bayas2, B Tackenberg4, J Würfel5,6, V Limroth1, R Linker1, M Mäurer1, J Haas10, M Stangel1, D Harlin1, C Winterstein11, M Meergans12, C Wernsdörfer12, A Gass11
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P099  Physician and participant treatment guesses in the double-blind CombiRx study
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1University of Alabama at Birmingham, Birmingham, AL, US, 2Icahn School of Medicine at Mount Sinai, New York, NY, US, 3University of Texas Health Science Center at Houston, Houston, TX, US

P100  Indirect comparison of glatiramer acetate 40mg/mL T1W and 20mg/mL QD dosing regimen effects on relapse rate: results of a predictive statistical model
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P101  Effect of fingolimod on evolution of baseline enhancing MRI lesions into persistent T1 hypointense lesions: post hoc analysis of the FREEDOMS study
EW Radug1, T Sprenger2, A de Vera4, G Francis4, E Rochotte2, D Tomic1, L Kappos1, 1Medical Image Analysis Center (MIAC), University Hospital, Basel, CH, 2University Hospital, Department of Neurology, Basel, CH, 3Novartis Pharma AG, Basel, CH, 4Novartis Pharmaceuticals Corporation, East Hanover, NJ, US

P102  No evident disease activity at 24 weeks in patients with relapsing MS treated with interferon β-1a SC vs. interferon β-1a IM in the EVIDENCE study
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P103  Alemtuzumab improves MRI outcomes in relapsing-remitting multiple sclerosis patients who relapsed on prior therapy
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P104  No evident disease activity in relapsing MS patients treated with interferon β-1a SC vs. interferon β-1a IM: subgroup analyses of the EVIDENCE study
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P105  A double-blind, randomized, versus-placebo study of palmitoylethanolamide in relapsing-remitting multiple sclerosis
N Orefice1, M Calabrese2, A Carotenuto1, I Cerillo1, S Montella1, G Cerullo2, A Marsili3, R Lanzillo3, F Saccâ1, V Brescia Morra2, A Calignano1, G Oreifej1, 1Federico II University, Department of Pharmacology, Naples, IT, 2University of Verona, Neurology Unit, Department of Neurological and Movement Sciences, Verona, IT, 3Federico II University-School of Medicine, Department of Neurosciences, Reproductive and Odontostomatological Sciences, Naples, IT

P106  Integrated analysis of daclizumab HYP pharmacokinetics from three phase 1 studies
AA Othman1, JQ Tran2, MT Tang14, S Dutta1

P107  24 month PANGAEA: a 5-year non-interventional study of safety, efficacy and pharmacoeconomic data for fingolimod patients in daily clinical practice
T Ziemssen1, A Fuchs2, H-J Schwarz2, T van Lokven3, C Cornelissen2
1Karl Gustav Carus University Hospital, Center of Clinical Neuroscience, Dresden, DE, 2Novartis Pharma GmbH, Nuremberg, DE, 3Kantar Health, Munich, DE
**P108**  Efficacy of delayed-release dimethyl fumarate in multiple sclerosis patients with moderate disability: an integrated analysis of the phase 3 studies  
M Hutchinson1, A Zhang2, M Yang2, M Okwuonenye3, NC Kurukulasuriya4, RJ Fox5, R Gold4  
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**P109**  Modeling concentration-efficacy relationship for MRI lesion counts under siponimod treatment and its dependence on the effect on lymphocyte reduction  
M Savelieva1, E Wallström2  
1Novartis Pharma AG, Basel, CH

**P110**  Five-year follow-up of delayed-release dimethyl fumarate in RRMS: integrated clinical efficacy data from the DEFINE, CONFIRM, and ENDORSE studies  
R Gold3, JT Phillips2, A Bar-Or3, M Hutchinson4, L Kappos5, R Zhang6, M Yang6, NC Kurukulasuriya7, V Viglietta8, RJ Fox7  
3St. Josep Hospital, Ruhr University, Bochum, DE, 2Baylor Institute for Immunology Research, Multiple Sclerosis Program, Dallas, TX, US, 3McGill University, Montreal Neurological Institute, Montreal, QC, CA, 4St. Vincent’s University Hospital, Dublin, Ireland, 5University Hospital, Basel Neurology, Basel, CH, 6Biogen Idec Inc., Cambridge, MA, US, 7Cleveland Clinic, Mellen Center for Multiple Sclerosis Treatment and Research, Cleveland, OH, US

**P111**  Innate immune modulator MIS416 enhances systemic levels of negative regulators of inflammation in phase 2a clinical trial plasma samples  
G Webster1, V Pearson1, R Girvan1  
1Innate Immunotherapeutics Ltd, Auckland, NZ

**P112**  Impact of fingolimod on achieving no evidence of disease activity in pre-treated patients with high disease activity in FREEDOMS and FREEDOMS II  
N Bergvall1, D Tomić1, N Sfikas2, L Kappos2  
1Novartis Pharma AG, Basel, CH, 2University Hospital, Basel, CH

**P113**  Natalizumab decreases progression of disability in RRMS patients as measured by the composite EDSS-Plus in AFFIRM  
Q Dong1, RA Rudick1, D Paes1, D Mikol1, S Belachew1  
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**P114**  Independent component analysis of cognitive performance in primary-progressive multiple sclerosis  
M Petracca1, H Bender1, C Farrell1, R Teodorescu2, J Howard2, C Riley4, V Stein4, F Arias4, M Fabian4, F Lublin5, M Inglese3,5,6  
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**P115**  Thalamic functional connectivity and cognitive impairment: comparison between relapsing remitting and secondary progressive multiple sclerosis  
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**P116**  Emotional modifications in multiple sclerosis: a neuropsychological and fMRI study  
L Pfaff1, D Gounot1, J-B Chanson2, J-P Armspach1, J De Seze1, F Blanc1  
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**P117**  Brain intrinsic resting-state functional connectivity modulation induced by mental effort in multiple sclerosis patients with fatigue  
C Zecca1, E Pravatą12,3, MA Rocca1, G Riccitelli12, A Cianfoni2, M Filippi3, C Gobbi1  
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**P118**  Brief computerized cognitive testing in pediatric-onset multiple sclerosis (MS)  
LE Charvet1,2, MW Porter1,2, B Harel1,2, N Amadiume1,2, AL Belman1,2, LB Krupp1,2  
1The Hospital for Sick Children, Division of Neurology, Toronto, ON, CA, 2University of Manitoba, Departments of Internal Medicine and Community Health Sciences, Winnipeg, MB, CA, 3York University, Department of Psychology, Toronto, ON, CA, 4University of Toronto, Department of Psychiatry, Toronto, ON, CA, 5The Children’s Hospital of Philadelphia, Division of Neurology, Philadelphia, PA, US

**P119**  A new computerized tool detects subtle differences in information processing speed in children with MS  
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**P120**  How does neurological reserve compare between MS patients and healthy controls?  
CE Schwartz12, A Ayandeh1, B Weinstein-Guttman1, RH Benedict1, R Zivadinov1, M Ramakrishnan2  
1DeltaQuest Foundation, Concord, MA, US, 2Tufts University Medical School, Medicine and Orthopaedic Surgery, Boston, MA, US, 3Oso and Akershus University College of Applied Sciences, Nursing, Oslo, NO, 4University of Buffalo, Department of Neurology, Buffalo, MA, US, 5University of Buffalo, Pharmaceutical Sciences, Buffalo, NY, US
P121  Cortical lesions and cognitive impairment in multiple sclerosis: cortex or juxta-cortex?  
C Louapre1,2, ST Govindarajan1, C Giannì1,2, N Madigan3, AS Nielsen4, J Cohen-Adad5, RP Kinkel1, C Mainiero1,2  
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3Beth IL Deaconess Medical Center, Boston, MA, US, 4Virginia Mason Medical Center, Seattle, WA, US,  
5Ecole Polytechnique de Montréal, Montreal, QC, CA

P122  A longitudinal evaluation of cognitive fatigue in MS using the PASAT  
JA Berard1, L Rees2, MS Freedman3, LAS Walker2  
1Ottawa Hospital Research Institute, Psychology, Ottawa, ON, CA, 2The Ottawa Hospital, Psychology, Ottawa, ON, CA, 3The Ottawa Hospital, Medicine, Ottawa, ON, CA

P123  Application of the Brief International Cognitive Assessment for Multiple Sclerosis (BICAMS) to pediatric-onset MS  
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P124  Rasch analysis of performance based cognitive measures in two distinct medical diseases, MS and HIV  
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1McGill University, MS Clinic, Montreal, QC, CA, 2Montreal Neurological Institute, MS Clinic, Montreal, QC, CA, 3McGill University Health Centre Research Institute, Montreal, QC, CA, 4McGill University, Neurology and Neurosurgery, Montreal, QC, CA

P125  The Brief International Cognitive Assessment for Multiple Sclerosis (BICAMS): an Irish validation study  
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1St Vincents University Hospital, Dublin, Ireland, 2Royal Holloway, University of London, Department of Clinical Psychology, Surrey, GB

P126  Spatial memory test (SMT): a self-administered iPad®-based tool for assessing nonverbal episodic memory dysfunction in MS  
S Rao1, R Rudick1, J Alberts1, D Schindler1, M Buss1, C Reece1, L Mourany1, G Losinski1, B Mamone1  
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P127  A comparison of the Brief International Cognitive Assessment for Multiple Sclerosis and the brief repeatable battery in multiple sclerosis patients  
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P128  Demonstration of altered neural substrates of information processing speed in pediatric-onset MS using an fMRI version of the SDMT  
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P129  Longitudinal MRI and neuropsychological assessment of patients with clinically isolated syndrome  
T Uher1,2, J Blahova-Dusankova1, DH Horakova1, N Bergslöö2, M Tybrova1, RHB Benedict2, T Kalincik4,5, DP Ramasamy2, Z Seidl3, J Hagemeier2, M Vanecikova5, J Krasnensky6, E Havrdova6, R Zivadinov2,7  
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P130  Perservation of GM volume is related to increased learning effect on PASAT in patients with CIS
T Uher1,2, RH Benedict3, D Horakova1, N Bergsland2, J Blahova-Dusankova1, M Tyblov1, DP Ramasamy2, Z Seidl1, M Vaneckova1, J Kraskensky1, E Havrdova1, R Zivadinov2,3
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P131  Effectively assessing executive function impairment in MS: comparisons of the Delis-Kaplan executive function system and Wisconsin card sorting tests
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P132  Brief International Cognitive Assessment for MS (BICAMS): preliminary findings from the Canadian validation study
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P133  Physical disability and cognitive impairment evolution in benign multiple sclerosis: a five years prospective study
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P134  SDMT performance predicts real-world functioning in adults with multiple sclerosis (MS)
LE Charvet1,2, M Kasschaau1, W Scherl1,2, M Amella1,2, P Melville1, L Krupp1,2
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P135  Predictive validity of the BRB-N in the assessment of cognitive impairment in RRMS according to EDSS disability degree
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P136  Cognitive disturbances and psychoaffective deficits in children and juveniles with multiple sclerosis: the MUSICADO – multicentric validation study
P Calabrese1, K Storm van’s Gravesande2, E Kalbe3, J Kessler4, U Füld4, Y Mali2
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P137  Does the presence of brain lesions predict cognitive functioning after acute demyelination in children?
AE Sve1, LH Verhey1, JK Mah2, BL Brooks3, B Calabrese4, EA Yeh1, B Banwell3,4, C Till4
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P138  Attention network efficiency and performance variability is associated with white matter microstructure in persons with multiple sclerosis
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1Dalhousie University, Psychology and Neuroscience, Halifax, NS, CA, 2University of Calgary, Department of Radiology, Calgary, AB, CA, 3Dalhousie University, Psychology and Neuroscience, Psychiatry, Halifax, NS, CA

P139  The role of the cerebellum in cognitive test performance in children and adolescents with multiple sclerosis
K Weier1, C Till2, V Fonov1, EA Yeh1,4, DL Arnold1, B Banwell1, DL Collins1
1McGill University, Montreal Neurological Institute, Montreal, QC, CA, 2York University, Department of Psychology, Toronto, ON, CA, 3The Hospital for Sick Children, Neurosciences and Mental Health Program, Toronto, ON, CA, 4University of Toronto, Department of Pediatrics (Neurology), Toronto, ON, CA, 5University of Pennsylvania, Children’s Hospital of Philadelphia, Philadelphia, PA, US

P140  Subjective and objective measures of cognition in MS: a preliminary analysis of correlations and test-retest reliability
L Osman1, JA Berard2, LM Rees1,2, D Cousineau1, MS Freedman1,2, H MacLean1,2, LAS Walker1
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P141  Self-reported cognitive fatigue is a function of time on task in multiple sclerosis
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1Kessler Foundation, West Orange, NJ, US, 2Rutgers New Jersey Medical School, Physical Medicine and Rehabilitation, Newark, NJ, US, 3Rutgers New Jersey Medical School, Neurology and Neurosciences, Newark, NJ, US, 4War Related Illness and Injury Study Center, Department of Veterans Affairs, East Orange, NJ, US

P142  Response inhibition on a Go/No-go task in pediatric-onset multiple sclerosis patients: an fMRI study
M Lysenko1, N Akbar2, EA Yeh3, B Banwell2,4, C Till1,3
1York University, Toronto, ON, CA, 2University of Toronto, Toronto, ON, CA, 3The Hospital for Sick Children, Toronto, ON, CA, 4Children's Hospital of Philadelphia, Philadelphia, PA, US

P143  Age of onset and cognitive reserve as moderators of cognitive decline in pediatric-onset multiple sclerosis patients
C Till2, B Bosseini1, D Flora1, BL Banwell3
1York University, Psychology, Toronto, ON, CA, 2The Hospital for Sick Children, Neurosciences and Mental Health, Research Institute, Toronto, ON, CA, 3Children's Hospital of Philadelphia, Dept. of Neurology, Philadelphia, PA, US

P144  Transfer of information across the corpus callosum is slowed in patients with multiple sclerosis compared to healthy controls
J Bacon1, T Bacon2, J Kister2, J Herbert2
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P145  Correlates of cognitive performances with fractional anisotropy decrease in clinically isolated syndromes
D Hamel1, M Deloire2, A Saubusse2, B Brochet1
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P146  CTIP performance in early relapsing-remitting MS: group differences and potential confounds
LAS Walker1,2, JA Berard2, LI Berrigan1, LM Rees1,2, MS Freedman3,4
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P147  Does cognitive impairment, fatigue, depression or physical disability influence computer assisted tests for driving performance in MS patients?
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P148  Inhibitory control in early multiple sclerosis
L Crivelli1, LF Marez2, RF Allegri1, MP Fiol1, MC Ysraelit1, J Correale1
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P149  Accuracy of clinical screening for cognitive impairment in multiple sclerosis: an empirical study
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P150  Cognitive impairment as measured by Audio Recorded Cognitive Screen in an MS clinic population with up to 6 years follow up
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1Hunter Medical Research Institute, University of Newcastle, Newcastle, AU, 2University of Newcastle, Newcastle, AU, 3John Hunter Hospital, Neurology, Newcastle, AU

P151  Self-reported episodic memory and future thinking and their relation to cerebral structure in early multiple sclerosis patients
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P152  Including ecological assessment in cognitive screening: a new approach to detect cognitive impairment in MS patients
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P153  Incipient cognitive dysfunction revealed by dual-task posturography in patients with multiple sclerosis
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P154  Incidental recall performance on a processing speed test is associated with verbal memory abilities in multiple sclerosis
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P155 Changes in subjective cognitive difficulties, mental health and information processing speed at one year follow up in MS patients
M Hebert1, Li Berrigan1, RA Marrie1, V Bhan1, S Patten1, K McKay1, JD Fisk1, CihR Team in the Epidemiology and Impact of Comorbidity on Multiple Sclerosis 1Dalhousie University, Halifax, NS, CA, 2University of Manitoba, Winnipeg, MB, CA, 3University of Calgary, Calgary, AB, CA, 4University of British Columbia, Vancouver, BC, CA, 5Capital District Health Authority, Halifax, NS, CA

P156 Cognitive impairment, oxidative stress and neurodegeneration in multiple sclerosis
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P157 The efficacy of Wechsler Memory Scale-fourth edition (WMS-IV) in memory evaluation in multiple sclerosis patients
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P158 Cognitive impairment and corpus callosum atrophy in multiple sclerosis
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P159 Do disease modifying treatments affect cognitive performance in early multiple sclerosis?
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P160 Prevalence of cognitive impairment in newly diagnosed MS patients
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P161 Executive functions evaluation in MS Patients without cognitive impairment: a task switching experimental paradigm
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P162 Cognitive impairment in patients with neuromyelitis optica spectrum disorder: a preliminary report
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P163 Utilization of the Brief International Cognitive Assessment for Multiple Sclerosis during treatment of relapses in patients with multiple sclerosis
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P164 Are both storage and executive control components of working memory equally affected in pediatric-onset multiple sclerosis patients?
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P165 Sustained attention, reaction time and traffic perception tests characterize different aspects of cognition and fatigue in MS patients
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P166 Regression-based norms for the Symbol Digit Modalities Test: demographic effects on identification of impairment in Dutch multiple sclerosis patients
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P167 Relative corpus callosum volume is related to decreased information processing speed in relapse-remitting multiple sclerosis patients
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P168  Are there differences on the measures of the minimal assessment of cognitive function in MS by race/ethnicity?
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P169  MS-Cortex study: the contribution of cortical lesions to cognitive impairment in patients with multiple sclerosis
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P170  Cognitive performance at early stages of MS in a Portuguese sample: influence of depressive symptoms, cognitive fatigue and disease characteristics
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P171  Reaction time distributions in early-phase relapsing-remitting multiple sclerosis differ from controls
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P172  Predictivity of executive functions deficit on episodic memory disorder in multiple sclerosis
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P173  The relationship between SDMT and everyday life performance: actual reality
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P174  Does smoking influence MRI disease activity in multiple sclerosis?
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P175  Smoking and HLA genes impact on disease activity and severity before and during treatment with interferon-beta
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P176  Obesity interacts with infectious mononucleosis in risk of multiple sclerosis
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P177  Central nervous system demyelinating disease in patients with inflammatory bowel disease
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P178  Prescription drug use among patients with multiple sclerosis
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P179 Comorbidities in patients with multiple sclerosis compared with the general population: retrospective analysis of the US MarketScan Database
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P180 Low prevalence of sleep disorders in demyelinating disease
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P181 Higher weight in adolescence and young adulthood is associated with an earlier age at MS onset
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P182 Alcohol-use disorders and multiple sclerosis risk: a national record-linkage study
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P183 The metabolic syndrome in disabled multiple sclerosis patients: prevalence and characteristics
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P184 Burden of comorbidities in patients with incident multiple sclerosis prior to and following diagnosis: a nationwide population study
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P185 Smoking, systemic inflammation and T-cell reactivity in patients with multiple sclerosis and healthy controls
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P186 Tobacco influence in the clinical progression of multiple sclerosis
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P187 Prevalence and predictors of substance abuse in multiple sclerosis
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P188 Elevated adiponectin levels induce pro-inflammatory responses in both myeloid cells and T-cells: linking adiposity and predisposition to pediatric MS
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P189 Investigating healthy lifestyle behaviors in multiple sclerosis: the role of neurological reserve and implicit processes of understanding
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P188 Elevated adiponectin levels induce pro-inflammatory responses in both myeloid cells and T-cells: linking adiposity and predisposition to pediatric MS
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P189 Investigating healthy lifestyle behaviors in multiple sclerosis: the role of neurological reserve and implicit processes of understanding
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Concomitant diseases and MRI outcomes in multiple sclerosis
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Multiple sclerosis in patients with common variable immunodeficiency disease: co-incidence or consequence?
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Body mass index in patients with multiple sclerosis: does disability matter?
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The burden of comorbid psychiatric disorders in worsening the quality of life in multiple sclerosis patients
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Subclinical coronary artery disease in multiple sclerosis patients
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Genetic risk factors are associated with cerebrospinal fluid measures in multiple sclerosis
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CSF isoelectric focusing differentiates multiple sclerosis from other CNS autoimmune disorders
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Importance of CSF analysis in the era of McDonald 2010 criteria: a retrospective multicenter study in patients with a clinically isolated syndrome
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P198 Comprehensive Immunophenotyping of CSF cells in relapsing-remitting multiple sclerosis patients with daclizumab therapy
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P199 Intrathecal B-cell response in multiple sclerosis brain recognizes auto-antigens
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P200 Increased intrathecal inflammation in progressive multiple sclerosis
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P201 Diagnostic and prognostic significance of intrathecal synthesis of immunoglobulin free light chains in MS
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P202 Intrathecal IgG from patients with multiple sclerosis target patient-specific phage peptides
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P203 Lipid-specific IgM oligoclonal bands in clinically isolated syndrome: 5-years follow-up
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P204 Subclinical intrathecal inflammation is risk for disease reactivation in early multiple sclerosis
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P205 What does an isolated cerebrospinal fluid monoclonal band mean: a tertiary centre experience
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P206 Lipid-specific oligoclonal IgM bands: is there any influence on the response to treatment with fingolimod?
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P207 mir-142-3p expression in multiple sclerosis cerebrospinal fluid is related to better cognitive performance
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P208 Cytokines profile in the cerebrospinal fluid in chronic relapsing inflammatory demyelinating diseases of the central nervous system
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P209 Post-dural puncture headache is markedly reduced when 25 Sprotte needles are used
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P210  Oligoclonal bands predict multiple sclerosis in children with isolated optic neuritis: a retrospective multicenter cohort study
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P211  Intrathecal IgM index correlates with severe disease course in multiple sclerosis: clinical and MRI results
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JL Frederiksen1, M Bülow2, 1Glostrup Hospital, University of Copenhagen, Neurology, Glostrup, DE

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T Curley1, T Pointon1, H Collins1, K Dennison1, G lm1, M Graner2, D Wagner3, X Xu4, 1University of Colorado School of Medicine, Neurology, Aurora, CO, US, 2University of Colorado School of Medicine, Neurosurgery, Aurora, CO, US, 3University of Colorado School of Medicine, Webb-Waring Center, Aurora, CO, US

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1Yonsei University College of Medicine, Neurology, Seoul, KR, 2Kangbuk Samsung Hospital, Neurology, Seoul, KR, 3Catholic University of Korea, Neurology, Seoul, KR

P223  Methionyl-tRNA formyltransferase (MTFMT) deficiency mimicking neuromyelitis optica
JA Pena1,3, F Scaglia1, TE Lotze2
1Baylor College of Medicine, Pediatric Neurology, Houston, TX, US, 2Baylor College of Medicine, Department of Molecular and Human Genetics, Houston, TX, US

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P225  Brain lesion location at onset helps differentiate neuromyelitis optica and multiple sclerosis
NH Kim1, DE Kim1, SH Woo1, KH Lee2, HJ Kim3
1Dongguk University Ilsan Hospital, Neurology, Goyang-si, KR, 2Sungkyunkwan University Samsung Seoul Hospital, Neurology, Seoul, KR, 3National Cancer Center, Neurology, Goyang-si, KR

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A Vandendiessche1, H Zéphir2, O Outerrick2, D Fetter3, N Derache4, G Defer4, P Vermersch4, J De Sèze5, B Bourre6
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S Menon1,2, SA Morrow1,2, M Kremenchutzky1,2
1Western University, Clinical Neurological Sciences, London, ON, CA, 2London Health Sciences Centre, London, ON, CA, 3Lawson Health Research Institute, London, ON, CA

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1Tohoku University, Multiple Sclerosis Therapeutics, Sendai, JP, 2Tohoku University School of Medicine, Medicine, Neurology, Sendai, JP, 3Federal University of Minas Gerais, Belo Horizonte, BR, 4University of São Paulo, São Paulo, BR, 5Tohoku University School of Medicine, Sendai, JP, 6Tohoku University School of Medicine, Multiple Sclerosis Therapeutics, Sendai, JP, 7Federal University of Minas Gerais, Neurology, Belo Horizonte, BR

P230  Artificial intelligence techniques in the diagnosis of clinically definite multiple sclerosis
G Dalla Costa1, L Moio1, L Leocani2, R Furlan3, M Filippi4, G Comi4, V Martinelli5
1San Raffaele Hospital, Neurological Department, Milan, IT, 2San Raffaele Hospital, Neurophysiology Unit, Milan, IT, 3San Raffaele Hospital, Neuroimmunology Research Unit, Milan, IT, 4San Raffaele Hospital, Neuroimaging Research Unit, Milan, IT

