29th international symposium on ALS/MND

Glasgow UK
7 – 9 December 2018

Programme

Hosts:
MND Scotland

Organised by the Motor Neurone Disease Association in co-operation with the International Alliance of ALS/MND Associations
The 29th International Symposium on ALS/MND has been approved by the Federation of the Royal College of Physicians of the United Kingdom for 18 category 1 (external) CPD credits.

The 29th International Symposium on ALS/MND, Glasgow, United Kingdom, 07/12/2018-09/12/2018 has been accredited by the European Accreditation Council for Continuing Medical Education (EACCME®) with 16 European CME credits (ECMEC®s). Each medical specialist should claim only those hours of credit that he/she actually spent in the educational activity.

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

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

On behalf of MND Scotland, I would like to welcome you all to the 29th International Symposium on ALS/MND and the 26th Annual Meeting of the International Alliance of ALS/MND Associations. It’s fitting that the organisations and institutes that have those affected by ALS/MND at their heart should come to Glasgow, the city which puts people at its heart (embodied in its slogan ‘People Make Glasgow’).

In 1997, the 8th International Symposium on ALS/MND was held in Glasgow for the first time. Much has changed since then. The number of people attending has dramatically increased, as has the number attending the International Alliance meetings, indicative of the rising interest and investment in finding a cure and improving care. Underlying this we have also seen the number of people affected by the condition increase. In Scotland, the numbers have doubled over the same period and it is for this reason that these meetings are so important.

At MND Scotland, our ambition is to transform care and fund a cure. This is the reason why we funded the re-establishment of the Scottish MND Register; why we work closely with centres of excellence like the Euan MacDonald Centre for MND Research in Edinburgh and invest in their work; why we support the MND Clinical Specialists across Scotland; why we introduced our new physiotherapy and advocacy services; and why we have seen, this year, the first clinical trial in Scotland for over twenty years. Our campaigning to improve the lives of those affected by MND has seen the introduction of free personal care and fast-tracking of benefits for the terminally ill, and legislation to ensure those with communication difficulties have access to AAC equipment.

Improvements in treatment, care and our understanding of the disease will only come through collaborative working, sharing of knowledge and enlightening each other. These meetings provide the perfect opportunity for this to happen.

I hope that when it’s time for you to return home that you will have been inspired, energised and enthused to take what you have learned and use it to move us ever closer to a world without ALS/MND.

Glasgow is a city with a wonderful cultural heritage, so please take some time to explore and experience why it was voted the Friendliest City in the World. I hope you enjoy your time with us and all that Glasgow and Scotland has to offer.

Craig W F Stockton
CEO, MND Scotland

Foreword

To Scottish ingenuity we owe thanks for the decimal point, logarithms, television, the telephone, penicillin, animal cloning and many more seminal discoveries. Biological science continues to flourish here, with world leading research in regenerative medicine and genetics of particular relevance to ALS/MND. We are therefore delighted that the 29th International Symposium on ALS/MND is being held in Glasgow.

Who gets ALS? The role of environmental factors, metabolism and physical fitness continues to be an area of great interest and is covered in a number of sessions at this meeting. We now understand that significant numbers of people, even without a family history, carry detectable genetic variants which cause or contribute to their condition. We therefore look at how we support people in making an informed choice about whether to be tested, in an era where gene specific therapies are beginning to emerge.

A single cell like a motor neuron could be thought of as a whole universe in itself. In this meeting we will learn about the role of different neuronal compartments, axons and synapses, in ALS, and advances in single cell biology which promise to take our knowledge to a new level where we can dissect out the precise events which trigger ALS.

Measuring disease progression, including cognitive change, and its impact on quality of life is critical to care planning and facilitating individual autonomy, as well as for informing clinical trial design. A range of international experts consider these subjects in detail.

The International Symposium on ALS/MND has a deserved reputation for bridging the gulf between science and clinical practice. This meeting should convince you that we are moving forward in closing the gap between basic discovery science and treatments that will genuinely alter the course of ALS/MND.

Kevin Talbot
Programme Committee Chair
Friday 7 December 2018

SESSION 1
HALL 2

JOINT OPENING SESSION

Chairs: S Light (UK) K Talbot (UK)

09.00 - 09.10
Welcome
S Light (UK) K Talbot (UK)

09.10 – 09.30
C1 Revised Airlie House Consensus Guidelines for design and implementation of amyotrophic lateral sclerosis (ALS) clinical trials based on the modified Delphi method
H Mitsumoto (USA)

09.30 – 09.35
Welcome on behalf of MND Scotland
L Cowan (UK)

09.35 – 09.40
Opening address
HRH The Princess Royal

09.40 – 09.50
International Alliance Humanitarian Award
International Alliance Forbes Norris Award

09.50 – 10.25
C2 The microbiome, the immune system and brain function
J Cryan (Ireland)

10.25 – 10.45
IPG Award and winner’s research presentation

10.45 – 11.15
REFRESHMENTS AND NETWORKING: Hall 5

SESSION 2
HALL 2

DEFINING ALS/MND

Moderator: J Rosenfeld (USA)

11.15 – 12.30
C3 Defining ALS/MND: The Big Debate
A Al-Chalabi (UK); O Hardiman (Ireland); M Kiernan (Australia); R Miller (USA)

12.30 – 14.00 LUNCH: Hall 5
## Session 3A
**Lomond Auditorium**

### Stem Cell Models
Chairs: G Miles (UK) C Svendsen (USA)

<table>
<thead>
<tr>
<th>Time</th>
<th>Title</th>
<th>Speaker(s)</th>
</tr>
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<tbody>
<tr>
<td>14.00 – 14.15</td>
<td>Cloning, stem cells and regenerative medicine</td>
<td>I Wilmut (UK)</td>
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<tr>
<td>14.15 – 14.45</td>
<td>Modelling ALS using induced pluripotent stem cells combined with organ-on-chip technology</td>
<td>C Svendsen (USA)</td>
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<tr>
<td>14.45 – 15.00</td>
<td>FM19G11 preserves blood brain barrier integrity and limits P-gP overexpression by reducing astrocytes toxicity in a human-derived in vitro cell model of familial and sporadic amyotrophic lateral sclerosis</td>
<td>S Bonanno (Italy)</td>
</tr>
<tr>
<td>15.00 – 15.15</td>
<td>Dysregulation of GluA1 Ca2+-permeable AMPAR in ALS: A potential converging pathomechanism causing motor neuron vulnerability to excitotoxicity</td>
<td>B Selvaraj (UK)</td>
</tr>
<tr>
<td>15.15 – 15.30</td>
<td>C9orf72 and TDP-43 iPS-derived motor neurons show alterations in calcium buffering through different mechanisms</td>
<td>R Dafinca (UK)</td>
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</tbody>
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## Session 3B
**Hall 2**

### Information, Autonomy and Decision Making
Chairs: P Andersen (Sweden) C Jackson (USA)

<table>
<thead>
<tr>
<th>Time</th>
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<tbody>
<tr>
<td>14.00 – 14.30</td>
<td>Gene testing for all? Supporting patient decisions in the post-genomic era</td>
<td>C Shaw (UK)</td>
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<tr>
<td>14.30 – 14.50</td>
<td>Developing a framework for the diagnostic interpretation of ALS genomes</td>
<td>D Leighton (UK)</td>
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<tr>
<td>14.50 – 15.10</td>
<td>Advance care planning in ALS: Representation and realisation of individual treatment goals through care management schemes</td>
<td>S Spittel (Germany)</td>
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<tr>
<td>15.10 – 15.30</td>
<td>Decision support tools for motor neurone disease multidisciplinary care</td>
<td>A Hogden (Australia)</td>
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## Session 3C
**Hall 1**

### Neuroimaging
Chairs: N Atassi (USA) P Bede (Ireland)

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<tr>
<td>14.00 – 14.20</td>
<td>Lifetime sport practice and brain metabolism in ALS: A 18F-FDG-PET study</td>
<td>A Calvo (Italy)</td>
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<tr>
<td>14.40 – 15.00</td>
<td>Primary lateral sclerosis, part of the MND spectrum or disease entity: a multiparametric neuroimaging study with comprehensive clinical and genetic profiling</td>
<td>E Finegan (Ireland)</td>
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<tr>
<td>15.00 – 15.20</td>
<td>Quantifying the post mortem ALS brain using ultra high-field MRI</td>
<td>B Tendler (UK)</td>
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### 15.30 – 16.00 Refreshments and Networking: Hall 5
**SESSION 4A**
**LOMOND AUDITORIUM**

**CELL BIOLOGY AND PATHOLOGY**

*Chairs: J Atkin (Australia) V Bonetto (Italy)*

16.00 – 16.30  
C16 The role of synapses in neurodegeneration  
*T Spires-Jones (UK)*

16.30 – 17.00  
C17 Single cell biology as a tool to explore neurodevelopment and neurodegeneration  
*L Goff (USA)*

17.00 – 17.15  
C18 The interactome of human TDP-43 in a cellular model of ALS  
*E Feneberg (UK)*

17.15 – 17.30  
C19 Small non-coding RNAs generated by the ALS-associated ribonuclease angiogenin deliver novel and accessible biomarkers of disease progression in ALS  
*M Hogg (Ireland)*

**SESSION 4B**
**HALL 2**

**CLINICAL TRIALS AND TRIAL DESIGN**

*Chairs: L van den Berg (Netherlands) M Cudkowicz (USA)*

16.00 – 16.30  
C20 Improving outcomes as rapidly as possible for patients: Multi-arm, multi-stage platform, umbrella and basket protocols  
*M Parmar (UK)*

16.30 – 16.50  
C21 Hurdles for pharmacogenetic interactions in ALS clinical trials: a post-hoc analysis and simulation study  
*R van Eijk (Netherlands)*

16.50 – 17.10  
C22 Novel composite endpoint extended analysis during extension of ibudilast phase 1A/2B clinical trial better predicts post wash out survival  
*B Brooks (USA)*

17.10 – 17.30  
C23 Randomized phase 2B trial of NP001, a novel immune regulator, in ALS  
*R Miller (USA)*

**SESSION 4C**
**HALL 1**

**NEUROPATHOLOGY**

*Chairs: J Ravits (USA) O Ansorge (UK)*

16.00 – 16.20  
C24 Selective vulnerability of the primary motor cortex in ALS  
*M Nolan (UK)*

16.20 – 16.40  
C25 Upper motor neurons with TDP-43 pathology from different species display similar cellular dysfunctions  
*H Ozdinler (USA)*

16.40 – 17.00  
C26 Distinct TDP-43 inclusions suggest divergent pathomechanisms in FTLD and FTLD-ALS  
*R Tan (Australia)*

17.00 – 17.20  
C27 Cognitive deficits in ALS are a marker of localized TDP-43 cerebral pathology  
*J Gregory (UK)*

**HALL 4**

**POSTER SESSION A: 17.45 – 20.00**

18.00 – 18.50  
**Theme 1:** Genetics and genomics  
**Theme 2:** In vitro experimental models  
**Theme 8:** Clinical imaging and electrophysiology  
**Theme 9:** Clinical trials and trial design

18.50 – 19.40  
**Theme 3:** In vivo experimental models  
**Theme 4:** Human cell biology and pathology  
**Theme 10:** Disease stratification and phenotyping  
**Theme CW:** Clinical work in progress
Saturday 8 December 2018

SESSION 5A
LOMOND AUDITORIUM

AXONAL DEGENERATION

Chairs: R Ribchester (UK) L Greensmith (UK)

08.30 – 09.00
C28 Mechanisms of axon degeneration and their relevance to ALS/MND
M Coleman (UK)

09.00 – 09.30
C29 Axonal transport as a therapeutic target
G Schiavo (UK)

09.30 – 09.45
C30 Neurotrophic factor-mediated regulation of axonal transport is impaired in SOD1 G93A mice
A Tosolini (UK)

09.45 – 10.00
C31 Axon loss and microglial activation in the corticospinal tract in sporadic ALS patients with predominant upper motor neuron symptoms
F Song (USA)

SESSION 5B
HALL 2

TECHNOLOGY AND ALS/MND

Chairs: T Meyer (Germany) S Chandran (UK)

08.30 – 08.50
C32 Computer assessment of speech in a successful ALS treatment trial
R Smith (USA)

08.50 – 09.10
C33 Remote pulmonary function testing in ALS telemedicine
A Geronimo (USA)

09.10 – 09.30
C34 Accelerometry for remote monitoring of disease progression in ALS clinical trials
R van Eijk (Netherlands)

09.30 – 09.45
C35 ALS patients can measure their own function at home: Reliability, tolerability and relationships between outcomes
J Shefner (USA)

09.45 – 10.00
C36 Preserving identity: The Speak: Unique voice banking pilot
P Rewaj (UK)

SESSION 5C
HALL 1

EPIDEMIOLOGY

Chairs: E Beghi (Italy) P Factor-Litvak (USA)

08.30 – 08.50
C37 Euro-MOTOR: a multicentre population-based case-control study of pre-existing medical conditions as risk factors for ALS
S Peters (Netherlands)

08.50 – 09.10
C38 Causal effects of presymptomatic lifestyle on ALS, stratified by C9orf72 genotype
H-J Westeneng (Netherlands)

09.10 – 09.30
C39 Are ALS motor phenotypes stochastic? A population-based study
A Chiò (Italy)

09.30 – 09.45
C40 Is psychological stress a predisposing factor for ALS? An online international case-control study of premorbid stressful life events, resilience and anxiety
J Parkin Kullmann (Australia)

09.45 – 10.00
C41 A family history of depression and anxiety predicts cognitive and behavioural changes in MND
C McHutchison (UK)

10.00 – 10.30 REFRESHMENTS AND NETWORKING: Hall 5
SESSION 6A
LOMOND AUDITORIUM

GENETICS AND GENOMICS
Chairs: M van Es (Netherlands) J Kirby (UK)

10.30 – 10.50
C42 Genomic structural variation in ALS: A case-control study using 6579 whole genome sequences
A Al Khleifat (UK)

10.50 – 11.10
C43 Identification of missing genetic association within non-coding elements using an artificial neural network
J Cooper-Knock (UK)

11.10 – 11.30
C44 A precision genomics approach to dissect the pathogenesis of ALS/MND
J Rubio (Australia)

11.30 – 11.50
C45 Discovery and characterisation of a novel genetic variant of amyotrophic lateral sclerosis
T Moll (UK)

11.50 – 12.10
C46 Expression levels of C9ORF72 associate with survival after onset in C9ORF72-linked diseases
M van Blitterswijk (USA)

12.10 – 12.30
C47 Spatial transcriptomics reveals spatially dysregulated expression of GRM3 and USP47 in amyotrophic lateral sclerosis
J Gregory (UK)

SESSION 6B
HALL 2

CLINICAL SUPPORT AND QUALITY OF LIFE
Chairs: O Hardiman (Ireland) E Mioshi (UK)

10.30 – 10.50
C48 Patient Reported Outcomes Measures (PROMs) in Amyotrophic Lateral Sclerosis (ALS)
F De Marchi (USA)

10.50 – 11.10
C49 Understanding quality of life in ALS/MND by modelling patient-reported outcomes
C Young (UK)

11.10 – 11.30
C50 Jumping between the cracks: navigating the world of care in motor neurone disease, a qualitative study
E Hobson (UK)

11.30 – 11.50
C51 An online mindfulness intervention for people with ALS
F Pagnini (Italy)

11.50 – 12.10
C52 Investigating protective factors of psychological distress in motor neuron disease (MND) caregivers
S Carney (Ireland)

12.10 – 12.30
C53 Apathy subtypes, quality of life, wellbeing and caregiver burden in motor neurone disease
R Radakovic (UK)

SESSION 6C
HALL 1

PRODROMAL AND EARLY DISEASE MARKERS
Chairs: M Turner (UK) Philippe Corcia (France)

10.30 – 10.50
C54 Relative thalamic hypometabolism as an early marker of C9orf72 pathology
J De Vocht (Belgium)

10.50 – 11.10
C55 Baseline and longitudinal volumetric changes associated with presymptomatic C9orf72 repeat expansion carriers
C McMillian (USA)

11.10 – 11.30
C56 Early and distinct perfusion alterations in presymptomatic C9orf72, MAPT and GRN mutation carriers
P Ferraro (USA)

11.30 – 11.50
C57 When does ALS begin? Insights from serum and CSF neurofilaments light and heavy
M Benatar (USA)

11.50 – 12.10
C58 Phosphorylated neurofilament heavy chains (pNfH) in blood as an early diagnostic and prognostic biomarker in ALS
K Poesen (Belgium)

12.10 – 12.30
C59 Peripheral immune biomarkers and the risk of neurodegenerative diseases in the Swedish AMORIS study
S Yazdani (Sweden)

12.30 – 14.00 LUNCH: Hall 5
SESSION 7A
LOMOND AUDITORIUM

NON-NEURONAL CELLS
Chairs: T Spires-Jones (UK) P Pasinelli (USA)

14.00 – 14.30
C60 Function and dysfunction of innate immune genes in microglia: implications for neurodegenerative disease
P St George-Hyslop (UK)

14.30 – 14.50
C61 Pathological study of glial inflammation in clinically pre-symptomatic spinal cords in patients with sporadic amyotrophic lateral sclerosis
S Hayashi (Japan)

14.50 – 15.10
C62 Exosomes derived from bone marrow mesenchymal stem cells and their shuttled miRNAs remodel astrocytes isolated from adult SOD1G93A mice from a neurotoxic to a neuroprotective phenotype
G Bonanno (Italy)

15.10 – 15.30
C63 C9orf72 expansion in astrocytes causes loss of metabolic flexibility, metabolic transport defects and loss of glycogen metabolism leading to increased toxicity under metabolic stress
S Allen (UK)

SESSION 7B
HALL 2

COGNITIVE AND PSYCHOLOGICAL CHANGE
Chairs: S Abrahams (UK) C Lomen-Hoerth (USA)

14.00 – 14.30
C64 The ALS-FTD spectrum: Diagnosis and management
J Hodges (Australia)

14.30 – 14.50
C65 Cognition and behaviour does decline across the ALS disease course after controlling for attrition
C Crockford (UK)

14.50 – 15.10
C66 Clinical correlates of memory decline in motor neuron disease
J Machts (Germany)

15.10 – 15.30
C67 Unravelling psychosis in motor neurone disease: A study of clinical features, cognition, and survival
R Ahmed (Australia)

SESSION 7C
HALL 1

NEUROPHYSIOLOGY
Chairs: M Weber (Switzerland) M De Carvalho (Portugal)

14.00 – 14.30
C68 Beyond molecules: Could circuit pathophysiology contribute to pathology of motor neuron diseases?
R Brownstone (UK)

14.30 – 14.50
C69 Excitability of spinal motoneurons in patients with ALS
V Marchand-Pauvert (France)

14.50 – 15.10
C70 Implementing Motor Unit Number Index (MUNIX) in a large clinical trial: Real world experience from 27 centres
C Neuwirth (Switzerland)

15.10 – 15.30
C71 Dysfunction of attention switching networks in amyotrophic lateral sclerosis correlates to impaired cognitive flexibility
R McMackin (Ireland)

15.30 – 16.00 REFRESHMENTS AND NETWORKING: Hall 5
SESSION 8A
LOMOND AUDITORIUM

PRECLINICAL THERAPEUTIC STRATEGIES

Chairs: P Shaw (UK) L Bruijn (USA)

