NEURO-2025
Sept 11-12, 2025 | Spain

UNITED RESEARCH FORUM
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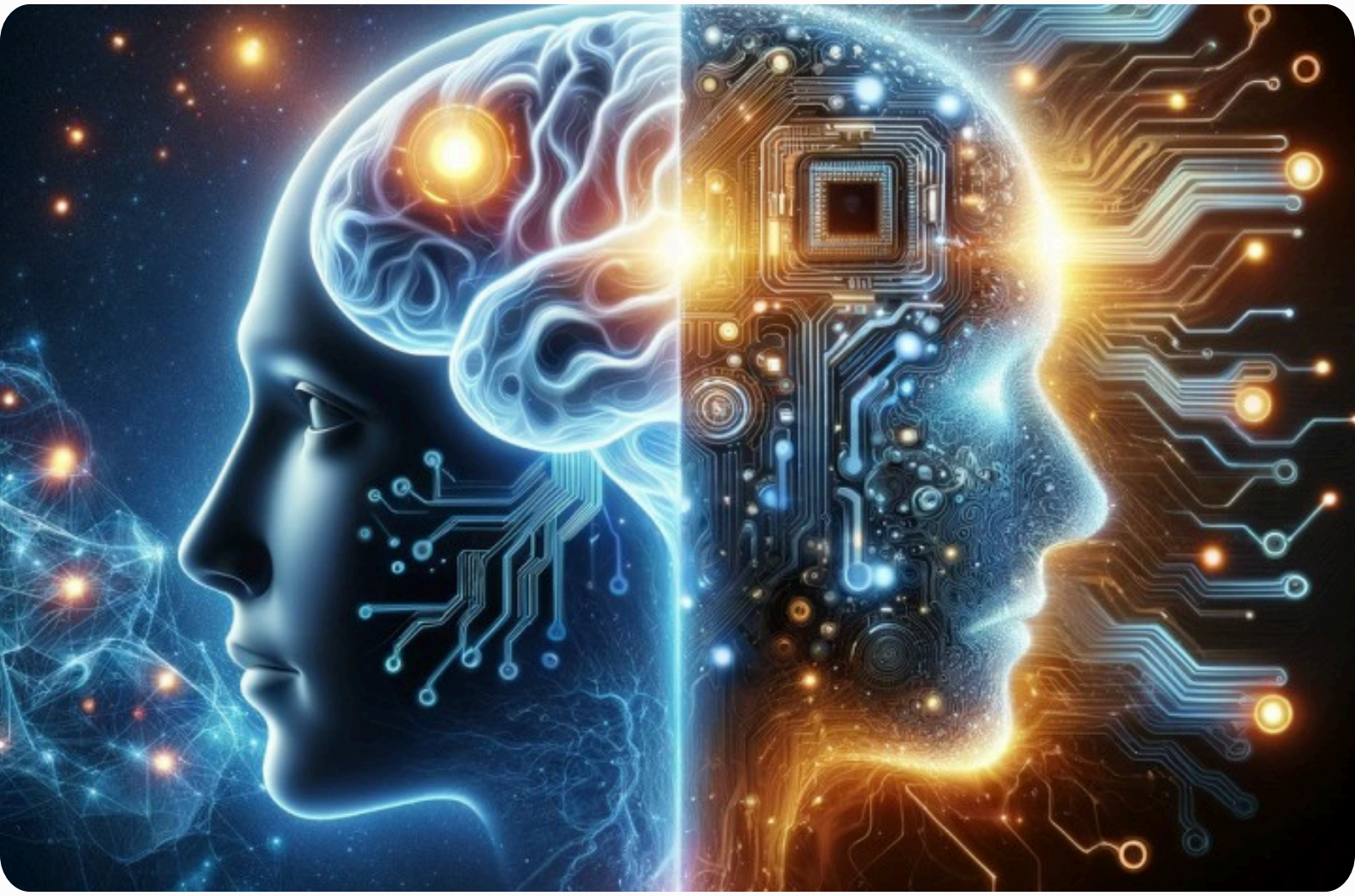
4th International symposium on Cognitive Neuroscience and Psychology

September 11-12 | 2025 in Barcelona, Spain



Venue: Hotel SB BCN Events
Barcelona, Spain

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ISBN: 978-1-917892-19-3

Website URL: https://unitedresearchforum.com/up-coming-conf.php

LETTER FROM THE DIRECTOR

On behalf of United Research Forum, UK, we are delighted to announce the organization of the 4th International symposium on Cognitive Neuroscience and Psychology, to be held at the Hotel SB BCN Events, Barcelona, Spain, September 11-12 | 2025.