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1University of Oxford, Nuffield Department of Clinical Neurosciences, Oxford, GB, 2Oxford University Hospitals NHS Trust, Department of Neurology, Oxford, GB, 3Medical University of Graz, Department of Neurology, Graz, AT, 4Medical University of Graz, Department of Radiology, Graz, AT, 5Hospital Vall d’Hebron, Department of Radiology, Barcelona, ES, 6UCL Institute of Neurology, London, GB, 7University of Siena, Department of Neurological and Behavioural Sciences, Siena, IT, 8Vita-Salute San Raffaele University, Neuroimaging Research Unit and Dept of Neurology, Milan, IT, 9University of Copenhagen, Glostrup Hospital, Copenhagen, DE, 10St Josef Hospital Ruhr-University, Department of Radiology, Bochum, DE

P232  Diagnosing multiple sclerosis with a gait measuring system, an analysis of the motor fatigue, and machine learning
S Piérard1, S Azroul1, R Phan-Ba2, V Delvaux1, P Maquet1, M Van Droogenbroeck1
1University of Liège, INTESLIG, Liège, BE, 2University of Liège, Liège, BE, 3University Hospital of Liège, Neurology, Liège, BE

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Y Chen1,2, MA Wu3, QZ Lu1, L Zhang4, QY Shu5, W Qiu4, QX Hu2
1The First Affiliated Hospital of Wenzhou Medical University, Neurological Department, Wenzhou, CN, 2The Third Affiliated Hospital of Wenzhou Medical University, Neurological Department, Wenzhou, CN, 3The Third Affiliated Hospital of Sun Yat-sen University, Neurological Department, Guangzhou, CN, 4The Fifth Affiliated Hospital of Sun Yat-sen University, Zuhai, CN, 5The Third Affiliated Hospital of Sun Yat-sen University, Guangzhou, CN

P235  Patients with multiple sclerosis criteria subsequently displayed Behçet disease signs
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1Mustapha Bacha University Hospital, Neurology, Algiers, DZ, 2Institut Pasteur of DZ, Immunology, Algiers, DZ

P236  Non MS tumefactive inflammatory lesions: diagnosis and long term evolution of 10 patients in a multicentric study
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FJ Carod Artal1, H Mourao Mesquita2
1Raigmore Hospital, Neurology, Inverness, GB, 2Matsumoto Medical Center, Neurology, Brasilia, BR

P239  Microscopic polyangiitis presenting with long extended transverse myelitis (LETMS)
HO Köse1, V Akdemir, Y Celik2
1Kafkas University Medical Faculty, Neurology, Kars, TR, 2Trakya University, Edirne, TR

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1Outpatient Neurology Clinic MS Care Center Clinical Trials Site Hanka Hertmanowska, Plewiska, PL

P241  Clinical course, radiologic features and treatment response in patients with tumefactive demyelinating lesions in Toronto
KM Krysko1, L Lee1,2, P O’Connor1,3
1University of Toronto, Division of Neurology, Toronto, ON, CA, 2Sunnybrook Health Sciences Centre, Division of Neurology, Toronto, ON, CA, 3St. Michael’s Hospital, Division of Neurology, Toronto, ON, CA

P242  Glial and neuronal markers in CSF predict progression in multiple sclerosis
MA Mañé Martínez1,2, B Olsson1, L Bau2, E Matas2, A Cobo Calvo3, U Andreasson1, K Blennow2, L Romero-Pinero1, S Martínez-Yézamo1, H Zetterberg3
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P243  Dicer and miRNA are differentially expressed and regulated in RMMS and SPMS
B Weinstock-Guttmann1, WJ Magner2, M Ramanathan3, D Hojnacki4, R Ghazi5, K Patrick6, A Khan6, TB Tomasi7
1SUNY University at Buffalo, Buffalo, NY, US, 2Roswell Park Institute, Buffalo, NY, US, 3SUNY University at Buffalo, Pharmaceutical Sciences, Buffalo, NY, US, 4SUNY University at Buffalo, Neurology, Buffalo, NY, US

P244  Interferon inducible transcriptional profile in secondary progressive multiple sclerosis patients
M Gurevich1, G Miron1, E Hanaei1, P Sonis1, M Dolev2, D Magalashvili2, A Achiron1
1Sheba Medical Center, Multiple Sclerosis Center, Ramat Gan, IL

P245  Serum neurofilament light chain levels are increased in patients with a clinically isolated syndrome
G Disanto1, R Adiutori1, R Dobson1, V Martinelli2, G Dalla Costa1, T Runia4, E Esvdoshenko4, E Thouvenot4, M Troiano6, N Norgren1, J Lorscheider3, C Teunissen6, L Kappos4, G Giovannoni1, J Kühle1, on behalf of the ‘International Clinically Isolated Syndrome Consortium (CIS)
1Queen Mary University, London, GB, 2Vita-Salute San Raffaele University, Milan, IT, 3Erasmus MC University Medical Center, Rotterdam, NL, 4City Clinical Hospital # 31, St Petersburg, RU, 5Université Montpellier 1, Montpellier, FR, 6University of Bari, Bari, IT, 7Uman Diagnostics, Umea, SE, 8University Hospital, Basel, CH, 9VU University Medical Centre, Amsterdam, NL

P246  Gray matter related proteins in cerebrospinal fluid differentiate between multiple sclerosis and other acquired demyelinating syndromes in childhood
V Singh1, D van Pelt1, M Stoop1, C Stingl4, I Ketelslegers1, R Neuteboom1, T Luider1, R Hintzen1
1Erasmus MC, Rotterdam, NL

P247  Global metabolomics identifies a metabolic profile of multiple sclerosis
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P248  CSF biomarkers of inflammation and neuronal damage in acute optic neuritis predict later development of MS and long-term disability
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P249  Cerebrospinal fluid osteopontin and neurofilament levels mark different brain atrophy patterns in clinically isolated syndrome
V Direnzo1, C Tortorella1, S Zoccolella1, M Ruggieri1, M Mastrapasqua1, D Paolicelli1, F Dicuonzo1, M Troiano1
1University of Bari, Bari, IT

P250  The proteome profile of the urine is different in patients with neuromyelitis optica compared to multiple sclerosis and healthy subjects
HH Nielsen1, LP Kristensen2, HC Beck2, J Reddy3, Z Illes1
1Odense University Hospital, Department of Neurology, Odense C, DE, 2Odense University Hospital, Center for Clinical Proteomics, Odense C, DE, 3University of Nebraska-Lincoln, School of Veterinary Medicine and Biomedical Sciences, Lincoln, NE, US
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<td>JW Lindsey, EY Lu, JT Chang. University of Texas Health Science Center at Houston, Neurology, Houston, TX, US; University of Texas Health Science Center at Houston, Biomedical Informatics, Houston, TX, US; University of Texas Health Science Center at Houston, Integrative Biology and Pharmacology, Houston, TX, US</td>
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MA Pawlak1, E Jodlawska1, B Gierczyk2, L Popenda1,4, S Jurga2,5, R Kazmierski1
1Poznan University of Medical Sciences, Department of Neurology and Cerebrovascular Disorders, Poznan, PL, 2Adam Mickiewicz University, Faculty of Chemistry, Supramolecular Chemistry, Poznan, PL, 3Adam Mickiewicz University, NanoBioMedical Centre, Poznan, PL, 4Polish Academy of Sciences, Institute of Bioorganic Chemistry, Poznan, PL, 5Adam Mickiewicz University, Department of Macromolecular Physics, Poznan, PL

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KA Sanders1,2, RA Lea3, SE Agland4, RJ Scott5,6, J Lechner-Scott2,3, L Tajouri1
1Bond University, Faculty of Health Sciences and Medicine, Gold Coast, AU, 2Hunter Medical Research Institute, Centre for Information-Based Medicine, Newcastle, AU, 3John Hunter Hospital, Department of Neurology, Division of Medicine, Newcastle, AU, 4Hunter Area Pathology Service, Division of Molecular Genetics, Newcastle, AU

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S Agostini1, R Mancuso1, A Hernis1, M Rovaris1, D Caputo1, M Clerici2
1Don C. Gnocchi Foundation, Lab Molecular Medicine, Milano, IT

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1University Federico II, Department of Neurosciences, Napoli, IT, 2Imperial College, Department of Primary Care and Public Health, London, GB, 3University Federico II, Department of Public Health, Napoli, IT

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R Nurtadinov1, C Tur1, S Malhotra1, J Sastre-Garriga1, X Montalban1, M Comabella1
1Vall Hebron University Hospital, Multiple Sclerosis Centre of Catalonia, Neuroimmunology Department, Barcelona, ES

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G Arrambide1, C Espejo2, LM Villar2, JC Álvarez-Cermeño2, C Picón3, H Eixarch3, E Simón1, M Comabella1, J Sastre-Garriga1, J Rio4, Á Vidal-Jordana5, J Castilló6, I Galán1, P Palavra1, C Nosi7, L Negrotto1, C Auger8, Á Rovira9, X Montalban1, M Tintoré9
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1Tisch MS Research Center of New York, New York, NY, US

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1G. d’Annunzio, Chieti, IT
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1Military Medical Academy, Belgrade, RS

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1Hospital Virgen Macarena, Seville, ES

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1School of Health Sciences, University of Minho, Braga, PT, 2Life and Health Sciences Research Institute, University of Minho, Braga, PT, 3ICVS/3B’s Associated Laboratory, Braga, PT

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1Centro Studi Sclerosi Multipla and H. San Raffaele, Gallarate-Milan, IT, 2Centro Studi Sclerosi Multipla, Vall Hebron University Hospital, Barcelona, ES

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A Kavaliunas1, L Stawiarz1, A Glaser1, J Hillert1  
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C Perrone1, I Berriosmorales1, B Beretich2, P Riskind1, C Ionete1  
1University of Massachusetts Medical School, Worcester, MA, US, 2Maine Medical Center, Portland, ME, US
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N Koch-Henriksen1,2, G Suarez3, A Reder4, M Magyari2
1University of Aarhus, Dept. of Clinical Epidemiology, Aarhus, DE, 2The Danish MS Research Centre, The Danish Multiple Sclerosis Registry, Copenhagen, DE, 3Bayer HealthCare Pharmaceuticals, New Jersey, NJ, US, 4University of Chicago Medical Center, Dept. of Neurology, Chicago, IL, US

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M Guer1, C Enzinger2, F Leutmezer3, J Kraus4, T Berger5
1General Hospital Linz, Department of Neurology and Psychiatry, Linz, AT, 2Medical University of Graz, Department of Neurology, Graz, AT, 3Medical University of Vienna, Department of Neurology, Vienna, AT, 4Paracelsus Medical University of Salzburg, Department of Neurology, Salzburg, AT, 5Innsbruck Medical University, Clinical Department of Neurology, Innsbruck, AT

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M Kurtuncu1, S Yildiz Celik1, A Coban1, E Shugaiv1, M Pehlivan1, G Akman-Demir2, M Eraksoy3
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C Tornatore1, JT Phillips2, O Khan3, A Miller4, A Ally5
1Georgetown University, Washington, DC, US, 2Baylor Research Institute, Dallas, TX, US, 3Wayne State University, Detroit, MI, US, 4Mount Sinai School of Medicine, New York, NY, US, 5CVS Caremark Inc., Woonsocket, RI, US

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AC Neal1, LO Tuttle1, JA Ruiz2, BM Anderson1, PB Wade2
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AE Sye1, CE Schwartz2,3,4, E Quon1, EA Yeh1,5
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S Cohn1, R Bermejo2, C Hara2, C Hersh2, RJ Fox2, J Cohen2, D Ontaneda2
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C Sammarco1, L Laing1, J Herbert1
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S Ozakbas1, B Piri Cinar2, D Oz3, T Kahraman4, G Kosehasanogullari1, B Bircan Kursun3
1Dokuz Eylul University, Dept. of Neurology, Izmir, TR, 2Giresun State Hospital, Giresun, TR, 3Dokuz Eylul University, Izmir, TR, 4Usak State Hospital, Usak, TR

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1Karolinska Institutet, Department of Medicine, Stockholm, SE, 2Karolinska Institutet, Department of Clinical Neuroscience, Stockholm, SE

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F Gascón1, A Navarre1, C Alcalá1, L Lacruz2, F Pérez-Miralle3, I Boscá4, B Casanova4, F Coret1
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1Hôpital de Hautepierre, Strasbourg, FR, 2AlSacEP, Colmar, FR

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T Chitnis1, G Karlsson1, DA Häring2, A Ghezzi1, D Pohl1, N Putzki2
1Partners Pediatric Multiple Sclerosis Centre, Massachusetts General Hospital, Boston, MA, US, 2Novartis Pharma AG, Basel, CH, 3Centro Studi Sclerosi Multipla, Gallarate, IT, 4Children’s Hospital of Eastern Ontario, Ottawa, ON, CA

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1Erciyes University, Neurology, Kayseri, TR, 2Erciyes University, Radiology, Kayseri, TR

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AR Chinea1, YG Hernandez1, ER Estades1
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SM Hayes1, S Mohammad2, P Ng3
1AXDEV Group, Brossard, QC, CA, 2Colchester University Hospital, Colchester, GB

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Y Barak4,5, D Magalashvili6, T Paz7, A Achiron4,5
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P323 Efficacy and safety of Fingolimod in clinical practice
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P324 Efficacy of second-line treatments in multiple sclerosis patients: a multicenter experience in clinical practice
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P325 Multiple sclerosis treatment practices in women of child-bearing age in CH: results of the women with MS online survey
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P326 Spanish Registry of patients with multiple sclerosis treated with fingolimod (GILENYA Registry): safety and effectiveness after one year on treatment
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P327 Neurocognitive changes in patients with relapsing-remitting multiple sclerosis treated with natalizumab
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P328 A monocentric, prospective, observational study to assess the satisfaction of patients treated with monthly natalizumab
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P329 Effectiveness of natalizumab in extended dosing interval
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P330 In utero 25-hydroxyvitamin D and risk of multiple sclerosis among offspring in the Finnish Maternity Cohort
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P331  Timing of cod liver oil use as a vitamin D source and multiple sclerosis risk in NO: the EnvIMS study
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P332  Potential impact of air pollutants on multiple sclerosis incidence in Tehran, Iran: role of vitamin D
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P333  Temporal effects on the presentation and evolution of multiple sclerosis
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P334  The association of multiple sclerosis prevalence and the soil heavy metal in Isfahan, Iran: one step closer to understanding etiology
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P335  Exploring early life sun exposure and MS risk using alternative life course epidemiology hypotheses: the EnvIMS study
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P336  Neonatal vitamin D status and risk of multiple sclerosis
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P337  Multiple sclerosis in Møre and Romsdal, Western NO 1960-2013. Time trends of incidence and prevalence through more than five decades
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P339  35 years of mortality due to multiple sclerosis in CA, 1975-2009: no decrease in mortality rates despite shift to older age at death
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**P340** Seasonal variation of relapse rate in MS is latitude-dependent
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**P345** Prevalence and incidence of multiple sclerosis estimated in European Register for Multiple Sclerosis (EUREMS): study protocol of the Epi-1d study
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**P341** Risk of multiple sclerosis related to month of birth changes over time
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**P342** The changing face of MS: does ARR vary by epoch?
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**P343** The incidence of multiple sclerosis in NZ, 2013: a population-based study
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**P344** Genes and environment in multiple sclerosis (GEMS) study: enabling the prospective study of individuals at risk of multiple sclerosis
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**P346** Vitamin D in multiple sclerosis; clinical and immunological implications
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**P347** Impact of wGRS on familial aggregation and clinical phenotypes in Italian multiple sclerosis patients
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A prospective case-control study of dietary salt intake and risk of pediatric MS

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Increasing prevalence and stable incidence of The spectrum of idiopathic inflammatory

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The spectrum of idiopathic inflammatory demyelinating diseases in South America: a multicenter study

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Sodium intake in multiple sclerosis patients

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Body mass index and baseline vitamin D status modify the response to vitamin D supplementation in multiple sclerosis patients and healthy controls

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Epidemiology of multiple sclerosis in the Republic of Moldova: an incidence and prevalence study in the northern and central regions

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Increasing incidence of multiple sclerosis among women in Buenos Aires: a 21-year health maintenance organization based study

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eQTL discovery in MS patients elucidates functional mechanisms associated with disease susceptibility and treatment

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The use of valproic acid and multiple sclerosis

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P357 Vitamin D levels and antibody titers against Epstein-Barr virus and human herpesvirus 6 in multiple sclerosis patients: a one-year follow-up study
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P358 Early-onset multiple sclerosis in Isfahan, Iran: a report of the demographic and clinical features of 221 patients
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P359 Using patient-derived multiple sclerosis severity score to demonstrate differences in MS severity across racial groups in an urban MS center
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P360 Disease progression in multiple sclerosis after age 65
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P361 Age at disease onset in familial and sporadic multiple sclerosis in AR
J Rojas1, L Patrucco1, J Miguez1, F Cáceres2, N Fernandez Liguori3, ML Saladino4, M Parada Marcilla4, MI Arrá1, J Correale4, M Floi5, MC Ysrraelit6, A Carrá1, MC Curbelo1, A Martinez1, J Steinbeg1, JP Hryb1, JL Di Pace1, MB Perassolo1, E Carnero1, A Caride1, PA Lopez1, C Martinez1, E Cristiano1
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P362 Vitamin D, latitude and sunshine hours in Scotland
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P363 Prevalence, demographics and clinical characteristics of multiple sclerosis in the city of Tlemcen, DZ
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P364 Large scale epidemiological survey of disability progression in JPese multiple sclerosis patients
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P365 Highly active multiple sclerosis and Epstein-Barr virus reactivation
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P366 Residential distance from main roads, air pollution, and multiple sclerosis disability in Southern California
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P367 Comparison of factors impacting vitamin D status in childhood and adult-onset demyelinating disease
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P368 Vitamin D level and its clinical correlation in Thai patients with central nervous system demyelinating diseases
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**P369** Clinical characteristics and outcome measures associated with disease progression in a prospective cohort of early diagnosed MS patients  
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**P370** Vitamin D is associated with degree of disability in patients with fully ambulatory relapsing-remitting multiple sclerosis  
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**P371** Vitamin D and multiple sclerosis: a comparison of serum 25-hydroxyvitamin D with demographic findings and paraclinical outcomes  
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**P372** Is relapsing-remitting MS a benign disease?  
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**P373** Specific clinical phenotypes of relapsing multiple sclerosis based on disease activity  
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**P374** The CNS barriers differentially regulate the migration of B-cells  
L Michel1, Ji Alvarez2, H Kebir1, L Bourbonnière1, J Poirier2, P Duquette2, A Bar-Or3, J Gommerman4, A Prat2  
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**P375** B7-H1 limits T-cell-mediated brain endothelial cell dysfunction and endothelial barrier disruption in a spontaneous model of CNS autoimmunity  
I Kuzmanov1, V Posevitz1, S Hucke1, D Chudyka1, L Klotz2, H Wiendl1  
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**P376** Serpine1 is a negative regulator of experimental autoimmune encephalomyelitis  
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**P377** MR molecular Imaging of VCAM-1 in EAE mice treated by statin: a new perspective for diagnosis and therapeutic management  
M Gauberti1, A Montagne2, D Vivien1, G Defer1,3, F M Rangachari, N Boivin1, A Chen1, C Zhu1, VK Kuchroo3  
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**P378** ATX-MS-1467 reduces MRI lesions and prevents disease progression in a humanized mouse model of multiple sclerosis  
D Graham1, S Huang1, J-K Choi1, S Rudin1, D Yu1, B Jenkins2, J Mandeville2, G Dai2, R Chang1, B Tomkinson1, T Dellovade1  
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**P379** Astrocyte CCL2 sustains immune cell infiltration in chronic experimental autoimmune encephalomyelitis  
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**P380** Beneficial effects of short chain fatty acids on the course of experimental autoimmune encephalomyelitis  
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P381 Laquinimod prevents disability progression in a model of spontaneous chronic EAE and interferes with the development of follicular helper T-cells
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P382 Oxysterols regulate T lymphocytes trafficking during experimental autoimmune encephalomyelitis
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P383 Development of a cortical lesion in a new rat model of focal inflammatory demyelination in serial MRI
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P384 Effects of isoxazolo-pyridinone 7e, a potent activator of the Nurr1 signaling pathway, on experimental autoimmune encephalomyelitis in mouse
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P385 Neuroanatomical organization and global transcriptome analyses of c-Fos activated astrocytes in EAE lesions, altered by administration of fingolimod
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P386 The lesion localization of passive transfer NMO-IgG model in Lewis rats
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P387 Laquinimod prevents NMOIg-induced disease exacerbation in a model of neuromyelitis optica
AT Argaw1,2,3, L Asp1,2,3, J Zhang1,2,3, VJ Cogliani1,2,3, P Waters4, P Hayardeny5, M Levy6, GR John1,2,3
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P388 Anti-murine CD52 therapy provides anti-inflammatory and neuroprotective effects in EAE
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P389 Therapeutic testosterone administration ameliorates clinical disability and cortical atrophy in EAE
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P390 Chondroitin 6-O-sulfate ameliorates experimental autoimmune encephalomyelitis
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P391 Adaptive angioplasticity promotes recovery in experimental autoimmune encephalomyelitis
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1Wayne State University, Detroit, MI, US

P392 Bringing CLARITY to EAE
RD Spence1, F Kurth1, N Itoh1, CRL Mongerson1, SH Wailès1, MS Peng1, A MacKenzie-Graham1
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P393 The role of glatiramer acetate in mitochondrial dynamics and biogenesis in EAE
CT Bever Jr1,2, VKC Nimmagadda1, R Jain1, SIV Judge1,2, D Trisler1,2, TK Makar1,2
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P394 Superior efficacy of glucocorticoid treatment of experimental autoimmune encephalomyelitis in macrophage migration inhibitory factor deficient mice
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The novel Bach1 inhibitor HPP971 uniquely activates Nrf2 and reduces disease severity in a mouse model of experimental autoimmune encephalomyelitis

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Characterization of GALT derived lymphocyte with regulatory properties from mice treated with murine antiCD52 antibody

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Plovamer acetate causes a more pronounced increase in eosinophils and CCL22 in naïve and EAE mice compared with glatiramer acetate

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Therapeutic effect and mechanisms of antigen-specific tolerogenic dendritic cells in experimental autoimmune encephalomyelitis

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Diffusion tensor imaging (DTI) reveals cortical structure and axon circuit alterations in a chronic demyelinating mouse model of multiple sclerosis

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Visual evoked potentials and MRI reveal optic nerve involvement in a relapsing remitting model of multiple sclerosis

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Spectroscopic determination of chelating properties and uptake in the cuprizone multiple sclerosis model

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Well-defined functional deficits and protracted course of EAE in rats with intraspinal injection of VEGF after low-dose immunization with MOG

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Clinical outcome of experimental autoimmune encephalomyelitis in semaphorin 7A-deficient mice

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Gender-specific neuregulin1 modulation of experimental autoimmune encephalomyelitis

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Oleanolic acid controls oxidative stress to protect against optic nerve degeneration in an experimental model of multiple sclerosis

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Relative protection of H. pylori sonicate administration against experimental autoimmune encephalomyelitis, irrespective of its antigenic properties