16.00 – 16.15
C72 WVE-3972-01, an investigational stereopure antisense oligonucleotide for the treatment of amyotrophic lateral sclerosis (ALS) and frontotemporal dementia (FTD)
Z Zhong (USA)

16.15 – 16.30
C73 Antibody therapy targeting RAN proteins rescues ALS/FTD in C9orf72 BAC mice
L Ranum (USA)

16.30 – 16.45
C74 In vivo delivery of single chain antibodies to target TDP-43 proteinopathy
S Pozzi (Canada)

16.45 – 17.00
C75 Robust SOD1 knockdown in large mammal spinal cord using a novel delivery paradigm with AAV gene therapy targeting SOD1 for the treatment of SOD1-ALS
H Patzke (USA)

17.00 – 17.15
C76 HTL0014242 a novel metabotropic glutamate receptor type 5 (mGlu5) negative allosteric modulator limits glial activation and slows late stage disease progression in the SOD1G93A mouse model of MND
H Brown-Wright (UK)

SESSION 8B
HALL 2

CLINICAL PROGRESSION

Chairs: Z Stevic (Serbia) A Chiò (Italy)

16.00 – 16.20
C78 ALS onset in old people: Clinical features and prognosis
M De Carvalho (Portugal)

16.20 – 16.40
C79 Primary lateral sclerosis (PLS)-specific PLSFRS reveals significant clinical changes over time in patients with PLS
H Mitsumoto (USA)

16.40 – 17.00
C80 Phenotype-genotype characterisation of ‘long survivors’ with motor neurone disease in Scotland
D Leighton (UK)

17.00 – 17.15
C81 Validation of the D50 model of ALS progression in representative cohorts from Europe and the USA
J Grosskreutz (Germany)

SESSION 8C
HALL 1

TISSUE BIOMARKERS

Chairs: R Bowser (USA) A Malaspina (UK)

16.00 – 16.15
C83 Neuroendocrine and metabolic biomarkers in amyotrophic lateral sclerosis and frontotemporal dementia
R Ahmed (Australia)

16.15 – 16.30
C84 Distinct features of plasma extracellular vesicles in amyotrophic lateral sclerosis patients
V Bonetto (Italy)

16.30 – 16.45
C85 Plasma extracellular vesicle microRNA expression in ALS patients from the National ALS Registry
P Factor-Litvak (USA)

16.45 – 17.00
C86 Identification of a non-coding RNA biomarker signature from serum in ALS
G Joilin (UK)

17.00 – 17.15
C87 A combination of ferroptosis-based biomarkers improves the prediction of functional decline in ALS patients
P-F Pradat (France)

17.15 – 17.30
C88 Novel function of neuronal apoptosis inhibitory protein: implication for a risk factor and a prognostic marker in ALS
O Kano (Japan)
### Sunday 9 December 2018

#### SESSION 9A
**LOMOND AUDITORIUM**

**DISEASE MODELS**

*Chairs: L Van Den Bosch (Belgium) P Fratta (UK)*

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<thead>
<tr>
<th>Time</th>
<th>Presentation</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>08.30</td>
<td>Identification of a pro-apoptotic signalling cascade in FTD-ALS models</td>
<td>S Sweeney (UK)</td>
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<tr>
<td>09.00</td>
<td>C90 C9orf72 arginine-rich dipeptide proteins interact with ribosomal proteins in vivo to induce a toxic translational arrest that is rescued by eIF1A</td>
<td>T Moens (UK)</td>
</tr>
<tr>
<td>09.20</td>
<td>C91 ALS/FTD associated C9orf72 expansions activate the heat shock response and induce SOD1 proteinopathy –</td>
<td>T Ramesh (UK)</td>
</tr>
<tr>
<td>09.40</td>
<td>C92 BMAA, a cyanobacterial neurotoxin, triggers neurodegenerative changes in motor neurons and microglial activation in the spinal cord</td>
<td>D Davis (USA)</td>
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#### SESSION 9B
**HALL 2**

**END OF LIFE DECISIONS**

*Chairs: G D Borasio (Switzerland) Z Simmons (USA)*

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<tr>
<th>Time</th>
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<tr>
<td>08.30</td>
<td>Wishes for hastened death in ALS: How should we as clinicians respond?</td>
<td>G D Borasio (Switzerland)</td>
</tr>
<tr>
<td>08.50</td>
<td>MAID in Canada: Legalization of medical assistance in dying has changed the discussion of WTHD in ALS</td>
<td>W Johnston (Canada)</td>
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<tr>
<td>09.10</td>
<td>Wishes for hastened death in ALS in Japan: The need for culture-sensitive answers</td>
<td>M Ogino (Japan)</td>
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<tr>
<td>10.00</td>
<td>PANEL DISCUSSION</td>
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**10.00 – 10.30 REFRESHMENTS AND NETWORKING**: Hall 5
SESSION 10A
LOMOND AUDITORIUM

RNA AND PROTEIN PROCESSING

Chairs: C Shaw (UK) J Rothstein (USA)

10.30 – 11.00
C96 Connection between nucleocytoplasmic transport and protein aggregation in ALS
D Dormann (Germany)

11.00 – 11.20
C97 Synergistic interaction between low complexity domains in FUS is important for toxicity in drosophila and for liquid-liquid phase separation
L Van Den Bosch (Belgium)

11.20 – 11.40
C98 Mechanisms of paraspeckle hyper-assembly in ALS
T Shelkovnikova (UK)

11.40 – 12.00
C99 Mouse TDP-43 C-terminal mutations lead to an ALS-like phenotype and splicing gain of function producing novel splicing events, skiptic exons
P Fratta (UK)

12.00 – 12.20
C100 Optogenetic enhancement of TDP-43 intermolecular interaction triggers its cytoplasmic mislocalization and inhibits axon outgrowth of spinal motor neurons
K Asakawa (Japan)

12.20 – 12.40
C101 Optogenetic modulation of TDP-43 proteinopathy
C Donnelly (USA)

SESSION 10B
HALL 2

RESPIRATORY AND NUTRITIONAL SUPPORT

Chairs: G Pattee (USA) S Pinto (Portugal)

10.30 – 10.50
C102 Gastrostomy, rates of decline of ALSFRS-R subscores and BMI, and survival
N Thakore (USA)

10.50 – 11.10
C103 Measuring rate of decline in pulmonary function in ALS: Results from the ALS Nutrition/NIPPV Study Group
C Jackson (USA)

11.10 – 11.30
C104 Slow vital capacity and functional decay in ALS
S Pinto (Portugal)

11.30 – 11.50
C105 Enhancing the efficacy of non-invasive ventilation for patients with motor neurone disease: A systematic review and multicentre survey
D O’Brien (UK)

11.50 – 12.10
C106 Impact of a combined expiratory and inspiratory respiratory strength training program in ALS: Results of a randomized sham controlled trial
E Plowman (USA)

12.10 – 12.30
C107 Survival and outcomes of 122 patients with ALS/MND using tracheostomy ventilation (TV)
P Cazzolli (USA)

SESSION 11 HALL 2

JOINT CLOSING SESSION

Chairs: K Talbot (UK) M Kiernan (Australia)

13.30 – 14.00
C108 Energy metabolism defects in ALS
L Dupuis (France)

14.00 – 14.30
C109 Fitness, exercise and ALS
P Shaw (UK)

14.30 – 14.40
Patient Impact Award

14.40 – 14.50
Poster Prize Presentation

14.50 – 15.00
Invitation to Perth 2019

15.00 – 15.15
Late breaking news

12.30 – 14.00 LUNCH: Hall 5
**Theme 1: Genetics and Genomics**

**GEN-01 ALSgeneScanner: a pipeline for the analysis of DNA next-generation sequencing data of ALS patients**
Alfredo Iacoangeli, Ahmad Al Khleifat, William Sproviero, Aleksey Shatunov, Ashley Jones, Richard Dobson, Stephen Newhouse, Ammar Al-Chalabi

**GEN-02 Whole genome sequencing as tool to unravel rare variants associated with ALS survival**
Matthieu Moisse, the Project MiniSEQing Consortium

**GEN-03 Residual signals in ALS GWAS**
Ross Byrne, Wouter van Rheenen, Orla Hardiman, Jan Veldink, Russell McLaughlin

**GEN-04 Yield of an ALS Genetic Testing Algorithm in a Tertiary Care ALS Clinic: Test Outcomes in 142 Patients**
Jennifer Roggenbuck, Radha Patel, Adam Quick, Stephen Kolb

**GEN-05 The IceBucket Challenge Sporadic ALS Australia Systems Genomics Consortium: ALSA-SGC**
Anjali Henders, Robert Henderson, Madhura Bhadravathi Lokeshappa, Shyuan Ngo, Fleur Garton, Ammar Al-Chalabi, Rob Edis, Matthew Kerinal, Nigam Laing, Philippa Lamont, Susan Mathers, Merrillie Needham, Garth Nicholson, Roger Phampflett, Dominic Rowe, David Schulz, Paul Talman, Jan Veldink, Leonar van den Berg, Peter Visscher, Steve Vucci, Kelly Williams, Pamela McCombe, Ian Blair, Naomi Wray

**GEN-06 Characterising polymorphic retrotransposon insertions in the genomes of ALS patients**
Abigail Savage, Ammar Al-Chalabi, Jose Garcia-Perez, Ulike Held, Anja Bock, Alejandro Rubio, Gerome Been, Bradley Smith, Alfredo Iacoangeli, Vivien Bubb, Gerald Schumann, John Quinn

**GEN-07 Genetic polymorphisms of the KATP channel and their expression are associated with progression and survival in Amyotrophic Lateral Sclerosis**
José Vidal-Taboada, María Salvadó, Alan Lopez-Lopez, Nicole Mahy, Manuel Rodríguez, Josep Gamez

**GEN-08 DNA Methylation in Amyotrophic Lateral Sclerosis**
Charlie Appleby Mallinder, Paul Heath, J Hightley

**GEN-09 Transcriptomic profile in ALS: possible correlation between disease progression and RNA deregulation**
Stella Gagliardi, Susanna Zucca, Cecilia Pandirini, Daisy Sproviero, Maria Garofalo, Matteo Bordoni, Orietta Pansarasa, Raffaele Calogero

**GEN-10 GM604 regulates developmental neurogenesis pathways and the expression of genes associated with amyotrophic lateral sclerosis**
William Swindell, Krzysztof Bojanowski, Mark Kindy, Dorothy Ko

**GEN-11 Genetic polymorphisms relate to cognitive, behavioural, and neuromuscular profile in sporadic ALS**
Katerina Placek, Laura Hennessy, Pilar Ferraro, Lauren Elman, Leo McCluskey, Vanni Van Deelen, Murray Grossman, Corey McMillan

**GEN-12 A 5 year review of clinical neurodegenerative disease genetic testing in NHS Scotland**
Elizabeth Elliott, Elaine Cleary, Jon Warner, Austin Diamond, Shuna Colville, Siddharthan Chandran, Mary Porteous, Suvarnkar Pal

**GEN-13 The diagnostic yield of NGS in ALS and related neuromuscular disorders**
Sien Van Dalee, Matthieu Moisse, Valérie Race, Project MiniSEQing consortium, Philip Van Damme

**GEN-14 The Malta MND DNA Bank: Identification of genetic risk factors in an isolated island nation**
Rebecca Borg, Karl Bonavia, Ruben Cauchi

**GEN-15 Genetic Profile of ALS Patients in Portugal**
Marta Gromich, Susana Pinto, Eugenio Gisca, Ana Pronto-Laborinho, Namede de Carvalho

**GEN-16 Genetic testing in amyotrophic lateral sclerosis and frontotemporal dementia: outcomes in patients and relatives referred to clinical genetics over a five-year period**
Lauren Cairns, Andrew Douglas

**GEN-17 Validation of genetic factors affecting survival in Japanese ALS patients**
Ryoichi Nakamura, Naoki Atsuta, Genki Tohnai, Masahiro Nakatoki, Naoki Hayashi, Daichi Yokoi, Hirohisa Watanabe, Masahisa Katsuno, Yuishin Izumi, Mitsuya Morita, Akira Taniguchi, Nobutaka Hattori, Osamu Kano, Masaya Oda, Koji Abe, Satoshi Kuwabara, Kouichi Mizoguchi, Ryuji Kaji, Gen Sobue

**GEN-18 Genotypes and phenotypes of Amyotrophic Lateral Sclerosis in Mongolia**
Tselmen Daria, Kathrin Muller, Zolzaya Doljoov, Suvd Oidovdorj, Sarantssetseg Turbat, Bolormaa Dambasuren, Oyungerel Bosookhuu, Chimegikhlan Banzrai, Erdenechimeg Yadamasuren, Patrick Weydt, Elmar Pinkhardt, Angela Rosenbohm, Munkhtuvshin Namid, Baasamjav Damchaa, Josef Hogel, Guentram Borck, Munkhbat Batmunkh, Albert Ludolph, Jochen Weishaupt

**GEN-19 Screening for TUBA4A mutations in a large Chinese cohort of ALS patients: re-evaluating the pathogenesis of TUBA4A in ALS**
Jiao Li, Dongsheng Fan

**GEN-20 Screening for CCNF mutations in a Chinese amyotrophic lateral sclerosis cohort**
Danyang Tian, Dongsheng Fan

**GEN-21 Mutation screening of the KIF5A gene in Chinese patients with amyotrophic lateral sclerosis**
Xiaojing Gu, Chunya Li, YongPing Chen, Qianqian Wei, Bei Cao, Ruwei Ou, Xiaojin Yuan, Yanbing Hou, Lingyu Zhang, Hui Liu, Ying Wu, Wei Song, Bi Zhao, Xueping Chen, Huifang Shang

**GEN-22 Mutation analysis of KIF5A in Chinese amyotrophic lateral sclerosisspatients**
Kang Zhang, Qing Liu, Dongchao Shen, Hongfei Tai, Shuangwu Liu, Zhih Wang, Jiayu Shi, Hanhui Fu, Xiaoxiang Li, Yuzhou Guan, Mingsheng Liu, Xue Zhang, Liying Cui

**GEN-23 The first report of SOD1-A4V mutation in a Chinese patient with familial amyotrophic lateral sclerosis without the A4V founder effect common in North America**
Lu Tang, Yan Ma, Xiaolu Liu, Lu Chen, Dongsheng Fan

**GEN-24 ANXA11 mutations analysis in Chinese amyotrophic lateral sclerosis patients**
Xiangyi Liu, Dongsheng Fan

**GEN-25 Mutational analysis of ANXA11 in ALS patients in Taiwan**
Yi Chung Lee, Pei-Chien Tsai, Yi-Chu Liao

**GEN-26 NEK1 Variants in Korean Patients with Sporadic Amyotrophic Lateral Sclerosis**
Seong Il Oh, Young-Eun Kim, Min-Young Noh, Ki Wook Oh, Chang-Seok Ki, Seung Hyun Kim, Jin-Seok Park

**GEN-27 Association between clinical characteristics and SOD1 variants in Korean patients with motor neuron disease.**
Ki Wook Oh, Young-Eun Kim, Jinseok Park, Sanggon Lee, Pyung Kang Park, Kyong Jin Shin, Chang-Seok Ki, Seung Hyun Kim

**GEN-28 A novel SOD1 mutation p.D126N associated with a rapidly evolving form of amyotrophic lateral sclerosis with bulbar involvement**
Antoine Pegat, Kevin Mouzat, Serge Lombroso, Emilien Bernard

**GEN-29 Screening of the TBK1 gene in a Spanish motor neuron disease cohort**
Josep Gamez, Cecilia Garcia, Jose Manuel Vidal-Taboada, Maria Salado

**GEN-30 CAG Intermediate-repeat expansion in ATXN2 associated with increased risk of SPS in the Irish population**
Jennifer Hengeveld, Mark Doherty, Leonie Dupuis, Alice Vajda, Mark Heverin, Dan Bradley, Orla Hardiman, Russell McLaughlin

**GEN-31 A cross-sectional analysis of the C9orf72 repeat expansion in South Africans with ALS**
Jeanine Heckmann, Gloudi Agenbag, Ansie Wichers, Francio Henning, Helen Cross, Alina Esterhuizen, Melissa Nel

**GEN-32 De novo FUS p.P525L mutation in sporadic juvenile amyotrophic lateral sclerosis with aggressive progression and mental disabilities**
Orly Goldstein, Mali Gana-Weisz, Beatrice Nefussy, Shir Twito, Batel Vainer, Avi Ortr-Urrtregre, Vivian Dory
**THEME 2**

**In Vitro Experimental Models**

**IVT-01** Antioxidant drugs reveal the potential for patient stratification in Motor Neurone Disease
Chloe Allen, Monika Myszczynska, Matthew Stopford, Noemi Gatto, Heather Moritboys, Pamela Shaw, Laura Ferraiuolo

**IVT-02** Targeting autophagy in ALS by BiAgil – a specific TGFIRI LNA-ASO
Sabrina Kueispert, Rosmarine Heydnn, Sebastian Peters, Eva Wirkert, Tim-Henrik Bruun, Lydia Aigner, Ulrich Bogdahn

**IVT-03** Multimodal regulation of autophagy by the Amyotrophic Lateral Sclerosis-associated kinase, TBK1
Maria Davies, Mark Collins

**IVT-04** The neuromuscular junction the hidden player in ALS: studies from ALS model mice, ALS patients, and the construction of an *in vitro* human neuromuscular circuit
Qiao Ding, Timothy Tracey, Prajwal Thakre, Elise Wimberger, Aaron Russell, Reif Kanjian, Mark Bellingham, Lindy Jeffree, Michael Colditz, Robert Henderson, Pamela McCombe, Kimberley Forrest, Matthew Devine, Massimo Hiliard, Ernst Ernst Wolvetang, Shyuan Ngo, Peter Noakes

**IVT-05** Neurochordin interacts with the SMN protein suggesting a novel mechanism for Spinal Muscular Atrophy pathology
Luke Thompson, Kimberley Morrison, Sally Shirran, Ewout Groen, Thomasillingwater, Catherine Botting, Judith Sleeman

**IVT-06** miR-105 as a critical determinant of neuronal intermediate filament steady-state mRNA levels in ALS
Zachary Hawley, Danae Campos-Melo, Kathryn Volkening, Michael Strong

**IVT-07** The neurotoxin BMAA is a contributor to Wallerian-like degeneration, and its transcellular transmission
Vanessa Tan, Benjamin Lassus, Say Hwa Tan, Adrian Teo, Chai Lim, Philippetixodor, Josquin Courte, Gilles Guillemin, Jean-Michel Peyrin

**IVT-08** Neurotoxicity of isoforms of the environmental toxin beta-N-methylamino-L-alanine (BMAA)
Doug Lobner, Thomas Schneider

**IVT-09** Examining the potential role of cyanotoxins in sporadic motor neurone disease
Kenneth Rodgers, Mehdi Mirzaei, Adam Quinn

**IVT-10** Inosine reverses motor neuron toxicity observed in amyotrophic lateral sclerosis (ALS) patient astrocytes with an adenosine deaminase deficiency
Scott Allen, Benjamin Hall, Alexander McGown, Lydia Castelli, Ryan Woof, Laura Francis, Adrian Higginbottom, Monika Myszczynska, Chloe Allen, Matthew Stopford, Christopher Webster, Guillaume Hautbergue, Tennore Ramesh, Laura Ferraiuolo, Pamela Shaw