Our goal is to provide an international platform where researchers and professionals from various fields of the health sector can come together to exchange ideas, discuss current trends, share research outcomes, and explore practical experiences.

We look forward to welcoming all of you to Spain and to hosting an exceptional meeting with distinguished scientists from around the world, sharing new and exciting developments across the diverse subjects covered by the conference.

We hope you enjoy your stay in Spain and encourage you to take this opportunity to explore the beautiful historical sites the country has to offer.

Finally, I extend my best wishes for a successful and fruitful conference, and express sincere thanks to our partners and the organizing team for making this event possible.

Dr. Vanga

Sincerely,
Dr. Vanga
Director | United Research Forum
United Kingdom

Day 1

THURSDAY

4th International symposium on Cognitive Neuroscience and Psychology

September 11-12 | 2025 in Barcelona, Spain

Registrations (09:00-09:30)

Opening Remarks (09:30-10:00)

10:00-10:30--------

Title: A Cross-over Pilot Study on the Effects of Classical Guitar Instruction on Motor and Non-Motor Symptoms in People with Parkinson's Disease

Christopher Adams, The University of Tennessee Health Science Center, USA

10:30-11:00--------

Title: Efficacy and Safety of Oral Valiltramiprosate in APOE4/4 Homozygotes with Early AD: Topline Results from APOLLOE4 Phase 3 Trial

Martin Tolar, Alzheon, Inc., USA

11:00-11:30--------

Title: Modulation of symptoms of autism spectrum disorders

Klara Kubelkova, University of Defence , Czech-Republic

REFRESHMENT BREAK & GROUP PHOTO (11:30-11:50)

Technical Session-I (11:50 - 13:10)

11:50-12:15--------

Title: Cognitive, socio-emotional and adaptive profile development in adults with autism spectrum disorders and severe intellectual disability

Jean-Louis Adrien, Université Paris Cité, France

12:15-12:40--------

Title: Spontaneous Synchrony in Friends Dyads: The Role of Social Settings and Ambient Odors

Marine R. Coeugnet, University of Lille, France

12:40-13:05--------

Title: Covert CSF circulation impairment: concept, clinical insights and primary attempt to treat and detect

Qinghua Hou, Sun Yat-sen University, China

Lunch @ Restaurant (13:05- 14:00)

Poster Presentation (14:00-14:20)

Poster I--------

Title: Netrin-4 Mitigates Tau Pathology in Alzheimer's Disease Across Hippocampal and Myenteric Neurons via UNC5A

Lee Ya Kim, Seung Hoon Jeon & Yumin Heo, Hallym University college of Medicine, South Korea

Day 1

THURSDAY

4th International symposium on Cognitive Neuroscience and Psychology

September 11-12 | 2025 in Barcelona, Spain

Poster II--------

Title: Modulation of autistic symptoms using dietary supplement of a psychobiotic

Aleš Macela, University of Defence, czech-republic

Technical Session-II (14:20-15:50)

14:20-14:45--------

Title: Inter-Organ Crosstalk in Neurodegenerative Diseases: Insights from Brain Body Interactions

Eun Hee Ahn, Hallym University college of Medicine, South Korea

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14:45-15:10--------

Title: From Molecular to Clinical Implications of Sleep-Related Breathing Disorders on the Treatment and Recovery of Acute Stroke: A Scoping Review

Karol Uscamaita, Hospital Universitari Sagra Cor Barcelona, Spain

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15:10-15:35--------

Title: Evaluation of a Cognitive Intervention using Virtual Reality for People with Intellectual Development Disorder

Margarida Oliveira, OLAE-Universidade LusÃ³fona de Lisboa, Portugal

Refreshment Break (15:35-16:00)

16:00-16:25--------

Title: Burnout in Assisted Reproduction Professionals: The Influence of Stressors in the Workplace