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P408 B cell antigen presentation is sufficient to drive neuro-inflammation in an animal model of multiple sclerosis
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P409 Antigen-specific myeloid-derived suppressor cells ameliorate experimental autoimmune encephalomyelitis
S Casacuberta-Serra1, C Costa2, S López-Estévez1, H Eixarch2, L Martorell1, X Montalban2, C Espejo2, J Barquín1
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P410 TGM6 is highly expressed by reactive astrocytes in the murine spinal cord during EAE and its levels correlate with the disease course
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P411 Genetic modification of 25(OH)D levels in MS
K Munger1, K Kochert2, K Fitzgerald1, B Arason1, F Barkhof1, G Comi1, S Cook6, G Edan1, M Filippi1, D Freedman1, D Goodin1, H-P Hartung1, D Jeffery2, L Kappos1, D Miller1, X Montalban5, P O’Connor6, B Hemmer1, B Mueller-Myhsok1, M Muhlau1, G Suarez2, R Sandbrink2, A Ascherio1, C Pohl2. The BENEFIT and BEYOND Study Groups
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P412 Multiple quantitative trait loci for anti-EBNA-1 IgG titres are associated with risk of multiple sclerosis
Y Zhou1, G Zhu2, DR Nyholt2, J Charlesworth1, S Simpson Jr1, I van der Mei1, NA Patsopoulos1, C Laverty1, A Henders2, J Ellis1, GW Montgomery2, R Rubicz2, J Blangero5, HH Göring6, NG Martin2, BV Taylor1
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P413 A tumor necrosis factor beta NcoI polymorphism is associated with inflammatory and metabolic markers in multiple sclerosis patients
AP Kallaur1, SR Oliveira1, PRVP Rodrigues1, LJV Schiavão1, WLCJ Pereira1, DR Kaim-Maciel2, DF Alfieri1, J Lopes1, DF Rodrigues1, F Delongui1, ANC Simão1, EMV Reiche1
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P414 Impact of genetic risk loci in multiple sclerosis on expression of proximal genes
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P415 Multiple sclerosis susceptibility genes are associated with cervical cord atrophy and may explain disability status
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P416 A genome-wide copy number variation study identified T-cell receptor as a susceptibility gene for multiple sclerosis and neuromyelitis optica
S Sato1, K Yamamoto2, T Matsushita1, N Isobe1, Y Kawano1, K Inuma1, T Yonekawa1, K Masaki1, S Yoshimura1, R Yamasaki1, J-I Kira1, The JP Multiple Sclerosis Genetics Consortium
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|-------------------|--------------------------------------------------|
| **P417** | Genetic interaction analysis of multiple sclerosis risk loci  |
| | M Lindén1, I Lima Bomfim1, J Hillert1, L Alfredsson1, T Olsson1, J Kockum1  |
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| **P418** | Non-HLA risk genes in Dutch MS multiplex families  |
| | JY Mescheriakova1, C Wijmenga2, RQ Hintzen1  |
| | 1Erasmus MC, Neurology, Rotterdam, NL, 2University Medical Centre Groningen, Groningen, NL  |
| **P419** | Susceptibility variants for multiple sclerosis in the JPese population  |
| | T Matsushita1, S Sato1, K Yamamoto2, L Madireddy3, P Gourraud1, S Baranini2, J Oksenberg3, J-I Kira1, the JP Multiple Sclerosis Genetics Consortium  |
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| **P420** | Genetic predictors of multiple sclerosis  |
| | G Disanto1, RDobson2, RPakpoor3, RIELangovan2, RAdiutori4, CGobbì5, JKühler6, GVignanoni7  |
| **P421** | The PhenoGenetic Project: a biobank with which to investigate the genetic and environmental architecture of immune variation in multiple sclerosis  |
| | PA Winn1, MCimpean1, ARobbins1, TXue12, PdeJager13, 1Brigham and Women’s Hospital, Center for Neurologic Diseases, Boston, MA, US, 2Harvard Medical School, Boston, MA, US, 3Brigham and Women’s Hospital, Program in Translational NeuroPsychiatric Genomics, Institute for the Neurosciences, Department of Neurology and Psychiatry, Boston, MA, US  |
| **P422** | SNPs within genes for cytokines and their receptors modulate IFN-γ and TNF-α associations with relapse in multiple sclerosis  |
| | Y Zhou1, BVTaylor1, NSwart1, JCharlesworth1, IVanderMei1, SSimpsonJr1  |
| | 1Menzies Research Institute Tasmania, Hobart, AU  |
| **P423** | Age at onset and disease severity in primary progressive multiple sclerosis: a genome-wide association study, pathway and network analysis  |
| | G Giacalone1, FCclarelli1, AOsideeau1, CGuaschino1, MSorosina1, G Liberatore1, NBarizzono1, DVecchioni1, VMartinelli1, MLeonette, GComi1, SSD’Alfonso1, FMartinelli Boneschi1, PROGEMUS, PROGRESSO  |
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| **P424** | Evaluation of interleukin 18 gene polymorphism and plasma concentration of IL-18 and IL-36 in relapsing remitting multiple sclerosis patients  |
| | FKhosraviani1, MAzadi1, FAlsahehfoosoul1, MEtemadiifar2  |
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| **P425** | Magnetic resonance imaging findings in healthy, genetically characterized, asymptomatic first-degree relatives of multiple sclerosis patients  |
| | SUSteel1, ACBakshi1, ZXia1,3, AVonKorff1,2, EK Owen1, ICMTortore1, PLDeJager1,2, DDSReich1  |
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| **P426** | Target resequencing of regions associated with multiple sclerosis in the Italian population  |
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| **P427** | Human Aquaporin 4 gene polymorphisms in Chinese patients with neuromyelitis optica spectrum disorders  |
| | WQiu1, YChang1, RLi1, CLi1, YLong1, JHuang1, WMai1, YDai1, XSun1, WXu1, YChen1, LZlu1, XHu1  |
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| **P428** | Defining the functional role of a novel MS susceptibility gene, IL7R alpha chain  |
| | L Bergamaschi1, G Galarza-Muñoz2, F Briggs1, S Arvai1, L Barcellos1, MGarcia-Blanco3, S Gregory1  |
| | 1Duke Molecular Physiology Institute, Medicine, Durham, NC, US, 2Duke University, Molecular Genetics and Microbiology, Durham, NC, US, 3Case Western Reserve University, Epidemiology and Biostatistics, Cleveland, OH, US, 4University of California, School of Public Health, Berkeley, CA, US, 5Duke University Medical Center, Molecular Genetics and Microbiology, Durham, NC, US  |
P429  Progranulin gene variability influences recovery and residual disability after relapses in multiple sclerosis
M Vercelli1, C Fenoglio2, C Chiavazza1, A Mattioda1, S Masera1, D Galimberti7, E Scarpini1, L Pinessi7, P Cavalla1
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P430  White matter abnormalities and gray matter atrophy measurements in long disease duration multiple sclerosis: prediction of a benign course
A Rut1, MD Steenwijk2,3, A Versteeg1, MD Daams2,3, PJW Pouwels2,4, LJ Balk2,5, PK Tewarie2,5, J Killestein2,5, BMJ Utdehaag2,5, JG Geurts2,5, F Barkhof2,5, H Vrenken1,4,4
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P431  Regional distribution and evolution of grey matter changes in different MS phenotypes: a 5-year longitudinal study
M Calabrese1, R Reynolds2, R Magliozzi1, M Castellaro4, A Scalfari1, OW Howell1, A Morra1, A Gajofatto1, C Romualdi1, M Benedetti1, S Monaco1
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P432  The association of thoracic spinal cord gray matter atrophy with disability and disease type in multiple sclerosis
R Schlaeger1,2, ND Papinutto1, C Bevan1, E Caverzasi1, J Gelfand1, A Green1,2, KM Jordan1,4,5, W Stern1, H-C von Büdingen1, E Waubant1, A Zhu1, DS Goodin1, BA Cree1, SL Hauser1, RG Henry1,4,5
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P433  Brain parenchymal fraction in the healthy – determined by MRI in an age stratified population and via a systematic review of the literature
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1Umeå University, Dept. of Pharmacology and Clinical Neuroscience, Umeå, SE, 2Umeå University, Dept. of Radiation Sciences, Diagnostic Radiology, Umeå, SE

P434  The rate of GM lesion development is similar in all MS disease subtypes
R Abdel-Fahim1, O Mougin2, CM Allen3, A Pitiot4, P Gowland2,5, N Evangelou1
1University of Nottingham, Division of Clinical Neurosciences, Nottingham, GB, 2University of Nottingham, Sir Peter Mansfield MR Centre, Nottingham, GB, 3Queen Elizabeth Hospital, London, GB, 4University of Nottingham, School of Psychology, Nottingham, GB

P435  Motor network global and local efficiency changes across the MS spectrum
M Pardini1,2, Ö Yaldızlı1,2, V Sethi1, N Muhlert1,4, Z Liu1,5, M Ron1, C Wheeler-Kingshott1, DH Miller1, DT Chard1,6
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P436  The link between subpial and diffuse white matter pathology in MS: a multimodal 7T and 3T MRI study using a surface-based and a tract-based analysis
C Louapre1,2, ST Govindarajan1, C Giannì1,2, J Cohen-Adad3, RP Kinkel4, C Mainero1,2
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P437  Multiple sclerosis lesion fingerprint using quantitative MRI multicontrast analysis
G Bonnier1,2, A Roche2, D Romanasco2,3, S Simioni1, D Meskaldji1, D Rotzinger5, Y-C Lin6, G Menegaz2,5, M Schluep2,5, R Du Pasquier1, TJ Sumpf1, J Frahm2, J-P Thiran1, G Krueger2,6, C Granzer2,4
1University of Lausanne, Lausanne, CH, 2Advanced Clinical Imaging Technology Group, Siemens-EPFL, Lausanne, CH, 3Ecole Polytechnique Federale Lausanne, STI / IEL / LTS5, Lausanne, CH, 4Centre Hospitalier Universitaire Vaudois (CHUV) and University of Lausanne, Department of Clinical Neurosciences, Lausanne, CH, 5Centre Hospitalier Universitaire Vaudois (CHUV) and University of Lausanne, Department of Radiology, Lausanne, CH, 6University of Verona, Department of Computer Science, Verona, IT, 7Max Planck Institute for Biophysical Chemistry, Biomedizinische NMR Forschungs GmbH, Goettingen, DE, 8Siemens Schweiz AG, Healthcare Sector IM&WS S, Renens, CH
Texture of deep gray matter areas relates to disability in multiple sclerosis
L Gaetano1, S Magon1, M Chakravarty2,3, O Findling1, M Amann1,4,5, J Reinhardt1, Y Naegelin1, C Stippich4, L Kappos1, E-W Radue1, T Sprenger1,4,5
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Sustained low rate of brain volume loss under long-term fingolimod treatment in relapsing multiple sclerosis: results from the LONGTERMS study
EW Radue1, F Barkhof2, J Cohen1, R Gottschalk4, Y Zhang1, L Cappiello1, P von Rosenstiel1, L Kappos6
1Medical Image Analysis Center (MIAC), Basel, CH, 2VU University Medical Center, Amsterdam, NL, 3Cleveland Clinic, Neurological Institute, Cleveland, OH, US, 4Novartis Pharma AG, Basel, CH, 5Novartis Pharmaceuticals Corporation, East Hanover, NJ, US, 6University Hospital, Department of Neurology, Basel, CH

Iron in multiple sclerosis lesions can be detected by larger volumes on quantitative susceptibility mapping than on T2 weighted imaging
C Wisnieff1,2, S Ramanan3, Y Wang1,2, D Pitt4
1Cornell University, Ithaca, NY, US, 2Weill Medical College, New York, NY, US, 3Yale University, New Haven, CT, US, 4Yale University, New Haven, NY, US

Grey matter abnormalities in mesial temporal lobe characterize patients with multiple sclerosis and epilepsy
M Calabrese1, NS Orfice2, M Castellaro1, A Morra1, F Bortoloni2, S Monaco1, P Manganotti1
1University Hospital of Verona, Dept. of Neurological and Movement Sciences, Verona, IT, 2University of Naples Federico II, Department of Pharmacology, Napoli, IT, 3University of Padova, Department of Information Engineering, Padova, IT, 4Euganea Medica, Neuroradiology Unit, Padova, IT, 5Multiple Sclerosis Centre, ULSS 6, Vicenza, IT

Myelin water MRI reveals long-term demyelination in normal appearing white matter from relapsing remitting multiple sclerosis
IM Vavasour1, SC Huiskens2, SM Meyers2, AL Traboulsee2, DKB Li1, W Moore4, AL Mackay1,2, C Laule1,4
1University of British Columbia, Radiology, Vancouver, BC, CA, 2University of British Columbia, Physics and Astronomy, Vancouver, BC, CA, 3University of British Columbia, Medicine, Vancouver, BC, CA, 4University of British Columbia, Pathology and Laboratory Medicine, Vancouver, BC, CA

Extended cortical lesion determining acute relapses in multiple sclerosis
M Puthenparampil1, D Poggiiali1, P Perini1, F Rinaldi1, G Rolma1, F Causi1, P Gallo1
1University of Padova, Department of Neuroscience SNPSRR, Padova, IT

Brain positron emission tomography scanning can be used to image pathological determinants of progressive multiple sclerosis
L Arias1, E Rissanen1, M Gardberg1, M Sucksdorff1, J Tuisku1, J Rinne2
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In vivo characterization of axonal damage in multiple sclerosis using high-gradient diffusion magnetic resonance imaging
SY Huang1,2, SM Tobyne3, A Nummenmaa1, T Witzel2, LL Wald2, JA McNab4, EC Klawi5
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Bi-directional trans-synaptic degeneration in the visual pathway in multiple sclerosis
LJ Balk1, MD Steenwijk1, P Tewarie1, MA Dams1, J Killestein1, MP Wattjes1, H Vrenken1, F Barkhof2, CH Polman1, BM Utdehaag1, A Petzold1
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Evidence of resting-state fMRI functional connectivity abnormalities in pediatric-onset MS and the relation to structural damage and cognition
N Akbar1,2, C Till3, J Sled1, SM Doesburg2, M Binns3, AR McIntosh1, B Aubert-Broche1, L Collins2, D Araujo1, M Lysenko4, B Banwell1,6
1The Hospital for Sick Children, Toronto, ON, CA, 2University of Toronto, Institute of Medical Science, Toronto, ON, CA, 3York University, Psychology, Toronto, ON, CA, 4Rotman Research Institute, Baycrest, Toronto, ON, CA, 5Montreal Neurological Institute, Montreal, QC, CA, 6Children’s Hospital of Philadelphia, Philadelphia, PA, US
P449  Improved white matter integrity with natalizumab treatment in multiple sclerosis
OT Wiebenga1,2, MM Schoonheim2, HE Hulst3, GJA Nagtegaal1,2, EM Strijbis3, MD Steenwijk1, CH Polman1, PJW Poulwels1, F Barkhof2, JJG Geurts2
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P450  Unraveling the relationship between regional gray matter atrophy and pathology in connected white matter tracts in long-standing multiple sclerosis
MD Steenwijk1, M Daams1,2, PJW Poulwels1, LJ Balk1, PK Tewarie2, JJG Geurts2, F Barkhof1, H Vrenken1,3
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P451  Attenuated BOLD hemodynamic response predicted by degree of white matter insult, slows cognition in multiple sclerosis
NA Hubbard1, MP Turner1, DM Robinson1, S Sundaram1, L Oasay1, JL Hutchison1, A Ouyang2, H Huang3, B Rypma2
1University of Texas at Dallas, Dallas, TX, US, 2University of Texas Southwestern Medical Center, Dallas, TX, US

P452  Disrupted distant functional connectivity within the temporoparietal junction is linked to impaired attention in multiple sclerosis
SM Tobyne1, D Boraty1, J Sherman1,2, B Rosen2, C Mainiero3, EC Kwiter1
1Massachusetts General Hospital, Harvard Medical School, Neurology, Boston, MA, US, 2Massachusetts General Hospital, Harvard Medical School, Psychiatry, Boston, MA, US, 3Massachusetts General Hospital, Harvard Medical School, Radiology, Boston, MA, US

P453  The natural history of brain volume loss among patients with multiple sclerosis: a systematic literature review and meta-analysis
T Vollmer1, JE Signorovitch2, L Huynh2, P Galebach2, C Kelley2, J Marvel2, A Di Bernardo3, R Sasane3
1University of Colorado School of Medicine, Department of Neurology, Aurora, CO, US, 2Analysis Group, Inc., Boston, MA, US, 3Novartis Pharmaceuticals Corporation, East Hanover, NJ, US

P454  Multivoxel MR spectroscopy in a pilot crossover study of natalizumab to dimethyl fumarate therapy
DD Blatter1, JF Foley2, T Hoyt2
1LDS Hospital and Intermountain Health Care, Radiology, Salt Lake City, UT, US, 2Rocky Mountain MS Research Group, Salt Lake City, UT, US

P455  Normal appearing white matter injury in MS is affected by the distance to the nearest cortical lesion
N Evangelou1, R Abdel-Fahim1, O Mougin2, J Rukseneita3, A Lazebny4, P Gowland1, A Piti2
1University of Nottingham, Division of Clinical Neurosciences, Nottingham, GB, 2University of Nottingham, Sir Peter Mansfield MR Centre, Nottingham, GB, 3Leicester Royal Infirmary, Leicester, GB, 4University of Nottingham, Nottingham, GB

P456  Dynamics of brain iron accumulation differ between clinically isolated syndrome and definite multiple sclerosis: a longitudinal 3T MRI study
M Khalil1, C Langkammer2, A Pichler1, D Pinter1, T Gattminger1, G Bachmaier1, S Ropele1, S Fuchs1, C Enzinger1, F Fazekas1
1Medical University of Graz, Graz, AT

P457  Region of interest based grey matter volumetry identifies clinically meaningful atrophy in early relapsing forms of multiple sclerosis
R Opfer1, A Tewes1, L Spie2, LY Reitz1, R Martin1, S Schippings1
1Jung Diagnostics GmbH, Hamburg, DE, 2University Medical Center Hamburg Eppendorf, Institute for Neuroimmunology and Clinical Multiple Sclerosis Research (INIMS), Hamburg, DE, 3University Hospital Zurich, Neuroimmunology and Multiple Sclerosis Research Section (nims), Department of Neurology, Zurich, CH

P458  Comparison of spinal cord area between spinal cord measurements using different coils in multiple sclerosis patients with 3.0T MRI
F-X Aymerich1, D Pareto1, M Alberich1, J Alonso1, J Sastr-Garriga2, X Montalban2, Á Rovira2
1Vall Hebron University Hospital, Magnetic Resonance Unit, Neuroradiology Dept., Barcelona, ES, 2Vall Hebron University Hospital, Multiple Sclerosis Centre of Catalonia, Neuroimmunology Dept., Barcelona, ES

P459  Increased gray matter lesion detection in MS with 7 Tesla MRI: a post-mortem verification study
LE Jonkman1, ID Kilsdonk2, JJM Zwanenburg3, R Klaver1, S van Veluw4, PJW Poulwels5, PR Luijten2, JJJ Geurts6, F Barkhof2
1VU University Medical Center, Anatomy and Neurosciences, Amsterdam, NL, 2VU University Medical Center, Radiology, Amsterdam, NL, 3University Medical Center Utrecht, Radiology, Utrecht, NL, 4University Medical Center Utrecht, Neurology, Utrecht, NL, 5VU University Medical Center, Physics and Medical Technology, Amsterdam, NL

P460  Thalamus structure and function determines severity of cognitive impairment in multiple sclerosis
MM Schoonheim1, HE Hulst1, RB Brandt1, M Strik1, AM Wink2, BMJ Uitdehaag3, F Barkhof2, JJG Geurts1,2
1VU University Medical Center, Anatomy and Neurosciences, Amsterdam, NL, 2VU University Medical Center, Radiology, Amsterdam, NL, 3VU University Medical Center, Neurology, Amsterdam, NL
Regional white matter abnormalities and cognitive impairment in MS: a multicenter TBSS study

A Bisecco1, MA Rocca1-2, E Pagani1, F Barkhof3, DL Thomas4, N De Stefano5, C Enzinger6, A Gallo7, HE Hulst1, L Mancini8, ML Stromillo9, F Fazekas10, G Tedeschi11, G Comi12, M Filippi1,2
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Thalamic tract integrity changes are associated with cognition and disinhibition in multiple sclerosis

HE Hulst1, RHB Benedict2, MD Steenwijk1, MM Schoonheim1, MG Dwyer3-5, N Bergslsand1,5, F Barkhof1, B Weinstock-Guttman1, R Zivadinov1,2, JGG Geurts1,1
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Multimodal quantitative magnetic resonance imaging of thalamus in multiple sclerosis and neuromyelitis optica

J Wang1, Y Liu2,3, Y Duan1, H Dong1, J Ye1, F Barkhof2, K Li2
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Memory impairment in multiple sclerosis: relevance of hippocampal activation and hippocampal connectivity

HE Hulst1, MM Schoonheim1, Q van Geest1, BMJ Uitdehaag2, F Barkhof3, JGG Geurts1,1
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Volumetric imaging of grey and white matter in the human brain

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P471  Ultra-high field MRI of intra- and extra-cellular sodium concentration in multiple sclerosis
M Petracca1,2, R Teodorescu1, L Fleysher1, L Jonkman1, I De Kouchkovsky4, N Oesingmann3, J Herbert3, M Inglese1,3
1Mount Sinai School of Medicine, Neurology, New York, NY, US, 2Federico II University, Neuroscience, Naples, IT, 3Mount Sinai School of Medicine, Radiology, New York, NY, US, 4New York University, Radiology, New York, NY, US, 5New York University, Neurology, New York, NY, US, 6Mount Sinai School of Medicine, Neuroscience, New York, NY, US

P472  Cervical cord area measurement using volumetric brain magnetic resonance imaging
Z Liu1,2, Ö Yaldizli1, M Pardini1, V Sethi1, H Kearney1, N Muhlert1, C Wheeler-Kingshott1, DH Miller1, DT Chard4
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P473  Natural evolution of gadolinium-enhancing lesions into chronic black holes in multiple sclerosis: analysis of PRISMS and SPECTRIMS placebo arms
A Traboulsee1, D Li1, Y Zhao1, R Tam1, G Zhao1, Y Cheng1, A Riddehough1, F Dangond2, J Fang2, L Kappos3, on behalf of the PRISMS and SPECTRIMS Working Groups
1University of British Columbia, Vancouver, BC, CA, 2EMD Serono, Inc., Rockland, MA, US, 3University Hospital Basel, Basel, CH

P474  Unraveling the neuroimaging markers of motor dysfunction in long-standing multiple sclerosis
M Daams1, MD Steenwijk1, MP Wattjes1, JGG Geurts2, BM Uitdehaag1, PK Tewarie1, LJ Balk3, J Killestein1, F Barkhof1, 1VU University Medical Center, Radiology and Nuclear Medicine, Amsterdam, NL, 2VU University Medical Center, Anatomy and Neurosciences, Amsterdam, NL, 3VU University Medical Center, Neurology, Amsterdam, NL

P475  MRI correlates of disability: neuroimaging substudy at 20-years in the ongoing US glatiramer acetate open-label extension study
O Khan1, F Bao1, G Ramesh2, K Thakore2, C Caon1, C Santiago1, Z Latifi3, R Aronov1, I Zak1, Y Sidt1, S Kolodny1, The MRI Sub-Study of the US Open-Label Glatiramer Acetate Study Group
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P476  MS cortex-study: the association of cortical thickness and cortical lesions with clinical symptoms in multiple sclerosis
K Reuter1, O Geisseler1, P Tiffel1, T Pflugshaupt1,2, L Bezzola1, B Schuenecht1, F Brugger1, M Linnebank1
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P477  Tissue-specific brain volume changes on natalizumab: a 36-month follow-up study using VBM
E Clampp1, D Pareto1, J Sastre-Garriga1, A Vidal-Jordana1, C Tur1, J Rio1, M Tintore1, C Auger2, A Rovira2, X Montalban1
1Vall Hebron University Hospital, Multiple Sclerosis Centre of Catalonia, Neuroimmunology Department, Barcelona, ES, 2Vall Hebron University Hospital, Magnetic Resonance Unit, Neuroradiology Department, Barcelona, ES

P478  Slowly expanding lesions in MS: a histopathological mirage?
Y Sethi1, G Nair1, CD Shea1, BE Dewey1, DS Reich1
1NINDS, NIH, Translational Neuroradiology Unit, Neuroimmunology Branch, Bethesda, MD, US

P479  MRI reveals connectivity of cortical lesions to deep white matter lesions in multiple sclerosis
J-M Tillema1, S Weigand2, J Port3, Y Shu4, J Mandrekar5, C Lucchinetti1, I Pirok1
1Mayo Clinic, Neurology, Rochester, MN, US, 2Mayo Clinic, Biomedical Statistics and Informatics, Rochester, MN, US, 3Mayo Clinic, Biomedical Engineering and Medical Physics, Rochester, MN, US

P480  Can MS lesion stages be distinguished with MRI? A postmortem MRI and histopathology study
LE Jonkman1, A Lopez Soriano2, H Vrenken2, P van der Valk3, F Barkhof1, JGG Geurts1
1VU University Medical Center, Anatomy and Neurosciences, Amsterdam, NL, 2VU University Medical Center, Radiology, Amsterdam, NL, 3VU University Medical Center, Pathology, Amsterdam, NL

P481  Corpus callosum atrophy is associated with cognitive impairment in multiple sclerosis: results of a 17-year longitudinal study
T Granberg1, J Martola1, G Bergendal2, S Aspelin1, H Vrenken2, P van der Valk3, F Barkhof1, JGG Geurts1
1Karolinska Institutet, Department of Clinical Science, Intervention and Technology, Stockholm, SE, 2Karolinska Institutet, Department of Clinical Neuroscience, Stockholm, SE