**IVT-11** Matrin-3 coalesces into novel nuclear structures in response to stress, a property that is impaired by the ALS-linked S85C mutation
Ryan Mulligan, Jacob Ayers, Cara Croft, Jared Richardson, Andy Berglund, Dave Borchelt, Edgardo Rodriguez Lebron

**IVT-12** Functional consequences of a novel L84F SOD1 mutation identified in a familial amyotrophic lateral sclerosis family from north India
Vibha Taneja, Abhishek Vats, M Gourie-Devi, Saima Wajid, Nirmal Ganguly

**IVT-13** Origin of toxicity in SOD1-associated ALS
Nikolay Dokholyan

**IVT-14** Layer V Pyramidal Neurons showing synaptic hyper-excitability has altered TrkB receptor signaling in SOD1G93A mouse model of ALS
Jonu Pradhan, Peter Noakes, Mark Bellingham

**IVT-15** Amyotrophic lateral sclerosis-associated mutant SOD1 inhibits anterograde axonal transport of mitochondria by PINK1/ Parkin dependent degradation of Miro1
Claudia Bauer, Annekathrin Molller, Rebecca Cohen, Christopher Webster, Kurt De Vos

**IVT-16** Targeting the mechanisms governing alterations in motor neuron excitability in MND
Yossi Buskila, Orsolya Kekesi, Lezanne Ooi

**IVT-17** Hyperexcitability in G93A-SOD1 neurons: multi-electrode recordings with morphological and molecular correlates
Stefania Marcuzzo, Benedetta Terragni, Silvia Bonanno, Emilio Ciusani, Renato Mantegazza, Pia Bernasconi, Ludovico Minati

**IVT-18** Pathogenic protein aggregation is a poor inducer of the heat shock response
Rebecca San Gil, Prachi Mehta, Deaeza Cox, Lezanne Ooi, Justin Yerbury, Adam Walker, Heath Ecroyd, Luke McAlary

**IVT-19** Restoration of ubiquitin homeostasis reduces mutant SOD1 toxicity but has no effect on the formation of large SOD1 aggregates
Isabella Lambert Smith, Natalie Farrawell, Darren Saunders, Stephen Oliver, Giorgio Favrin, Justin Yerbury

**IVT-20** Wildtype TDP 43 functions in DNA repair but this process is perturbed in ALS
Anna Konopka, Manal Farg, Shafi Jamali, Julie Atkin

**IVT-21** Linking miR9 and miR124 expression in motor neurons of ALS models to chromatin remodelling, neuronal gene expression and plasticity
Benoit Gentil, Jaime Colavincenzo, Mario Fernandez, Heather Durham

**IVT-22** In vitro compound screening assays for the identification of small molecules modulating TDP-43 accumulation
Christopher Secker, Hannah Niederlecher, Mirjam Groh, Thomas Meyer, Matthias Endres, Erich Wanker

**IVT-23** The intrinsically disordered region of TDP-43 is essential for gene regulation
Martina Halleger, Anob Chakrabarti, Flora Lee, Nicholas Luscombe, Jernej Ule

**IVT-24** TARDBP pre-mRNA with a mutation causes disturbance of TDP-43 autoregulation via altered interaction with ALS-related splicing factors
Akhiro Sugai, Akihide Koyama, Takuya Konno, Osamu Onodera

**IVT-25** Investigating cell autonomous and non-cell autonomous effects in a TDP-43M337V BAC mouse model of Amyotrophic Lateral Sclerosis
Jayden Clark, Myrna Kelfkens, Ruxandra Dafinca, David Gordon, Kevin Talbot

**IVT-26** Development of a high throughput screening pipeline to identify modifiers of stress granule dynamics in motor neurons from a TDP-43 transgenic mouse model of ALS
David Gordon, Ruxandra Dafinca, Lucy Farrimond, Daniel Ebner, Kevin Talbot

**IVT-27** Translocation of TDP-43 and FUS in cortical neurons and spinal motor neurons after glutamatergic stress or in presence of the neurotoxic peptide Aβ 1-42
Alexandre Henriques, Maud Combes, Clémence Farrugia, Philippe Poindron, Noëlle Callizot

**IVT-28** Characterisation of a novel isoform of FUS and its role in ALS
Marta Vidal, Audrey Ragagnin, Albert Lee, Ben Heng, Gilles Guillemin, Roger Chung, Julie Atkin

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**THEME 3**

**In Vivo Experimental Models**

**IVV-01** Rewiring muscles to restore function in ALS using stem cells and optogenetics
Barney Bryson, Linda Greensmith

**IVV-02** Nucleocytoplasmic Transport Defects in a Novel Mouse Model of Neurodegeneration Caused By Mutations in NEMF.
Roger Sher, Paige Martin, Tyler McGathey, Gregory Cox

**IVV-03** Decreased Glycogenolysis by mir-338-3p Leads to Regional Glycogen Accumulation in the Spinal Cord of Amyotrophic Lateral Sclerosis Mice
Chunyu Li, Qianqian Wei, Xiaoqing Gu, Yongping Chen, Xueping Chen, Bei Cao, Ruwei Ou, Huifang Shang

**IVV-04** Disruption of the astrocytic TNFR1-GDNF axis accelerates motor neuron degeneration and disease progression in amyotrophic lateral sclerosis
Liliana Brambilla, Giulia Guidotti, Francesca Martorana, Anand Iyer, Eleonora Aronica, Chiara Valori, Daniela Rossi

**IVV-05** Mutations in NEMF, a ribosomal quality control protein, cause progressive neurodegeneration and motor phenotypes in mice

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**POSTER SESSIONS | 29th INTERNATIONAL SYMPOSIUM ON ALS/MND**
Jennifer Stauffer, Paige Martin, Yu Kigoshi-Tansho, Roger Sher, Claudio Joaziero, Gregory Cox

**IVV-06** Neurou muscular Junction Rescue in SMA: Why Early Treatment Is Key
Alison Thomson, Rachel Kline, Erc Villalón, Erkan Cakir, Christian Lorson, Lyndsay Murray

**IVV-07** Pathogenic and therapeutic relevance of the CB2 receptor in TDP43 transgenic mice, a model of amyotrophic lateral sclerosis
Carmen Rodríguez-Cueto, Laura García Toscano, Marta Gómez-Almería, Julián Romerio, Cecilia Hilliard, Javier Fernández-Ruiz, Eva de Lagos

**IVV-08** Enteroviral Infection Leads to Cytoplasmic Mislocalization of TDP-43 in Mouse Brain
Yuan Chao Xue, Gabriel Fung, Yasis Mohamud, Haoyu Deng, Huitao Liu, Jingchun Zhang, Ralph Feuer, Neil Cashman, Honglin Luo, Chelsea Ruller

**IVV-09** Sam1 deletion protects motor axons and dendritic spines in TDP-43 Q353K1 transgenic mice
Matthew White, Ziqiang Lin, Andrea Loreto, Eugene Kim, Richard Mead, Camilla Simmons, Diana Cash, Michael Coleman, Jemeen Seedharan

**IVV-10** Pathological alterations to Golgi apparatus structure and protein trafficking occur prior to disease onset in a TDP-43 mouse model of ALS
Britt Berning, Prachi Mehta, Christoph Krisp, Mehdi Mirzaei, Julie Atkin, Mark Molloy, Adam Walker

**IVV-11** The neuroprotective function of the oxidation resistance 1 gene in the TDP-43-associated pathology of ALS
Silvia Corrochano, Matthew Williamson, Mattea Finelli, David Gordon, Kevin Talbot, Key Davries, Peter Oliver

**IVV-12** Chemogenetic exploration of the Blood-Spinal Cord-Barrier impairment in an ALS mouse model
Najwa Ouali Alami, Linyun Tang, Barbara Commissio, Tobias Boeckers, Albert Ludolph, Francesco Roselli

**IVV-13** Shifting the Spectrum: Utilizing a Known Modifier Locus to Suppress Disease Severity in Igfmbp2-Associated Motor Neuron Disease Models
Paige Martin, Sarah Holbrook, David Schroeder, Amy Hicks, Jennifer Stauffer, Gregory Cox

**IVV-14** Initial Characterisation of a New Rat Model of ALS8
Brenda Murage, Rachel Kline, Mark Harmon, Thomas Wishart, Mandy Jackson, Paul Skehel

**IVV-15** Characterization of mice with heterozygous TBK1 deletion
Clara Bruno, Kirsten Sieverding, David Brenner, Amy Hicks, Jennifer Stauffer, Gregory Cox

**IVV-16** FUS is required for post-synaptic neuromuscular junction differentiation: evidence from knock-in mice and iP5 based cellular models
Gina Picchiarelli, Maria Demestre, Tobias Boeckers, Erik Storkebaum, Luc Dupuis

**IVV-17** Quantitative proteomic profiling of nerve and muscle identifies a dynamic evolution in mitochondrial bioenergetics underpinning accelerated neuromuscular junction degeneration in the mature mouse
Rachel Kline, Kosalá Dissanayake, Maiclo Llaveo Hurtado, Alexander Ah, Douglas Lamont, Richard Ribchester, Thomas Wishart, Lyndsay Murray

**IVV-18** Intracerebroventricular administration of cystatin C extended the survival time of SOD1G93A mouse model
Seiji Watanabe, Okiru Komine, Fumito Endo, Keisuke Wakasugi, Koji Yamanaka

**IVV-19** Muscle dysfunction precedes loss of motor unit connectivity in SOD1(G93A) mice
Christopher Wier, Alexander Crum, Anthony Reynolds, Chiya Iyer, Deepthi Churig, Manily Paletas, Patrick Heilman, David Kline, W Arnold, Stephen Kolb

**IVV-20** Neuregulin 1 regulation and its organizing functions in C-type cholinergic afferents on normal and altered alpha-motor neurons
Sara Salvany, Anna Casanovas, Olga Taratal, Sara Fernández, Lidia Piedrafita, María Clara Soto-Bernardini, Manuel Santafé, Jordi Calderó, Markus Schwab, Josep Esqueda

**IVV-21** Necroptosis contributes minimally to disease onset and progression in SOD1G93A mice
Tai Te Wang, Nirma Perera, Doris Tomas, Brittany Cuic, James Murphy, Bradley Turner

**IVV-22** Counteracting roles of MHC1 and CD8+ T cells in the peripheral and central nervous system of ALS SOD1G93A mice
Giovanni Nardo, Maria Chiara Trolesta, Mattia Verderio, Alessandro Mariani, Massimiliano De Paola, Nilo Riva, Giorgia Dina, Nicolò Panini, Eugenio Erba, Angelo Quattrini, Caterina Bendotti

**IVV-23** Circuit-Specific Early Sensory Abnormalities in the SOD1G93A Mouse Model for Amyotrophic Lateral Sclerosis
Martina Wiedau, Soju Seki, Toru Yamamoto, Ravidu Udugampola, Igor Spigelman, Xia Yang, Michelle Levine, Scott Chandler, Sharmila Venugopal

**IVV-24** Deconstructing genes, pathways and networks of selective motor neuron vulnerability and tolerance in perinatal SOD1G93Amice
Fatemeh Zanganéh, Christopher Bye, Bradley Turner

**IVV-25** An in vivo model of intercellular pathogenic protein transmission in ALS Mouna Haidar, Valentina Marchica, Nicholas Nicholson, Thomas Becker, Catherina Becker, Paul Heath, Thomas Gillingwater

**IVV-26** Characterisation of a Zebrafish model of Annexin A11
Bradley Smith, Valentina Marchica, Nicholas Nichoalo, Corinne Hourat

**IVV-27** Pathogenesis and motor neuron vulnerability in spinal muscular atrophy is modulated by bioenergetic status

**IVV-28** Antisense Oligonucleotide Therapy Targeting SOD1 for the Treatment of Canine Degenerative Myelopathy: A Disease Model of ALS
Joan Coates, Curt Mazur, Eric Swazy, Gayle Johnson, Daniella Vansteenkiste, Katherine Bibi, Stefanie Lim, Frank Bennett, Timothy Miller

**IVV-29** Does pThr17Stau mediate cytoplasmic inclusion formation through exposure of the N-terminal phosphatase activating domain of tau?
Matthew Hintermayer, Alexander Mosczynski, Michael Strong

**IVV-30** APX-051T, astaxanthin derivatives, attenuates functional disability in ALS model rats by orchestrating the suppression of IL-17a related events
Karu Kobayashi, Tomihisa Yokoyama, Katsuhito Yamano, Yashuhiro Nishida, Michinori Takashina, Michihsia Mukawa, Makoto Ogawa, Takashi Fujita

**IVV-31** Characterisation of a Zebrafish model of Annexin A11
Bradley Smith, Valentina Marchica, Nicholas Nichoalo, Corinne Hourat

**IVV-32** Pathogenesis and motor neuron vulnerability in spinal muscular atrophy is modulated by bioenergetic status

**IVV-33** High throughput screening of LifeArc ion channel library using the sod1G93R zebrafish model of ALS
Olifat Abduljabbar, Alexander McGown, Jonathan Wood, Tonnore Ramesh

**IVV-34** Traumatic injury exaggerates neurodegeneration in ALS models and perturb nucleocytoplasmic transport
Eric Anderson, Lauren Gochea, Aditi Singh, Rangan Grant, Krishani Patel, Simon Watkins, Jane Wu, Jacob Schwartz, Udai Pandey

**IVV-35** Importance of Sigma-1 receptor in amyotrophic lateral sclerosis: Genetic analysis in Drosophila
Bilal Khalil, Simon Couly, Tangui Maurice, Jean Charles Lévens

**IVV-36** Experimental set-up to study the in vivo spread of C9ORF72-derived Dipeptide Repeats in Drosophila melanogaster
Javier Moron Oset, Sebastian Grönke, Linda Partridge

**IVV-37** Drosophila TBK1 dysfunction in glia cells cause abnormal postsynaptic glutamate receptor clustering
Minyeop Nahm, Min-young Noh, Su Min Lim, Seung Hyun Kim

**IVV-38** amio acid ratios and racemases in ALS/MND
James Metcalf, Sandra Banack, Paul Cox
THEME 4
Human Cell Biology and Pathology

HCB-01 Generation of an induced pluripotent stem cell (iPSC) bank for amyotrophic lateral sclerosis: An MNDA initiative
Erin Hedges, Agnes Nishimura, Christopher Shaw

HCB-02 Metabolic alterations in motor neurons derived from ALS-patients.
Tijj Vandenoo, Wenting Guo, Bart Ghesquiere, Katrien De Bock, Ludo Van Den Bosch

HCB-03 Ryanodine receptor and IP3 receptor role in the ER-mitochondria-calcium cycle of iPSC derived ALS motor neurons
Benjamin Vlad, Vedrana Tadic, Sakikata Sengupta, Beatrice Stubendorff, Otto Witte, Andreas Hermann, Julian Grosskreutz

HCB-04 Calcium dynamics in hiPSC-derived astrocytes and their influence on motor neuron function
Veronica Brivio, Abby Scurfold, Bhuvanesh Selvaraj, Arpan Mehta, Karen Burr, Siddharthan Chandran, Gareth Miles

HCB-05 Perturbations in Na+/K+ pumps in ALS patient iPSC-derived motorneurons harbouring C9ORF72 mutations
Amrit Chouhan, Abby Scurfold, Bhuvanesh Selvaraj, Arpan Mehta, Karen Burr, Siddharthan Chandran, Gareth Miles

HCB-06 Stress granules formation upon condition of chronic stress in human ALS disease models
Claudia Colombrita, Valentina Gumina, Annamaria Maraschi, Alberto Doretti, Clara Volpe, Francesca Sassone, Patrizia Bossolasco, Vincenzo Silani, Antonia Ratti

HCB-07 Investigating nucleocytoplasmic transport and stress granule dynamics in TDP-43 iPSC-derived MNs
Ruxandra Dafinca, Ana Candalija, Emily Carroll, Helen Christian, Sally Cowley

HCB-08 Modulation of the Unfolded Protein Response by L-serine: a Putative Mechanism for Neuroprotection
Rachael Dunlop, James Powell, Benjamin Heng, Gilles Guillaumin, Paul Cox

HCB-09 Regulation of exosomes secretion to diminish the toxicity of the muscle secretome in ALS myotubes
Owen Connolly, Virginie Mariot, Geetha Vijayakumar, Pierre Pradat, William Duddy, Stephanie Duguez

HCB-10 Perinuclear accumulation and microparticle secretion of SOD1 in sporadic ALS myotubes
Vanessa Milla, Laura Le Gall, Virginie Mariot, Geetha Vijayakumar, Pierre Francois Pradat, Julie Dumonceaux, William Duddy, Stephanie Duguez

HCB-11 Alteration of FUS pathway leading to a communication breakdown in ALS
Laura Le Gall, William Duddy, Sylvain Roquevibre, Virginie Mariot, Julie Dumonceaux, TRANE group

study, Olivier Lucas, Cedric Raoul, Susan Knoblach, Cecile Martinat, Jose-Luis Gonzales De Aguilar, Pierre Francois Pradat, Stephanie Duguez

HCB-12 Translating ribosome affinity purification from C9orf72 ALS/FTD patient-derived iP5 Motor Neurons
Chaitra Sathyaparakash, Jakub Scaber, Nidaa Ababneh, Ana Candalija, Ruxandra Dafinca, Kevin Talbot

HCB-13 Bulk and single-cell transcriptomic profile of iPSC-derived motor neurons from C9orf72-ALS/FTD patients
Ana Candalija, Jakub Scaber, Ruxandra Dafinca, Nidaa Ababneh, Viola Volpato, Caleb Webber, Bart Swinnen, Ludo Van Den Bosch, Georg Haase, Kevin Talbot

HCB-14 Methylation of C9orf72 promoter: a disease modifier and a model confounder in C9orf72 ALS/FTD iPSCs and iMNs
Clara Volpe, Claudia Colombrita, Patrizia Bossolasco, Cinzia Tiloca, Silvia Peverelli, Valentina Gumina, Francesca Sassone, Vincenzo Silani, Antonia Ratti

HCB-15 Dissecting the contribution of dipeptide repeats to the toxicity in C9orf72 iPSC-derived motor neurons from patients with ALS/FTD
Paola Barbagallo, Sally Cowley, Ruxandra Dafinca, Kevin Talbot

HCB-16 Bioenergetic and cytoskeletal deficits are caused by the C9orf72 repeat expansion in human iPSC-derived motor neurons
Arpan Mehta, Bhuvanesh Selvaraj, Oven Dando, Karen Burr, Jenna Gregory, Roderick Carter, Nicholas Burton, Colin Smith, Giles Hardingham, Siddharthan Chandran

HCB-17 C9-ALS patient specific iPSC lines as in vitro model to study pathogenesis and to test Morpholino oligomers efficacy
Michela Taiana, Margherita Bersani, Monia Nizzardo, Paola Rinchetti, Silvia Barabon, Nereo Bresolin, Giacomo Comi, Stefania Corti