Raquel Urteaga García, Head of Psychology Unit al Clínica Tambre, Spain

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16:25-16:50--------

Title: Mind Over Miles: Cognitive Functioning and Health in Multi-Marathon Runners

Leo Lundy, Trinity College Dublin, Ireland

16:50-17:15--------

Title: Identification of a neuron-specific ferroptosis in the neurodegenerative mucopolysaccharidosis IIIB model

Mathilde Larribau, INSERM UMR1291, CNRS UMR5051, France

Day 1 Concludes

Panel discussions

Day 2

FRIDAY

4th International symposium on Cognitive Neuroscience and Psychology

September 11-12 | 2025 in Barcelona, Spain

Opening Remarks (9:00-10:00)

Technical Session-I (10:00-11:30)

10:00-10:30--------

Title: Numerosity Perception and Perceptual Load: Exploring Sex Differences Through Eye-Tracking

Julia Bend, Åbo Akademi University, Finland

10:30-11:00--------

Title: Brain-Computer Interface tool use and the Contemplation Conundrum: a blueprint of mental action, agency, and control

Dvija Mehta, Reminiscence Pvt Ltd; University of Cambridge; Eindhoven University of Technology, England

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11:00-11:30--------

Title: Precision in Pediatric Epilepsy: Systematic Review and Meta-Analysis of Diagnostic Tools and Treatment Outcomes

Eslam Abady, Tanta University, Egypt

11:30-12:00--------

Title: Investigating the Role of Intravoxel Incoherent Motion Diffusion-Weighted Imaging in Evaluating Multiple Sclerosis Lesions

Othman I Alomair, King Saud University, Saudi Arabia

12:00-12:30--------

Title: Family Relationships and Executive Functions in Tunisian Children

Sleh Eddine Saadi, Mohamed Tahar Maamouri Hospital, Tunisia

12:30-13:00--------

Title: Behavioral effects of a nicotine-associated context on fear memory extinction

Jiayue Pan, Wuhan University of Science and Technology, China

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13:00-13:30--------

Title: Multidisciplinary management of facial nerve palsy: surgical and logopedic rehabilitation

Marco Bonali, University Hospital of Modena, Italy

Lunch @ Restaurant (13:30- 14:00)

Day 2

FRIDAY

4th International symposium on Cognitive Neuroscience and Psychology

September 11-12 | 2025 in Barcelona, Spain

Technical Session-II (14:00-17:30)

14:00-14:30--------	**Title: Prevalence of protective levels of anti-HBs antibodies among 15-17 year old adolescents at Kawempe division Kampala-Uganda** **Joan Nambafu,** Makerere University,College of Health Sciences, Uganda
14:30-15:00--------	**Title: The Digital Mind: How Technology Shapes Cognition and Decision-Making in Medical Training** **Krish Jindal,** All India Institute of Medical Sciences, India
15:00-15:30--------	**Title: Emotions and decision-making in boardrooms – a systematic review from behavioral strategy perspective** **Rosine Hasson Marques,** The Catholic University of Paraná, Brazil
15:30-16:00--------	**Title: Unretirement: Motivational Factors Among Financially Independent Seniors** **Bettina Falckenthal,** University of Aveiro, Portugal
16:00-16:30--------	**Title: A Comparative Study on the Visual Evoked Potentials P100 in 36 Children with Learning Disorder** **Jishui Zhang,** Department of Mental Health, Beijing Children's Hospital, Capital Medical University, Children's National Medical Center, Beijing, China; Department of Mental Health, Xinjiang Children's Hospital, China
16:30-17:00--------	**Title: Use of the Assessment of Caregiver Experience with Neuromuscular Disease(ACEND) in Spinal Muscular Atrophy** **Laurey Brown,** Ann and Robert H. Lurie Children's Hospital, United States
17:00-17:30--------	**Title: Adolescent Body Perception and Emotional Well-Being: The Protective Role of Physical Activity** **Cesar Agostinis-Sobrinho,** Klaipeda University, Lithuania
17:30-18:00--------	**Title: Exploring the Relationship among Ethical Leadership, Psychological Safety, Conflict Management Strategies, and Job Performance: The Moderating role of Inclusive Environment** **Sher Bano,** Taiyuan University of Technology, China