P482  Functional and structural connectivity abnormalities underlying clinical disability in multiple sclerosis
E Sbardella1, N Filippi1, F Tona1, C Piattella1, N Ptas1, L Prosperini1, C Pozzilli1, P Pantano1
1University Sapienza, Neurology and Psychiatry, Rome, IT, 2Santa Lucia Foundation, Rome, IT, 3FMRIB Centre, Oxford, GB
P483  Longitudinal DMN changes in cognitively preserved MS patients
R Docimo1,2, A Bisecco1, F Esposito1,2, G Muzzo1,2, G Pontillo1,2, S Bonavita1,2, L Lavorgna1,2, M Cirillo1,2, G Tedeschi1,2, A Gallo1,2
1Second University of Naples, Department of Medical, Surgical, Neurological, Metabolic and Aging Sciences, Naples, IT, 2MRI Research Centre SUN-FISM – Neurological Institute for Diagnosis and Care ‘Hermitage Capodimonte’, Naples, IT, 3University of Salerno, Department of Medicine and Surgery, Salerno, IT

P484  White matter lesion central veins: an interscanner comparison of patients with multiple sclerosis and ischemic lesions at 3-Tesla MRI
A Samaraweera1, PS Morgan2, R Dineen3, I Driver4, N Evangelou1
1University of Nottingham, Division of Clinical Neuroscience, Nottingham, GB, 2Nottingham University Hospitals NHS Trust, Department of Medical Physics, Nottingham, GB, 3University of Nottingham, Division of Radiological and Imaging Sciences, Nottingham, GB, 4University of Nottingham, Sir Peter Mansfield Magnetic Resonance Centre, Nottingham, GB

P485  Inflammation does not cause chronic global neurodegeneration in NMO? A longitudinal multimodal quantitative MRI study comparing NMO and MS
L Matthews1,2, S Kolind3, A Brazier1, MI Leite1, J Brooks4, M Jenkinson1, J Palace1
1University of Oxford, Nuffield Department of Clinical Neurosciences, Oxford, GB, 2Oxford University Hospitals NHS Trust, Department of Neurology, Oxford, GB, 3University of British Columbia, Vancouver, BC, CA, 4University of Nottingham, Sir Peter Mansfield Magnetic Resonance Centre, Nottingham, GB

P486  Functional changes in default mode network activity – the most sensitive resting state fMRI parameter for short-term longitudinal changes in MS
D Pinter1, C Beckmann2, M Loitfelder1, N Filippini2, A Pichler1, S Fuchs1, F Fazekas1, C Enzinger1
1Medical University Graz, Graz, AT, 2Radboud University Nijmegen, Nijmegen, NL, 3University of Oxford, Oxford, GB

P487  Functional MRI encoding task for faces in multiple sclerosis
L Vacchi1, MA Rocca1,2, GC Riccitelli1, M Rodegher2, V Martinelli1, F Possa1, A Falini1, G Comi2, M Filippi1,2
1San Raffaele Scientific Institute, Vita-Salute San Raffaele University, Neuroimaging Research Unit, Institute of Experimental Neurology, Milan, IT, 2San Raffaele Scientific Institute, Vita-Salute San Raffaele University, Department of Neurology, Milan, IT, 3San Raffaele Scientific Institute, Vita-Salute San Raffaele University, Department of Neuroradiology, Milan, IT

P488  Brain atrophy quantification in multiple sclerosis
S Jain1, D Smeets1, DM Sima1, A Ribbens1, K Janssens1, M Daams2, M Steenwijk2, H Vrenken2, F Barkhof3, W Van Hecke1,3
1icoMetrix, Leuven, BE, 2VU University Medical Center, Amsterdam, NL, 3Antwerp University Hospital, Antwerp, BE

P489  Sample-size calculations for short-term proof-of-concept studies of tissue protection and repair in MS lesions via conventional clinical imaging
DS Reich1, R White2, ICM Cortese1, L Vuolo1,3, CD Shea1, TL Collins3, AJ Petkau1
1National Institute of Neurological Disorders and Stroke, NIH, Bethesda, MD, US, 2University of British Columbia, Statistics, Vancouver, BC, CA, 3University of Florence, Neurology and Radiology, Florence, IT, 4Myelin Repair Foundation, Saratoga, CA, US

P490  The value of MRS, a novel MRI technique, as a predictor of disability: analysis at 20-years of RRMS patients treated long-term with glatiramer acetate
O Khan1,2, F Bao1, C Ford1, S Kolodny4, A Vainstein5, Y Sidi5
1Wayne State University, Detroit, MI, US, 2Sastry Foundation Advanced Imaging Laboratory, Wayne State University School of Medicine, Detroit, MI, US, 3University of New Mexico Health Sciences Center, Albuquerque, NM, US, 4Teva Pharmaceutical Industries, Cleveland, OH, US, 5Teva Pharmaceutical Industries, Netanya, IL

FRIDAY, SEPTEMBER 12
14:45 – 16:15  Hall C
Poster Session 2 (P491-P981)

P491  Prospective multi-modal MRI study to examine the effect of natalizumab on tissue injury in the brain and spinal cord in patients with RRMS
O Khan1, F Bao1, E Berntsaas1, C Santiago1, C Caon1, I Zak1, A Tselis1
1Wayne State University, Detroit, MI, US

P492  Corpus callosal myelin water fraction and transcallosal inhibition in multiple sclerosis
IM Vavasour1, EY Zhao2, MR Borich3, A Rauscher1, C Laule1,2, AL Traboulsee3, DKB Li1, LA Boyd4, AL Mackay1
1University of British Columbia, Radiology, Vancouver, BC, CA, 2University of British Columbia, MD/PhD Program, Vancouver, BC, CA, 3Emory University, Rehabilitation Medicine, Atlanta, GA, US, 4University of British Columbia, Pathology and Laboratory Medicine, Vancouver, BC, CA, 5University of British Columbia, Medicine, Vancouver, BC, CA, 6University of British Columbia, Physical Therapy, Vancouver, BC, CA, 7University of British Columbia, Physics and Astronomy, Vancouver, BC, CA
P493  White matter and long-tract lesions play a marginal role in determining cortical atrophy  
D Seppi1, S Miante1, V Poretti1, D Poggiali1, F Rinaldi1, P Perini1, P Gallo1  
1University of Padova, Department of Neuroscience  

P494  Characteristic of optic magnetic resonance imaging in neuromyelitis optica and multiple sclerosis patients presenting with optic neuritis  
Y-M Lim1, KM An1, J Lee1, SY Pyun2, K-K Kim1  
1Asan Medical Cente, University of Ulsan College of Medicine, Neurology, Seoul, KR, 2National Police Hospital, Neurology, Seoul, KR

P495  High field spinal cord imaging in multiple sclerosis at 7 Tesla  
S Pawate1, A Dula1, B Robert2, D Richard2, S Sriram1, J Gore2, S Smith1  
1Vanderbilt University Medical Center, Neurology, Nashville, TN, US, 2Vanderbilt University Institute of Imaging Sciences, Nashville, TN, US

P496  Multi-center upper cervical spinal cord areas obtained from brain MRI scans at 3T in patients with MS  
N Papinutto1, R Schlaeger2, A Zhu1, F Khalid1, VV Oommen1, S Tahuid1, BAC Cree2, SL Hauser1, HL Weiner1, R Bakshi1, RG Henry1  

P497  Identification of tissue-specific MRI markers to assess protection and repair in response to fingolimod  
C Bernos-Otero1, L Fleysher2, J Zhang1, E Fieremans1, G John1, M Inglese1  
1Icahn School of Medicine at Mount Sinai, Neurology, New York, NY, US, 2Icahn School of Medicine at Mount Sinai, Radiology, New York, NY, US, 3New York University, Radiology, New York, NY, US, 4Icahn School of Medicine at Mount Sinai, Radiology and Neuroscience, New York, NY, US

P498  Spinal cord and brain atrophy in neuromyelitis optica: a comparative study with MS and healthy controls  
Y Liu1, Y Duan1, H Dong1, M Wattjes2, H Vrenken2, F Barkhof2, K Li1  
1Xuanwu Hospital, Beijing, CN, 2VU Medical Center, Amsterdam, NL

P499  MR frequency shift imaging as a sensitive measure of longitudinal changes in multiple sclerosis lesions  
V Wiggermann1,2, E Hernandez-Torres1,2, IM Vavasour1,2, C Laule1, AD Mackay1,2, DKB Li1,2, A Traboulsee1,2, A Rauscher1,2  
1University of British Columbia, Physics and Astronomy, Vancouver, BC, CA, 2University of British Columbia, Radiology, Vancouver, BC, CA, 3UBC MRI Research Centre, Vancouver, BC, CA, 4University of British Columbia, Pathology and Laboratory Medicine, Vancouver, BC, CA, 5University of British Columbia, Neurology, Vancouver, BC, CA

P500  Distinction between neuromyelitis optica and multiple sclerosis using multi-voxel pattern classification  
A Eshaghi1, V Wattsche1, M Calabrese3, MA Sahraian4, D Alexander5, O Ciccarelli2  
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P501  FLAIR’ for the non-invasive histological diagnosis of MS  
T Campion1, P Smith1, DR Altman2, BP Turner1, J Evason1, IC George4, P Sat4, DS Reich4, ME Miquel5, K Schmierer1,6  
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P502  A longitudinal study of spinal cord atrophy in progressive multiple sclerosis  
D Plantone1, H Kearney1, MC Yiannakas2, AJ Thompson1,2, DH Miller1,2, O Ciccarelli2  
1NMR Research Unit, Queen Square MS Centre, UCL Institute of Neurology, London, GB, 2NIHR University College London Hospitals Biomedical Research Centre, London, GB

P503  Development of gray matter atrophy is associated with disability progression in patients with CIS: a 4 year follow up study  
T Uher1, D Horakova2, N Bergslund2, M Tylblova2, DP Ramsamy7, Z Seid1, M Vanecckova4, J Krasedyn4, E Havrdova1, R Zivadinov2,15  
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P504  Microstructural white matter damage in fatigued multiple sclerosis patients: a DTI-TBSS study
A d’Ambrosio1,2, G Caiazzo1,2, A Bisecco1,2, R Docimo1,2, S Esposito1,2, M Cirillo1,2, F Esposito1,2,3, S Bonavita1,2, G Tedeschi1,2, A Gallo1,2
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P505  Quantitative evaluation of “invisible” MS brain tissue damage in GM and WM using Gradient Echo Plural Contrast Imaging
J Wen1, X Ulrich1, C Hildebolt1, S Lancia2, D Yablonskiy1, A Cross1
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P506  Functional neuroimaging of inattentional blindness in multiple sclerosis
J Ellis1, K Romero2, M Theaudin1, R Staines2, A Feinstein1
1Sunnybrook Research Institute, Psychiatry, Toronto, ON, CA, 2University of Waterloo, Kinesiology, Waterloo, ON, CA

P507  The nature of white matter tract injury in relapsing-remitting multiple sclerosis: a diffusion-tensor imaging study in relation to disease duration
A Achiron1, E Stone1,2, RN Achiron1, A Achiron1
1Sheba Medical Center, Multiple Sclerosis Center, Tel Aviv, IL, 2Sackler School of Medicine, Tel Aviv University, NY State/American Program, Tel Aviv, IL, 2Tel Aviv University, Tel Aviv, IL

P508  Regional cortical thickness in African Americans with multiple sclerosis
M Alkawaz1, E Monohan1, JS PEmal1, N Nealon1, T Vartanian1, S Gauthier1
1Weill Cornell Medical College/Judith Jaffe MS Center, New York, NY, US

P509  Can we really differentiate spinal cord ischemia from the myelitis of neuromyelitis optica with MRI in the acute setting?
E Johnson1, I Kister2, E Raz1, T Loh1, T Shepherd1
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P510  Lower brain glutamate levels in patients with relapsing MS compared to healthy controls
EL MacMillan1, SH Kolind1, D Leppert1, N Seneca1, E Vianna2, A Dzyakanchuk2, R Tam1,4, AL Traboulsee1
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P511  No change in venous, arterial, nor CSF flows in MS patients after 1 year of disease modifying drugs
S El Sankari1, O Balédent2, V van Pesch1, T Duprez3, C Sindic1
1Université Catholique de Louvain, Brussels, BE, 2Amiens University Hospital, Amiens, FR

P512  Corticospinal tract integrity measured using transcranial magnetic stimulation and magnetic resonance imaging in NMO and MS
IM Vavasouri1, P Manogaran2, MR Borich1, SH Kolind2, WD Regan2, AL Mackay3, LA Boyd4, DKB Li5, AL Traboulsee6
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P513  Regional brain atrophy in early stages of single patients with rrMS analyzed by automated quantified MRI
A Raji1, G Winkler2, L Spies1, A Tewes1, R Opfer3
1Center of Neurology, Hamburg, DE, 2Center of Neurology, Neurology, Hamburg, DE, 3Jung Diagnostics, Hamburg, DE

P514  Resting state fMRI probed as predictor of fatigue symptoms in multiple sclerosis
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P515  SLF: a MS white matter lesion filling toolbox for the SPM software
S Valverde1, A Oliver1, D Pareto2, JC Vilanova1,2, À Rovira1, L Ramió-Torrenta1, X Lladó1
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P516  Magnetic resonance perfusion weighted imaging – a marker of inflammatory activity in multiple sclerosis?
P Sowa2, GO Nygaard3, A Bjørnerud4, S Damangiri5, G Spulber6, EJ Celius1, P Due-Tønnessen1, HF Harbo2, MK Beyer7
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**PS17**  Cellular and microstructural changes due to iron deposition in multiple sclerosis lesions
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**PS18**  Imaging of brain perfusion in multiple sclerosis and neurodegenerative disorders: association with endothelial factors. An interim analysis
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**PS19**  MR frequency shift imaging of MS lesions and comparison to myelin water and magnetization transfer imaging
V Wiggermann1,2, SY Tan1, E Hernandez Torres1,4, DKB Li1,2, AL Mackay1, IM Vavasour1,4, N Seneca1, D Leppert1, S Kolind1,2,4, A Traboulsi1,4, A Rauscher1,4
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**PS20**  MR frequency shift imaging demonstrates that iron accumulation is rare in multiple sclerosis lesions
V Wiggermann1,2, LE Lee3, E Hernandez-Torres3,4, DKB Li1,2, AL Mackay1, IM Vavasour1,4, CA Laule1,6, A Rauscher1,4
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**PS21**  Characteristics of patients with MRI-only conversion to multiple sclerosis after a clinically isolated syndrome
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**PS22**  Discriminative radiological features of multiple sclerosis and neuromyelitis optica in Chinese patients
S Cheng1, R Li1, KL Shiu1, E Yeung1, CN Lee1, M Auyeung1, CM Cheung1, TH Tsoi1
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**PS23**  Central vein detection in MS lesions using FLAIR* at 7T
BE Dewey1, L Vuolo1,2, CD Shea1, SJ Inati1, DS Reich1, P Sat1
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**PS24**  Exploring the link between resting-state functional connectivity in the default mode network and subpial pathology in MS using multimodal 7 Tesla MRI
C Louapre1,2, ST Govindarajan1, C Gianni1,2, J Cohen-Adad1,2, RP Kinkel1, C Mainiero1,2
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**PS25**  Brain volume loss during the first year of interferon-beta treatment: baseline inflammation and regional brain volume dynamics
A Vidal-Jordanà1, J Sastre-Garriga1, F Pérez-Miralles1, D Pareto2, J Río3, C Auger4, M Tintore1, A Rovira1, X Montalban1
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**PS26**  Statistical estimation of quantitative TI maps using standard clinical modalities
A Mejia1, E Sweeney2, B Dewey2, C Shea3, P Sat1, J Harezlak4, D Reich1, RT Shinohara5
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**PS27**  1-H MRSI in patients with relapsing multiple sclerosis at 7 Tesla
Y Li1, BAC Cree2, A Zhu2, D Leppert1, S Seneca1,2, SJ Nelson1,4, RG Henry1,4,2,4
1University of California San Francisco, Radiology and Biomedical Imaging, San Francisco, CA, US, 2University of California San Francisco, Department of Radiology and Biomedical Imaging, San Francisco, CA, US, 3University of California San Francisco, Department of Neurology, San Francisco, CA, US, 4F. Hoffmann-La Roche Ltd, Basel, CH, 5University of California San Francisco, Bioengineering and Therapeutic Sciences, San Francisco, CA, US

**PS28**  Utilization of routine magnetic resonance imaging in multiple sclerosis patient management
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1Providence Health and Services, Brain and Spine Institute, Portland, OR, US
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P529 Basal ganglia iron in multiple sclerosis patients measured with 7T quantitative susceptibility mapping (QSM) correlates with inhibitory control task
MA Rocca1,2, Valsasina1, E Pravatà1, M Radaelli2, F Martinelli Boneschi2, C Gobbi4, A Falini1, G Comi1, M Filippi1,2
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P530 Predictor status of disease modifying therapy time-exposure to brain atrophy using NeuroQuant
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P531 Depressive symptoms in MS patients are associated with abnormal hippocampal resting state functional connectivity
MA Rocca1,2, P Valsasina1, E Pravatà1, M Radaelli2, F Martinelli Boneschi2, C Gobbi4, A Falini1, G Comi1, M Filippi1,2
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P532 New insights on the pathophysiology of fatigue in MS: a fMRI study of the motor network
MA Rocca1,2, A Meani1, GC Riccitelli1, M Rodegher2, B Colombo1, A Falini1, G Comi1, M Filippi1,2
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P533 Correlation analysis of in vivo MRI and post-mortem quantitative immunohistochemistry data in a mouse model of inflammatory cerebral demyelination
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P534 Automatic multiple sclerosis brain lesion localisation and volumetry
S Jain1, D Smeets1, A Ribbens1, DM Sima1, K Janssens1, M Daams1, M Steenwijk1, H Vrenken1, B Barkhof1, W Van Hecke11
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P535 Optimal detection of infratentorial lesions with a combined dual-echo sequence: ‘P2T’
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P536 Disruption of brain functional reorganization leads to disability progression in multiple sclerosis
A Faivre1, E Robinet1, C Rousseau1, A Maarouf1, A Le Trotter1, W Zaaraoui1, S Confort-Gouy1, M Guye1, J Pelletier1, J-P Ranjeva1, S Achard2, B Audoin1
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P537 Combined DIR and PSIR images improve detection and classification of cortical lesions in multiple sclerosis and clinically isolated syndromes
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P538 Compensatory remapping of fMRI functional connectivity during resting state in multiple sclerosis
S-J Lin1, A Liu1, ZJ Wang1, D Leppert2, N Seneca1, E Vianna1, A Dzyakanchuk1, S Kolind1, A Trabousee2, MJ McKeown1
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P539 Permeability of the blood-brain barrier predicts conversion from optic neuritis to multiple sclerosis
SP Cramer1,2, JF Simonsen1, JL Frederiksen1, HBW Larsson1
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P540 Comparison of visual conspicuity between two contrast-enhanced T1-weighted sequences in the detection of multiple sclerosis lesions with 3.0T MRI
F-X Aymerich1, C Auger1, P Alcaide1, D Pareto1, E Aires, AR, 2National Institutes of Health, Bethesda, MD, US

P541 Altered resting state homologous inter-hemispheric functional connectivity is related to clinical measures of disability in multiple sclerosis
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**P542** Central and peripheral alterations in glucose uptake in patients with multiple sclerosis during treadmill walking
JH Kindred\(^1\), JR Hebert\(^2\), JJ Tuulari\(^3\), M Buccioni\(^4\), KK Kalliakoski\(^5\), T Rudroff\(^6\)
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**P543** Treatment effect on brain atrophy differs between first and second-line therapies for relapsing-remitting MS: a meta-analytic approach
P Branger\(^3\), J-J Parienti\(^4\), G Defer\(^5\)
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**P544** MS subtype classification using lesion geometry and texture
B Taschner\(^1\), N Müller-Lenke\(^2\), K Bendfeldt\(^2\), TE Nichols\(^1\)
\(^1\)University of Warwick, Centre for Complexity Science, Coventry, GB, \(^2\)Medical Image Analysis Center, University Hospital Basel, Basel, CH

**P545** Thoracic spinal cord lesions are influenced by the degree of cervical spine involvement in multiple sclerosis
LH Hua\(^1\), SL Donlon\(^2\), MJ Sobhanian\(^3\), S Portner\(^3\), DT Okuda\(^2\)
\(^1\)Cleveland Clinic, Lou Ruvo Center for Brain Health, Las Vegas, NV, US, \(^2\)Arizona Neurological Institute, Phoenix, AZ, US, \(^3\)University of Texas Southwestern Medical Center, Department of Neurology and Neurotherapeutics, Dallas, TX, US

**P546** Glutamate as a marker for disease progression in patients with relapsing-remitting multiple sclerosis using magnetic resonance spectroscopic imaging
V Fleischer\(^1\), R Kolb\(^2\), E Reuter\(^1\), U Klose\(^2\), F Zipp\(^1\), A Gröger\(^1\)
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**P547** Grey-matter atrophy rate is not related to disease activity or MRI lesion accumulation in relapsing-remitting MS patients: a longitudinal study
A Damasceno\(^1\), BP Damasceno\(^1\), F Cendes\(^1\)
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**P548** Multiple sclerosis lesion geometry in quantitative susceptibility mapping and phase imaging
S Eskreis-Winkler\(^1\), K Deh\(^1\), A Gupta\(^1\), P Spincemaille\(^2\), S Gauthier\(^1\), M Jin\(^2\), Y Wang\(^1,2,3\)
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**P549** Angle resolved R2* is sensitive to tissue changes: study in MS patients and controls
E Hernandez-Torres\(^1\), V Wigglermann\(^1\), TR Baumeister\(^1\), Y Zhao\(^2\), D Sadovnick\(^2,4\), DKB Li\(^3\), A Traboulsee\(^2,3\), A Rauscher\(^3\)
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**P550** Vitamin D levels are associated with low cortical thickness in secondary progressive MS
D Ontaneda\(^1\), S Planchon\(^1\), J Cohen\(^1\), E Fisher\(^2\)
\(^1\)Cleveland Clinic, Mellen Center, Cleveland, OH, US, \(^2\)Cleveland Clinic, Biomedical Engineering Lerner Research Institute, Cleveland, OH, US

**P551** A prospective, case-control, longitudinal MRI study of the effect of glatiramer acetate on iron deposition in RRMS
R Zivadinov\(^1\), C Kennedy\(^1\), N Bergsland\(^1\), R Melia\(^1\), DP Ramasamy\(^1\), M Cherneva\(^1\), D Hojnacki\(^2\), E Carl\(^1\), MG Dwyer\(^1\), B Weinstock-Guttman\(^2\)
\(^1\)State University of New York, Buffalo Neuroimaging Analysis Center, Buffalo, NY, US, \(^2\)State University of New York, Baird MS Center, Department of Neurology, Buffalo, NY, US

**P552** Cortical and subcortical volume dynamics in active relapsing-remitting multiple sclerosis patients treated with in Fingolimod (Gilenya)
A Achiron\(^1,2\), C Hoffmann\(^3\), Y Nissan\(^1\), M Dolev\(^1\), D Magalashvili\(^1\), S Miron\(^1\)
\(^1\)Sheba Medical Center, Multiple Sclerosis Center, Ramat Gan, IL, \(^2\)Sackler School of Medicine, Tel-Aviv, IL, \(^3\)Sheba Medical Center, Neuroradiology, Ramat Gan, IL

**P553** Perfusion and diffusion changes in multiple sclerosis lesions and correlation with brain atrophy and clinical disability
M Cerghe\(^1\), L Li\(^1\), M Lu\(^1\), SP Nejad-Davarani\(^1\), Q Jiang\(^1\)
\(^1\)Henry Ford Hospital, Detroit, MI, US, \(^2\)Wayne State University, School of Medicine, Detroit, MI, US, \(^3\)Henry Ford Hospital, Department of Biostatistics and Research Epidemiology, Detroit, MI, US

**P554** Impaired homologous interhemispheric functional connectivity is related to atrophy of the corpus callosum in multiple sclerosis
S Tobyn\(^1\), D Boratyn\(^1\), EC Klawiter\(^1\)
\(^1\)Massachusetts General Hospital, Harvard Medical School, Neurology, Boston, MA, US