HCB-18 C9ORF72 repeat expansions cause axonal transport defects in iPSC-derived motor neurons
Laura Furnagall, Steven Boeynaems, Raheem Fazal, Wenting Guo, Ann Sijssen, Mathias De Decker, Matthieu Mousie, Bart Swinnen, Delphine Bohl, Wim Robberecht, Philipp Koch, Pieter Vanden Berghe, Ludo Van Den Bosch, Catherine Verfaillie, Philip Van Damme

HCB-19 Neuronal differentiation of induced pluripotent stem cells from a patient with severe neurological impairment reveals mutations in the MND candidate gene GCNSL1, causing mitochondrial defects
Timothy Tracey, Dmitry Ovchinnikov, Sylvie Martin, Rohie Je, Adeline Vanderveer, Guy Helman, Ernt Wølvetang, Shyuan Ngo

HCB-20 Progressive Motor Neuron Pathology and the Role of Astrocytes in a Human Stem Cell Model of VCP-Related ALS
Claire Hall, Zhi Yao, Minee Choi, Giula Tyzack, Andrea Serio, Raphaëlle Lusier, Jasmine Harley, Elisavet Preza, Charlie Arber, Sarah Crisp, P. Marc Watson, Dmitrii Kullmann, Andrey Abramov, Selina Wray, Russell Burley, Samantha Loh, L. Miguel Martins, Molly Stevens, Nicholas Luscombe, Christopher Sibley, Anders Lakatos, Jernej Ule, Sonia Gandhi, Riche Patani

HCB-21 Autophagy in ALS patients with SOD1 and C9orf72 mutations
Mayra Zakhatarova, Ivan Kochergin, Nataliya Abramychyna, Yuliya Shplukova, Elena Lysogorskaia, DenisYu Logunov, Alexey Vasiliev, Amna Roslyakova, Ilya Bakuli, Taras Siman, Inessa Zakroyshchikova, Juliya Korzhova, Mariya Ivanova, Sergey Illarischkin

HCB-22 Mitophagy Dysregulation in PBMCs of Sporadic ALS Patients
Matteo Bordoni, Valentina Fantini, Roberto Leone, Jonathan Vinet, Orietta Panasarasa, Stella Gagliardi, Cristina Cereda

HCB-23 y’ fibrinogen and changes in morphology of erythrocytes in Amyotrophic Lateral Sclerosis
Ana Catarina Pronto Laborinho, Catarina Lopes, Marta Gromicho, Nina Santos, Fillomena Carvalho, Mamede de Carvalho

HCB-24 R-loops and stress granules interaction in Amyotrophic Lateral Sclerosis
Marta Gianinny, Daisy Sproverio, Matteo Bordoni, Luca Diamanti, Jonathan Vinet, Stella Gagliardi, Serena Carra, Orietta Panasarasa, Cristina Cereda

HCB-25 Muscleblind modulates FUS-associated neurodegeneration and promotes stress granule turn-over
Ian Casci, Karmik Krishnamurthy, Sukheleen Kour, Nandini Ramesh, Rogan Grant, Eric Anderson, Stacie Olivier, Vadreennath Tripathy, Jared Sterneckert, Amanda Gleixner, Christopher Donenelly, Marc-David Ruepp, Piera Pasinelli, Udai Pandey

HCB-26 Cortical Cytokine Changes in Healthy Ageing, Motor Neurone Disease and Alzheimer’s Disease
Anuradha Tennakoon, Ian Musgrave, Ian Johnson, Vittiya Katharesan

HCB-27 Aberrant Assembly Machines Involved in ALS:A New Paradigm with Diagnostic and Therapeutic Implications
Suganya Selvarajah, Shao Feng Yu, Nick De’Yarman, Dennis Solas, Anatoly Kitiagorodskyy, Yemi Akintunde, Kumar Pauluvannan, Amanda Macieik, Anuradha Lingappag, Shriya Sahu, Ana Moreira, Danielle Goldsmith, Alex Parker, Caludia Maio, Vinod Asundi, Kent Mattack, Verian Bader, Svenja Trossbach, Kim Staats, Justin Khida, Lyle Ostrow, Carsten Korth, Vishwanath Lingappa, Deben Dey, Jeffrey Rosenfeld

HCB-28 Functional interplay between TDP-43 and p62 - relevance for proteostasis in ALS
Jeffrey Rosenfeld, Carsten Korth, Vishwanath Lingappa, Shao Feng Yu, Nick De’Yarman, Dennis Solas, Anatoly Kitiagorodskyy, Yemi Akintunde, Kumar Pauluvannan, Amanda Macieik, Anuradha Lingappag, Shriya Sahu, Ana Moreira, Danielle Goldsmith, Alex Parker, Caludia Maio, Vinod Asundi, Kent Mattack, Verian Bader, Svenja Trossbach, Kim Staats, Justin Khida, Lyle Ostrow, Carsten Korth, Vishwanath Lingappa, Deben Dey, Jeffrey Rosenfeld

HCB-29 ALS-RAP: The reproducible antibody platform initiative for ALS research
Carl Lallamme, Thomas Durcan, Susanne Graslund, Wen Hwa Lee, Peter McPherson, Opher Gileadi
THEME 5
Epidemiology and Informatics

EPI-01 Changing epidemiology of motor neurone disease in Scotland
Danielle Leighton, Judith Newton, Laura Stephenson, Shuna Colville, Richard Davenport, George Gorrie, Ian Morrison, Siddharthan Stephenson, Shuna Colville, Richard Davenport

EPI-02 The MND Register for England, Wales and Northern Ireland
Sarah Opie-Martin, Lynn Ossher, Anna Kulka, Kevin Talbot, Ammar Al-Chalabi

EPI-03 Epidemiology of amyotrophic lateral sclerosis in Russia
Anastasia Ataulina, Vera Fominaya, Anna Vorobieva, Rafiz Shikherimov, Lev Brylev, Maria Zakharova, Alla Guekht, Ettore Beghi

EPI-04 Geospatial quantification of historical exposure estimates of putative environmental risk factors for ALS
Angeline Andrew, Walter Bradley, Elijah Stommel, Bart Guetti, Dominic Faciponte, Olivia Hunter, Patricia Henegan, Tanya Butt, Xun Shi

EPI-05 POSTER WITHDRAWN

EPI-06 POSTER WITHDRAWN

EPI-07 Exploring Cyanobacterial Exposure as a Risk Factor for Neurodegenerative Disease in Autopsy Cases from Northern New England, USA
Tanya Butt, Patricia Henegan, Elisaveta Maslak, Walter Bradley, William Pendlebury, Jessica Crothers, Angelene Andrew, Elijah Stommel

EPI-08 Identifying Aerosolized Cyanobacteria as an Environmental Risk Factor for Amyotrophic Lateral Sclerosis (ALS) using Human Bronchoalveolar Lavage and Nasal Swab Specimens
Dominic Faciponte, Matthew Bourgh, Darius Seidler, James Carroll, John Dessaint, Angelene Andrew, Louis Vaickus, Jacob Rauh, Tanya Butt, Elijah Stommel

EPI-09 Is exposure to mercury a risk factor for ALS? Analysis of results from an international online case-control study
Jane Parkin Kullmann, Roger Pampfliet

EPI-10 Antibiotics Use and Risk of Amyotrophic Lateral Sclerosis: a Nationwide Population-Based Nested Case-Control Study
Jiayiwei Sun, Daniela Marisio, Henrik Larsson, Catarina Almqvist, Caroline Ingre, Ulrika Zayagi, Yagi Pawitan, Fang Fang

EPI-11 Smoking is associated with younger age of onset in Motor Neurone Disease
Roger Mills, Alan Tennant, Carolyn Young, TONiC Study Group

EPI-12 Investigating causality in associations between smoking and risk of ALS: a Mendelian randomisation study using methylation and genotype data

EPI-13 Physical activity and Amyotrophic Lateral Sclerosis: a UK case control study
Mohamed Omar, Sarah Opie-Martin, Puja Mehta, Tom Fang, Anna Kulka, Christopher Shaw, Neil Pearce, Karen Morrison, Ammar Al-Chalabi

EPI-14 The Role of Exercise in the Development of Motor Nuerone Disease

EPI-15 C9orf72 expansion is associated with accelerated decline of respiratory function and decreased survival in amyotrophic lateral sclerosis
Gabriel Miltenberger Miltenyi, Vasco Conceição, Marta Gromicho, Ana Pronto-Laborinoh, Susana Pinto, Mamede de Carvalho

EPI-16 Identification of A4V SOD1 mutation in a Spanish family with the A4V sharing the founder haplotype observed in European SOD1-A4V patients
Cecilia Garcia, Jose Manuel Vidal-Taborda, Maria Salvador, Josep Gamez

EPI-17 Natural history and survival relevance of ALS/MND in different phenotypes — data from a hospital-based registry
Qianqian Wei, Yongping Chen, Xueping Chen, Bei Cao, Ruwei Ou, Lingyu Zhang, Yanbing Hou, Huifang Shang

EPI-18 POSTER WITHDRAWN

EPI-19 Mitochondriomics analysis in a subset of ALS patients from the National ALS Registry
Diana Faragolof, Wendy Kaye, Kasey Brennan, Diane Re, Andrea Bacarelli, Marianna Ani Kioumourtzoglou, Hiroshi Mitsumoto, Paul Mehta, Jamie Raymond, Pam Factor-Litvak

EPI-20 Comparison of Mortality Rates: United States vs. the National ALS Registry, 2011–2014
Ted Larson, Jessica Cohen, Paul Mehta, Kevin Horton

EPI-21 Big Data Analytics for Early Diagnosis of Amyotrophic Lateral Sclerosis
Tara Grabowsky, Christopher Miller, Oodaye Shukla, Manjula Kasoji, Ronald Payne, Charlotte Merrill, Wendy Agnese, Nazemi Atassia

EPI-22 POSTER WITHDRAWN

EPI-23 Validation of a Suite of Machine Learning Models using the Longitudinal VITALITY-ALS Data Set
Daniele Beaulieu, Jonavelle Cuero, Albert Taylor, Amy Bian, Lisa Meng, Andrew Wolff, David Emmitt

EPI-24 Global Patient Ecosystem: from Patient Identification to Data Visualization and Analyses to Distribution
Alexander Sherman, Igor Katsovsky, Olga Kharkozava, Alexander Korin, Amanda Podesta, Ervin Sinani, Prasha Vigneswaran, Yusra Wahab, Jason Walker, Merit Cudkowicz

EPI-25 Longitudinal data collection of combined clinic cohorts for improved understanding of ALS natural history
Ximena Arcila, Kim Goslin, Scott Vota, Alexander Sherman, Eric Macklin, Ervin Sinani, Hong Yu, Pamela Chau, Prema Mehta, Nathan Newman, Kevin Hilton, Daniel Wymer, Nicholas Olney, Megan Somers, Valerie Ferment, David Walk

EPI-26 World Health Organisation Disability Assessment Schedule (WHODAS-2.0) in MND/ALS
Eleanor James, Roger Mills, Alan Tennant, Carolyn Young, TONiC Study group

EPI-27 Risk factors for depression in Motor Neurone Disease
Daniela Schluter, Giuseppina Miele, Roger Mills, Carolyn Young, TONiC Study Group
EPI-28 Neuropathic pain in ALS/MND  
Zoe Szyrimi, Roger Mills, Carolyn Young, TONIC Study Group

EPI-29 Updated Results From a US-Focused Online Survey of Patient and Caregiver Perspectives on Disease Burden in ALS  
Amy Lavenderie, Bonnie Charpentier, Jennifer Pettrillo, Kristina Bowyer, James Berry, John Bridges, Madeline Kenneth, Brian Kennedy, Zachary Simmons, John Ravis, Richard Bedlack, Miriam Galvin, Orla Hardiman, Calaneet Balas, Allison Martin, David Zook, James Valentine, Luce Bruijn

EPI-30 Concurrence between amyotrophic lateral sclerosis and polymyositis, myasthenia gravis, Guillain-Barré syndrome, and multiple sclerosis – a medical records review study  
Elisa Longinetti, Olafur Sveinsson, Raymond Press, Weimin Ye, Fredrik Piel, Fang Fang

EPI-31 Causes of death in a representative cohort of amyotrophic lateral sclerosis patients  
Elisa Longinetti, Virginia Bonito, Eugenio Vitelli, Ettore Beghi

EPI-32 Increased mortality among family members of patients with ALS – a register-based epidemiological study  
Ulf Kläppe, Elisa Longinetti, Catarina Almqvist, Fang Fang, Caroline Ingre

THEME 6  
Tissue Biomarkers

BIO-01 Evaluation of Oxidative Stress (OS) and Other Biomarkers and Survival in a Large ALS Cohort Study  
Hiroshi Mitsumoto, Diana Garofalo, Regina Santella, Jonathan Hupf, Irina Gurvich, Pam Factor-Litvak, Hiroshi Mitsumoto, ALS/PLS COSMOS Study Group

BIO-02 Biomarkers of Glia Activation in ALS  
Lucas Vu, Jiyan An, Robert Bowser

BIO-03 Image registration for quantitative postmortem MRI and histology comparison  
Istvan Hutzzer, Karla Miller, Menaka Palleeage-Gamarallage, Olaf Ansgorge, Martin Turner, Benjamin Tendler, Ricardo Menke, Anna Leonte, Zorica Stevic

BIO-04 Biomarkers of inflammation and Blood Brain Barrier Dysfunction in Amyotrophic Lateral Sclerosis disease progression  
Saikata Sengupta, Beatrice Stubendorf, Robert Steinbach, Tino Prell, Otto Witte, Julian Grosskreutz

BIO-05 Gut Microbiome Assessment in People with ALS: A Pilot Study  
Katharine Nicholson, Kjetil Bjornvik, James Chan, Galeb Abu-Ali, Ramnik Xavier, Curtis Huttenhower, Alberto Ascherio, James Berry

BIO-06 Characterizing the contribution of chitinases to immune alterations in Amyotrophic Lateral Sclerosis  
Nayana Gaur, Caroline Perner, Florian Perner, Beatrice Stubendorf, Otto Witte, Julian Grosskreutz

BIO-07 Serum C-Reactive Protein as a Prognostic Biomarker in Amyotrophic Lateral Sclerosis (ALS)  
Hail Idnissoglou, Nurkan Polat, Mustafa Idnissoglou, Fatma Dervis, Emir Dervis

BIO-08 CSF chitinase proteins as ALS biomarkers  
Alexander Thompson, Elizabeth Gray, Alexander Bampton, Dominika Raciborska, Kevin Talbot, Martin Turner

BIO-09 Glycophospholipid dysregulation and lysosomal dysfunction in motor neuron disease  
Carla Da Silva Santos, Mylene Huebecker, David Priestman, Frances Platt

BIO-10 Loss of lipid homeostasis as an underlying disease mechanism in Primary Lateral Sclerosis  
Estela Area Gomez, Robin Chan, Jonathan Hupf, Pam Factor-Litvak, Hiroshi Mitsumoto, ALS/PLS COSMOS Study Group

BIO-11 Altered erythrocyte fatty acid profile in patients with amyotrophic lateral sclerosis  
Rajna Minic, Aleksandra Arsic, Milica Kojadinovic, Ivo Bozovic, Visnja Pantic, Irena Zivkovic, Brizita Djordjevic, Zorica Stevic

BIO-12 Pattern identification of blood analytes for the discrimination and characterization of ALS and lower MND patients a machine learning approach  
Alberto Greco, Anna Romanelli, Maria Rosa Chiesa, Ilaria Da Prato, Cristina Dolcotti, Valentina Azzollini, Gabriella Cavallini, Renata Del Cagnatore, Paolo Bongioanni, Maria Chiara Carboncini

BIO-13 Exosomal content in patients with ALS compared to those with selective involvement of lower motor neuron  
Ilaria Da Prato, Renata Del Cagnatore, Valentina Azzollini, Cristina Dolcotti, Gabriella Cavallini, Paolo Bongioanni, Maria Chiara Carboncini

BIO-14 Efficacy evaluation of nusinersen in an adult spinal muscular atrophy case using peripheral blood mRNA.  
Tomohiko Ishihara, Akihide Koyama, Akihiro Sugai, Osamu Onoode

BIO-15 Cell-free DNA as a biomarker for ALS  
Barbara Celona, Fleur Garton, Christa Caggiano, Catherine Lomen-Hoerth, Robert Henderson, Pamela McCombe, Anjali Henders, Shyuan Ngo, Frederik Steyn, Naomi Wray, Noah Zaitlen

BIO-16 A Pilot Study Evaluating the Correlations Between Mitochondrial DNA Copy Numbers in Blood, Motor Cortex and Spinal Cord  
Diana Garofalo, Wendy Kaye, Kasey Brennan, Diane Re, Andrea Baccarelli, Marlianti-Anna Kiousoumtzoglou, Hiroshi Mitsumoto, Paul Mehta, Jamie Raymore, Pam Factor-Litvak

BIO-17 MicroRNA profiling in cerebrospinal fluid in a cohort of Brazilian Amyotrophic Lateral Sclerosis patients  
Felipe Busser, Frederico Jorge, Fatima Passini, Ida Fortini, Gerson Chadi

BIO-18 ALS, FTD, AD and PD: RNA in extracellular vesicles as neurodegenerative biomarker  
Daisy Sproverio, Stela Gaggiardini, Susanna Zucca, Marta Gianinni, Jessica Garau, Maddalena Argoni, Raffaele Calogero, Orietta Pansarasasa, Cristina Cereda

BIO-19 Muscle-related enzymes in amyotrophic lateral sclerosis  
Xueping Chen, Hufiang Shang

BIO-20 Clinical disease stage related changes of serological factors in amyotrophic lateral sclerosis  
Xueping Chen, Hufiang Shang

BIO-21 Relationship between serum creatinine, creatine kinase level and skeletal muscle mass in patients with amyotrophic lateral sclerosis  
Hongfei Tai, Lijing Cui, Wei Yu, Mingzheng Liu, Xiaoguang Li, Wenmin Guan, Shuanguwu Liu, Kang Zhang

BIO-22 A multi-centre study of neurofilament assay reliability and inter-laboratory variability  
Elizabeth Gray, Patrick Oekl, Kaj Blennow, Maria Del Mar Amador, Jens Kuhlbe, Foudil Lamari, Andrea Malaspina, Koen Poesen, Francois Salachas, Charlotte Teunissen, Henrik Zetterberg, Albert Ludolph, Andreas Jeromin, Martin Turner, Markus Otto

BIO-23 Autoantibodies against axonal proteins as biomarkers and therapeutic targets in Amyotrophic Lateral Sclerosis  
Fabiola Puentes, Ozlem Yildiz, Chingua Lu, Joanne Wu, Michael Benatar, Andrea Malaspina

BIO-24 Natural course of neurofilament light in patients with amyotrophic lateral sclerosis appears not to be stable in subgroup analysis: a register-based longitudinal study in Sweden  
Ulf Kläppe, Yiqiang Zhan, Kristan Samuelsson, Raymond Press, Fang Fang, Caroline Ingre

BIO-25 Plasma neurofilament heavy chain levels predict clinical course in a large ALS clinical trial population  
Satsish Eraly, Steve Han, Dawei Liu, Sai Thammakorn, Shawn Ciotti, Toby Ferguson

BIO-26 Wild-type SOD1 is misfolded in cerebrospinal fluid of sporadic ALS  
Yoshiaki Furukawa, Eiichi Tokuda, Shinji Ohara, Shawn Ciotti, Toby Ferguson