Panel discussions

Day 2 Concludes

4th International symposium on Cognitive Neuroscience and Psychology

September 11-12 | 2025 in Barcelona, Spain

Christopher Adams[1], **MD, MS,** Greg Fulton[2], BM

[1]University of Tennessee Health Science Center, Memphis, TN, US
[2]Seattle Pacific University, Seattle, WA, US

A Cross-over Pilot Study on the Effects of Classical Guitar Instruction on Motor and Non-Motor Symptoms in People with Parkinson's Disease

Background
A randomized post cross-over study with 26 participants found positive changes in motor and non-motor symptoms in people with Parkinson's disease (PwPD) after six weeks of group classical guitar sessions but not individualized physical therapy.

Objective
Determine if group instruction of PwPD in classical guitar specifically improved motor function, mood, and quality of life compared to group exercise in a non-randomized cross-over pilot study.

Methods
Eighteen PwPD were enrolled and 15 completed the study. Group 1 (N=10) received guitar instruction, then group exercise. Group 2 (N=8) received group exercise then guitar instruction. Assessments were at baseline, six weeks, and 12 weeks at the American Parkinson's Disease Association Headquarters Northwest Chapter. The groups were combined for analysis by two-tailed paired t-tests due to low sample size. Assessments included the Movement Disorder Society-Unified Parkinson's Disease Rating Scale (MDS-UPDRS) motor sub-section, Hoehn and Yahr scale, Parkinson's Disease Questionnaire-39 (PDQ-39), Apathy Evaluation Scale-Self (AES-S), and Beck Depression Inventory II (BDI-II).

Results
MDS-UPDRS motor scores decreased compared to pre-test scores with group guitar instruction (-5.3 points, $p<0.001$), but not group exercise (-0.47 points, $p=0.85$). BDI-II scores decreased by 2.13 ($p=0.08$) and 1.87 points ($p=0.02$) with group guitar instruction and group exercise, respectively. PDQ-39 scores decreased by 1.93 ($p=0.02$) and 2.52 ($p=0.02$) points with group guitar instruction and group exercise, respectively. AES-S scores decreased with group exercise (2.40 points, $p=0.03$) but not group guitar instruction (-2.4 points, $p=0.26$).

Conclusions
Group guitar instruction could potentially help with both motor and non-motor symptoms in PwPD. There appears to be a specific effect of group guitar instruction on MDS-UPDRS motor scores that is not due to regular meetings and general exercises. This unfunded study was registered at ClinicalTrials.gov (NCT05917704).

Keywords: music-based treatment, Parkinson disease, apathy, depression, guitar-based treatment, rhythm-based treatment, non-motor symptoms, MDS-UPDRS

ISBN: 978-1-917892-19-3

doi.org/10.51219/URForum.2025.Christopher-Adams

Biography

Dr. Christopher Adams is an assistant professor of neurology at the University of Tennessee Health Science Center. He is also a movement disorder neurologist at Methodist University Hospital. His medical degree was completed at Texas Tech Paul L Foster School of Medicine in 2017. His neurology residency was completed at the University of Texas McGovern Medical School at Houston in 2021. He completed his movement disorder fellowship at the University of Washington School of Medicine in 2024.

Dr. Adams specializes in biomarkers and disease-modifying therapies for people with Parkinson's disease (PwPD). With a background in Movement Disorders and training in basic science research, he brings expertise in study design and data analysis for biomarker studies in PwPD to the University of Tennessee Health Science Center. He has served as the principal investigator on two internal grants and a community-funded study at the University of Washington. His collaborations have included phase I and II clinical trials, as well as various other studies that have resulted in peer-reviewed publications and abstracts

ISBN: 978-1-917892-19-3

doi.org/10.51219/URForum.2025.Christopher-Adams

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[1]Alzheon, Inc., Framingham, MA, USA (*Presenting Author); [2]Alzheimer's Research and Treatment Center, Wellington, FL USA, [3]University of Rochester School of Medicine and Dentistry, Rochester, NY; [4]Barrow Neurological Institute, Phoenix, AZ; [5]Toronto Memory Program, Toronto Canada; [6]Re:Cognition Health, London, UK; [7]Ace Alzheimer Center, Barcelona, International University of Catalunya, Barcelona, Spain.