**P555** Imaging myelin pathology in the gray matter in multiple sclerosis
Y Wang\(^1\), C Wu\(^1\), Z Zhu\(^1\), R Miller\(^1\)
\(^1\)Case Western Reserve University, Cleveland, OH, US

**P556** Sex differences in brain glucose uptake in patients with multiple sclerosis during walking
JH Kindred\(^1\), JR Hebert\(^2\), M Buccioni\(^3\), JJ Tuulari\(^2\), PJ Koo\(^1\), T Rudroff\(^2\)
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PS57  Epigenetic changes in CD8+ T cells and CD19+ B cells isolated from relapsing/remitting multiple sclerosis patients  
MC Graves1, M Benton2, R Lea3, D Macartney4, L Tajouri5, RJ Scott5, J Lechner-Scott5  
1Hunter Medical Research Institute, Molecular Genetics, Newcastle, AU, 2Griffith University, Brisbane, AU, 3Institute of Environmental Science and Research, Porirua, NZ, 4Bond University, Gold Coast, AU, 5John Hunter Hospital, Neurology, Newcastle, AU

PS58  Abnormal functional phenotypes of effector and regulatory T-cell subsets in pediatric-onset MS  
M Nyirenda1, R Li2, CS Moore1, A Rozenberg1, A Rezk1, T Johnson2, DA Sadovnick3, DL Arnold1, RA Marrie4, B Banwell5, A Bar-Or6  
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PS59  Unique immune profile in benign MS identified with antigen arrays  
P Pia Kivisakk1, B Patel1, Y Hyvert2, T Gholidpour1, R Gandhi3, T Chitnis1, HL Weiner1, FJ Quintana1  
1Brigham and Women’s Hospital, Harvard Medical School, Partners Multiple Sclerosis Center, Center for Neurologic Diseases, Department of Neurology, Boston, MA, US, 2EMD Serono, Billerica, MA, US

PS60  Oxysterols impair type 1 regulatory T-cell differentiation and promote autoimmunity  
F Chalmin1, N Budoo1, V Rochemont1, D Merkler1, C Pot1  
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PS61  Role of melatonin in MS pathogenesis  
MF Farez1, S Mendez Huergo1, I Mascanfroni1, G Rabinovich1, FJ Quintana1, J Correale1  
1Raúl Carrea Institute for Neurological Research (FLENI), Neurology, Buenos Aires, AR, 2IBYME, Buenos Aires, AR, 3Center for Neurologic Diseases - Brigham and Women’s Hospital, Boston, MA, US

PS62  Identification of a transcriptional regulator of pathogenicity of Th17-cells  
G Meyer zu Horste1, C Wu1, Y Lee1, W Elyaman1, VK Kuchroo2  
1Brigham and Women’s Hospital, Harvard Medical School, Center for Neurologic Diseases, Boston, MA, US

PS63  Identification of a key role for complement in neurodegeneration in multiple sclerosis  
I Huitinga1, J Michaelidou2, M van Strien1, C van Eden1, K Fluitert2, JW Neal3, J Giles4, PB Morgan1, F Baas5, S Dhib-Jalbut6, KE Balashov1  
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PS64  Intrathecal Epstein-Barr virus specific CD8 T-cell responses in multiple sclerosis patients are directed to lytic viral antigens  
GP van Nierop1, JG Mitterreiter1, BL Haagmans1, J Mautner2, ADME Osterhaus1, RQ Hintzen3, GMGM Verjans1  
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PS65  MicroRNA mir-21 is induced by interferon-beta and inhibits IL-12 expression: a novel immunomodulatory mechanism in multiple sclerosis  
LL Aung1, V Bhise2, S Dhib-Jalbut3, KE Balashov1  
1Rutgers-Robert Wood Johnson Medical School, Neurology, New Brunswick, NJ, US

PS66  Transcriptional analysis of proinflammatory capacity of human Th17 subsets in healthy subjects and patients with multiple sclerosis  
D Hu2, N Pochet1, R Clicic1, T-H Yang2, P Kivisakk1, Y Lee1, F Sallusto1, V Kuchroo1, HL Weiner1  
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PS67  The immunological architecture of multiple sclerosis and treatment  
J Dooley1, J Pauwels1, D Franckenaert2, J Terbeek4, J Garcia-Perez2, K Hilven2, D Danso-Abeam1, B Decallonne6, B Dubois1,4, A Liston1,2, A Goris1  
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PS68  Induction of the glucocorticoid-induced leucine zipper protein in dendritic cells by hepatocyte growth factor limits autoimmune neuroinflammation  
N Molnarfi1,2, M Benkhoucha3, G Sneider2, M-L Santiago-Raber2, PH Lalite1,2  
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P569  The protection of A2aR on BBB permeability from Th1 cytokines in MS
M Alahiri1, S Agarwal1, SA Sadiq1, Y Liu2,3
1Tisch Multiple Sclerosis Research Center of New York, New York, NY, US, 2School of Basic Medical Sciences, Fudan University, Department of Pathology, Shanghai, CN

P570  Characterization of naïve, memory and effector CD4+T-cell subsets in progressive MS
BR Nielsen1, R Ratzer1, L Börnsen1, PS Sørensen1, MR von Essen1, JR Christensen1, F Sellebjerg1
1Danish Multiple Sclerosis Center, Copenhagen University Hospital, Rigshospitalet, Department of Neurology, Copenhagen, DE

P571  Impact of glucocorticoid treatment on the migration and polarization of human monocytes
TLK Finck1,2, HJ Fischer1, HM Reichardt1, F Lühder2
1University of Göttingen Medical School, Institute for Cellular and Molecular Immunology, Göttingen, DE, 2University of Göttingen Medical School, Department of Neuroimmunology, Institute for Multiple Sclerosis Research, Göttingen, DE

P572  Molecular dynamics and intracellular signalling of the TNF-R1 carrying the R92Q mutation
S Malhotra1, L Agulló1, X Montalban1, M Comabella1
1Vall Hebron University Hospital, Multiple Sclerosis Centre of Catalonia, Neuroimmunology Department, Barcelona, ES

P573  Plasmocytoid dendritic cells deficit of early response to toll-like receptor 7 agonist stimulation in multiple sclerosis patients
MP Mycko1, H Cwiklinska1, M Cichalewska1, M Matysiak1, P Lewkowicz1, B Slwinska1, I Selmaj1, KW Selmaj1
1Medical University of Lodz, Department of Neurology, Laboratory of Neuroimmunology, Lodz, PL

P574  Neuroprotective effects of calcitriol in autoimmune optic neuritis
K-W Sühs1,2, K Pars1, SK Williams2, K Hein3, R Diem2
1Hannover Medical School, Department of Neurology, Hannover, DE, 2University Clinic Heidelberg, Department of Neuro-Oncology, Heidelberg, DE, 3University of Heidelberg Medical School, Department of Neurology, Heidelberg, DE

P575  Neutrin-1 regulates blood-brain barrier function and CNS inflammation
C Podjaski1,2, JL Álvarez1, M-A Lecuyer1, C Larochelle1, S Terouz1, L Bourbonniere1, Saint-Laurant1, S Larouche1, H Hachehouche1, A Nakano1, M Sabbagh1, J Bin1, N Arbou1, P Darlington1, J Antel1, T Kennedy2, A Prat1
1CRCHUM, Montreal, QC, CA, 2McGill University, Montreal, QC, CA, 3Concordia University, Montreal, QC, CA

P576  Immune cells in the diffusely abnormal white matter of multiple sclerosis
C Laule1,2,3, V Pavlova4, E Leung5, G Zhao6, P Kozłowski7, AL Traboulsi7, DKB Li8, GRW Moore2,3,4
1University of British Columbia, Radiology, Vancouver, BC, CA, 2University of British Columbia, Pathology and Laboratory Medicine, Vancouver, BC, CA, 3University of British Columbia, International Collaboration on Repair Discoveries (ICORD), Vancouver, BC, CA, 4University of British Columbia, Medicine (Neurology), Vancouver, BC, CA

P577  Interleukin-1β activates the apoptotic protein p53 to cause excitotoxic neurodegeneration and disease progression in multiple sclerosis
S Rossi1,2, V Studer1,2, C Motta1, F Barbieri1,2, G Macchiariulo1,2, F Buttari1,2, D Centonze1,2
1Tor Vergata University, Clinica Neurologica, Dipartimento di Medicina dei Sistemi, Rome, IT, 2Fondazione Santa Lucia/Centro Europeo per la Ricerca sul Cervello (CERC), Rome, IT

P578  EBV nuclear antigen-1 epitope reactive to intrathecal antibodies in the cerebrospinal fluid of patients with multiple sclerosis
H Collins1, D Gunaydin1, K Tamanito1, A Dolei1,2, X Yu1
1University of Colorado Anschutz Medical Campus, Neurology, Aurora, CO, US, 2University of Sassari, Department of Biomedical Sciences and Centre of Excellence for Biotechnology Development and Biodiversity Research, Sassari, IT

P579  Heat shock protein 40 family promotes autoimmune demyelination
MR Cichalewska1, MP Mycko1, HD Cwiklinska1, M Jurynczyk1, KW Selmaj1
1Medical University of Lodz, Neurology Department, Lodz, PL

P580  Ephrin B1 and B2 are essential for the pathogenicity and migration capacity of TH17 cells in EAE and MS
B Broux1, H Luo1, S Ghannam1, C Larochelle1, W Jin1, Y Hu1, X Wang1, Y Wang1, J Wu1, A Prat1
1Université de Montréal, CRCHUM, Montréal, QC, CA

P581  Heterogeneous biological effect of AQP4-IgG on astrocyte
E Ferrant1, A Ruiz1, S Cavagna1, C Benetello2, N Auvergnon1, P Giraudon1, R Marignier1
1Centre de Recherche en Neurosciences de Lyon (CRNL), Inserm U1028 - CNRS UMR5292 - UCBIL, Lyon 1, Neuro-Oncology and Neuro-Inflammation Team (ONCOFLAM), Lyon, FR, 2CRNL, Plateforme Génétique Fonctionnelle et Optogénétique (PGFO), Lyon, FR

P582  In vivo imaging of molecular mimicry of CD8+ T cells in healthy and inflamed brain
E Reuter1, N Grohmann2, M Paterka3, J Birkenstock3, R Gollan1, T Kuhlmann4, F Zipp1, V Siffrin1
1University Medical Center Mainz, Neurology, Mainz, DE, 2Max Delbrueck Center for Molecular Medicine Berlin-Buch, Berlin, DE, 3University Hospital Münster, Münster, DE
P583 Mucosal associated invariant T-cells from multiple sclerosis patients are effector cells with increased activation and homing abilities
M Salou1, B Nicot1, A Garcia1, A Gentyl1, L Michel1,2, A Elong-Ngono1, M Jacq-Foucher1, F Le Frère2, N Jousset3, S Wiertlewski2, J-P Souillou1, N Degauque1, A Nicot1, S Brouard1, D-A Laplaud1,2,3
1INSERM UMR 1064, Nantes, FR, 2University Hospital, Neurology Department, Nantes, FR, 3Inserm 005, CIC, Nantes, FR

P584 Metabolic syndrome and multiple sclerosis. Metformin and thioazolinediones activate different immunomodulatory pathways
J Correale1, MF Farez2
1Institute for Neurological Research Dr. Raúl Carrea (FLENI), Buenos Aires, AR, 2FLENI, Neurology, Buenos Aires, AR

P585 Amino acid catabolism is altered in immune cells from multiple sclerosis patients
J Correale1, MF Farez1
1Institute for Neurological Research Dr. Raúl Carrea (FLENI), Buenos Aires, AR

P586 The role of T regulatory cells in the therapeutic effect of glatiramer acetate in experimental autoimmune encephalomyelitis
R Aharoni1, T Feferman1, DD Bar Lev1, G Shakhar1, M Sela1, R Arnon1
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P587 Impact of minocycline and established MS medications on EMMPRIN, a new factor implicated in MS immunopathogenesis
JN Hahn1, J Wang1, C Silva1, VW Yong1
1University of Calgary / Hotchkiss Brain Institute, Clinical Neurosciences, Calgary, AB, CA

P588 The nuclear receptor Nur77 restricts T-cell responses and limits central nervous system autoimmunity
S Hucke1, M Liebmann1, T Kuhlmann2, H Wiendl1, L Klots1
1University of Muenster, Department of Neurology, Muenster, DE, 2University of Muenster, Department of Neuropathology, Muenster, DE

P589 CD8+CD161hi, Tc17 and mucosal-associated invariant T cells in treated and untreated multiple sclerosis patients
L Negrotto1, E Cantó1, M Tintoré1, J Río1, X Montalban1, M Comabella1
1Vall Hebron University Hospital, Multiple Sclerosis Centre of Catalonia, Neuroimmunology Department, Barcelona, ES

P590 Altered glycosylation patterns during multiple sclerosis generate neo-autoantigens
D Lefranc1, B Oxombe1, M Bellart1, V Buée-Scherrer2, L Prin1,3, S Dubucquoi1,2, P Vermersch1,4
1University Lille North of FR, EA2686, Lille, FR, 2INSMIN U837, Team 1, Lille, FR, 3University Hospital, Immunology, Lille, FR, 4University Hospital, Neurology, Lille, FR

P591 Cholesterol is main autoantigen recognized by antibodies reacting with brain lipids in MS patients
A Jurewicz1, M Domowicz1, A Ewiak-Paszyska1, G Galazka1, CS Raine2, K Selmaj1
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P592 Functional characterization of myeloid dendritic cells in peripheral blood of patients with multiple sclerosis
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P593 c-Myc activity in T-cells is critical for autoimmune demyelination
MP Myck1, A Wilson2, M Cichalewska1, H Cwiklinska1, HR MacDonald2, KW Selmaj1
1Medical University of Lodz, Department of Neurology, Laboratory of Neuroimmunology, Lodz, PL, 2Developmental Immunology Group, Ludwig Center for Cancer Research of the University of Lausanne, Lausanne, CH

P594 Global metabolomic analysis of cuprizone toxicity
A Tarabotti1, H Huang1, R Avila2, CB Bal2, S Medicetty1, L Shriver1
1University of Akron, Akron, OH, US, 2Renovo Neural Inc., Cleveland, OH, US

P595 Principal component analysis allows to cluster patients with multiple sclerosis on the basis of different subsets of CD8+ and iNKT-cells
AM Simone1, D Ferraro1, F Vitetta1, S De Biasi2, M Nasi2, E Bianchini2, L Gibellini1, M Pinti1, C Del Giovane1, A Cossarizza2, P Sala2
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P596 Autoantibodies to IL-18 in multiple sclerosis: profit or damage?
DS Korobko1,2, MA Tyumentseva4, NA Malkova1,2, NV Tikunova4
1State Novosibirsk Regional Clinical Hospital, Regional MS Centre, Novosibirsk, RU, 2Novosibirsk State Medical University, Novosibirsk, RU, 3Institute of Chemical Biology and Fundamental Medicine, SB of Russian Academy of Sciences, Novosibirsk, RU

P597 The role of endogenous interferon-beta in the pathogenesis of relapsing remitting multiple sclerosis
X Zhang1, Y Tao1, S Markovic-Plese1
1University of North Carolina at Chapel Hill, Chapel Hill, NC, US
P598  Sodium chloride-high diet promotes pro-inflammatory macrophage activation and aggravates central nervous system autoimmunity
  S Hucke1, M Eschborn1, A Engbers1, H Wiendl2, L Klotz2
  1University of Muenster, Department of Neurology, Muenster, DE

P599  Suppression of IL-10 production by calcitriol in patients with multiple sclerosis
  M Niino1, T Fukazawa2, Y Miyazaki3, E Takahashi1, N Minami1, I Amino1, N Fujiki1, S Doi1, S Kikuchi3
  1Hokkaido Medical Center, Department of Clinical Research, Sapporo, JP, 2Sapporo Neurology Clinic, Sapporo, JP, 3Hokkaido Medical Center, Department of Neurology, Sapporo, JP

P600  Comparative efficacy between a generic (M356) and brand Copaxone® (glatiramer acetate injection) in an animal model of multiple sclerosis
  C Honan1, TC Ganguly1, I Fier1, GV Kaundinya1
  1Momenta Pharmaceuticals, Inc., Cambridge, MA, US

P601  The ubiquitin-like modifier HLA-F adjacent transcript is upregulated in the central nervous system in vitro and in vivo by proinflammatory cytokines
  JA Benjamins1-2, L Nedelkoska1, B Bealmear1, S Todi3, M Niino1, T Fukazawa2, Y Miyazaki3, E Takahashi1, N Minami1, I Amino1, N Fujiki1, S Doi1, S Kikuchi3
  1Wayne State University, Neurology, Detroit, MI, US, 2Wayne State University, Immunology and Microbiology, Detroit, MI, US, 3Wayne State University, Pharmacology, Detroit, MI, US

P602  Effects of IFN-β-1b treatment on lymphocyte subpopulations and S1P-dependent migration in patients with multiple sclerosis
  T Hottenrott1, H Sic2, H Eibel1, S Rauer1
  1Freiburg University Medical Center, Neurology, Freiburg, DE, 2Freiburg University Medical Center, Center for Chronic Immuno-deficiency, Freiburg, DE

P603  Natalizumab and fingolimod differentially impact the alpha-4/beta-1 and alpha-L/beta-2 expression-related subset diversity of T-cells
  A Harrer1, K Oppermann1, J Wanek1, G Pilz1, P Wipfier1, J Sellner1, S Afazeli1, E Haschke-Becher1, E Trinka1, J Kraus1
  1Paracelsus Medical University, Department of Neurology, Salzburg, AT, 2Paracelsus Medical University, Central Laboratory, Salzburg, AT

P604  Identification of novel protein candidates involved in immunomodulatory processes in therapy and pathomechanism of multiple sclerosis
  MJ Knop1, S Nischwitz2, H Faber1, M Uhr1, CW Turck4, F Weber9
  1Max Planck Institute for Psychiatry, Neurology, Munich, DE, 2Städtischen Klinikum München, Klinikum Harlaching, Neurology, Munich, DE, 3Max Planck Institute for Psychiatry, Pharmacokinetiks and CSF Analysis, Munich, DE, 4Max Planck Institute for Psychiatry, Proteomics and Biomarkers, Munich, DE

P605  Short term effects of intravenous glucocorticoids on the expression of Th17-related genes on circulating CD4+ T-cells after multiple sclerosis relapse
  C de Andres1-2, M García1, A Delgado2, H Goicochea3-4, ML Martinez-Gines1,2, ML Martin1,2, LA Lopez-Fernandez7
  1Hospital Gregorio Marañon, Madrid, ES, 2Biomedical Research Institute Gregorio Marañon, Madrid, ES

P606  Using social media for large-scale recruitment in a prospective multiple sclerosis (MS) inception cohort: the genes and environment in MS (GEMS) study
  A von Korff1, E Owen1, M Cimpean1, P Winn1, Z Xia1-2, PL De Jager1-3
  1Brigham and Women’s Hospital, Neurology, Boston, MA, US, 2Harvard Medical School, Boston, MA, US, 3Harvard Medical School, Neurology, Boston, MA, US

P607  A global analysis of the use of social media to discuss multiple sclerosis
  J Pakpoor1, S Nyein1, G Disanto1, A Nwosu4, D Baker3, G Giovannoni2
  1University of Oxford, John Radcliffe Hospital, Oxford, GB, 2University of Southampton, Southampton, GB, 3Queen Mary University of London, Barts and the London School of Medicine and Dentistry, Blizard Institute, London, GB, 4Marie Curie Palliative Care Institute Liverpool, Liverpool, GB

P608  Social media and MS: a crowdsourcing-based approach
  L Lavorzina1, M de Stefano1, D Buonanno1, S Eboli2, F Conte1, A Gallo1, S Bonavia1, G Tedeschi1
  1Second University of Naples, Department of Medical, Surgical, Neurological, Metabolic and Aging Sciences, Naples, IT, 2Monchibord.com, Naples, IT

P609  Consultation for difficult pediatric demyelinating cases via nationwide webinar
  JM Ness1, T Schreiner2, V Bhise1, G Alper4, B Morgan-Followell5, D Hertz6, US Network of Pediatric MS Centers
  1University of Alabama at Birmingham, Pediatrics, Division of Pediatric Neurology, Birmingham, AL, US, 2University of Colorado, Pediatric Neurology, Denver, CO, US, 3Robert Wood Johnson Medical School, Child Health Institute, New Brunswick, NJ, US, 4University of Pittsburgh School of Medicine, Pediatrics, Pittsburgh, PA, US, 5Nationwide Children’s Hospital, Pediatric Neurology, Columbus, OH, US, 6National Multiple Sclerosis Society, Medical Programs, New York, NY, US

P610  Argentine’s experience in developing and implementing a blog, as a tool for better interaction between multiple sclerosis patients and their doctors
  JD Steinberg1, MC Curbelo1, G Rojas1, AD Martinez1, AJ Carra1
  1Hospital Britânico, Buenos Aires, AR