BIO-27 Elevated troponin t levels in patients with amyotrophic lateral sclerosis  
Emir Dervis, Hail Idnissoglou, Nurkan Polat, Fatma Idnissoglou, Mustafa Idnissoglou

BIO-28 Elemental Redistribution of Copper, Iron and Zinc in the Motor Neurone Disease CNS  
Kai Kysenius, Bence Paul, Dominic Hare, Peter Crouch

BIO-29 Preclinical in vivo Raman spectroscopy: Shining light on muscle in motor neurone disease  
Maria Plesia, Oliver Stevens, Gavin Lloyd, Ian Coldicott, Aneurin Kennerley, Gaynor Miller,
Pre-Clinical Therapeutic Strategies

TST-01 Variation of Gut Microbiome Rescues ALS Phenotypes Through Fatty Acid Metabolism
Audrey Labarre, Ericka Guitard, Alex Parler

TST-02 Ligand-mediated stabilization of the native hSOD1 conformation – an ALS treatment strategy
Karoline Santur, Jeannine Mohrulder, Dieter Willbold

TST-03 Characterization of the SOD1-G93A mouse model of Amyotrophic lateral sclerosis and a promising treatment for the disease
Sara Figueroa Santur, Francesca De Lorenzo, Michael Sendtner, Mart Saarma, Merja Voutilainen

TST-04 Retinoid activating nanoparticles increase lifespan and reduce neurodegeneration in the SOD1G93A mouse model of ALS
David Medina, Eugene Chung, Collin Teague, Rachael Sinanni, Robert Bowser

TST-05 Liraglutide shows no effect on disease progression in SOD1G93A and TDP-43Q331K transgenic mouse models of motor neurone disease (MND)
Amy Keerie, James Alix, Ahmed Iqbal, Christian Holscher, Richard Mead

TST-06 Gene therapy approaches for familial ALS
Marisa Cappella, Mathilde Cohen-Tannoudji, Thibaut Marais, Stéphanie Astord, Aurse Besse, Benoit Giroux, Cynthia Lefebvre, Delphine Bohl, Martine Barkats, Maria Grazia Biferi

TST-07 Chronic Systemic Treatment with a Muscarinic Antagonist Improves Neuromuscular Function at the NMJ in an ALS Mouse Model
Elsa Tremblay, Danielle Arbour, Richard Robitaille

TST-08 Therapeutic potential of the native hSOD1 conformation – an ALS treatment strategy
Audrey Labarre, Ericka Guitard, Alex Parler

TST-09 Continuous administration of CDNF in a model of Amyotrophic Lateral Sclerosis
Francesca De Lorenzo, Mart Saarma, Merja Voutilainen

TST-10 Inhibition of exosome secretion by GW4869 improves the locomotor function in mutant SOD1 mice
Nirma Perera, Doris Tomas, Laura Vella, Brad Turner

TST-11 Immunogens for targeted neurotrophic factor gene delivery to motor neurons in vivo
Courtney Subramaniam, Zachary Willson, Ur Saragovi, Mouna Haidar, Bradley Turner, Mary Louise Rogers

TST-12 Using a novel molecular chaperone to reduce toxic proteins in ALS model systems
Stephanie Santarriaga, Emily Seminary, Eric Clark, Dominic Fee, Paul Barkhaus, Brian Link, Allison Ebert, Matthew Scaglione

TST-13 Diseased cortex communicates via exosomes in ALS
Mukesh Gautam, Hande Ozdinler

TST-14 Treatment of the SOD1G93A transgenic mouse model of amyotrophic lateral sclerosis (ALS) with an all-D-enantiomeric peptide
Julia Post Schulz, Antje Willuweit, Karl-Josef Langen, Janine Kutzsche, Dieter Willbold

TST-15 Adipose Derived Stem Cells for cell therapy of Motor Neuron Disease
Yuri Ciervo, Laura Ferraiuolo, Monika Myszczynska, Chloë Allen, Ke Ning, Jun Xu, Pamela Shaw, Richard Mead

TST-16 Liposome-mediated uptake of H-ferritin improves outcomes in the SOD1G93A mouse model of ALS
Amanda Snyder, A Madhankumar, Elizabeth Neely, Russell Payne, Oliver Mrowczynski, Elias Rizk, Olivya Hess, Zachary Simmons, James Connor

TST-17 A miRNA-based Gene Therapy Approach to Target Mutated SOD1 in Key Cell Types in Amyotrophic Lateral Sclerosis (ALS)
Valérie Vilmont, Julianne Aebischer, CYcia Rochat, Bernard Schneider

TST-18 Assessing the Neuroprotective Effects of Cromolyn Sodium in the SOD1G93A Mouse Model of Amyotrophic Lateral Sclerosis
Eric Granucci, Kaly Mueller, Ana Gricic, Hoang Le, Amanda Dios, Sabrina Paganoni, James Berry, Merit Cudkowicz, David Elmaleh, Rudolph Tanzi, Ghazaleh Sadri-Vakili

TST-19 A peptide-directed knockdown of misfolded SOD1 as a therapy for ALS
Jiming Kong, Teng Guan

TST-20 MRI/PE traceable microglia-targeted nanovectors: a new potential theranostic platform for tracking and modulating neuroinflammation in Amyotrophic Lateral Sclerosis
Renato Auremma, Umberto Capasso Palmiero, Mattia Sponchioni, Tyler Mathews, Javier Molina Estevez, Simone Gatti, Letterio Politi, Alessandra Biffi, Davide Moscatelli, Marco Peviani

TST-21 Neuromuscular cellular targets of tyrosine kinase inhibitors in ALS patients and SOD1G93A rats
Emiliano Tria, Peter King, Ying Si, Yuni Kwon, Valentina Varela, Sofia Ibarbun, Mariangeles Kovacs, Ivan Moura, Olivier Hermine, Joseph Beckman, Luis Barbeito

TST-22 Stimulation of mTOR-independent autophagy amplifies TDP-43 pathology and disease progression in a bi-transgenic TDP-43 mouse model of ALS
Nirma Perera, Doris Tomas, Nayomi Wanniarachchilage, Chris Bye, Brad Turner

TST-23 Gamma-carbolines slow progression of pathology in FUS transgenic mice
Valeria Goloborosheva, Tamara Ivanova, Kirill Chaprov, Pavel Mazin, Sergey Bachurin, Natalia Ninkina, Vladimir Buchman

TST-24 Synaptotagmin 13 protects motor neurons from degeneration in ALS and SMA
Monica Nizzardo, Federica Rizzo, Michela Taiana, Julio Aguila Benitez, Jik Nissen, Ilay Allodi, Nereo Bresolin, Giacomo Comi, Eva Hedlund, Stefania Corti

TST-25 A combination of acamprosate and baclofen (PXT864) as a potential new therapy for amyotrophic lateral sclerosis
Lydie Bouscaillet, Julien Laffaire, Philippe Rinaudo, Serguei Nabirotschkin, Nathalie Chotod, Rodolphe Hajj, Daniel Cohen

TST-26 AMPA receptor-specific RNA aptamers rescued ALS phenotype in conditional ADAR2 knockout mice
Megumi Akamatsu, Takenari Yamashita, Sayaka Teramoto, Zhen Huang, Li Niu, Shin Kwak

TST-27 Cannabinoids enhance nerve-evoked muscle contraction in an ex vivo model of neuromuscular weakness
Anna Sanchez Avila, Shalil Khan, Jamie Fogarty, Lydia Johnston, Roger Pertwee, Guy Bewick

TST-28 Effects of cannabinoïd in Amyotrophic Lateral Sclerosis (ALS) or Motor Neurone Disease (MND): A pre-clinical systematic review and meta-analysis
Berzenn Urbi, Maame Amma Owusu, Ian Fraser, Matthew Katz, Arman Sabet

TST-29 Perturbations to copper and cuproenzyme functionality are a significant, treatable feature of sporadic MND
James Hilton, Kai Kysenius, Carsten Rautengarten, Stephen Mercer, Catriona McLean, Dominic Hare, Blaine Roberts, Anthony White, Peter Crouch

TST-30 Disrupted copper availability in sporadic motor neurone disease promotes ferroptotic stress and toxic glial activation
James Hilton, Jeffrey Liddell, Kai Kysenius, Stephen Mercer, Catriona McLean, Dominic Hare, Blaine Roberts, Paul Donnelly, Anthony White, Ashely Bush, Peter Crouch

TST-31 CuLL(ATSM) potently inhibits neuronal ferroptosis: implications for pathogenesis in MND
Adam Southon, Abdel Belaidi, Scott Ayton, Joseph Beckman, Peter Crouch, Ashley Bush

TST-32 Human antibodies engage intraneuronal C9ORF72 dipeptide repeat proteins
Kevin Meyer, Nicole Caevegn, Petra Borter, Roger Nitsch, Fabio Montrasio, Jan Grimm

TST-33 Neurogenic niche activity: Modulation by targeting TGFβ-R-II
Sebastian Peters, Eva Wirkert, Sabrina Kuespert, Rosmarie Heydn, Ludwig Aigner, Tim-Henrik Bruun, Ulrich Bogdahn
CLT-03 The United States National Amyotrophic Lateral Sclerosis (ALS) Registry Provides Comprehensive Recruitment Assistance for Clinical Trials
Paul Mehta, Ted Larson, Kevin Horton

CLT-04 Correlation between Slow Vital Capacity Measured in the Home and in the Clinic for Patients with Amyotrophic Lateral Sclerosis
Lisa Meng, Stacy Rudnicki, Bettina Cockcroft, Andrew Wolff, Fady Malik, Jeremy Shefner

CLT-05 Non-invasive ventilation use in patients enrolled in VITALITY-ALS
Stacy Rudnicki, Bettina Cockcroft, Fady Malik, Lisa Meng, Andrew Wolff, Jeremy Shefner

CLT-06 Can you validly use a total ALSFRS-R score? A Rasch analysis to provide interval scale estimates
Carolyn Young, Jessica Paris-Davies, Roger Mills, Alan Tennant, TONIC study group

CLT-07 Sit to Stand (STS) Vs. Stair climbing (SC) as a Measure of Lower Extremity (LE) Function in Ambulatory patients with Amyotrophic sclerosis (ambALS)
Mohammed Sanjek, Scott Holsten, Enayet Raheem, Nigel Rozario, Elena Bravver, William Bockeneck, Benjamin Brooks

CLT-08 Study 201283: An Exploratory Study to Investigate the Use of Biotelemetry to Identify Markers of Disease Progression in Subjects with Amyotrophic Lateral Sclerosis –Physical Activity and Movement Data
Madeline Kelly, Arseniy Lavrov, Luis Garcia Gancedo, Jim Parr, Rob Hart, Theresa Chiviera, Chris Shaw, Ammar Al Chalabi, Rachael Marsden, Martin Turner, Kevin Talbott

CLT-09 Study 201283: An Exploratory Study to Investigate the Use of Biotelemetry to Identify Markers of Disease Progression in Subjects with Amyotrophic Lateral Sclerosis –Feasibility Data
Luis Garcia Gancedo, Madeline Kelly, Arseniy Lavrov, Jim Parr, Rob Hart, Theresa Chiviera, Chris Shaw, Ammar Al Chalabi, Rachael Marsden, Martin Turner, Kevin Talbott

CLT-10 Study 201283: An Exploratory Study to Investigate the Use of Biotelemetry to Identify Markers of Disease Progression in Subjects with Amyotrophic Lateral Sclerosis –Heart Rate Variability and Speech Data
Arseniy Lavrov, Madeline Kelly, Luis Garcia Gancedo, Jim Parr, Rob Hart, Theresa Chiviera, Chris Shaw, Ammar Al Chalabi, Rachael Marsden, Martin Turner, Kevin Talbott

CLT-11 A Patient-Centric Motor Neuron Disease Activities of Daily Living Scale (PADL-ALS)
Jeffrey Statland, Alex Karanevich, Laura Herbelin, Kristina Bowles, Callyn Kirk, Richard Barohn, Michael Benatar, CRxAll Investigators

CLT-12 Feasibility and Validation of the Modified Oculobulbar Facial Respiratory Score (mOBFRS) in Amyotrophic Lateral Sclerosis
Marie Wencel, Nadia Araujo, Eileen Medina, Danh Nguyen, Lishi Zhang, Tahseen Mozaffar, Namita Goyal

CLT-13 Radicava® (edaravone) for Amyotrophic Lateral Sclerosis: New formulation and its development plan
Koji Takei, Yoshinobu Nakamaru, Masae Kakubari, Makoto Akimoto, Manabu Hirai, Joseph Palumbo

CLT-14 Radicava® (edaravone) for Amyotrophic Lateral Sclerosis: Progress on Postmarketing Requirements and Commitments
Heeyoung Park, Laura Bower, Koji Takei, Steve Apple, Wendy Agnese, Joseph Palumbo

CLT-15 The effect of riluzole on the different clinical stages in ALS
Adriana Jongh, Ruben Eijken, Susan Peters, Roel Vermeulen, Leonard Berg

CLT-16 Long term efficacy of edaravone for ALS
Hide Yoshino

CLT-17 Results from the EPI-589 safety and pharmacology trial in ALS patients
Matthew Klein, Jonathan Katz, Robert Baloh, Kimberly Goslin, Richard Lewis, Dallas Forshey, Peggy Alford, Arlena Cummings, Robert Miller

CLT-18 Safety and Clinical Effects of two intrathecal infusions of Mesenchymal Stem Cells in Amyotrophic Lateral Sclerosis: Preliminary results of a Phase 1/2 Clinical Trial in a Cohort of Brazilian patients
Gerson Chadi, Frederico Jorge, Dagoberto Callegari, Felipe Busser, Paul Brofman, Alexandra Senegaglia, Carmen Rebelatto, Débora Daga, Giuseppe Palmisano

CLT-19 Intraspinal transplantation of the adipose tissue-derived regenerative cells in amyotrophic lateral sclerosis – preclinical and clinical outcome
Magdalena Kuzma Kozakiewicz, Andrzej Marchel, Anna Kaminska, Małgorzata Gawał, Jan Szajdacz, Anna Figi-Falbovska, Edyta Maj, Arkadiusz Nowak, Natalia Krzesniak, Bartomiej Noszczyn, Krystyna Domanska-Janik, Anna Samorska

CLT-20 Clinical features and effect of erythropoietin in spinal and bulbar muscular atrophy (SBMA)
Sanggyun Lee, Pyung Kang Park, Jinseok Park, Kwokoo Oh, Seung Hyun Kim

CLT-21 A Phase 2 Trial of Ezagobine on Neuronal Excitability in Amyotrophic Lateral Sclerosis
Brian Wang, Eric Macklin, Steve Vucic, Courtney McIlf, Sabrina Paganoni, Nicholas Maragakis, Richard Bedlack, Seward Rutkove, Namita Goyal, Dale Lange, Michael Rivner, Bjorn Oskarsson, Stephen Goutman, Zachary Simmons, Robert Baloh, Shafeeqad Ladhq, Joam Compadron, William David, Jeremy Shefner, Nazem Atassi, Merit Cudkowicz

CLT-22 Impact of Time Since Diagnosis on Response to Tirasentiv, a Fast Skeletal Muscle Troponin Activator, in Patients With Amyotrophic Lateral Sclerosis: A Subgroup Analysis of VITALITY-ALS
Andrew Wolff, Bettina Cockcroft, Fady Malik, Lisa Meng, Stacy Rudnicki, Jeremy Shefner

CLT-23 POSTER WITHDRAWN
**PAPER SESSIONS | 29th INTERNATIONAL SYMPOSIUM ON ALS/MND**

**THEME 10**

**Disease Stratification and Phenotyping**

DSP-01 Beyond known genes: the relevance of detailed family histories
Marie Ryan, Emmet Costello, Michaela Hammond, Nicola Davis, Katie Nolan, Susan Byrne, Margaret O'Brien, Mark Heverin, Russell McLaughlin, Niall Pender, Orla Hardiman

DSP-02 Intermediate-length ataxin-2 polyglutamine repeats are associated with disease phenotype in ALS
Patricia Mico-McCombe, Shuyan Ngo, Christine Guo, Amir Fazlollahi, Saskia Bollmann, Michael Benatar, Corey Mc Millan, CREAtus Consortium

DSP-03 Characterisation of an ALS patient with a novel TBK1 mutation: demonstration of coexistent risk factors and an extreme disease phenotype
Pamela McCombe, Carley Jackson, Noah Lechtzin, Timothy Miller, Jeremy Shefner, Jinsy Andrews, Angela Genge, Maria Kuzma-Kozakiewicz, Mamede de Carvalho, Marta Gromicho, Julia Grosskreutz, Susanne Petri, Hilmi Uysal, Magdalena Kuzma-Kozakiewicz

DSP-04 Protein signatures help differentiate site-specific onset and mode of disease progression in Italian ALS patients
Szymon Filip, Tori Sosnowski, Young Goo, Renata Del Carratore, Halil Idrisoglu, Paolo Bongioanni, Hande Ozdinler, Ammar Al-Chalabi

DSP-05 Longitudinal studies reveal serum protein dynamics in ALS patients with prominent upper motor neuron involvement
Halil Idrisoglu, Szymon Filip, Nukan Polat, Tori Sosnowski, Young Goo, Hande Ozdinler

DSP-06 Association study of serum creatine kinase level and clinical characteristics in amyotrophic lateral sclerosis
Kazuki Nagashima, Yukio Fujita, Masaki Ikeda

DSP-07 Neuroinflammation in amyotrophic lateral sclerosis: the association between neutrophil-to-lymphocyte ratio and the rate of disease progression
Seok Jin Choi, Young Nam Kwon, Jaeyoung Seo, Ki Yoon Kim, Sang-Jeong Kim, Seung-Young Seong, Jung-Joon Sung

DSP-08 Enhancing the comparability of individual disease courses in partner centers of the ONWebDUALS project using the DS0 progression model
Beatrice Stubendorff, Marta Gromicho, Kataryna Szacka, Frauke Hartmann, Mamede de Carvalho, Magdalena Kuzma-Kozakiewicz, Susanne Petri, Hilmi Uysal, Julian Grosskreutz

DSP-09 The development of a Norwegian ALS registry
Tore Meisingset, Geir Bråthen

DSP-10 Influence of environmental and lifestyle factors on onset and progression of Amyotrophic Lateral Sclerosis (ALS) in a German population
Sonja Körner, Johanna Kammeyer, Antonia Zapf, Magdalena Kuzma-Kozakiewicz, Maria Pietkiewicz, Bozena Kuraszkiewicz, Hanna Goszczyńska, Marta Gromicho, Julian Grosskreutz, Peter Andersen, Mamede de Carvalho, Susanne Petri

DSP-11 Juvenile and adult-onset Amyotrophic Lateral Sclerosis: an Italian study
Imen Kacem, A Berrechid, I Sghaier, S Mrabet, M Ben Djebara, Senda Ajroud Driss, Riadh Goudier

DSP-12 Pattern, Clinical Characteristics, and Outcome of Amyotrophic Lateral Sclerosis Patients Admitted in a Tertiary Hospital in Eastern China: A Cross-Sectional Study
Qi Niu, Qingswen Jin