Efficacy and Safety of Oral Valiltramiprosate in APOE4/4 Homozygotes with Early AD: Topline Results from APOLLOE4 Phase 3 Trial

Background

Valiltramiprosate (ALZ-801) is an oral inhibitor of amyloid oligomer formation. Tramiprosate (active agent in ALZ-801) had shown promising efficacy signals with favorable safety in 1300 APOE4 carriers with AD, with no observed ARIA-E. This trial evaluated Valiltramiprosate in APOE4/4 homozygotes with Early AD.

Methods

This 78-week double-blind, placebo-controlled, two-arm trial that randomized 325 homozygotes (162 to placebo, 163 to 265 mg BID), stratified by MCI (MMSE 27-30) or Mild AD (MMSE 22-26). MRI (1.5/3 Tesla) were conducted every 26 weeks and analyzed by Clario Inc. The clinical outcomes were ADAS-Cog13 (primary), CDR-SB (key secondary) and DAD (disability assessment for dementia, secondary). Hippocampal volume (HV) was the main imaging outcome. MMRM was the primary analysis model.

ISBN: 978-1-917892-19-3

doi.org/10.51219/URForum.2025.Martin-Tolar

Results

Safety population (N=325) was 51% females, 90% Caucasian, mean age 68 years, MMSE 25.6, 39% with MCI (MMSE 27-30) and 30% with baseline microhemorrhages and/or siderosis. In the full analysis set (N=320), the placebo-adjusted least-square mean (LSM) difference in change from baseline (CBL) on ADAS-Cog13 favored drug non-significantly (delta=-0.50; p=0.61, 11% vs placebo CBL); CDR-SB and DAD numerically favored drug by 23% and 29%, but HV favored drug significantly (74 mm^3, nominal p=0.017, 18% less atrophy). Prespecified Mild AD showed small nonsignificant clinical effects favoring placebo, but showed numerical benefit on HV (51 mm^3, 12% p= 0.115). In prespecified MCI, all outcomes favored drug (nominal p-values): ADAS-Cog13= -2.14 (p=0.041; 52%); CDR-SB= -0.65 (p=0.053, 104%); DAD= 6.09 (p=0.016, 96%); and HV= 108 mm^3 (p= 0.004, 26% less atrophy). Nausea (mostly mild) was the most common adverse event; the incidence of ARIA-E was the same as placebo.

Conclusions

In the overall population, ADAS-Cog13 did not achieve significance, but the hippocampus showed a significant 18% slowing of atrophy. The pre-specified Mild AD group showed trends to HV atrophy slowing that did not translate to clinical benefits. The pre-specified MCI group showed significant 28% HV atrophy slowing with meaningful cognitive and functional benefits and positive trends on several secondary clinical outcomes. Overall safety was favorable with no increased ARIA. In the high-risk APOE4/4 population, this positive benefit-risk profile supports valiltramiprosate's potential as an oral disease-modifying treatment for APOE4/4 homozygotes with MCI.

Biography

Dr. Tolar serves as the Founder, President & CEO of Alzheon. Prior to founding Alzheon in June 2013, Dr. Tolar held executive positions in several life sciences companies, where he has successfully established and grew new companies, business areas and product opportunities. Dr. Tolar served as President & CEO of Knome, Inc., where he led the development of human genome interpretation systems and services for academic, pharmaceutical and clinical clients, as President & CEO at NormOxys, Inc., where he built the business for novel cancer therapeutics, and as Chief Scientific Officer and Chief Business Officer at CoMentis, Inc., where he developed the first clinical-stage beta secretase inhibitor platform for Alzheimer's disease and negotiated a collaboration with a potential value of $1.1 billion with Astellas Pharma in 2008. Dr. Tolar held a variety of clinical development and business leadership positions at Pfizer, where he was instrumental in a wide range of business transactions, including acquisition of Rinat Neuroscience for $500 million in 2006, and directed programs through all stages of clinical development and FDA approval including NDA filings.

ISBN: 978-1-917892-19-3

doi.org/10.51219/URForum.2025.Martin-Tolar

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3Veterinary Research Institute, Brno, Czech Republic.