P611  Regulation of CNS demyelination by the gut microbiome
  LH Kasper1, Y Wang1, K Telesford1, S Haque-Begum1, EJ Kasper1, J Ochoa-Reparaz2
  1Geisel School of Medicine Dartmouth College, Microbiology and Immunology, Hanover, NH, US
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| P612 | Intestinal microflora modified by Candida kefyr reduces the susceptibility to experimental autoimmune encephalomyelitis |
| K Takata1, T Tomita2, T Koda3, T Okuno3, JA Honarat4, M Kinoshita5, M Takei1, K Hagihara1, H Mochizuki1, S Sakoda6, Y Nakatsuji6 |
| 1Osaka University, Neurology, Suita, JP, 2Kyorin Pharmaceutical Co., Ltd., Shimosuga, JP, 3Osaka University, Laboratory of Immune Regulation, Suita, JP, 4National Hospital Organization Toneyama, Neurology, Toyonaka, JP |

| P613 | Bacteria and their cell wall components uniformly co-activate IL-17-producing thymocytes |
| HH Hofstetter1, A Weber1, C Zimmermann2, B Kieseier2, HP Hartung2 |
| 1HHU Düsseldorf, Neurology, Düsseldorf, DE, 2HHU Düsseldorf, Düsseldorf, DE |

| P614 | A commensal symbiont product prevents murine CNS demyelination via TLR2-mediated expansion of migratory CD39+ T-cell subsets |
| Y Wang1, K Telesford1, S Begum-Haque1, J Ochoa-Repáraz1,2, DL Kasper3,4, LH Kasper1 |
| 1Brigham and Women’s Hospital, Boston, MA, US, 2University of California, San Francisco, CA, US, 3Loma Linda University, Laboratory of Immune Regulation, Suita, JP, 4Harvard University, Kingston, ON, CA |

| P615 | Gut microbiome in early pediatric multiple sclerosis: a case-control study |
| H Tremlett1, D Fadroski2, S Lynch2, J Hart2, J Graves2, S Lulu3, G Aaen4, A Belman5, L Benson6, C Casper7, T Chitnis8, M Gorman9, L Krupp2, LH Kasper1, M Padmanabhan10, M Reif10, M Rodgriguez9, J Rose6, J-M Tillema9, B Weinstock-Guttman10, E Waubant9, CC Goodrich11, D Koh11, D Liebenson1, R Goswami1, C Fressinaud1,2, E Weinstock-Guttman10, J Eyer2 |
| 1University of British Columbia, Vancouver, BC, CA, 2University of California, San Francisco, CA, US, 3Loma Linda University, Loma Linda, CA, US, 4Stony Brook University, Stony Brook, NY, US, 5Harvard University, Cambridge, MA, US, 6University of Utah, Salt Lake City, UT, US, 7Baylor College of Medicine, Houston, TX, US, 8University of Alabama, Birmingham, AL, US, 9Mayo Clinic, Rochester, MN, US, 10State University of New York at Buffalo, Buffalo, NY, US |

| P616 | Gut microbiome is linked to immune cell phenotype in multiple sclerosis |
| R Gandhi1, FV Glehn1, MA Mazzola1, S Jangi1, B Glanz1, S Cook2, P Nejad1, J Petrosinos2, D Ward3, N Li4, GK Gerber5, L Bry1, H Weiner1 |
| 1Brigham and Women’s Hospital, Boston, MA, US, 2Baylor College of Medicine, Houston, TX, US, 3Broad Institute, Cambridge, MA, US |

| P617 | Commensal antigen induction of suppressive human Foxp3+ Tregs |
| KM Telesford1, Y Wang1, J Ochoa-Repáraz1, S Begum-Haque1, LH Kasper1 |
| 1Geisel School of Medicine at Dartmouth, Microbiology and Immunology, Hanover, NH, US |

| P618 | The MS Microbiome Consortium (MSMC): an academic multi-disciplinary collaborative effort to elucidate the role of the gut microbiota in MS |
| SE Baranzini1, I Katz-Sand2, SK Mazmanian1, Y Becosme2, J London3, R Farber2, R Kanner1, R Gomez1, BA Cree1, R Knight1, P Casaccia2 |
| 1University of California San Francisco, Neurology, San Francisco, CA, US, 2Mount Sinai School of Medicine, Neurology, New York, NY, US, 3California Institute of Technology, Biology and Biological Engineering, Pasadena, CA, US, 4University of Colorado, Boulder, Chemistry and Biochemistry, Boulder, CO, US |

| P619 | Astroglial endocytosis of myelin causes microglial activation and dendritic loss of neurons |
| G Ponath1, S Ramanan1, C Raine1, D Pitt2 |
| 1Yale University, Department of Neurology, New Haven, CT, US, 2Yeshiva University, Albert Einstein College of Medicine, New York, NY, US |

| P620 | Expression profiles of inflammation associated microRNAs in astrocytes from multiple sclerosis lesions |
| VTS Rao1, SC Fu1, CS Moore1, SK Ludwig2, M-K Ho1, BJ Bedell1, A Bar-Or1, JP Antel2 |
| 1McGill University, Montreal, QC, CA, 2Queen’s University, Kingston, ON, CA |

| P621 | Histamine H3 receptor negatively regulates oligodendrocyte differentiation and myelination |
| RR Wang1, Y Chen1, T Guo1, W Zhen1, TB Guo1, RY Zhao1, AA Liu1, JP Rubio1, D Krufl1, J Lu1, M Song1, P Thompson1, S Wang1, JC Richardson1, GL SmithKline, R&D in Shanghai, Shanghai, CN, 2GlaxoSmithKline, R&D Center, Stevenage, GB, 3GlaxoSmithKline, R&D Center, Research Triangle Park, NC, US |

| P622 | Proremyelinating properties of neurofilament peptide NFL-TBS.40-63 and axon cytoskeleton proteins in vitro |
| C Fressinaud1,2, E Weinstock-Guttman10, J Eyer2 |
| 1University Hospital, Neurology Department, Angers, FR, 2LUNAM, UPRES EA 3143, Angers, FR |

| P623 | Differential glycosylation of KIR4.1 in glia cells affects binding of autoantibodies in multiple sclerosis |
| R Srivastava1, SR Kalluri1, Y Schäfer1, V Grummel1, E Kremmer1, D Buck1, L Schirmer1, B Hemmer1 |
| 1Technische Universität, Munich, DE, 2Helmholtz Zentrum München, Core Facility Monoclonal Antibodies, Munich, DE |

| P624 | Effect of inflammatory insults on cell viability and its regulation by epigenetic changes in oligodendrocytes |
| Y Wang1, J Petal1, E Loda1, D Liebenson1, R Goswami1, D Stefoski1, R Balabanov1 |
| 1Rush University, Neurology, Chicago, IL, US |
P625  Azetidine-induced oligodendroglialopathy  
RA Sobel1,2, MA Albertelli1, KV Grimes4, E Rubenstein3  
1Stanford University School of Medicine, Department of Pathology, Palo Alto, CA, US, 2Veterans Affairs Health Care System, Laboratory Service, Palo Alto, CA, US, 3Stanford University School of Medicine, Department of Comparative Medicine, Stanford, CA, US, 4Stanford University School of Medicine, Department of Chemical and Systems Biology, Stanford, CA, US, 5Stanford University School of Medicine, Department of Medicine (Emeritus), Stanford, CA, US

P626  RGC-32 regulates TGF-β extracellular matrix expression in reactive astrocytes  
CA Tegla1,2, CD Cudrici1, D Boodhoo1, A Martin1, AJ Sugarman1, J Danoff1, V Rus1, H Rus1,2,3,4  
1University of Maryland School of Medicine, Neurology, Baltimore, MD, US, 2Veterans Administration Maryland Health Care System, Baltimore, MD, US, 3University of Maryland School of Medicine, Neurology, Baltimore, MD, US, 4Veterans Administration, Multiple Sclerosis Center of Excellence, Baltimore, MD, US

P627  The relationship between neuronal S1P receptor modulation by Fingolimod and neuronal survival  
JM Orian1  
1La Trobe University, La Trobe Institute for Molecular Science, Melbourne, AU

P628  Dose dependent protection of oligodendrocytes by IVIG  
M Winter1, C Baksmeier1, H-P Hartung1, N Goebels1  
1Heinrich-Heine-University, Department of Neurology, Duesseldorf, DE

P629  Neuromyelitis optica IgG in the cerebrospinal fluid induces blood brain barrier breakdown and NMO lesions in brain parenchymal white matter  
N Asgari1,2, CT Berg1, R Khoroooshi1, A Wlodarczyk1, T Owens1  
1University of Southern DE, Neurobiology, Institute of Molecular Medicine, Odense, DE, 2Veje Hospital, Department of Neurology, Veje, DE

P630  Neuromyelitis optica: VEn multicentric epidemiologic study  
J Soto1, O Molina1, A Soto2, E Armas3, C Soubléte4, Y Mora3, ME Ravelo5, F Hernandez6, G Rios6, G L Vink7, J Hidalgo6, MC Castillo1  
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P631  Neuromyelitis optica does not impact periventricular venous density - a 7 Tesla MRI study  
C Ramien1, T Sinnecker2, Y Ge1, J Herbert1, F Paul1, I Kister1, J Wuerfel1,4  
1Charité University Medicine Berlin, NeuroCure, Berlin, DE, 2Asklepios Fachklinikum Teupitz, Dep. of Neurology, Teupitz, DE, 3New York University, Langone Medical Center, New York, NY, US, 4University Medicine Goettingen, Institute of Interventional and Diagnostic Neuroradiology, Goettingen, DE

P632  Plasmablasts as AQP4-Ab producers in the pathogenesis of neuromyelitis optica  
N Chihara1,2,3, T Aranami1,4, S Oki1, T Matsuoka1, M Nakamura1, T Okamoto4,5, M Murata2, T Toda2, S Miyake1,2, T Yamamura1  
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P633  Neuropsychiatric features of neuromyelitis optica  
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P634  Comparison of peripheral and CNS B-cell pools in NMO, using next generation sequencing, and its implications for B-cell trafficking  
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P635  HLA class 11 alleles and environmental associations with neuromyelitis optica in Indian population  
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P636  The increase of CD56 high NK cells and activated Treg-cells in patient with neuromyelitis optica after treatment with anti-IL-6R antibody tocilizumab  
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P637  Evaluation of treatment response to plasmapheresis in acute exacerbations of neuromyelitis optica  
GES Linhares1, SLA Pereira1, FMH Jorge1, R Simm1, LM Oliveira1, LS Mendes1, D Callegaro1  
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P638  Relevance of cervical cord atrophy and 3rd. ventricle widening to clinical disability in neuromyelitis optica
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P639  Neuromyelitis optica and neuromyelitis optica spectrum disorder patients in Turkish cohort: demographic, clinical, laboratory and radiological features
A Altintas1, R Karabudak2, B Petek Balci3, M Terzi4, A Soysal5, S Saip1, A Tuncer Kurne6, U Uygunoglu1, M Nalbantoglu1, G Gozubatik Celik1, N Isik7, Y Celik7, F Gokcay8, T Duman1, C Boz9, C Yucetas10, N Celebisoy11, S Diker1, I Colpak Isikay12, T Kansu1, A Siva1
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P640  Therapy of neuromyelitis optica exacerbations: a retrospective evaluation of 840 episodes with 1168 treatment cycles
I Kleiter1, A Gahlen1, N Borisow2, K Fischer1, F Pauli1, C Trebst1, Neuromyelitis Optica Study Group (NEMOS)1, 2Ruhr-University Bochum, Bochum, DE, 3Charité Universitätsmedizin Berlin, NeuroCure Clinical Research Center and Clinical and Experimental Multiple Sclerosis Research Center, Neurology, Berlin, DE, 4Asklepios Fachkliniken Brandenburg GmbH, Teupitz, DE, 5Hannover Medical School, Hannover, DE

P641  Clinical and radiological profiles of anterior visual pathway involvement in neuromyelitis optica
I Kawachi1, A Yokoseki1, E Saji1, M Hokari1, K Yanagawa1, M Nishizawa1
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P642  Factor H autoantibodies in neuromyelitis optica
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P643  Retrospective review of optimal treatment for acute relapses in neuromyelitis optica
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P644  Pathological study of tumefactive brain lesions in neuromyelitis optica
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P645  Is late-onset neuromyelitis optica spectrum disorder associated with a worse outcome?
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P646  Presence of HLA DR10 in Mexican patients with neuromyelitis optica (Devic’s disease)
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P647  The plasma anti-aquaporin antibodies and the outcome of myelitis in neuromyelitis optica and neuromyelitis optica spectrum disorders: any relationship?
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P648  Autoantibodies in patients with neuromyelitis optica
WLCJ Pereira1, AP Kallaur1, SR Oliveira1, ANC Simao1, LJV Schiavao1, PRVP Rodrigues1, F Delongui1, DF Alfieri1, EMV Reiche1, DR Kaimen-Maciel1
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P649  Neuromyelitis optica: annual relapse rates off and on immunosuppression and the relationship to attack type and ethnicity
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P650  Magnetic resonance imaging features of optic neuritis distinguishing neuromyelitis optica from multiple sclerosis
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P651  Involvement of cerebral cortex in anti-aquaporin-4 antibody seropositive neuromyelitis optica spectrum disorder patients
SY Kim1, W Kim1, S-H Kim2, S-Y Huh3, J-W Hyun2, IH Jeong2, M-S Park4, JY Cho5, HY Shin6, SM Kim4, J-H Ra2, S-H Lee2, HJ Kim2
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P652  NMO and NMOSD: clinical, imaging, Laboratory and CSF characteristics: a cohort from Iran
SM Nabavi1, S Fayyazi2, G Ghazizadeh Eslami3, SH Aghamiri4, S Hozhabri Fouladizadeh4, A Zarvan5, M Yaghubi Ashrafi6, MS and Neuroimmunology Study Group
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P653  An unusual case of neurofibromatosis type 1, high titer antinuclear autoantibodies and neuromyelitis optica
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P654  Neuromyelitis optica and neuromyelitis optica spectrum disorders: the evaluation of 86 patients followed by Istanbul Bilm University
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P655  Optic neuritis related to tumour necrosis factor-a antagonists: description of 30 cases in a nationwide pharmacovigilance database
M-A Laville1, B Mosquet2, C Breuilly1, M Cohen4, A Fromont1, H Zéphir1, A Coquerel1, G Defer1, N Derache1
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P656  Multicolor retinal imaging in acute optic neuritis: a new potential biomarker for multiple sclerosis
RC Sergott1, ML Moster2, E Affel3

P657  White matter damage is associated with optic neuritis related retinal nerve fiber and ganglion cell loss in neuromyelitis optica spectrum disorders
F Pache1,2, H Zimmermann1, S Papazoglou1, M Scheel1, A Lacheta1, F Magerstäd1, K Ruprecht1, AU Brandt1, F Paul1,3
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P658  Optical coherence tomography (OCT) as a predictive and longitudinal in vivo biomarker of disease and repair in a mouse model of multiple sclerosis
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P659  Retrograde axonal and neuronal degeneration of the retina in acute optic neuritis
I Gabilondo1, EH Martínez-Lapiscina1, E Fraga-Pumar1, S Ortiz-Perez2, R Torres-Torres2, M Andorrà3, S Liufriu1, A Saiz1, B Sanchez-Dalmaj1, P Villoslada3
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P660  Mechanisms of fatigue in multiple sclerosis: the role of neuronal loss in the visual system
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P661  Retinal structural injury is worse in African-Americans than Caucasians with multiple sclerosis
J Chorostecki1, F Bao1, G Bao1, C Santiago1, A Tselis1, E Bernitsas1, N Seraji-Bozorgzad1, E Frohman2, C Caon1, O Khan1
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P662 Impaired color vision as determined by Farnsworth Munsell 100 Hue testing is tightly associated with retinal thinning in multiple sclerosis

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P663 Retinal ganglion cell layer thinning and vision outcome in optic neuritis over six months

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P664 Ocular motility: a potential method of quantifying progressive cerebral dysfunction in multiple sclerosis and clinically isolated syndrome

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P665 Retrospective comparison of mfERG and SD-OCT between RRMS and PPMS patients with and without optic neuritis

AM Flowers1, MK Adam2, RC Sergott3, 4

P666 Reliability of different point estimates for intra-retinal layer thickness determination

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P667 Longitudinal correlation of retinal nerve fiber layer and timed 25 foot walk in a large MS cohort

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P668 Relapsing inflammatory optic neuropathy: clinical description in a series of 16 patients

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P669 Multimodal clinical trial paradigm to assess neuroprotection in optic neuritis: baseline data

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P670 Sector-specific macular volume compromise in relapsing and remitting multiple sclerosis as measured by optical coherence tomography

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P671 The utility of optical coherence tomography in acute monocular visual loss: is it optic nerve or retina?

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P672 Vogt Koyanagi Harada disease, our experience

V Nogueira Fernández1, L Álvarez Fernández1, C Da Silva França1, L Ramos Rúa1, M Rodríguez Rodríguez1, M Alberte Woodward1, J González Ardura1, R Pego Reigosa1, F Brañas Fernández1, M Guijarro Del Amo1, JA Cortés Laín1
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P673 Comparing two and three way receiver operating characterization (ROC) analyses for optic neuritis transfer function characterization

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P674 25-hydroxyvitamin D levels in acute optic neuritis. Relation to paraclinical findings, demographic characteristics and risk of MS

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P675 Optic nerve head volume as a marker for neuronal damage after optic neuritis in multiple sclerosis and neuromyelitis optica

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| **P676** Optic neuritis associated with multiple sclerosis: VEPs sensitive in acute phase, OCT useful in chronic phase  |
| G Di Maggio1, R Santangelo1, S Guerrieri1, L Ferrari1, S Medaglini1, M Rodegher1, B Coloombo1, L Moiola1, U Del Carro1, V Martinelli1, G Comi1, L Leocani1  |
| 1San Raffaele, Milano, IT  |
| **P677** Optical coherence tomography after first optic neuritis for the differentiation between neuromyelitis optica and multiple sclerosis  |
| NH Kim1, YJ Shin2, KS Jeong3, J-Y Cho4, HJ Kim5  |
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| **P678** Longitudinal time-domain optic coherence study of retinal nerve fiber layer of IFNβ-treated and untreated MS patients  |
| R Pui1, M Sada1, F Morbiducci1, T Skripuletz1, Ü Pui1, D Brockmann1, K-W Süh1, M Stangel1, C Trebst1  |
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| **P679** Macrophage/microglia differentiation in slowly expanding lesions of progressive MS  |
| K Jäckle1, W Brück1  |
| 1University Medical Center Göttingen, Institute of Neuropathology, Göttingen, DE  |
| **P680** Meningeal inflammation affects the balance of TNF signaling in cortical grey matter in progressive multiple sclerosis  |
| R Magliozzi1,2, P Durrenberger3, O Howell4, F Roncaroli5, E Aricó6, MS Brignone7, F Aloisi8, R Reynolds9  |
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| **P681** The relationship between axonal loss and demyelination in the MS spinal cord  |
| D Carassiti1, N Petrova1, S Al-Zawawi1, F Scaravilli1, K Schmierer2  |
| 1Queen Mary University London, Experimental Medicine, Neuroscience and Trauma, London, GB  |
| **P682** Astrocytes upregulate interleukin-17 receptor expression in white matter lesions in multiple sclerosis  |
| J Raffel1, R Nicholas1, F Roncaroli1, R Reynolds1  |
| 1Imperial College, London, GB  |
| **P683** Induction of ion channel and transporter transcripts in normal appearing grey matter of chronic multiple sclerosis patients  |
| R Klaver1, P Nijland2, GJ Schenk1, P Van der Valk1, J Van Horssen2, HE De Vries2, JJJ Geurts1  |
| 1VU University Medical Center, Anatomy and Neuroscience, Amsterdam, NL, 2VU University Medical Center, Molecular Cell Biology and Immunology, Amsterdam, NL, 3VU University Medical Center, Pathology, Amsterdam, NL  |
| **P684** Podoplanin is expressed in multiple sclerosis meninges and perivascular infiltrates and regulates T-cell proliferation and Th17 differentiation  |
| A Nylander1,2, M Dominguez-Villar1, S Ramanan1, DA Hafler1, D Pitt1  |
| 1Yale University, Neurology, New Haven, CT, US, 2Yale School of Medicine, New Haven, CT, US, 3Yale School of Medicine, Neurology, New Haven, CT, US  |
| **P685** Epigenetic changes control memory function following demyelination in multiple sclerosis  |
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| **P686** Clostridium perfringens epsilon toxin: a model for the newly forming MS lesion  |
| J Linden1, Y Ma1, KR Ruma1, ML Oo1, L Gerber2, T Vartanian2  |
| 1Weill Cornell Medical College, Brain and Mind Research Institute, New York, NY, US, 2Weill Cornell Medical College, New York, NY, US  |
| **P687** Postmortem MRI to guide pathological localization: individualized, 3D-printed cutting boxes for fixed brains  |
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| **P688** S100B levels are increased in multiple sclerosis and modulates demyelination, glial reactivity and inflammation  |
| A Barateiro1, V Afonso1, S Gisela1, JJ Cerqueira2, D Brites1, J van Horssen2, A Fernandes13  |
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P690 Differential oxidative stress and cytokine profile between progressive and relapsing-remitting multiple sclerosis patients
AP Kallaur1, SR Oliveira2, LJV Schiavão2, PRVP Rodrigues2, DF Alfieri2, WLCJ Pereira2, F Delonguì3, DF Rodrigues2, J Lopes2, HK Morimoto2, DR Kaimen-Maciel1, ANC Simão2, EMV Reiche2
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P691 Neuropathological study of glucose and monocarboxylate transporters in multiple sclerosis
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P692 Is inflammation atherogenic in neurological diseases? A case-control study with migraine and multiple sclerosis patients
V González Quintanilla1, M Toriello1, S Gutierrez González1, J Fernández Fernández1, O Hatri2, R Viadero1, S López García1, EJ Palacio1, A Oterino1
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P693 Chi3l1 and Spp1 distribution in multiple sclerosis lesions
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P694 Endothelial function in patients with multiple sclerosis
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P695 Visual evoked potentials in neuromyelitis optica and its spectrum disorders
P Albrecht1, M Ringelstein1, I Kleiter2, I Ayzenberg2, N Borisow3, F Paul1, K Ruprecht3, M Krämer2, B Wildemann2, S Jarius2, H-P Hartung2, O Aktas2
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P696 Detecting cognitive impairment in MS based on a support vector machine classification of EEG P300 connectivity
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P697 Visual and auditory evoked potentials as related to fatigue in multiple sclerosis
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P698 Modulation of action tremor by repetitive transcranial magnetic stimulation in multiple sclerosis patients
M Gangitano1, P Raqones1, J Battaglini1, S Realmuto2, G Salemi1, B Fierro1, G Savettieri1
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P699 Heart rate variability analysis in recently diagnosed patients with multiple sclerosis
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P700 The VEMP score: a promising tool for evaluation of brainstem involvement in multiple sclerosis
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P701 Autonomic dysfunction and catecholamine levels in patients with clinically isolated syndrome
L Crnosija1, I Adamiec1, M Lovric2, M Krbtok Skoric1, I Milivojevic1, A Junakovic1, T Gabelic1, B Baruni1, I Zadro1, M Habek1
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P702 Measurement of visual evoked potentials (VEPs) from awake rats before and after introduction of gliotoxins into the optic chiasm
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P703 Visual evoked potentials and optic coherence tomography in monitoring involvement of visual pathways in multiple sclerosis
L Leocani1, S Guerrieri1, G Di Maggio1, R Santangelo1, L Ferrari1, S Medaglini1, M Rodedger1, B Colombo1, L Moiola1, U Del Carro1, V Martinelli2, G Comi11
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P705  Motor evoked potentials from multiple recording sites of the lower limbs as a monitoring tool of central motor function in MS relapsing patients
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P706  Transient and steady-state visual evoked potentials during treatment with fampridine
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P707  Longer QRS and QT interval duration and different QRS axis were found in relapsing remitting multiple sclerosis patients during remission
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P708  Q-space imaging is a marker of repair following spinal cord relapse in MS
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P712  Anti-SEMA4D antibody ameliorates pathogenic processes related to multiple sclerosis
AS Jonason1, E Klimatcheva1, T Fisher1, C Reilly1, L Winter1, J Veeraraghavan1, M Doherty1, C Mallow1, J Seils1, H Bussler1, S Torno1, R Kirk1, A Howell1, M Scrivens1, L Balch1, T Pandina1, W Wang1, E Evans1, WJ Bowers1, M Paris1, J Leonard1, V Iddison1, E Smith1, M Zauderer1
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P709  NMDA receptor blockade is neuroprotective in experimental autoimmune optic neuritis
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P713  Exploration of spontaneous remyelination and its clinical relevance in MS: a longitudinal PET study with 11C-PIB
B Bodini1,2, M Veronesi3, D Garcia-Lorenzo1, M Battaglini3, E Poiron1, L Freeman1, C Papeix1, B Zalc1, M Tchikviladze1, C Lubetzki1, M Bottlaender1, F Turkheimer1, B Stankoff1
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P710  NDC-1308, a gain of function estradiol analog for inducing remyelination in multiple sclerosis patients
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P714  Melanocortin receptor agonist ACTH 1-39 protects rat forebrain neurons from apoptotic, excitotoxic and inflammation-related damage
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P711  Fingolimod effect on diffuse tissue damage is partly independent of its effect on focal damage in relapsing-remitting multiple sclerosis patients
M De Stefano1, L Kappos2, EW Radue1, T Sprenger2, D Piani Meier3, D Häring3, T Sprenger2, D Piani Meier3, D Häring3, T Sprenger2
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P715  KB3944, a selective estrogen receptor beta agonist, in preclinical development for neuroprotective and regenerative therapy of multiple sclerosis
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P716  The role of vitamin D and gender in optic neuritis recovery
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P717  Tissue plasminogen activator (tPA) influences recovery after white matter damage by acting on astrocytes and oligodendrocyte progenitors
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P718 Laquinimod treatment prevents cuprizone-induced demyelination independent of Toll-like receptor signaling via MyD88 and TRIF
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P719 Promoting remyelination in MS via the GPR17 receptor, a new key actor in oligodendrogenesis
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P720 The role of CDP-choline in CNS remyelination
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P721 Small molecule inducers of oligodendrocyte differentiation
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P722 TGFβ signaling drives oligodendrocyte development and regeneration
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P723 Lineage tracing reveals dynamic changes in PDGF alpha receptor-derived cells following cuprizone-induced demyelination
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P724 Effects of vitamin D on axonal loss during de- and remyelination
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P725 Non-steroidal anti-inflammatory drug promotes remyelination
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P726 The effects of GSK239512 on lesion remyelination in a relapsing remitting MS population: design of a phase 2a imaging study
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P727 Dimethyl fumarate enhances glutathione recycling by increasing expression and function of glutathione reductase
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P728 A high throughput flow cytometry based approach to assess the differentiation of oligodendrocyte precursor cells into mature oligodendrocytes
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P729 Serial individual lesion MTR follow-up for studies of potentially remyelinating therapies in MS
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P730 Neuroprotective effects of hesperidin in a C57BL/6 mouse model of multiple sclerosis
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P731 A phase II study of the anti-LINGO-1 monoclonal antibody, BIIB033, in subjects with acute optic neuritis: baseline data
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P732 Production of differential screening-selected gene aberrative in neuroblastoma (DAN) in the CNS may support neurogenesis/oligodendrogenesis in MS
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P733 Predictors of fear of sexual rejection in individuals with multiple sclerosis
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P734 Development of the neurological coping index for multiple sclerosis (NCI-MS)
CA Young¹,², A Tennant¹, Trajectories of Outcome in Neurological Conditions (TONIC)
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P735 Psychiatric diagnoses, medication and risk for disability pension in multiple sclerosis patients; a population-based register study
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P736 Depression and multiple sclerosis in the CombiRx study
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P737 Personality traits are associated with the quality of patient-provider relationships in multiple sclerosis
C Ray¹, S O'Bryan¹, C Mavis¹, J Ehana¹, S Neidinger¹, A Bruce¹, D Catley¹, L Strober¹, M Glusman¹, A Ness¹, A Bradley-Ewing¹, S Lynch¹, J Bruce¹
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P738 Disease management and perceived self-efficacy: how does one's personality contribute?
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P739 Depression correlate with disability and clinical course in multiple sclerosis patients: an Italian multicenters study
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P740 Does anxiety moderate the relationship between bowel dysfunction and illness intrusiveness in multiple sclerosis?
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P741 The Penn State worry questionnaire provides a valid measure of worry across a broad range of disability in multiple sclerosis
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P742 Stress burden and satisfaction with treatment in caregivers and patients with multiple sclerosis. MS-feeling study
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P743 Neuropsychiatric features and fatigue in a prospective population paediatric demyelinating disease longitudinal study
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P744 Demographic and clinical features of children and adolescents with MS: from the US network of pediatric MS centers
AL Belman1,2, CS Olsen1,4, TC Casper1, L Krupp1,2, JW Rose3, G Aaen1, L Benson1, T Chitnis2, O Farooq3, M Gorman6, J Graves2, T Chitnis1, T Lotze1, J Ness5, M Patterson2, M Rodriguez2, J-M Tillema2, E Waubant2, B Weinstock-Guttman5, US Network for Pediatric MS Centers 1Stony Brook University, Department of Neurology, Stony Brook, NY, US, 2Lourie Center for Pediatric MS, Stony Brook, NY, US, 3Data Coordinating and Analysis Center for the US Network of Pediatric Multiple Sclerosis, Salt Lake City, UT, US, 4University of Utah School of Medicine, Department of Pediatrics, Salt Lake City, UT, US, 5Loma Linda University, Loma Linda, CA, US, 6Children’s Hospital Boston, Boston, MA, US, 7The Partners Pediatric MS Center at the Massachusetts General Hospital for Children, Boston, MA, US, 8The Pediatric MS Center of the Jacobs Neurological Institute at the University of Buffalo, Buffalo, NY, US, 9The Regional Pediatric MS Center at the University of California at San Francisco, San Francisco, CA, US, 10The Center for Pediatric-Onset Demyelinating Diseases at Children’s Hospital of Alabama, Birmingham, AL, US, 11Texas Children’s Hospital, Baylor College of Medicine, Houston, TX, US, 12The Regional Pediatric MS Center at Mayo Clinic Rochester, Rochester, Rochester, NY, US