DSP-13 Regional Spreading of Bulbar-Onset ALS Patients: Implications of UMN vs LMN phenotypes
Susana Pinto, Marta Gromicho, Peter Andersen, Julian Grosskreutz, Magdalena Kuzma-Kozakiewicz, Susanne Petri, Hilmi Uysal, Mamede de Carvalho

DSP-14 The NEALS Primary Latera Lateral Sclerosis (PLS) Registry
Sabrina Paganoni, Fabiola De Marchi, James Chan, Sara Thrower, Nathan Staff, Neil Datta, Yas Kizanuki, Vivian Drory, Christina Fournier, Erik Pioro, Stephen Goutman, Alexander Sherman, Nazem Atassi

DSP-15 Primary lateral sclerosis (PLS), a rare and neglected motor neuron disease: time for new diagnostic criteria and an international collaboration
Hiroshi Mitamura, Nazem Atassi, Lauren Elman, Mary Kay Floeter, Sabrina Paganoni, Teepu Siddique

DSP-16 FOSMN-MND: Broadening the phenotype of an heterogeneous disease
Hugo Oliveira, Stephan Jauser, Tuomo Polvikoski, Johannes Attem, Abhijit Joshi, Ming Lai, Mark Baker, Tim Williams

DSP-17 CADASIL in ALS
Pyungkang Park, Sanggon Lee, Jinseok Park, Kiwook Oh, Kyong Jin Shin, Seung Hyun Kim

DSP-18 A Spreadsheet Calculator for the Diagnosis of ALS
Rodney Li Pi Shan, Lawrence Komgut, Benjamin Brooks

DSP-19 Factors influencing diagnosis delay in amyotrophic lateral sclerosis
Kataryna Szacka, Peter Andersen, Mamede de Carvalho, Marta Gromicho, Julian Grosskreutz, Susanne Petri, Beatrice Stubendorff, Hilmi Uysal, Magdalena Kuzma-Kozakiewicz

DSP-20 A diagnostic pathway in patients with amyotrophic lateral sclerosis
Krzysztof Niewopock, Kataryna Szacka, Peter Andersen, Mamede de Carvalho, Marta Gromicho, Julian Grosskreutz, Susanne Petri, Beatrice Stubendorff, Hilmi Uysal, Magdalena Kuzma-Kozakiewicz

DSP-21 The impact of hand dominance in the ALSFRS-R scoring
Susana Pinto, Marta Gromicho, Mamede de Carvalho

DSP-22 Prognostic modelling of patients with motor neuron disease: using routinely collected data to predict survival
Danielle Leighton, Judith Newton, Laura Stephenson, Shuna Colville, Samuel Leighton, Richard Davenport, George Gorry, Ian Morrison, Siddharth Chandran, Susvankar Pal

DSP-23 Use of a Smartphone-Based Digital Phenotyping Platform to Quantify ALS Progression
James Berry, Sabrina Paganoni, Katherine Burke, Harli Weber, Kenzie Carlson, Joel Salinas, James Chan, Josh Barbach, Kathryn Conningah, Jordan Green, Julka-Pekka Onnla

DSP-24 The ALS Mobile Analyzer: monitor disease progression using a mobile app
Yehuda Snir, Noa Davis, Idit Ron, Shay Rishoni

DSP-25 A Short-form Version of the C-NBS, a Patient Reported Outcome for Assessing Bulbar Function in Amyotrophic Lateral Sclerosis
Eric Macklin, Kathleen Myers, Paul Wicks, Richard Smith

DSP-26 POSTER WITHDRAWN

DSP-27 ALS with FTD-onset: features and progression pattern
Marta Gromicho, Susana Pinto, Ana Pronto-Laborinho, Peter Andersen, Julian Grosskreutz, Magdalena Kuzma-Kozakiewicz, Susanne Petri, Hilmi Uysal, Mamede de Carvalho

DSP-28 Impact of Alzheimer’s Disease co-pathology on Amyotrophic Lateral Sclerosis with and without Frontotemporal Degeneration
Laura Hennessy, Kim Firn, Lauren Elman, Leo McCluskey, David Irwin, Edward Lee, John Trojanowski, Murray Grossman, Corey Mc Millan

DSP-29 Development of secondary phenotypes within the ALS/FTD spectrum in sporadic and C9orf72 expansion cases
Kaylee Faulkner, Laura Hennessy, Carrie Caswell, Lauren Elman, Leo McCluskey, Viviana Van Deerlin, Lauren Massimo, David Irwin, Murray Grossman, Sharon Xie, Corey Mc Millan
Cognitive and Psychological Assessment and Support

COG-01 A National Audit of Cognitive Assessments in people with Amyotrophic Lateral Sclerosis (pwALS) in Scotland
Maria Stavrour, Judy Newton, Gill Stott, George Gorrie, Ian Morrison, Siddharthan Chandran, Sharon Abrams, Suvankar Pal, Richard Davenport

COG-02 Cognitive assessment tools used in ALS/MND-specific health-care: A systematic review
Tina Taule, Margaret Sävik, Regina Lein, Eike Wehling, Tiina Rekand

COG-03 Neuropsychological Characteristics of sporadic Amyotrophic Lateral Sclerosis Patients in Korea
Jinseok Park, Ki-Wook Oh, Hee-Jin Kim, Seung Hyun Kim, Kyoung Jin Shin

COG-04 Limitations of the translated Edinburgh Cognitive and Behavioural ALS screen in South African controls
Christine Albertyn, Natasha Jooste, Jeannine Heckmann

COG-05 Implementing Edinburgh Cognitive and Behavioural ALS Screen (ECAS) in palliative care in patients with Motor Neurone Disease (MND) - experience from Phyllis Tuckwell Hospice Care (PTHC)
Beata Le Bon

COG-06 Thinking about Cognitive assessment: Piloting ECAS clinics in South Wales
Katie Gibbon, Richard Betts, Philippa Stewart, Siwan Seaman, Andrew Green, Ruth Glew

COG-07 The Edinburgh Cognitive and Behavioural ALS Screen (ECAS) is sensitive to both Alzheimer’s Disease and behavioural variant Frontotemporal Dementia
Mónica De Icaza Valenzuela, Thomas Bak, Shuna Colville, Suvankar Pal, Sharon Abrams

COG-08 Impact of the Edinburgh Cognitive and Behavioural ALS Screen on clinical practice and the patient experience
Faith Hodgins, Steve Bell, Steven Meldrum, Luke Williams, Sharon Mulhern, Sharon Abrams

COG-09 The Edinburgh Cognitive and Behavioural ALS Screen - Russian version
Veronika Chernenkaia, Kirill Gorbachev, Denis Gorbachev, Anastassia Ataulina, Vera Fominykh, Lev Brylev

COG-10 Age and education-matched cut-off scores for the Polish version of the Edinburgh Cognitive and Behavioural ALS Screen (ECAS)
Katarzyna Ciecierska, Beata Pilczuk, Maksymilian Bielecki, Magdalena Kuzma-Kozakiewicz

COG-11 Cognitive impairment in Polish ALS patients using newly developed age and education-matched cut-off scores of the Edinburgh Cognitive and Behavioural ALS Screen (ECAS)
Katarzyna Ciecierska, Beata Pilczuk, Maksymilian Bielecki, Magdalena Kuzma-Kozakiewicz

COG-12 Reliability and Validity of the brief Dimensional Apathy Scale (bDAS)
Ratko Radakovic, Debbie Gray, Kaitlin Dudley, Eneida Mioshi, David Dick, Giulia Melchiorre, Harry Gordon, Judith Newton, Shuna Colville, Suvankar Pal, Siddharthan Chandran, Sharon Abrams

COG-13 The impact of behavioural symptoms in motor neurone disease comparisons across neurodegenerative brain conditions
Elizabeth Highton Williamson, Jashelle Caga, David Foxe, Nicollette Thornton, Eleanor Ramsey, John Hodges, Olivier Piguet, Rebekah Ahmed, Matthew Kiernan

COG-14 What are MND patients really distressed about? Using the concerns checklist in an MND clinic to enhance the recognition and management of distress
Luke Williams, Helen Lennox

COG-15 Abstractive skills of mnd patients neuropsychological assessment by means of an eye tracking system approach
Susanna Nanni, Enrica Armenti, Valentina Azzollini, Paolo Bongioanni, Maria Chiara Carboncini

COG-16 Investigating depression and disability in a cross-sectional sample of people with ALS/MND
Noah Granger, Daniela Schlüter, Andrea Bredin, Roger Mills, Carolyn Young, TONiC Study group

COG-17 The Boat test: a new task assessing moral and utilitarian judgment
Monica Consonni, Eleonora Catricala, Veronica Boschi, Eleonora Dalla Bella, Virginia Borsa, Francesca Conca, Riccardo Verini, Celeste Gasparri, Nicola Canessa, Giuseppe Lauria, Stefano Cappa

COG-18 Investigation of Isolated Agraphia in Amyotrophic Lateral Sclerosis
Yiou Huang, Ayano Kondo, Yu Kawakami, Takashi Uematsu, Chisato Onba, Man Miyajima, Kotaro Ohwa, Saori Morozumi, Shigehiko Kato, Keizo Yasui, Tatsuya Miyake

COG-19 Language Impairment in Frontotemporal dementia with amyotrophic lateral sclerosis: A review
Beatriz Santana, Adriana Oda, Leticia Mansur

COG-20 Distinct neuropsychological profiles in bvFTD and ALS-FTD
Jennifer Saxton, Jennifer Thompson, Jennifer Harris, Matthew Jones, Julie Snowden

COG-21 A longitudinal study of cognition in the ALS-FTSD: r7 results from a population-based cohort of incident cases
Marta Pinto Grau, Bronagh Donohoe, Sarah O’Connor, Lisa Murphy, Emmet Costello, Rebecca Corr, Alice Vajda, Mark Heverin, Niall Pender, Orla Hardiman

COG-22 The story of the ALS-FTD continuum retold: Rather two distinct entities
Dorothee Lulé, Cynthia Vazquez, Ulike Weilandt, Jochen Weishaupt, Markus Otto, Sarah Straub, Elisa Semler, Ingo Uttern, Albert Ludolph, Peter Andersen, Magdalena Kuzma-Kozakiewicz

COG-23 Wellbeing in patients with a severe neurological condition: differences between Germany, Poland and Sweden
Magdalena Kuzma-Kozakiewicz, Peter Andersen, Kasia Ciecierska, Natalia Szejko, Thomas Meyer, Susanne Petri, Katharina Linse, Andreas Herrmann, Olof Semb, Erica Stenberg, Simona Nackberg, Johannes Dorst, Ingo Uttern, Anci Hågström, Albert Ludolph, Dorothee Lulé

COG-24 Social factors and their contribution to quality of life in ALS/MND: a systematic review of the literature
Laurence Nee, Noah Granger, Carolyn Young

COG-25 Coping in Motor Neurone Disease/ Amyotrophic Lateral Sclerosis: Qualitative Analysis of Themes
Carolyn Young, Hikari Ando, Rosanna Cousins, TONiC study group

COG-26 Hope in Motor Neurone Disease/ Amyotrophic Lateral Sclerosis: Qualitative Analysis of Concepts and Domains
Carolyn Young, Hikari Ando, Rosanna Cousins, TONiC Study Group

COG-27 ALS patient perspectives on physician assisted death after recent passage of the end of life options act in California
Nicole Heinl, Carol Tran, Catherine Lomen Hoerth

COG-28 Investigation of preferences in physician-assisted death in a cohort of Spanish ALS patients: legal issues preparing for the future
Ana Canovas, Estefania Soler, Maria Salvado, Josep Gamez

COG-29 Physicians’ Attitudes toward End-Of-Life Decisions in Amyotrophic Lateral Sclerosis
Tamara Thun, Gior Borsai, Johanna Anneser

COG-30 Awareness and Understanding of Amyotrophic Lateral Sclerosis in newly diagnosed patients, family, and friends
Jamson Creekmore, Heather Hayes, Mark Bromberg, Summer Gibson, Jamie Leatham

COG-31 Shared experiences of informal caring: Support with empathy on a Motor Neurone Disease online health forum
Sarah Hargreaves, Peter Bath, Suzanne Duffin, Julie Ellis, Melanie Lovatt

COG-32 Clustering of cognitive deficits in relatives of Familial vs Sporadic ALS patients
Emmet Costello, Marie Ryan, Mark Heverin, Niall Pender, Orla Hardiman

COG-33 Behavioural changes in MND are associated with symptoms of neuropsychiatric disorders in first and second-degree family members
Caroline Mc Hutchison, Marie Ryan, Emmet Costello, Mark Heverin, Andrew McIntosh, Orla Hardiman, Sharon Abrams

COG-34 “Just another piece of equipment.” The role, identity and experiences of carergivers in motor neurone disease: a qualitative study
Esther Hobson

COG-35 Quality of life among relatives to ALS patients- a prospective and longitudinal study
Birgitta Jakobsson Larsson
Respiratory and Nutritional Management

**RNM-01 Club-cell protein (CC-16): prognostic biomarker in ALS**
Ana Catarina Pronto Laborinho, Marta Gromichio, Mariana Pereira, Susana Pinto, Swash Swash, Mamede de Carvalho

**RNM-02 Interleukin (IL)-6 in Amyotrophic Lateral Sclerosis: correlation with respiratory function**
Ana Pronto Laborinho, Marta Gromichio, Mariana Pereira, Susana Pinto, Michael Swash, Mamede de Carvalho

**RNM-03 Spirometry as Prognostic for ALS (SPALS)**
Andrea Calvo, Umberto Manera, Enrico Matteoni, Margherita Daviddi, Davide Casale, Silvia Gallo, Claudio La Mancusa, Luana Focaraccio, Alessio Mattei, Luca Solero, Cristina Moglia, Fabrizio D’Ovidio, Adriano Chib

**RNM-04 Respiratory physiotherapy using Lung Insufflation assist maneuver to patients with ALS - The Evaluation of Lung Insufflation Capacity by LIC TRAINER®**
Keisuke Yorimoto, Yousuke Ariake, Takako Saotome, Alison Proctor, Christopher McDermott

**RNM-05 Supine FVC does not predict Sleep Disordered Breathing in ALS**
Urvil Desai, Benjamin Brooks, Velma Langford, Enayet Raheem

**RNM-06 Prevalence of OSA in ALS**
Urvil Desai, Benjamin Brooks

**RNM-07 Human diaphragm remodelling in amyotrophic lateral sclerosis**
Raquel Guimarães-Costa, Thomas Simlowski, Isabelle Rivals, Capucine Morelot-Panzini, Marie-Cécile Niérat, Mai Thao Bui, David Akbar, Norma Beatriz Romero, Patrick Pierre Michel, Fabrice Menegaux, François Salachas, Jesus Gonzalez-Bermejo, Gaele Bruneteau

**RNM-08 Importance and Benefit of the Simple Inexpensive Chest X-Ray to Evaluate the Diaphragm in ALS/MND Patients**
Raymond Onders, Bashar Katriji, Mary Jo Elmo, Cindy Stepian, Robert Schliz

**RNM-09 Can the use of techniques that increase lung capacity and the formation of a greater volume of dead space and oropharyngeal be a strategy to airway protection and to improve swallowing in bulbar ALS patients?**
Alessandra Dorça

**RNM-10 Respiratory reorganization and rehabilitation therapy (TR3), an approach that may favor lung capacity increase and minimize weakness due to disuse in the upper airway post-tracheostomies in ALS patients**
Alessandra Dorça, Edna Rocha, Denise Sisterolli, Vagner Santos

**RNM-11 Use of non-invasive ventilation in ALS: A 10-year experience at the Ljubljana ALS Centre**
Polona Klažar, Patricia Kranjc, Polona Kliner, Blaž Koritnik, Lea Leonardi, Leja Dolenc Grošelj, Stanka Ristić Kovačič, Dušan Dumič, Janez Zidar

**RNM-12 Airway Sensorimotor Function in Individuals with Amyotrophic Lateral Sclerosis**
Lauren Tabor, Emily Plowman, Teresa Vasilopoulos, Alessandra Gallastegui

**RNM-13 Monitoring and promoting effectiveness and adherence to non-invasive ventilation in motor neurone disease using EncoreAnywhere telemonitoring: a pilot and feasibility, randomised controlled trial**
Esther Hobson, Treasa James, Natasha Mupamufu, Alison Proctor, Christopher McDermott

**RNM-14 Greater Tolerance to Disease Progression and Survival Advantage with Volume Assured Pressure Support Ventilation in Patients with ALS**
Andrea Anton, Paul Barkhaus, Kathryn Sherman, Kavita Ratarsar

**RNM-15 Use of Transcutaneous Carbon Dioxide Values for Improving Compliance and Effectiveness of Non-invasive Ventilation in Individuals with Amyotrophic Lateral Sclerosis**
Aubrey Isaacas, Heather Hayes, Jamie Leaham, Mark Bromberg, Jeanette Brown

**RNM-16 Factors predicting survival in ALS patients on non-invasive ventilation**
Kallicpi Marinou, Riccardo Sideri, Beatrice De Maria, Gabriele Mora

**RNM-17 Pulmonary pathology of amyotrophic lateral sclerosis patients with non-invasive ventilation, a retrospective institute-based study**
Kiyonobu Komai, Chihoho Ishida, Kazuya Takahashi, Atsuo Tagami, Yuko Motozaki, Atsushi Kawashima

**RNM-18 Continued use of non-invasive ventilation is appropriate even after admission to hospice**
Michael Mur, Robin Turner, Richard Bedlack, Philip Choi

**RNM-19 Adherence evaluation to home use of mechanical airway clearance devices in ALS patients: a pilot experience**
Elisa De Mattia, Chiara Gallivanone, Andrea Lizio, Marino Iatomasi, Sara Lupone, Elena Mollar, Barbara Garabelli, Fabrizio Raro, Valeria Sansone, Christian Lunetta

**RNM-20 Implementation of Mechanical Insufflator-Exsufflator for patients with ALS and Bulbar Dysfunction in Uppsala University Hospital, Sweden**
Jenny Snickars, Annelie Berthén

**RNM-21 Safety of cough assist in invasive mechanically ventilated ALS patients**
Josep Gamez, Maria Salvado, Sergi Martí, Julà Sampol, Miriam Barrecheguren, Esther Rodriguez, Irene Bello, Mario Montesinos, Alba Gomez

**RNM-22 Trends in home care of ALS patients with TPPV in a prefecture of Japan: stable number of patients, but decreased use of home-care from 2008 to 2017**
Yugo Narita, Takemasa Ishikawa, Keiko Fukuroku, Michiko Nakai

**RNM-23 Comparing Outcomes of Patients with Amyotrophic Lateral Sclerosis (ALS) Using Tracheostomy Invasive Ventilation (TIV) in Tokyo, Japan and Ohio, USA**
Yuki Nakayama, Pamela Cazzoli, Chiharu Matsuda, Michiko Haraguchi, Kentaro Hayashi, Kota Bokuda, Toshio Shimizu

**RNM-24 Relation between peak cough flow and functional levels of swallowing in patients with Amyotrophic Lateral Sclerosis and Progressive Bulbar Paralysis**
Luciana Frasbasile, Adriana Oda, Juliana Neves, Percilia Alves, Cristina Salvioni, Rosana Borges, Helena Sierra, Eduardo Carvalho, Acary Oliveira