Modulation of symptoms of autism spectrum disorders

Autism is a congenital developmental disorder characterized by abnormal social interaction, persistent repetitive patterns of behavior, and impaired communication skills. Autism appears before the third year of age. It belongs to autism spectrum disorders (ASD). There is currently no treatment for ASD that provides significant improvement in core symptoms. However, recent studies suggest that ASD is associated with gut dysbiosis; the modulation of gut microbiota in children with ASD may improve the manifestation of ASD symptoms. Here we present a randomized, double-blind, placebo controlled pilot study demonstrated that the ASD suffering children have significantly modified gut microbiome that is converted to nearly neurotypical one by supplementation of children with biological response modifier Juvenil, which is a molecular complex prepared by alcohol/ether extraction of bovine blood. In parallel, Juvenil positively modulate children´s autism symptoms in the categories of motor manifestations, visual reactions, fear and nervousness, non-verbal communication and level and activity. This pilot study has been registered by the Ethics commission of the University Hospital Hradec Kralove, Czech Republic, No.: 202005 S09P, registered in May 12th 2020.

Keywords: autism, gut microbiome, biological response modifier, neuropsychology.

Biography

The author's dominant topic is infection biology oriented towards host-pathogen interactions with a special focus on early innate immune responses of hosts. A parallel topic is basic research on modulators of biological responses.

ISBN: 978-1-917892-19-3

doi.org/10.51219/URForum.2025.Klara-Kubelkova

Jean-Louis Adrien1 *, Éric Thiébaut2 and Romuald Blanc1,3 on behalf the Collaborative Group

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2 Lorrain Laboratory of Psychology and Neurosciences of Behaviors' Dynamics (2LPN), University of Lorraine, Nancy, France. 3Research Unit UMR 1253, iBrain, University of Tours, INSERM Group "Autism", Tours, France.

Cognitive, socio-emotional and adaptive profile development in adults with autism spectrum disorders and severe intellectual disability

Specific and validated developmental assessments centered on cognitive and socio-emotional (CSE) abilities and adaptive behavior (AB) are necessary to implement personalized behavioral and functional intervention programs for adults with autism spectrum disorders (ASDs) and severe intellectual disabilities (IDs), aiming to enhance their social communication and autonomy. The study objective was to describe these individuals' cognitive, socio-emotional and adaptive development profile, its heterogeneity and its relations between all domains.

The Socio-emotional Cognitive Evaluation Battery (SCEB-A), a psychometrically validated tool for adults with ASD and severe ID and developmental ages under two years, and the Vineland-II scales were applied to 97 adults (64 men and 33 women with a mean age of 36 years). These adults were recruited from 18 French medico-social services dedicated to this population. The participants were examined by trained psychologists using SCEB-A and familiar professionals using the Vineland-II questionnaire. The CSE profile of this group of adults revealed lower developmental levels in some domains, such as expressive language, vocal and gestural imitation, and symbolic play, and higher developmental levels in spatial relations, behavior regulation, joint attention, and affective relation. The AB profile was characterized by a better development level in Daily Life than Communication and Socialization domains. The mean AB development level was better than CSE. There were some correlations between several CSE and AB domains attesting relationships between some functional behaviors and abilities.

The SCEB-A, novel instrument for adults with ASD and severe ID is useful and relevant for assessing this clinical population's cognitive and socio-emotional development. Associated to an adaptive development assessment, these developmental evaluations enable professionals to implement personalized educative intervention programs and cognitive and social remediation, in adults, including aging adults.

Keywords: Autism spectrum disorder; Severe intellectual disability; Socio-emotional Cognitive Evaluation Battery for Adults; Vineland-II; Profiles of cognitive, socio-emotional and adaptive development

ISBN: 978-1-917892-19-3

doi.org/10.51219/URForum.2025.Jean-Louis-Adrien

Biography

Psychologist for 24 years in a university child psychiatry department (CHU de Tours), which pioneered the first neurodevelopmental research on autism in France. Subsequently, professor of clinical psychology and psychopathology at Paris Descartes University for 20 years, supervising 20 doctoral theses in psychology. In collaboration with university colleagues, established a research laboratory focusing on psychopathology and health processes, as well as teaching units on developmental psychopathology and autism, including a professional degree program for supporting individuals with autism. Conducted research on early signs of autism based on home movies studies and developed behavioral and developmental assessment tools for autism. Notably, author of the Socio-emotional Cognitive Evaluation Battery (SCEB) for children and adults (SCEB-A) published by Pearson-France ECPA.