P745 Cognitive impairment in pediatric multiple sclerosis patients is not related to cortical lesions
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P746 Young adults with pediatric-onset MS have a downward educational trajectory
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P747 Vitamin D status as a predictor of multiple sclerosis outcome in children with acute demyelinating syndromes: a prospective cohort study
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P748 Puberty onset and pediatric multiple sclerosis course
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P749 Recurrent optic neuritis in children
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P750  Behavioral ratings in pediatric multiple sclerosis (MS)
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P751  Treatment type and EDSS outcome of paediatric acute disseminated encephalomyelitis: a retrospective analysis of children from a US Network
GS Aaen1, T Hunt1, TC Casper2, E Waubant1, AL Belman2, T Chitnis3, M Gorman4, T Lotze4, J Ness4, J Mendelt-Tillema5, M Rodriguez1, J Rose5, J Graves2, B Weinstock-Guttman6, L Krupp2, US Network of Paediatric MS Centers Steering Committee
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P752  Assessing long-term functional outcomes in children with acute disseminated encephalomyelitis
CS Beatty1, AS Drake1, D Ramasamy1, J Parrish1, R Zivadinov1, B Weinstock-Guttman1
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P753  A case-control study for risk factors of pediatric multiple sclerosis in Iran: highlighting the role of puberty
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P754  Sex related differences in T2 lesion load in pediatric multiple sclerosis patients
HM Hummel1, P Huppke1, T Friede1, D Ellenberger1, J Gärtner1
1University Medical Center Georg-August-University Göttingen, Department of Pediatrics and Pediatric Neurology, Göttingen, DE, 2University Göttingen, Department of Medical Statistics, Göttingen, DE

P755  A 3-year, longitudinal MRI study in pediatric patients with MS, CIS, ADEM and OND
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P756  Oral disease modifying therapies in pediatric MS patients: a US network experience
Q Farooq1, C Casper2, E Waubant1, L Krupp4, T Chitnis5, M Gorman6, J Ness7, M Rodriguez8, M Patterson9, L Benson9, AL Belman10, CS Olsen9, J Rose2, G Aaen1, J Graves2, Y Harris2, T Lotze5, J-M Tillema8, B Weinstock-Guttman1, US Network of Pediatric Multiple Sclerosis Centers
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P757  Neurological status, fatigue, motor performance and exercise capacity in children with multiple sclerosis and acute disseminated encephalomyelitis
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P758  Maximal lifetime brain growth (estimated with intracranial volume) is linked to level of disability on the multiple sclerosis functional composite
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P759  Factors that determine disease course: the symptomatic lesion matters. 1000 CIS subgroup analysis
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P760  MRI predictors of time-to-second-attack and disability in children with MS: findings from a prospective cohort of children with CNS demyelination
LH Verhey1, RA Marrie2, A Bar-Or1, AD Sadovnick4, M Shroff1, DL Arnold3, B Banwell6, Canadian Pediatric Demyelinating Disease Network
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P761  Clinical and molecular markers that predict severity of relapsing-remitting MS (RRMS) disease outcomes
J Goyal1, J Bienkowska1, R Hosur1, M Yang1, S Feng1, V Viglietta1, D Mikol1
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P762  Possible prognostic factors for visual function after optic neuritis
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P763  Investigation of no evidence of disease activity (NEDA) and long-term disability prediction in a seven year longitudinal MS cohort
DL Rotstein1, BC Healy1, MT Malik1, T Chitnis1, HL Weiner1
1Brigham and Women’s Hospital, Harvard Medical School, Neurology, Boston, MA, US

P764  Early brain volume loss on interferon predicts disability progression after 4 years
F Pérez-Miralles1, J Sastre-Garriga1, À Vidal-Jordana1, D Pareto1, J Río1, M Tintore1, C Auger1, À Rovira1, X Montalban1
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P765  Assessing a predictive score for long-term disability progression in relapsing-remitting multiple sclerosis: 7/8-year follow-up in the PRISMS study
M Freedman1, A-F Ben-Amor2, E Aycardi1, D Issard4, F Casset-Semanaz2, M-P Sormani1
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P766  Assessing a predictive score for disease activity in secondary progressive multiple sclerosis: post-hoc analysis of data from the SPECTRIMS study
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P767  Clinical and paraplanarical parameters in newly diagnosed MS patients predictive of brain atrophy after 2 and 5-years
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P768  A clinical prediction model for definite multiple sclerosis in patients with clinically isolated syndrome
TF Runia1, N Jafari1, DAM Siepman1, D Nieboer2, E Steyerberg2, RQ Hintzen1
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P770  Early MRI predictors of clinical progression over 48 months in patients with clinically isolated syndrome
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### P771 Predictors of disability accrual in multiple sclerosis patients on first-line therapy

T Spelman, V Jokubaitis, G Izieriedo, P Duquette, F Grand'Maison, P Grammond, R Hupperts, E Havrdova, C Oreja-Guevara, R Aloughhani, T Petersen, J Lechner-Scott, C Boz, H Butzkueven, A Lugasiti, M Trojano, for the MSBase Study Group

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### P772 Psychosocial factors affecting quality of life in multiple sclerosis – a review of the current evidence base

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### P773 Personality traits predict the perceived health-related quality of life in persons with multiple sclerosis

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### P774 Predictors of quality of life in MS: relations with disability status, mental health, fatigue, and comorbid illnesses

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### P775 Validity of the Neuro-QOL lower extremity and upper-extremity scales in persons with MS with a range of cognitive disability as measured by the SDMT

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### P776 Living with multiple sclerosis: a quantitative exploration of a health-related quality of life battery of patient reported outcomes

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### P777 Correlations between patient-reported ambulatory function (MSWS-12) and objective disability measurements in SPMS: analysis of ASCEND baseline data

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### P778 Longitudinal course of depression and fatigue in multiple sclerosis

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### P779 Cross-sectional analysis of patient-reported symptoms and impairment in relapsing-remitting and secondary progressive multiple sclerosis

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### P780 Cognition and fatigue in patients with relapsing multiple sclerosis treated by subcutaneous interferon beta-1a: an observational study SKORE

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### P781 Assessment of the patient’s perspective in the European Register for Multiple Sclerosis (EUREMS): study protocol of the PRO study

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### P782 How do lower urinary tract symptoms affect quality of life in multiple sclerosis: a systematic review of the literature

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P783  Identifying an important change threshold for the Multiple Sclerosis Walking Scale-12 (MSWS-12)
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P784  Psychometric testing of the early mobility impairment questionnaire for multiple sclerosis
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P785  Evaluation of patient health status in the PR-fampridine ENABLE study using SF-36-derived utility scores
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P786  Psychometric properties of the French version of the multiple sclerosis knowledge questionnaire
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P787  Rasch analysis of the Leeds Spasticity Scale in multiple sclerosis
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P788  Dalfampridine improves spasticity and fatigue in multiple sclerosis
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P789  Evaluation of the health related quality of life in neuromyelitis optica spectrum disorder
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P790  An interim analysis of quality of life in patients with relapsing-remitting multiple sclerosis treated with delayed-release dimethyl fumarate
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P791  MS with versus without relapse – the patient perspective in the PEARL study
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P792  Symptoms and association with health outcomes in relapsing-remitting multiple sclerosis: results of a US patient survey
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P793  What is the influence of fatigue and depression on patients’ perceived illness intrusiveness?
ES Gromisch1, V Zemon1, S Snyder1, AS Castiglione2, LC Schairer3, M Beier4, E Farrell5, MA Picone5, S Kim5,6, FW Foley6
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P794  Prevalence of adverse events with long-term disease-modifying therapy and their impact on quality of life in patients with multiple sclerosis
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P795  A validation study of the FSMC: comparing the consistency of patient self-evaluation with objective fatigue measures
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P796 Development of the neurological hope index for multiple sclerosis (NHI-MS)
CA Young1,2, A Tennant1, Trajectories of Outcome in Neurological Conditions (TONIC)
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P797 Final results of the Swiss post marketing surveillance monitoring quality of life and treatment satisfaction in patients with RR-MS (SWISSASCENT)
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P798 Rasch analysis of the WHO Disability Assessment Schedule 2.0 for use in multiple sclerosis
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P799 Impact of treatment-related flu-like symptoms and injection site reactions on quality of life in patients with multiple sclerosis: ADVANCE study
ET Kinter1, S Guo2, A Aitincatal2, I Proskorovsky3, G Phillips1, B Sperling1, G Sabatella1, Biogen Idec Inc., Cambridge, MA, US, 2Evidera, Lexington, MA, US, 3Evidera, Montreal, QC, CA

P800 Multiple sclerosis-associated bladder dysfunction in the NARCOMS registry: a 5-year follow up study
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P801 New sleep scales for multiple sclerosis
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P802 Defining clinical meaning of patient-reported outcomes with disability assessment in multiple sclerosis: an analysis of the CARE-MS II study
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P803 Physical disability, anxiety and depression in people with MS: an internet-based survey via the UK MS Register
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P804 Relationship between relapses and quality of life in patients with relapsing remitting multiple sclerosis
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P805 Patient-reported physical functioning in relapsing-remitting and secondary progressive forms of multiple sclerosis: a cross-sectional survey
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P806 Italian validation of the 12-item multiple sclerosis walking scale (MSWS-12)
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P807 Cognitive motor interference in both upper and lower extremities in MS
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P808 Corticospinal reserve predicts walking improvement in progressive multiple sclerosis patients undergoing neurorehabilitation and deep rTMS with H-coil
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P809  Efficacy of mental imagery to improve autobiographical memory in multiple sclerosis patients: a double approach in neuropsychology and neuroimaging
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P810  Evaluation of gait abnormalities in MS patients with minimal disability
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P811  Reliability and validity of the narrow path walking test for people with multiple sclerosis
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P812  Visual delay adaptation to reduce intention tremor in multiple sclerosis
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P813  Understanding patient comprehension in natalizumab administration/discontinuation and JC virus serology – a pilot study
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P814  A novel characterization of gait pattern alterations in individuals with multiple sclerosis based on quantitative movement analysis
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P815  Factors affecting physical activity in minimally impaired people with multiple sclerosis
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P816  The effects of video-game training on broad cognitive transfer in multiple sclerosis: a pilot, randomized controlled trial
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P817  Effects of biofeedback-assisted stress management on symptoms and neurologic performance in patients with MS
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P818  Concern about falling in people with MS: association with definite gait parameters measured by an instrumented treadmill
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P819  Brain activity during motor imagery in multiple sclerosis
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P820  Neuropsychological and neurophysiological assessment of a cognitive rehabilitation program for multiple sclerosis patients
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P821  Gait variability, asymmetry, and bilateral coordination of gait during a long distance walk in persons with multiple sclerosis
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P822 Characteristics of MS patients who follow-through with cognitive training
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P823 The relationship between core stability and balance in patients with multiple sclerosis
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P824 The state of MS: current insight into patient-neurologist relationships, barriers to communication and treatment satisfaction
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P825 Value based medicine: enabling evidence-based and individualized treatment decisions for patients with multiple sclerosis
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P826 Do patients with multiple sclerosis understand quantitative health information? A comparison of patients with a probabilistic national sample
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P827 Analysis of data from an adult day program for people with multiple sclerosis
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P828 A prospective study comparing the impact of three levels of support services on interferon β adherence in patients with relapsing MS: interim results
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P829 Aerobic fitness and hippocampal volume in multiple sclerosis
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P830 Physiological response to exercise in people with MS: peak or slope?
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P831 Falls among non-ambulatory individuals with multiple sclerosis: an international expert panel consensus statement
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P832 Low-cost portable posturography for patients with multiple sclerosis using Wii balance board
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P833 Investigating of the effect of fascial mobilization on dynamic walking parameters in patients with multiple sclerosis
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P834 Vitamin D serum levels and balance are not related in multiple sclerosis
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P835 An exploratory study of the acceptability and efficacy of working memory training for individuals with pediatric-onset multiple sclerosis
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P836 Gait and cognition in MS: a complex interplay. Relationship between kinematic data and cognitive processing speed, verbal and visual memory
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P837 Postural adaptation during a Nintendo Wii balance training
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P838 Glatiramer acetate and pregnancy in women with multiple sclerosis – results from the German multiple sclerosis and pregnancy registry
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P839 Delayed-release dimethyl fumarate and pregnancy: preclinical studies and pregnancy outcomes from clinical trials and postmarketing experience
R Gold1, JT Phillips2, E Havrdova3, A Bar-Or4, L Kappos5, H Yuan6, P Valencia6, L Oliwa6, M Novas6, J Li7, MT Sweetser8, NC Kurukulasuriya6, V Viglietta9, RJ Fox1
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P840 Multiple sclerosis is more severe after menopause in a longitudinally followed clinical cohort
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P841 Risk of neuromyelitis optica spectrum disorder relapse associated with pregnancy on JPese patients
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P842 Pregnancy outcomes in the alemtuzumab MS clinical development program
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P843  Pregnancy outcomes and disease activity after exposure to natalizumab in patients with multiple sclerosis
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P844  Pregnancy issues in multiple sclerosis patients: preliminary results from a multicenter retrospective cohort study
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P845  Sex life of women with multiple sclerosis: qualitative study
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P846  Pregnancy outcomes for female patients and partners of male patients in the teriflunomide clinical development program
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P847  Exclusive breastfeeding and postpartum multiple sclerosis relapses
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P848  Ovarian reserve and sex hormone levels in multiple sclerosis patients
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P849  Sexual dysfunction and incidence of depression in MS patients
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P850  Prevalence of sexual dysfunction in multiple sclerosis
RAP da Silva1, LP Stievano1, GS do Olival1, VB Toller1, SS Jordy1, M Eloi1, CP Tilbery1
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P851  Evolving trends in reproductive practices among women with multiple sclerosis: insights from an online patient powered research network
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P852  The role of breastfeeding in multiple sclerosis patients
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P853  Examining the effectiveness of pregnancy counseling in women with multiple sclerosis of childbearing potential
LH Travis1, K Clarke1, NC Hank2, LR Mckinney1
P854  Sexual dysfunctions in female patients with relapsing-remitting multiple sclerosis
K Zebenholzer1, R Prohazka1, S Salhofer-Polanyi1, A Dal-Bianco1, C Woeber1
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P855  Fecundity in women with multiple sclerosis: an observational retrospective mono-centric study
T Roux1, R Debs2, C Lubetzkii2, P Touraine3, C Courtillot1, C Papeix1

P856  Progestin content of oral contraceptives and the risk of multiple sclerosis
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P857  Maraviroc and JC – virus associated immune reconstitution inflammatory syndrome
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P858  Fifteen non-fatal outcomes in natalizumab-associated PML/IRIS: the effects of early diagnosis and evolving novel therapeutic approaches
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P859  Managing the switch from natalizumab: the washout is hazardous and should be avoided
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P860  MS FIRST – a longitudinal, prospective, comparative drug safety module for use in MS clinical practice
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P861  Longitudinal serum JCV indexes in MS patients with natalizumab-associated progressive multifocal leukoencephalopathy
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P862  Varicella-zoster virus (VZV) experience in fingolimod clinical studies and the post-marketing setting
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P863  Treatment of multiple sclerosis patients after 24 Naltazumab doses: a prospective observational study: the TY-STOP
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P864  Risk of relapse after natalizumab discontinuation: which is the best treatment option?
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P865  Anti-JC virus antibodies in a Portuguese multiple sclerosis cohort
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P866  Persistence of JCV in CSF of MS patients with PML
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P867  Long-term safety of rituximab in MS and other autoimmune disorders
E Bernitsas, F Bao, S Srivastava, A Memon, A Tselis, O Khan
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P868  Analysis of data from RRMS alemtuzumab-treated patients in the clinical program to evaluate incidence rates of malignancy
T Miller, M Habeck, DH Margolin, J Palmer, P Oyuela, on behalf of the CAMMS233, CARE-MS I, and CARE-MS II Study Investigators
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P869  Longitudinal analysis of anti JCV-serostatus and antibody levels for PML-risk assessment in natalizumab-treated MS-patients
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P870  Late onset PML in a natalizumab-treated MS patient
CE Karageorgiou, G Giannouli, A Kargadou, A Athanasouli, G Emanouil
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P871  Evidence of cortical lesions in PML patients and differences from cortical lesions observed in multiple sclerosis: an imaging study
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P872  Application of serum natalizumab levels during plasma exchange in multiple sclerosis patients with progressive multifocal leukoencephalopathy
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P873  Rituximab in high activity MS patients after natalizumab withdrawal
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P874  Life threatening asthmatic crisis after prolonged fingolimod treatment
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P875  High dose glucocorticoid treatment does not contribute to reduced bone mineral density in patients with multiple sclerosis
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P876  Two-years clinical and radiological activity during fingolimod post-natalizumab in relapsing-remitting multiple sclerosis. Single-center experience
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P877  A pilot study to assess disease state stability, efficacy, and tolerability in a natalizumab to dimethyl fumarate crossover design
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P878  High seroconversion in a cohort MS patients treated with natalizumab in Amsterdam
A Vennegoor, JA Rossum, MP Wattjes, J Killestein
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P879  Disability progression associated with transitioning treatment after 2-years of natalizumab therapy as reported by NARCOMS participants
AR Saltor, SS Cofield, RJ Fox, T Tyytys, D Campagnolo, MJ Fanelli, L Livingston
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P880  Management of infusion-associated reactions in alemtuzumab-treated relapsing-remitting multiple sclerosis patients
L Mayer1, L Casady2, G Clayton3, P Oyuela4, DH Margolin5, on behalf of the CARE-MS I and II Investigators
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P881  JCV antibody index and adhesion molecule expression levels in natalizumab-treated multiple sclerosis patients – a cross-sectional study
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P882  Anti JC virus antibodies in pediatric multiple sclerosis
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P883  Impact of JCV seropositivity in natalizumab-relapsing-remitting multiple sclerosis treated patients: an observational study
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P884  Disease reactivation in multiple sclerosis pregnant women who stopped natalizumab during the first gestational period
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P885  Multiple sclerosis as immune related adverse event after ipilimumab treatment in metastatic melanoma
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P886  Prevalence of anti-JC-virus antibodies in an ATn MS-cohort: impact of gender, age and pre-treatment and analysis of cut-off-index
M Auer1, F Deisenhammer1
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P887  Is there an increased cancer risk in people with relapsing multiple sclerosis taking cladribine?
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P888  Fingolimod after natalizumab – Is there a rebound of MS activity?
IB Marques1, I Correia2, S Batista3, C Nunes4, MC Macario5, L Sousa5
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P889  MicroRNA and gene expression profiling related to stem cells immune regulatory function in experimental autoimmune encephalomyelitis (EAE)
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P890  Cytogenetic analysis of culture-expanded human mesenchymal stem cells used in a phase I clinical trial in multiple sclerosis
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P891  The effects of activated immune and CNS-resident cells on human oligodendrocyte progenitor cell survival and differentiation
CS Moore1, Q-L Cui1, NM Warsi1, BA Durafourt1, N Zorko1, DR Owen1, JP Antel1, A Bar-Or1
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P892 Immune function monitoring in a phase I trial of autologous culture-expanded mesenchymal stem cell transplantation for relapsing multiple sclerosis  
A Bar-Or1, M-N Boivin1, A Rozenberg2, T Johnson2, C Belabani1, G Morisse2, J Sirosi3, S Lai Wing Sun3, S Vanamala1, A Del Rosario Villalobos2, J Reese Koc2,3, S Morrison4, RA Berme1, PB Imrey4, SM Planchon5, JA Cohen6  
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P893 Exosomes released by mesenchymal stem cell populations promote differentiation and maturation of oligodendrocytes  
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P894 Localization and viability of neural stem cells after therapeutic intrathecal transplantation in experimental autoimmune encephalomyelitis  
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P895 Clinical experience in autologous hematopoietic stem cell transplantation in refractory aggressive multiple sclerosis  
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P896 Therapeutic potential of human mesenchymal cells in the animal model of MS  
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P897 Increased CXCL10 production in bone marrow MSCs and monocytes of severe MS patients before and after AHSCT treatment  
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P898 Autologous hematopoietic stem cell transplant in patients with neuromyelitis optica  
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P899 Generation and characterization of neuralized mesenchymal stem cells from multiple sclerosis patients  
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P900 Anti-neural precursor cell (NPCs) – immune response in experimental autoimmune encephalomyelitis (EAE)  
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P901 Identification of an alternative to fetal bovine serum for the culture expansion of human mesenchymal stem cells for use in clinical studies  
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P902 Assessment of bone marrow-derived cell therapy in progressive multiple sclerosis (ACTiMuS)  
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P903 Clinical and immunological monitoring of autologous IL-10 modified dendritic cells transplantation in multiple sclerosis  
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Cingulum bundle alterations underlie subjective fatigue in multiple sclerosis
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Long-term, sustained safety and efficacy of repeat onabotulinumtoxinA treatment in multiple sclerosis patients with neurogenic detrusor overactivity
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Prolonged-release fampridine enhances physical activity during everyday life in patients with multiple sclerosis (FAMPKIN)
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Thalamic dysfunction is associated with fatigue in patients with multiple sclerosis: a graph theory study
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Kinematic analysis of fampridine-induced modifications of the gait pattern in patients with multiple sclerosis
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Clinical features of patients presenting with seizures at the time of multiple sclerosis diagnosis: a 12-year retrospective case-control study
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The multifaceted nature of multiple sclerosis (MFS)
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Detailed characterization of the effects of prolonged-release fampridine on walking function in patients with multiple sclerosis (FAMPKIN)
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Restless legs syndrome and multiple sclerosis
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Reassessment of Lhermitte’s sign in multiple sclerosis
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Restless leg syndrome and multiple sclerosis
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P916  The relationship between objectives parameters of sleep and measures of fatigue, depression and cognition in multiple sclerosis
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P918  Effect of fampridine (4-aminopyridine) on the manual functions of patients with multiple sclerosis
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P919  Involvement of the Obersteiner-Redlich zone of the trigeminal nerve in an exacerbation of multiple sclerosis (MS)
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P920  Efficacy, safety and response rate of nabiximols assessed in an Italian monocentric cohort
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P921  Changes in functional impairment in persons with multiple sclerosis treated with dalfampridine
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P922  Walking ability and balance in patients with multiple sclerosis treated with prolonged-release fampridine: randomized, double-blind MOBILE study
R Hupperts1, J Lycke2, C Short3, C Gasperini4, M McNeill5, R Medori5, L Mehta5, J Elkins6
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P923  The effectiveness and safety of the intrathecal baclofen for the multiple sclerosis-related spasticity
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P924  Safety, quality of life, and walking ability with PR-fampridine treatment in clinical practice in FR: interim results of the LIBERATE study
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P925  Special challenges of neuro palliative care in multiple sclerosis patients
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P926  Dystonic features are common in MS-related tremor and contribute to its severity
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P927  Efficiency sulbutiamine for treatment of fatigue in patients with multiple sclerosis
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P928  Pilot randomized control trial of a brief multidisciplinary consultation intervention for treating sexual dysfunction in multiple sclerosis
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P929  Long-term effects of fampridine on walking ability in patients with multiple sclerosis: a phase II, open-label, uncontrolled, monocenter study
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P930  II. A multi-center investigation of elevated body temperature in relapsing remitting vs. secondary progressive MS
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P931  Case report: a patient with residual cognitive sequelae after post-malaria acute demyelinating encephalomyelitis (ADEM)
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P932  Prolonged-release Fampyra® post-marketing experience in the Alsace
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P933  Long-term treatment of intrathecal baclofen in multiple sclerosis: frequency and severity of withdrawal syndrome
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P934  Dalfampridine and MS: clinical benefit and what else? A multimodal approach for an early evaluation of effectiveness
V Torri Clerici¹, P Confalonieri¹, L Brambilla¹, G Brenna¹, M Moscatelli¹, R Frangiamore¹, AM Giovannetti¹, C Antozzi¹, S Frischetti¹, R Mantegazza¹, A Erbetta¹, D Aquino¹, D Rossi¹
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P935  PR-Fampridine improves walking and quality of life in people with MS related severe walking impairment: a pragmatic observational study
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P936  Spasticity in multiple sclerosis: the relationship with other neurological impairments and overall quality of life
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P937  Radiosurgical thalamotomy for treatment of severe multiple sclerosis associated tremor and its impact on quality of life
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P938  Impact of bladder symptoms on quality of life in multiple sclerosis
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P939  Sustained release fampridine treatment impacts on the daily physical activity amount in MS people with walking disability
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P940  Balance disorders and fatigue in multiple sclerosis: dysfunction in different central sensory integration areas
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P941  Effects of long-term treatment with prolonged-release fampridine on cognitive functioning in patients with multiple sclerosis
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P942 Individualized dosing of a novel oral Δ9-THC formulation improves subjective spasticity and pain in patients with progressive multiple sclerosis
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P943 Heterogeneous etiology of fatigue syndrome in multiple sclerosis patients
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P944 Abobotulinumtoxin a for detrusor overactivity in patients with multiple sclerosis: effect on quality of life and urodynamic parameters
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P945 Incidence of hypogonadism and fatigue in male multiple sclerosis patients
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P946 Urinary dysfunction in multiple sclerosis; frequency, characteristics and management in standard care
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P947 Central pain in multiple sclerosis: what we know and what we don't
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P948 Increased arrhythmic incidence in multiple sclerosis is associated with the location of the demyelinating plaques in the spinal cord
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P949 Natalizumab-induced circulating hematopoietic stem cells (HSC) have higher expansion capacity in MS patients who show significantly increased HSC count
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P950 IL-2Rβγ-signaling contributes to regulatory T cell maintenance and stability in daclizumab HYP-treated RRMS patients
DJ Hess1, DS Mehta1, X You1, K Riester1, JP Sheridan4, L Amaravadi1, JS Elkins2, JD Fontenot1