**RNM-25 Relationships between Mechanisms of Airway Protection, Bolus Thickness and Swallowing Safety in Individuals with Amyotrophic Lateral Sclerosis**
Ashley Waito, Carly Barbon, Jennifer Chapin, Kelby Magennis, Raele Robison, Sana Smawui, Lauren Tabor-Gray, Teresa Valenzano, Emily Plowman, Catiriona Steele

**RNM-26 Pseudobulbar affect facilitates the diagnosis of bulbar onset ALS**
Mark Ross, Megna Rao

**RNM-27 Marker of the time course of bulbar swallowing, speech and voice symptoms in patients with Amyotrophic Lateral Sclerosis and Progressive Bulbar Paralysis**
Percilia Alves, Adriana Oda, Rosana Borges, Juliana Neves, Luciana Frasbasile, Helena Sierra, Sheila Flores, Maria Rocha, Cristina Salvioni, Eduardo Carvalho, Acary Oliveira

**RNM-28 Understanding bulbar function in motor neuron disease through speech, swallowing and salivation scales**
Juliana Neves, Adriana Oda, Rosana Borges, Percilia Alves, Luciana Frasbasile, Cristina Salvioni, Helena Sierra, Eduardo Carvalho, Acary Oliveira

**RNM-29 Analysis of the impact of tongue strength and fatigue on functional bulbar aspects in patients with Motor Neuron Disease/Amyotrophic Lateral Sclerosis**
Adriana Oda, Rosana Borges, Percilia Alves, Juliana Neves, Helena Sierra, Cristina Salvioni, Eduardo Carvalho, Acary Oliveira

**RNM-30 Relationship between the tongue fatigability and bulbar functional measures of patients with Motor Neuron Disease: bulb and appendicular onset**
Rosana Borges, Adriana Oda, Cristina Salvioni, Juliana Neves, Percilia Alves, Luciana Frasbasile, Helena Sierra, Eduardo Carvalho, Acary Oliveira

**RNM-31 Identification of Sensitive Screening Tools for Early Detection and Accurate Monitoring of Dysphagia in Multidisciplinary ALS Clinics**
Emily Plowman, Lauren Tabor-Gray, Jennifer Chapin, May Smith, Raele Robison, Terrie Vasilopoulos, Amber Anderson, James Wymer
The use of Botulinum Toxin B in the management of oral secretions in patients with Motor Neurone Disease in the Institute of Neurological Sciences, Queen Elizabeth Hospital Glasgow

George Gorrie, Laura Cunningham, Ann Silver, Helen Lennox, Kitty Millar, Janice Hatrick

RNM-33 Oral Secretory Problems in MND: Clinical Signs and Assessment Tools
Evelyn Chew, Julie Labra, Natalie James, Steve Vucic

RNM-34 Is prediagnostic body weight loss a prognostic factor for disease progression and survival in ALS?
Olof Sundstroem, Bita Banieghbal, Ingela Nygren

RNM-35 Segmented body composition assessment and clinical characteristics in Amyotrophic Lateral Sclerosis/Motor Neuron Disease
Cristina Salvioni, Marcio Ottoboni, Adriana Oda, Camilla Borba, Juliana Neves, Luciana Frabasile, Percilia Alves, Rosana Borges, Helena Sierra, Acary Bulle

RNM-36 The Impact of Swallowing and Nutrition on Gastrostomy Decision-Making in MND
Julie Labra, Anne Hogden, Emma Power, Vicki Flood, Natalie James

RNM-37 Safe Patient Selection for Percutaneous Endoscopic Gastrostomy in Motor Neurone Disease
Jolene Brown, David Oliver, Anthony Hanratty, Emma Wood, Alex Nicholson

RNM-38 Multidisciplinary approach in the indication of Percutaneous Endoscopic Gastrostomy (PEG) in patients with Amyotrophic Lateral Sclerosis
Eduardo Carvalho, Simone Holzapfel, Fatima Caromano, Adriana Oda, Helena Sierra, Juliana Neves, Luciana Frabasile, Percilia Alves, Cristina Salvioni, Acary Oliveira

RNM-39 Paravertebral block for radiologically inserted gastrostomy tube placement in ALS, a single center series
Bjorn Oskarsson, Christopher Robards, Robert McClain, Steven Clendennen, Ricardo Paz-Fumagalli, Beau Toskich, Carla Palmucci, Ilana Logvinov, Karina Hex, Steven Porter

RNM-40 Stress load and neurodegeneration after gastrostomy tube placement in ALS patients
Vera Aminykh, Kirill Gorbachev, Anastasia Ataulina, Veronika Chernenkova, Tatiana Druzkova, Alla Guekht, Natalia Gulyaeva, Lev Bulle

RNM-41 Patient experience of Gastrostomy placement by Nasal unseeded seated technique (NuPEG)
Artika Datta, Helen Copey, Tracy Sapworth, Jeremy Woodward, Duncan Massey, Rhys Roberts

RNM-42 Outcome of late stage percutaneous endoscopic gastrostomy in ALS as analysis of our experience in a spanish population
Maria Salgado, Pecilia Palmas, Sergi Marti, Miriam Barrecheguren, Alba Gomez, Mireia Guerrero, Ana Canovas, Susana Rodriguez, Esther Ruiz, Elsiena Conde, M. Dolores Julve, Clara Sanchez, Miriam Nadal, Joan Dot, Josep Ramon Armengol, Jaume Ferrer, Carolina Puiggrós, Rosa Burgos, Josep Gamez

RNM-43 Artificial nutrition interventions in the Scottish MND population diagnosed between 2015 and 2016
George Gorrie, Menai MacDonald, Robert Swingler, Shuna Colville, Judith Newton, Richard Davenport, Anthony Bateman, Sharon Abrahams, Siddharth Shah, Candan, Ian Morrison

RNM-44 Evaluation of quality of information provision, complications and quality of life post gastrostomy in patients with motor neurone disease
George Gorrie, Morag Vickers

THEME 13
Clinical Management and Support

CMS-01 Delivering bad news in amyotrophic lateral sclerosis and modulating emotional trauma: Where physician duty meets patient autonomy, and recommended guidelines for clinical practice
Wesleigh Edwards, Sahana Malik, Ivy Chippendale, John Ravits

CMS-02 Evaluation of delay to diagnosis in a cohort of individuals with Motor Neurone Disease assessed within NHS Greater Glasgow & Clyde
Liam Carroll, Emily Rose, George Gorrie

CMS-03 Repurposing an electronic data capture system to document research discussions with ALS patients
Anne Haulum, Heidi Runk, Matthew Bankert, Jennifer Crossen, Ruth Stewart, Zachary Simmons

CMS-04 Improving the measurement of isometric muscle strength in Amyotrophic Lateral Sclerosis by using Fixed Dynamometry
Japie Bakers, Anita Beelen, Ruben van Eijk, Anne Visser-Meily, Leonard van den Berg

CMS-05 A model of telemedicine for the care for patients at a US-based ALS clinic
Anne Haulum, Matthew Bankert, Andrew Geronimo, Susan Walsh, Zachary Simmons

CMS-06 Health care professionals’ perspectives of multidisciplinary home-based e-Health for amyotrophic lateral sclerosis
Natalie James, Anne Hogden, Emma Power, Steve Vucic

CMS-07 Carers’ perspectives of multidisciplinary home-based e-Health for amyotrophic lateral sclerosis
Natalie James, Emma Power, Anne Hogden, Steve Vucic

CMS-08 Individualized medicine in individuals with ALS/MND: bending patient’s progression curve utilizing Precision Medicine
Eduardo Locatelli, Merit Cudkowicz, Lauren Tabor, Fiona Scarlett

CMS-09 Potentially severe drug drug interactions in ALS patients
Elisabetta Pupillo, Elisa Bianchi, Luca Pasina, Ettore Beghi

CMS-10 Early post-marketing experience with Edaravone in patients with ALS
Beatrice Nefussy, Batel Vainer, Yaara Fainmesser, Vivian Drory

CMS-11 Summary of the US Safety Data for Radicava® (edaravone): Findings from the Postmarketing Pharmacovigilance
Laura Bower, Ming Ji, Stephen Apple, Minh Hoang, Lesly Tran, Bernard Hahn, Alexander Kalin, Alex Kim

CMS-12 Prescribing Practices and Patient Experience with edaravone for Amyotrophic Lateral Sclerosis
Sarah Dehoney, Western ALS Study Group, Heather Hayes, Mark Bromberg

CMS-13 Edaravone Therapy in Amyotrophic Lateral Sclerosis (ALS) – Initial Experience at 4 ALS Centres in Germany
André Maier, Susanne Spitell, Birgit Koch, Dagmar Kettemann, Andreas Funke, Nadine Gajewska, Teresa Baldes, Bertram Walter, Torsten Grehl, Ute Weyen, Julian Grosskentz, Jenny Norden, Christoph Münch, Thomas Meyer

CMS-14 Single-Site Experience in Edaravone (Radicava) Treatment Deployment for Amyotrophic Lateral Sclerosis (ALS) Patients: Insurance Verification, Infusion Options, Delivery System Initiation, Safety and Monitoring

CMS-15 Edaravone: Patients’ Initial Perspective
Mark Ross, Ann Chang, Amanda Canizales

CMS-16 Edaravone therapy in ALS: the University of California San Francisco (UCSF) ALS Center experience
Janice Wong, Catherine Lumen Hoehrt

CMS-17 Radicava® (edaravone) for Amyotrophic Lateral Sclerosis: US Experience at 1 Year After Launch
Tatyanar Baranovsky, Glenn McAnanama, Wendy Agnese, Mike Martin

CMS-18 Effect of Radicava (Edaravone) on uric acid levels: Preliminary results
Terry Heathman Patterson, John Furey, Isabelle Kaminer, Justin Chen, Anahtah Deboo, Sabrina Paganoni

CMS-19 Equity of access to Riluzole for individuals with MND/ALS in the UK
Daniela Schlüter, Bethan James, Roger Mills, Carolyn Young, TONIC Study Group

CMS-20 The MotOrtose project – Development of a motorized upper extremity orthosis for ALS
Tore Meisingset, Geir Bråthen, Terje Lien
CMS-21 Robotics in ALS – acceptance of robotic assistance systems in patients with ALS

CMS-22 Advances in Power Mobility: Technology to Increase Power Feature Utilization
Amber Ward, Jennith Bernstein

CMS-23 Thuis ALS Thuis, a Virtual Home environment for ALS patients
Rinse Maathuis, Jonna Parren - Kramer, Esther Krutwagen - van Reenen, Anita Beete, Anne Visser - Melly

CMS-24 “Freedom to make my own decisions” - What patients with ALS want when they get their first power wheelchair
Kristina Simacek, Sherry Xiao, Christopher Curran, Elizabeth Lawler, Jamilie Granskie, Karin Leire, Helene Svanh, Paul Wicks

Danielle Leighton, Judith Newton, Harry Gordon, Giulia Melchorro, Shuna Colville, Laura Melanson, Anthony Bateman, Sharon Abrams, Richard Davenport, Ian Morrison, George Gorrie, Robert Swingler, Siddharthan Chandran, Susvankal Pal

CMS-26 Access to care for ALS patients in Canada: Findings from the Canadian Neuromuscular Disease Registry

CMS-27 Vale Community Resource Service (VCRS): Innovative, successful and collaborative management of clients with Motor Neurone Disease (MND) in their own homes. Co-production to improve client experience
Devi Druce Perkins, Elinor Evans, Joanna Phillips, Natasha Hinkin-Evans

CMS-28 McGill University Single Item Quality-of-Life (QoL) Scale Compared with ALS Health-Related Quality-of-Life Likert Scales Including Breathing QoL Measurement
Benjamin Brooks, Elena Bravver, Urvi Desa, Navid Kalra, Jordan Green

CMS-29 Defining quality of care in ALS: a European Delphi study
Jolien Hendriks, Evy Revers, Anne Jolie, Philip Van Damme, Walter Sermeus

CMS-30 YCare: A multidisciplinary caregiving skills and intervention for young caregivers in families with ALS
Melinda Kavanagh, Megan Howard, Dominic Fee, Paul Barkhaus, Lori Barker-Horner

CMS-31 Informal ALS caregivers – expressing their needs within a health care setting: a qualitative analysis
Miriam Galvin, Sile Carney, Bernie Corr, Niall Pender, Orla Hardiman

CMS-32 The relatives experience of the care for the patients during the ALS disease progression
Birgitta Larsson, Cecilia Franke, Chaitanya den Dulk

CMS-33 A qualitative study to understand the experiences of being a caregiver for a partner/spouse who has Motor Neuron Disease
Heidi Morris

THEME 14 Palliative Care and Decision Making

PAL-01 Symptomatic and palliative pharmacotherapy of people with ALS in Germany - analysis of a platform-case management approach
Thomas Meyer, Susann Spittel, Dagmar Kettemann, Andreas Funke, Torsten Greul, Ute Weyer, Julian Grosskreutz, Susanne Petri, Nadine Gajewski, Bertram Walter, Teresa Balles, Jenny Norden, Christoph Münch, André Maier

PAL-02 Patients’ Satisfaction and Usability for Tetrahydrocannabinol/Cannabinol (THC:CBD) in the Treatment of Spasticity in Patients with Amyotrophic Lateral Sclerosis (ALS)
Susanne Spittel, Andreas Funke, Dagmar Kettemann, André Maier, Nadine Gajewski, Teresa Balles, Bertram Walter, Annette George, Christoph Münch, André Maier

PAL-03 “Dog assisted physiotherapy improve the results of traditional treatment in ALS patients”
Manuela Vignolo, Romina Truffelli, Riccardo Zuccarino, Elisa Giove, Davide Manunza, Fabrizio Caponnetto

PAL-04 Reliability and Validity of Speech & Pause Measures during Passage Reading in ALS
Yana Yunusova, Carolina Barnett, Nicholas Wasylyk, James Berry, Gary Pattee, Lorne Zinman, Sanjay Kalra, Jordan Green

PAL-05 Development of Specialized Time-Sensitive Communication Method for ALS patients
Takayo Namba, Chiaki Ishii

PAL-06 Amyotrophic lateral sclerosis ALS related impact on social communication patient and caregivers perceptions
Lavoisier Neto, Thais de Novais, Marcondes França Júnior, Regina Chun

PAL-07 A baseline audit of Alternative and Augmentative Communication aid provision for people with MND in NHS Scotland
Elizabeth Elliott, Judith Newton, Shuna Colville, Richard Davenport, George Gorrie, Ian Morrison, Siddharthan Chandran, Susvankal Pal

PAL-08 A pilot study of voice banking in Amyotrophic Lateral Sclerosis patients
Giordana Donvito, Lucia Catherine Greco, Andrea Lizio, Stefania Bona, Elena Carraro, Valeria Sansone, Christian Lunetta

PAL-09 The palliative care needs of people with motor neurone disease and their informal caregivers: a qualitative systematic review
Kate Fleming, Victoria Turner

PAL-10 Symptom relief and palliative care last week of life in motor neuron disease
Annell Oznain, Rick Sawatzky, Anette Alveriza, Kristoffer Årestedt, Cecilia Häkansson, Joakim Ollén

PAL-11 Sleep-wake disturbances in Chinese Patients with Sporadic Amyotrophic Lateral Sclerosis
Shuangwu Liu, Hongfei Tai, Kang Zhang, Zhili Wang, Dongchao Shen, Hanhui Fu, Mingsheng Liu, Yuzhou Guan, Yan Huang, Liying Cui

PAL-12 Decision-making support for the use of tracheostomy with invasive ventilation in patients with ALS in Japan
Woojung Shin, Tomoko Inoue, Yuki Nakayama, Hide Yoshino, Takaroni Yokota, Makoto Tanaka

PAL-13 The preparations and countermeasurement of patients with amyotrophic lateral sclerosis for disaster after the Great East Japan earthquake
Yuji Tanaka

PAL-14 Evaluation of patients’ shortness of breath and opioid introduction
Yoko Nishikawa, Yugo Narita, Takamasu Ishikawa, Akihiro Shindo, Hidekazu Tomimoto

PAL-15 Investigation of opioid use for the patients with end of life stage ALS using NPPV
Takashi Akaowaka, Mieko Ogino, Hide Yoshino

PAL-16 Advance care planning in progressive chronic neurological diseases - what we can learn from ALS - a qualitative study
Amje Sebeer, A. Jeanettte Polis, Dick Willems, Marianne De Visser

PAL-17 Advance care planning (ACP) and the impact of intervention in the Lancashire and South Cumbria MND Care Centre
Amy Parkes, Suress Chiltey, Pauline Callagher

PAL-18 Discussing trying and dying on Twitter: depictions of non-standard care options for people with Amyotrophic Lateral Sclerosis (ALS)
Rebecca Foley, Westerly Luth, Mark Bieber, Tania Bubela, Wendy Johnston

PAL-19 The attitude of neurologists to end-of-life care in amyotrophic lateral sclerosis
Krzysztof Barc, Peter Andersen, Helena Aho-Ozean, Albert Ludolph, Dorothee Lule, Magdalena Kuzma-Kozakiewicz

PAL-20 Advance directives in ALS patients: The Piedmont and Valle d’Aosta register experience
Cristina Moglia, Andrea Calvo, Alessandro Bombaci, Umberto Manera, Antonio Canosa, Antonio Iardl, Adriano Chib
**THEME BW**

**Biomedical Work in Progress**

**BW-01** The Dominant Inherited ALS (DIALS) Network: Methods For a Work in Progress  
Katharine Nicholson, Katherine Burke, Diane Lucente, Sara Thower, James Chan, Tania Gendron, Mercedes Prudencio, Leonard Petrucelli, James Berry, Timothy Miller

**BW-02** Kinesin heavy chain (KIF5A) mutations in amyotrophic lateral sclerosis: A follow up study  
Yevgeniya Abramzon, Adriano Chio, Bryan Traynor

**BW-03** The potential role of a polymorphic VNTR in the aetiology of Motor Neurone Disease  
Jack Marshall, Ben Middlehurst, Abigail Savage, Richard Mead, Pamela Shaw, Vivien Bubb, John Quinn

**BW-04** The role of non-LTR retrotransposons in the increased genetic burden to MND at the NEk1 gene  
Jack Marshall, Ben Middlehurst, Gerald Schumann, Abigail Savage, Richard Mead, Pamela Shaw, Vivien Bubb, John Quinn

**BW-05** Regulation of Ubiquilin 2 dependent protein clearance  
Matthew Keuss, Roland Hjerpe, John Bett, Thimo Kurz

**BW-06** Variability in the level of a motor neurone disease-relevant protein: survival motor neurone (SMN) in individual cells and associated vulnerability to hypoxic damage  
Elena Hernandez Gerez, Ian Fleming, Simon Parson

**BW-07** ARF GTPases control motor neuron death in models of ALS  
Lei Zhang, Jelena Mosjilovic-Petrovic, Robert Kelb

**BW-08** The clinical effects of chlorovirus atcv 1 on sod1 g93a transgenic als mice and identification of anti atcv 1 ig isotypes subclasses associated with ALS  
Gary Pattee, Thomas Pietro, David Dunnnigan, Zack Guinn, Irina Agarkova, James Van Etten

**BW-09** Knock in mouse models to understand ALS pathomechanisms  
Abraham Acevedo Arozena, Thomas Cunningham, Anny Devoy, Adrian Isaacs, Linda Greensmith, Pietro Fratta, Elizabeth Fisher

**BW-10** Repeated concussions lead to CSMN and identification of anti atcv 1 ig isotypes subclasses associated with ALS  
Gary Pattee, Thomas Pietro, David Dunnnigan, Zack Guinn, Irina Agarkova, James Van Etten

**BW-11** Humanised mouse models of ALS  
Remya Nair, Anny Devoy, Samanta Gasco, Charlotte Tibbit, Asif Nakhuda, Carmelo Millioti, Abraham Acevedo-Arozena, Pietro Fratta, Adrian Isaacs, Thomas Cunningham, Elizabeth Fisher

**BW-12** Extramotor involvement differs with severity of bulbar ALS: post-mortem neuropsychopathological findings  
Sanjana Shellikeri, Julia Keith, Sandra Black, Lorne Zimnin, Yana Yunuslova

**BW-13** Mutations in TARDBP show axonal transport defects in induced pluripotent stem cell-derived motor neurons  
Raheem Fazal

**BW-14** Molecular mechanisms underlying TDP-43 regulation on the Stress Granule assembly factor G3BP1  
Hadjara Sidièbe, Geneviève Di Tommaso, Anais Aulas, Jade-Emmanuelle Deshaies, Alex Parker, Pascale Legault, Christine Vande Velde

**BW-15** Utilizing network medicine approaches to explore the role of muscle in ALS  
Stephen Morgan, Stephanie Duguez, William Duddy

**BW-16** Gene expression biomarkers: a longitudinal study in ALS and FTD patients  

**BW-17** Exosomes a Window into ALS  
Sandra Banack, Paul Cox, Rachael Dunlop

**BW-18** Biomarkers for disease progression and potential therapeutic targets in Amyotrophic Lateral Sclerosis  
Ozlem Yildiz, Gary Warnes, Valentina Puccino, Vittoria Lombardi, Fabiola Puentes, Jemmond Dall, Claudio Mauro, Klaus Schmierer, Andrea Malaspina

**BW-19** An Al Drug Discovery Case Study Establishing New Neuroprotective Compounds for Treating ALS  
Matthew Stopford, Nora Markus, Monika Myszczynska, Richard Mead, Laura Ferraiuolo, Dave Sheppard, Peter Richardson, Mark Rackham

**BW-20** All-Optical Electrophysiology for High-Throughput Drug Screens and Functional Characterization of Human iPSC-Derived Motor Neurons from ALS patients  
Sandy Hinckley, Hongkang Zhang, Luis Williams, Graham Dempsey, Daniel Elbaum, Adam Cohen, Kevin Eggan, Kasper Roet

**BW-21** Patient Blood Derived Cell Lines Provide Unlimited Supply of DNA  
Debbie Blick, Clare Wilson, Ayuen Lual, Sharon Bahia, Edward Burnett, Bryan Bolton, Julie Russell

**BW-22** Alterations of lipid metabolism define potential circulating biomarkers of amyotrophic lateral sclerosis  
Gorka Fernandez Eulate, Jose Ignacio Ruiz-Sanz, Javier Riancho, Monica Zufriñan, Roberto Fernandez-Torrón, Juan José Pozo-Aldea, Juan Bautista Espinal, Gonzalo Gonzalez-Chinchón, Miren Zulaica, M Begona Ruiz-Larrea, Francisco Gil-Bea, Adolfo López de Munain

**BW-23** Investigating metabolic dysfunction in a yeast model of Sod1-associated ALS  
Kevin Doyle

**THEME CW**

**Clinical Work in Progress**

**CW-01** Investigating bioenergetic dysfunction in motor neurone disease using 31 phosphorous magnetic resonance spectroscopy: a feasibility study  
Matilde Sassini, Julia Bigley, James Alix, Nigel Hoggard, Pamela Shaw, Thomas Jenkins, Iain Wilkinson

**CW-02** Exploring SICI using TMS-EEG: a potential diagnostic tool for MND  
Vishal Ravji, Izabela Kaczmarczyk, Lorenzo Rocchi, John Rothwell, Nikhil Sharma

**CW-03** Investigating selective vulnerability to denervation in MND using whole-body muscle MR measures  
Tanya Esmail, Jacob Fingret, James Alix, Nigel Hoggard, Julia Bigley, Christopher McDermott, Pamela Shaw, Iain Wilkinson, Thomas Jenkins

**CW-04** Are there acoustic markers of LMN versus UMN involvement in motor neuron diseases?  
Nathalie Leveque, François Salachas, Timothée Lenglet, Maria Del Mar Amador, Rabab Debs, Nadine Le Forestier, Pierre-François Pradat, Cédile Fougouer, Gaëlle Brunetoe

**CW-05** Case of Motor Neuron Disease in patient with Human Immunodeficiency Virus: association or coincidence?  
Arum Aslanyan, David McKee

**CW-06** People living with ALS and their caregivers’ input into drug development in Europe  
Miniam Galvin, Orla Hardiman, Christopher McDermott (on behalf of Impact European Survey Advisory Group), Amy Laverdiere, Bonnie Charpentier, Jennifer Pettrillo, Kristina Bowyer, Lucie Brujin

**CW-07** Analysing Inclusion Criteria in Surgical Trials in ALS/MND to Identify Differences in Long Term Results  
Raymond Onders, Mary Jo Elmo, Bashar Katirji, Robert Schilt

**CW-08** Rationale and methods of EMERALD: A randomized, double-blind, single-centre, placebo-controlled phase II trial evaluating the safety, tolerability, and efficacy of Cannabis based medicine extract (CBME) in patients with Amyotrophic Lateral Sclerosis (pALS)  
Arman Sabet, Berzenn Urbi, Richard Bedlack, Ethan Russo, Simon Broadley

**CW-09** Observational Quantitative Data in Adult Patients with SMA Dosed with Nusinersen  
Cosette Burian, Senda Ajroud Driss, Ashley Bozeman

**CW-10** Design and status of the ongoing Phase II, randomized, placebo-controlled trial of AMX0035 in Amyotrophic Lateral Sclerosis (CENTAUR)  
Joshua Cohen, Kent Leslie, Justin Klee, Patricia Andres, Merit Cudkowicz, Nazem Atassi, Sabrina Paganoni
CW-11 Long-term Outcome of Filgrastim (G-CSF) in ALS Patients
Siw Johannesen, Bettina Budeus, Tim-Henrik Bruun, Sebastian Peters, Anne-Louise Meier, Sabrina Küspert, Ines Kobox, Ohnmar Hsam, Anna-Maria Wirth, Wilhelm Schulte-Matthlet, Sabine Ibel, Armin Schneider, Winfried Koch, Ulrich Bogdahn

CW-12 Novel drug RCH4 slows ALSFRS-R decline by 63.3% (n=51 p=0.0001. Treatment-years=54). The presentation compares treatment outcomes between Radicava, generic Edaravone, RCH4, and addresses the question: “Do they work”, not: “How do they work”.
Michael Curan

CW-13 Edaravone as an antioxidant agent to treat amyotrophic lateral sclerosis: a longitudinal prospective study of a cohort of patients from Veneto area, Italy
Gianni Soraru, Andrea Fortuna, Ilaria Martinelli, Elena Pegoraro, Maurizio Corbetta, Giorgio Canave, Nicoletta Freddi, Sandro Guzzon, Stefania Lelli, Alessandra Vitali, Marianna Fortunato, Franco Ferrari, Luigi Bartolomei, Francesco Penni, Flavio Sanson, Mauro Scarpelli, Silvia Romito, Ernesto Castaldo, Roberto Lerario, Matteo Gizzi

CW-14 Surveillance of using novel free radical scavenger, edaravone to investigate survival effect for ALS patients in Japan (SUNRISE Japan); Report for intermediate summary
Manabu Hirai, Satoshi Yuki, Kaoru Ishizaki, Hiroaki Matsuda, Gen Sobue

CW-15 Protocol and Design of the Radicava® (edaravone) Biomarker Study for ALS Patients in the United States
Benjamin Brooks, James Berry, Angela Genge, Terry Heiman-Patterson, Stanley Appel, Michael Benatar, Robert Bowser, Merit Cudkowicz, Clifton Gooch, Jeremy Shefner, Jean Hubble, Steve Apple, Wendy Agnese, Charley Merrill, Sally Nelson

CW-16 French securing of Edaravone distribution network: risk management linked to japanese packaging and time consuming consequences
Emmeline Lagrange, Audrey Lehman

CW-17 What would a King’s staging 2.0 look like? A retrospective review
Nathalie Magnan, Toni Vtale, Natalie Saunders, Angela Genge

CW-18 Development of improved single control: the result of effective collaboration
Jenny Rolfe

CW-19 MND association wheelchair champions project
Jenny Rolfe

CW-20 Outcome measures for the mobile arm support in individuals with amyotrophic lateral sclerosis (ALS)
Joyce Knowdee Mot Qtr L, Jeffrey Rosenfeld

CW-21 Modifying Cervical Support to Allow Rotation with a 3-D Printed Attachment
Sara Feldman, Mark Goren, Thinh Nguyen

CW-22 The initiation of Dignity Therapy for people affected by Motor Neurone Disease in the West of Scotland.
Laura Cunningham, Bridget Johnston

CW-23 Mechanisms of psychosis and psychosis-risk in motor neurone disease and frontotemporal dementia with motor neurone disease
Alicia Wilcox, Rhys Roberts, James Rowe

CW-24 Successful introduction of Alternative and Augmentative Communication for pALS: retrospective study of cases of ‘Yay’ and ‘Nay’
Malin Björjesson

CW-25 An education program to support communication for people with ALS: checking discretion ability by a pre- and post-test evaluation
Takemasa Ishikawa, Yugo Narita, Chihiro Mizumoto, Erisa Takahashi, Michiko Naka, Keiko Fukuroku, Yuji Tanaka, Tamotsu Imura

CW-26 The Multidisciplinary Chest Management Programme for Patient’s Living with Motor Neurone Disease: The benefits of joint Speech and Language Therapy and Physiotherapy working in the assessment and management of swallowing and cough
Jodi Allen, Charlotte Massey

CW-27 Speech and Language Therapy Assistant led Voice Banking Education Groups
Rebecca Yalland, Hannah Davies, Julieanne Yates, Hayley Regan-Wall, Belinda Done, Stephanie Durman

CW-28 Bringing Voice Banking to Dorset - lessons in time, timing & technology
Sharon Owens

CW-29 Identifying features of dysarthria as acoustic biomarkers for ALS using a tablet based speech analysis system
Julie Stierwalt, Sandra Schneider, Christian Poellabauer, Louis Daudet

CW-30 Exploring Voice Measures to Track Disease Onset and Progression in Amyotrophic Lateral Sclerosis (ALS)
Jordan Green, Kathryn Connaghan, Yana Yunusova, Kaila Stipancic, Sarah Genge, James Berry

CW-31 Respiratory Management of Amyotrophic Lateral Sclerosis /Motor Neurone Disease patients attending the West of Scotland Long-Term Ventilation Unit (WoSLTVU)
Grace Murphy, Joanne Payne, Alison Clarke, Dave Raeside, George Gorrie, Scott Davidson

CW-32 Optimising the management of ventilated patients with motor neurone disease through telemedicine via call centre: multidisciplinary team approach
Helen Ashcroft, Hickari Ando, Carolyn Young, Rob Halhead, Robert Angus

CW-33 Home-monitoring in ALS/MND care: Evaluation of a Tailored eHealth care process for personalized ALS/MND care
Remko Van Enenmann, Jochem Hellemans, Anita Beelen, Esther Knuutwagen-van Reenen, Willeke Knuthof, Marja Slappendel, Leonard van den Berg, Anne Visser- Meily

CW-34 Case Report Elective withdrawal of Non-Invasive Ventilation in an MND patient at home – a partnership approach but only possible with experienced staff with the right skills
Beata Le Bon

CW-35 A Pocket Tool for those with ALS/MND seeking Urgent Medical Care
Patricia Wilkinson

CW-36 Development of a Motor Neurone Disease Patient Concerns Inventory (MND PCI) for identifying MND patients’ main concerns in the outpatient clinic setting
Mary O’Brien, Jennifer Kirton, Emma Pearson, Suresh Chhetri, Simon Rogers

CW-37 Purpose of a FunctionalHydration Scale on Motor Neuron Disease/Amyotrophic Lateral Sclerosis
Adriana Oda, Luciana Frabasile, Cristina Salvioni, Percilia Alves, Rosana Borges, Juliana Neves, Helena Sierra, Eduardo Carvalho, Acary Oliveira

CW-38 Improving Outcomes in Feeding Tube Placement for ALS/MND patients using an Interdisciplinary, Collaborative Approach
Paula Brockenbrough, Rebecca Rhodes, Michelle Gebhardt, Amanda Butler, Kathleen Pearson, Scott Vota

CW-39 Development of the South Wales MND Care Network Gastrostomy Placement Guidance
Stephanie Durman, Idris Baker, Andrea Lowman, Joanne Bradburn, Elizabeth Green, Victoria Prendiville, Linda Morgan

CW-40 Exploring the effectiveness of communicating wellbeing and quality of life information in Motor Neurone Disease to multidisciplinary teams
Gillian Medley, Clarissa Giebel, Maria Thornton, Michelle Ennis, Sandra Smith, Paula Sutton, Moira Furlong, Carolyn Young

CW-41 Motor Neurone Disease: supporting people to die at home in Lancashire and South Cumbria
Maddy Bass, Philomena Swarbrick, Pauline Callagher

CW-42 POSTER WITHDRAWN

CW-43 The Challenges of Addressing the Needs of Family Carers across South Wales
Caroline Bidder, Ruth Glew, Carol Smith

CW-44 ‘Many hands make light work’ - the success of the South Wales MND Care Network Multidisciplinary Team days
Ruth Glew, Katie Gibbon, Caroline Bidder, Sara Mallams, Alice Richards, Richard Pavsey, Stephanie Durnan, Idris Baker
## Programme of events/locations

### Friday 7 December

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<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
<th>Venue</th>
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</thead>
<tbody>
<tr>
<td>07.00 – 08.50</td>
<td>Arimoclomol in ALS: Advisory Committee Meeting – Hosted by Orphazyme A/S (closed meeting)</td>
<td>Alsh 1</td>
<td>SEC Centre (Loch Suite)</td>
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<tr>
<td>07.00 – 18.00</td>
<td>Registration International Symposium</td>
<td>Concourse</td>
<td>SEC Centre</td>
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<tr>
<td>07.00 – 19.00</td>
<td>Speaker Room</td>
<td>Room 5.1</td>
<td>SEC Centre</td>
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<tr>
<td>07.30 – 08.30</td>
<td>BIG Data in ALS Workgroup: Resources, Collaborations and Sharing (closed meeting)</td>
<td>Alsh 2</td>
<td>SEC Centre (Loch Suite)</td>
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<tr>
<td>09.00 – 10.45</td>
<td>Symposium Joint Opening Session</td>
<td>Hall 2</td>
<td>SEC Centre</td>
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<tr>
<td>10.45 / 15.30</td>
<td>Refreshments and Networking</td>
<td>Hall 5</td>
<td>SEC Centre</td>
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<tr>
<td>11.15 – 12.30</td>
<td>Symposium Joint Session 2</td>
<td>Hall 2</td>
<td>SEC Centre</td>
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<tr>
<td>12.30 – 14.00</td>
<td>Lunch</td>
<td>Hall 5</td>
<td>SEC Centre</td>
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<tr>
<td>13.00 – 14.00</td>
<td>Pan-Asian Consortium for Treatment and Research in ALS (PACTALS)*</td>
<td>Alsh 2</td>
<td>SEC Centre (Loch Suite)</td>
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<tr>
<td>14.00 – 17.30</td>
<td>Symposium Biomedical Sessions 3A/4A</td>
<td>Lomond Auditorium</td>
<td>SEC Centre (Loch Suite)</td>
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<tr>
<td>14.00 – 17.30</td>
<td>Symposium Clinical Sessions 3B/4B</td>
<td>Hall 2</td>
<td>SEC Centre</td>
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<tr>
<td>14.00 – 17.20</td>
<td>Symposium Alternative Sessions 3C/4C</td>
<td>Hall 1</td>
<td>SEC Centre</td>
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<tr>
<td>17.45 – 20.00</td>
<td>Poster Session A</td>
<td>Hall 4</td>
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<tr>
<td>17.45 – 19.00</td>
<td>Cochrane Neuromuscular Group</td>
<td>Alsh 1</td>
<td>SEC Centre (Loch Suite)</td>
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<tr>
<td>18.30 – 20.00</td>
<td>BRAIN-MEND Consortium Meeting (closed meeting)</td>
<td>Alsh 2</td>
<td>SEC Centre (Loch Suite)</td>
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### Saturday 8 December

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<tbody>
<tr>
<td>07.15 - 08.15</td>
<td>Innovation Landscape in ALS/MND: Designing Tomorrow’s Clinical Trials Today, Inclusion and Exclusion Criteria – A Live Debate (Sponsored by Cytokinetics)</td>
<td>Argyll Suite</td>
<td>Crowne Plaza Glasgow</td>
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<tr>
<td>07.00 – 18.00</td>
<td>Registration International Symposium</td>
<td>Concourse</td>
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<tr>
<td>08.30 – 17.30</td>
<td>Symposium Biomedical Sessions 5A/6A/7A/8A</td>
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<td>08.30 – 17.30</td>
<td>Symposium Clinical Sessions 5B/6B/7B/8B</td>
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<td>08.30 – 17.30</td>
<td>Symposium Alternative Sessions 5C/6C/7C/8C</td>
<td>Hall 1</td>
<td>SEC Centre</td>
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<tr>
<td>10.00 / 15.30</td>
<td>Refreshments and Networking</td>
<td>Hall 5</td>
<td>SEC Centre</td>
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<td>12.30 – 14.00</td>
<td>Lunch</td>
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<td>17.45 – 20.00</td>
<td>Poster Session B</td>
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<tr>
<td>18.30 – 21.00</td>
<td>Bulbar Guidelines Development Symposium</td>
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### Sunday 9 December

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<td>07.00 – 13.30</td>
<td>Registration International Symposium</td>
<td>Concourse</td>
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<tr>
<td>07.00 – 13.30</td>
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<td>SEC Centre</td>
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<tr>
<td>07.15 – 08.15</td>
<td>NEALS Consortium (closed meeting)</td>
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<tr>
<td>08.30 – 12.40</td>
<td>Symposium Biomedical Sessions 9A/10A</td>
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<td>SEC Centre (Loch Suite)</td>
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<tr>
<td>08.30 – 12.30</td>
<td>Symposium Clinical Sessions 9B/10B</td>
<td>Hall 2</td>
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<tr>
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<td>Lunch</td>
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<td>SEC Centre</td>
</tr>
<tr>
<td>13.30 – 15.15</td>
<td>Symposium Joint Closing Session</td>
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* This meeting is open to delegates from the Asia-Pacific Region
With grateful thanks to the supporters of the 29th International Symposium on ALS/MND

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Join us in Perth, Australia 4-6 December 2019

Provisional abstract submission deadline: 5 June 2019

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For further information please contact:
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Email: symposium@mndassociation.org
Email: abstracts@mndassociation.org

www.mndassociation.org