P951 Pharmacogenomics of interferon-beta treatment in Caucasian MS patients
S Mahurkar1, V Suppiah1, M Moldovan2, M Slee1, M Krupa1, H Bützkueven1, V Jokubaitis2, B Taylor2, A Kermode1, S Broadley1, G Stewart1, D Booth1, F McKay1, J Lechner-Scott1, F Martinielli Boneschi1, K Vandenbergroeck1, A Antigüedad1, M Comabella1, S Malhotra1, X Montalban1, C O'Doherty1
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P952 Fingolimod promotes regulatory phenotype and function in B-cells of multiple sclerosis patients
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P953 Vitamin D3 administration to MS patients leads to increased serum levels of TGF-beta
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P954  Reduction and reconstitution of B-cells in peripheral blood and lymphoid issues in cynomolgus monkeys following administration of ocrelizumab
T Gelzeichter1, K McKeever2, D Auyeung-Kim2, A Herman3, J Beyer1, P Lappin3, S Joseph4, A Song3, N Dybdal1

P955  Laquinimod reduces CNS autoimmunity by activation of natural killer cells
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P956  How do Treg cell function and related cytokines levels change in alemtuzumab treated patients? A 24 months immunological study
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P957  Fingolimod selectively affect antigen-presenting cells ex vivo and in vitro in multiple sclerosis
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P958  Steady state pharmacokinetics and blood lymphocyte responses in healthy subjects dosed with XP23829, a novel fumaric acid ester for multiple sclerosis
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P959  Teriflunomide mechanism of action: linking preclinical evidence to clinical efficacy and safety
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P960  Enhanced axonal metabolism in multiple sclerosis patients treated with natalizumab
OT Wiebenga2,3, AM Klauser4, MM Schoonheim5, GJA Nagtegaal6, MD Steenwijk2,1, JAV van Rossum2,1, CH Polman1,1, F Barkhof2,1, PWJ Pouwels4,1, JGG Geurts5,6
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P961  Characterization of CD56bright NK cells in daclizumab HYP-treated RRMS patients
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P962  Modulation of circulating CD39-expressing T regulatory cells from MS patients by fingolimod
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P963  Laquinimod regulates inflammatory gene induction in a human model of reactive astrogliosis
T Tham2,3, JN Mariani2,3, J Seto1,2, B Hartmann1,2, L Hayardeny1, GR John1,2,3
1Icahn School of Medicine at Mount Sinai, Friedman Brain Institute, New York, NY, US, 2Icahn School of Medicine at Mount Sinai, Corinne Goldsmith Dickinson Center for MS, New York, NY, US, 3Icahn School of Medicine at Mount Sinai, Neurology, New York, NY, US, 4Teva Pharmaceuticals, Netanya, IL

P964  The effect of immune therapeutic agents on the T-cell receptor repertoire in MS-patients
T Dehmel1, C Warmke1, MA Mausberg2, M Comabella3, X Montalban4, H-P Hartung5, BC Kieseier1
1Heinrich-Heine-University, Neurology, Düsseldorf, DE, 2Universiti Vall d’Hebron, Servei de Neurologia-Neuroimmunologia, Barcelona, ES
Effect of natalizumab treatment on circulating normal MicroRNA expression and microglia activation measured by [11C]PK11195-PET in patients treated with natalizumab

High dose corticosteroid treatment alters transcripts of susceptibility genes in peripheral blood of multiple sclerosis patients

Normalization of abnormal MicroRNA expression in monocytes of relapsing-remitting MS patients treated with fingolimod

Effect of natalizumab treatment on circulating CD4+CD62L+ T-cells in multiple sclerosis patients

Distinct effects of fingolimod on gene expression of T-cell subsets in the blood of patients with multiple sclerosis

Immunoglobulin family genes are associated with clinical response to natalizumab

Differential effects of fingolimod and copaxone upon FoxP3+ regulatory B-cells in MS

Rapid, sustained and reversible pharmacodynamics of DAC HYP in MS patients supports mechanism of action via modulation of the IL-2 pathway

Fine tuning of Treg and iNKT cells after treatment with Fingolimod in relapsing-remitting multiple sclerosis patients

Increased neutralization capacity of TNF-α in sera of MS patients may play a role in MS pathogenesis and is reversed by therapy with interferon-β

Natalizumab increases HLA-G expression in PDCs of multiple sclerosis patients

Effects of alemtuzumab on selective immune cell subsets in the blood of patients with relapsing remitting multiple sclerosis

Investigation of the effects of itraconazole, a probe CYP3A and P-glycoprotein inhibitor, on the pharmacokinetics of ceralifimod (ONO-4641)

CD19 mRNA quantification improves rituximab treatment-to-target approach: a proof of concept study
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#### Additional Details

**LBP9**

**Oligodendroglial cells and signs of remyelination are present in a subset of early active and inactive MS lesions despite pronounced axonal damage**

**F Bahn**, C Theodossiou-Wegner, W Brück

**Neuropathology, Göttingen, DE**

**LBP10**

**High-mobility group box 1 (HMGB1) expression is increased in the normal-appearing brain tissue of multiple sclerosis (MS) patients vs. controls**

**GZ Hassan-Smith**, S Messahel, G Mazibrada, J Woolmore, AM Gonzalez, S Nagaraju, M Carey, SJ Curnow, CP Hawkins

**Neuropathology, Göttingen, DE**

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**P979**

**Peripheral blood lymphocyte count: a possible immunological marker of fingolimod efficacy?**

M Zaffaroni, D Baroncini, A Bianchi, P Annovazzi, SM Baldini, G Minonzio, A Ghezzi, G Comi

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**P980**

**A two-years follow-up study of multiple sclerosis patients treated with interferon-beta: predictive value of NABs at six months of treatment**

AM Arias-Leal, MI Dominguez-Mozlo, M Garcia-Montojo, MA Garcia-Martinez, I Casanova, R Arroyo, R Alvarez-Lafuente

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**P981**

**Stress induced angioplasticity is protective in experimental autoimmune encephalomyelitis**

V Katyshev, N Sen, S Katysheva, Z Serkin, P Dore-Duffy

1. Wayne State University, Neurology, Detroit, MI, US
LBP11  A 1-year smartphone data collection study for MS: feasibility and utility of frequent sampling of patient performance in a natural setting
R Bove1, S Prasad1, A Robbins1, J Paskavitz2, J Hujol2, V Golubchikov2, B Glanz2, H Weiner2, R Ramachandran2, M Botfield2, P De Jager1, MS CODES1
1Brigham and Women’s Hospital, Harvard Medical School, Boston, MA, US, 2Vertex Pharmaceuticals, Boston, MA, US, 3Brigham and Women’s Hospital, Harvard Medical School, Neurology, Boston, MA, US

LBP12  Excitatory post-synaptic injury in experimental autoimmune encephalomyelitis gray matter
MJ Bellizzi1, HA Gelbard2
1University of Rochester, Neurology, Rochester, NY, US, 2University of Rochester, Center for Neural Development and Disease, Rochester, NY, US

LBP13  Profiling the autoantibody repertoire on ultra-high-density peptide microarrays reveals novel potential autoimmune targets in multiple sclerosis
A Zandian1, B Forström1, B Ayoglu1, A Häggmark1, M Uhlén1, JM Schwemlen1, M Khademi2, T Olsson2, P Nilsson1
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LBP14  DMF protects neural stem/progenitor cells and differentiated neurons from oxidative damage through regulating anti-oxidative stress genes
S Chuikov1, S Taitano2, Q Wu1, Y Mao-Draayer1
1University of Michigan, Neurology, Ann Arbor, MI, US, 2University of Michigan, Ann Arbor, MI, US

LBP15  HERV-W envelope protein inhibits oligodendroglial cell differentiation which can be abrogated by the neutralizing antibody GNbAC1
D Kremer1, M Foerster1, T Schichel1, P Goettle1, H-P Hartung1, H Perron2, P Kuery1
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LBP16  Follow-up of MS patients from phase Iia clinical study of GNbAC1 reveals unexpected decrease of HERV-W endogenous retrovirus genes expression
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LBP17  Clinical outcomes in patients with CIS treated with interferon beta-1b: 11-year follow-up of BENEFIT
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LBP18  Exome sequencing unravels novel candidate genes in familial multiple sclerosis
E Melamed1, Y You2, R Cheni3, S Baranzini2, L Steinman1, M Snyder2, M Han1

LBP19  Differential impact of pediatric monophasic demyelinating disorders and multiple sclerosis on brain growth
B Aubert-Broche1, V Fonov1, K Weier1, B Banwell2,3, S Narayan3, DL Arnold1, DL Collins3, the Canadian Pediatric Demyelinating Disease Network
1McGill University, Montreal Neurological Institute, Montreal, QC, CA, 2Children’s Hospital of Philadelphia, Division of Neurology, Philadelphia, PA, US, 3Hospital for Sick Children, Dept of Neurology, Toronto, QC, CA

LBP20  A multi-SNP signature predicts high response to Copaxone (Glatiramer Acetate) in RRMS patients
C Ross1, F Towfic2, D Laifenfeld3, J Levy3, D Ladkani4, L Hayardeny5, B Zeskind2, V Knappertz3,5, I Grossman4, M Hayden5
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LBP21  Cerebrospinal fluid aquaporin-4 antibody levels in neuromyelitis optica attacks
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LBP22  Identification of pathogenic mutations and risk alleles in familial multiple sclerosis
C Vilarino-Guell1, AL Traboulsee1, AD Sadovnick1
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Over 200 educational grants were awarded to authors of accepted abstracts submitted by young investigators.

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## EDUCATIONAL GRANT AWARDEES

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# EDUCATIONAL GRANT Awardees

| Dr. Amal Samaraweera | University of Nottingham | Nottingham | United Kingdom |
| Ms. Katherine Sanders | Bond University | Gold Coast | Australia |
| Dr. Shinya Sato | Neurological Institute, Graduate School of Medical Sciences, Kyushu University | Fukuoka | Japan |
| Dr. Emilia Sbardella | University Sapienza | Rome | Italy |
| Ms. Ruth Schneider | University Bochum | Bochum | Germany |
| Mr. Menno Schoonheim | VU University Medical Center | Amsterdam | Netherlands |
| Dr. Alessio Signori | University of Genoa | Genoa | Italy |
| Ms. Ioanna Stavrakaki | to-BBB technologies BV | Leiden | Netherlands |
| Ms. Sony Steele | Translational Neuroradiology Unit, NINDS, NIH | Bethesda | United States |
| Mr. Martijn Steenwijk | VU University Medical Center | Amsterdam | Netherlands |
| Mr. Evan Stone | Sackler School of Medicine, Tel Aviv University | Tel Aviv | Israel |
| Dr. Klarissa Hanja Stürner | University Medical Center Hamburg-Eppendorf | Hamburg | Germany |
| Dr. Kurt-Wolfram Süh | Medical School Hannover | Hannover | Germany |
| Dr. James Sumowski | Kessler Foundation | West Orange | United States |
| Ms. Austin Sye | Hospital for Sick Children | Toronto | Canada |
| Dr. Kazushiro Takata | Osaka University | Suita | Japan |
| Dr. Cosmin Tegla | University of Maryland School of Medicine | Baltimore | United States |
| Mr. Prejaas Tewarie | VU University Medical Center | Amsterdam | Netherlands |
| Ms. Katja Thomas | University Hospital Dresden | Dresden | Germany |
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| Mr. Matteo Tonietto | University of Verona | Verona | Italy |
| Mr. Øivind Torkildsen | Haukeland University Hospital, Department of Neurology | Bergen | Norway |
| Dr. Peter Ueda | Karolinska Institutet | Stockholm | Sweden |
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| Dr. Luisa Vuolo | National Institutes of Health (NIH) | Bethesda | United States |
| Dr. Ryan Wang | GlaxoSmithKline | Shanghai | China |
| Dr. Yan Wang | Dartmouth College | Lebanon | United States |
| Mr. David Weller | University Hospital Zurich | Zurich | Switzerland |
| Dr. Jie Wen | Washington University in St. Louis | St. Louis | United States |
| Mr. Oliver Wiebenga | VU University Medical Center | Amsterdam | Netherlands |
| Ms. Vanessa Wiggermann | University of British Columbia | Vancouver | Canada |
| Dr. Johannes Willumsen | Molde Hospital, Helse Møre and Romsdal Health Trust | Molde | Norway |
| Ms. Phoebe Winn | Brigham and Women’s Hospital | Boston | United States |
| Ms. Magdalena Wojtowicz | Dalhousie University | Halifax | Canada |
| Mr. Gokhan Yazici | Gazi University | Ankara | Turkey |
| Mr. Yuan Zhou | Menzies Research Institute Tasmania | Hobart | Australia |
| Dr. Lana Zhovtis Ryerson | NYU Langone Medical Center | New York City | United States |
Welcome the crew of the yacht Oceans of Hope who have sailed from Copenhagen across the Atlantic Ocean to Boston on a historic global voyage. It is the first ever circumnavigation of the world by a yacht crewed by people with multiple sclerosis.

Organized by the Sailing Sclerosis Foundation, and led by its founder Dr. Mikkel Anthonisen, the aim of the voyage is to change perceptions of MS by showing what is possible when people with a chronic disease are empowered to conquer their individual challenges.

33,000 nautical miles. 20 ports of call. One inspiring crew. Be moved by the stories they share.

Opening Ceremony
Thursday, 11 September
08:30 - 09:00
John B. Hynes Veterans Memorial Convention Center Auditorium, Levels 2 & 3

Research shows there are many benefits of physical activity for patients with MS. Oceans of Hope is the first ever circumnavigation crewed by people with multiple sclerosis and will emphasize ability instead of disability.

In each port of call, Oceans of Hope aims to create a sustainable legacy by establishing a network between the MS world and the sailing world to promote active and healthy lifestyles.

The ocean does not discriminate. Professional and amateur sailors alike face the same weather and sea conditions. There are no “passengers” on board; each crew member plays an active part in the voyage, carrying out a range of tasks according to their ability, including sail changes, helming, cooking and cleaning on board, and teamwork has been the key to the success of their voyage.

www.sailing-sclerosis.com
Take the opportunity to network, exchange information and build alliances to achieve our common goal of finding solutions, strategies and treatment to help those living with MS.

CLOSING NETWORKING EVENT

Friday, 12 September 2014; 19:30
John F. Kennedy Presidential Library and Museum
Columbia Point, Boston, Massachusetts

Shuttle service departs beginning 19:00*

*Shuttle service: departing at 19:00 from the Boylston Street entrance of the Hynes Convention Centre for a 20-30 minutes commute to the John F. Kennedy Presidential Library and Museum.

About the JFK Presidential Library and Museum

The John F. Kennedy Presidential Library and Museum is a vibrant tribute to the life and times of the 35th President of the United States, John F. Kennedy. Attendees will be invited to travel back in time to the early 1960s for an engaging, interactive look at one of the most important eras in American history. The reception will be held simultaneously in the Smith Hall, the Pavilion, an outdoor tent by the water, and on the terrace overlooking the Massachusetts Bay. A special menu will have you discovering the many tastes of Boston.

Admission is free to delegates but registration is required. Limited capacity.
### 2014 Joint ACTRIMS-ECTRIMS Meeting Industry Supporters

ACTRIMS and ECTRIMS thank the following companies, organizations and institutions for their generous contributions to MSBoston 2014, which provides a platform to share the latest advances in treatment and research in MS with the help of dedicated professionals, advocates, patients and families whom together inspire programs to find a cure.

**AbbVie**
- Silver Level Package Supporter
- Exhibit Booth 29
- Satellite Symposium
  - **Friday, 12 September at 18:30**
  - Treating to Target and Beyond: Is Improvement in Functioning a Realistic Treatment Goal in Multiple Sclerosis?
  - Exhibition & Meeting Guide
  - Door Hanger Insert

**ACTRIMS-ECTRIMS On Demand/ Learner's Digest International**
- Exhibit Booth 42
- Exhibition & Meeting Guide
- Delegate Bag Insert

**Allergan**
- Educational Grant

**Bayer HealthCare**
- Gold Level Package Supporter
- Exhibit Booth 24
- Water Bottles, Coolers and Cups
- Exhibition & Meeting Guide

**Biogen Idec**
- Platinum Level Package Supporter
- Exhibit Booth 23
- Hospitality Suite Room 200
- Satellite Symposia
  - **Wednesday, 10 September at 18:45**
  - Beyond Diagnosis: The Essential Role of MRI in Clinical Management of Multiple Sclerosis CME
- Exhibition & Meeting Guide
- Door Hanger Insert
- Way Finding Footprints

**Biogen Idec**
- Platinum Level Package Supporter
- Exhibit Booth 23
- Hospitality Suite Room 200
- Satellite Symposia
  - **Wednesday, 10 September at 18:45**
  - Beyond Diagnosis: The Essential Role of MRI in Clinical Management of Multiple Sclerosis CME
- Exhibition & Meeting Guide
- Door Hanger Insert
- Way Finding Footprints

**Genentech, Inc.**
- Silver Level Package Supporter
- Exhibit Booth 27
- Satellite Symposium
  - **Saturday, 13 September at 07:15**
  - Shifting the Paradigm in Multiple Sclerosis Treatment by Targeting New Pathways CME
  - Exhibition & Meeting Guide

**Genzyme, A Sanofi Company**
- Platinum Level Package Supporter
- Exhibit Booths 18 & 19
- Hospitality Suite Room 206
- Satellite Symposia
  - **Wednesday, 10 September at 17:30**
  - Emerging Trends in MS Pathophysiology: The Role of Mitochondria
- Exhibition & Meeting Guide
- Door Hanger Insert
- Exhibition & Meeting Guide

**Mallinckrodt Pharmaceuticals**
- Bronze Level Package Supporter
- Exhibit Booth 26
- Hospitality Suite Room 207
- Satellite Symposia
  - **Friday, 12 September at 17:15**
  - Treatment Decisions at the Intersection of Trials and Practice
  - Exhibition & Meeting Guide
  - Door Hanger Insert

**MedImmune**
- Exhibition & Meeting Guide

**Med-IQ**
- Door Hanger Insert
- Exhibition & Meeting Guide
- Delegate Bag Insert

**Medscape Education**
- Delegate Bag Insert

**MENACTRIMS**
- Door Hanger Insert

**Merck KGaA, Darmstadt, Germany**
- Gold Level Package Supporter
- Exhibit Booth 22
- Hospitality Suite for EMD Serono and Pfizer US Room 208
- Satellite Symposia
  - **Thursday, 11 September at 12:30**
  - Time for Change: Advancing Our Understanding of MS
  - Exhibition & Meeting Guide

**Miller Medical Communications**
- Door Hanger Insert
- Exhibition & Meeting Guide
- Delegate Bag Insert

**MitoQ**
- Exhibit Booth 11
- Exhibition & Meeting Guide

**Mylan**
- Exhibit Booth 15
- Educational Grant

**National Multiple Sclerosis Society**
- Delegate Bag Insert

**Novartis**
- Platinum Level Package Supporter
- Exhibit Booth 25
- Hospitality Suite Room 210
- Satellite Symposia
  - **Thursday, 11 September at 18:00**
  - Evolving Insights Into MS Pathology: Can We Ever Stop Disease Worsening? CME
- Exhibition & Meeting Guide

**PeerView Institute for Medical Education**
- Exhibition & Meeting Guide
- Delegate Bag Insert

**SAGE Publications**
- Exhibit Booth 1
- Exhibition & Meeting Guide

**TEVA Neuroscience**
- Platinum Level Package Supporter
- Exhibit Booth 17
- Hospitality Suite Room 300
- Satellite Symposia
  - **Friday, 12 September at 12:00**
  - Evolving Strategies to Improve Patient-Clinician Communication and Treatment Adherence in Multiple Sclerosis CME
  - Exhibition & Meeting Guide
  - Mobile App
  - Conference Abstracts on USB Drive
  - Shuttle Bus Service
  - Wi-Fi

**Vindico Medical Education**
- Exhibit Booth 5
- Delegate Bag Insert

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**THANK YOU**

ACTRIMS and ECTRIMS thank the following companies, organizations and institutions for their generous contributions to MSBoston 2014, which provides a platform to share the latest advances in treatment and research in MS with the help of dedicated professionals, advocates, patients and families whom together inspire programs to find a cure.
Don’t miss

Closing Plenary

Awards for best scientific work

Saturday, 13 September, 10:30-12:30
Auditorium, Levels 2 & 3

• MSBoston 2014 Best Poster Presentation (five winners)

• MSBoston 2014 Best Young Investigator for Oral Presentations (two winners)

• MS Journal Award for abstract that reports work that most contributes to knowledge of the cause or pathogenesis of MS and related diseases (two winners)

• MS Journal Award abstract that reports work that most contributes to the treatment or management of MS and related diseases (one winner)

• MS International Foundation Award for best presentation of a translational project in the young investigator’s session (one winner)