ISBN: 978-1-917892-19-3

doi.org/10.51219/URForum.2025.Jean-Louis-Adrien

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4Psychology Research Center (CIPsi), School of Psychology, University of Minho, Braga, Portugal.

Spontaneous Synchrony in Friends Dyads: The Role of Social Settings and Ambient Odors

Interpersonal synchrony, defined as the temporal coordination of movements between individuals, plays a central role in social bonding, cooperation, and trust. While the influence of social context on synchrony has been well documented, little is known about how sensory environments—particularly ambient odors—may modulate this coordination. This study investigated whether a pleasant ambient odor could influence movement synchrony between individuals during social interactions. Twenty-five same-sex friend dyads participated in three interaction tasks designed to elicit distinct social atmospheres: fun, cooperative, and competitive. These tasks were performed under two conditions: with the diffusion of a pleasant, stimulating peppermint odor, or without any odor (control). Interpersonal synchrony was quantified using motion energy analysis and windowed cross-correlation of video recordings. As expected, synchrony levels were significantly higher in the fun condition compared to cooperative and competitive contexts, replicating prior findings on the impact of affective atmosphere. However, no significant effect of ambient odor was found on in-phase synchrony across conditions. These results suggest that while social context robustly shapes interpersonal coordination, ambient olfactory stimulation—at least when task-irrelevant—may not significantly influence motor synchrony between individuals. Ongoing analyses using functional near-infrared spectroscopy (fNIRS) aim to explore inter-brain synchrony during these interactions. Preliminary neurophysiological results will be presented, offering further insight into how shared brain activity may or may not be modulated by ambient olfactory cues.

Keywords: Behavioral synchrony, Olfactive stimuli, In-phase synchrony, Anti-phase synchrony, Cooperation, Competition

Biography

I am a PhD candidate at SCALab UMR 9193, University of Lille, under the supervision of Prof. Yvonne Delevoye-Turrell, in collaboration with the neurotech start-up Seenel Imaging. My thesis, funded by the Hauts-de-France Region, the University of Lille, and Seenel Imaging, focuses on how olfactory stimuli modulate cognitive effort and affective states, using combined EEG-fNIRS technology in ecologically valid settings. Passionate about affective and cognitive sciences, I explore the role of scent in shaping perception and brain dynamics. I also teach cognitive science and engage in public outreach, especially through Xperium, to make research more accessible.

ISBN: 978-1-917892-19-3

doi.org/10.51219/URForum.2025.Marine-R-Coeugnet

4th International symposium on Cognitive Neuroscience and Psychology

September 11-12 | 2025 in Barcelona, Spain

Yi Xu1, Xiaodi Wang2, Muhan Cao2, **Qinghua Hou2***

1.Department of Rehabilitation medicine, the seventh Affiliated Hospital, Sun Yat-sen University. Shenzhen, China,
2.Department of Neuroly, Clinical Neuroscience Center, the seventh Affiliated Hospital, Sun Yat-sen University. Shenzhen, China.

Covert CSF circulation impairment: concept, clinical insights and primary attempt to treat and detect

Metabolic waste and macromolecules in the brain are primarily cleared by the flow of cerebrospinal fluid (CSF), which drains through lymphatic pathways in the dura mater, skull base, and spinal meninges. This clearance system, though sophisticated, is structurally vulnerable and prone to stagnation. Aging or disease can reduce clearance capacity or increase waste production, raising the risk of CSF circulation impairment. Early-stage CSF circulation disorders are often subclinical, yet they may silently impair brain health and cognitive function before symptoms appear. Early detection and intervention are thus essential. However, covert CSF circulation impairment can be difficult to identify. Advanced MRI techniques show promise for detection by tracing water molecule movement, distinguishing lymphatic fluid from surrounding tissues, and dynamically assessing CSF flow. These imaging advances are expected to drive future research on covert CSF circulation disorders. Increased understanding in this area will boost research into cognition and sleep and support development of non-surgical therapies. In our presentation, we will highlight our preliminary interventions using enhanced external counterpulsation and our MRI-based evaluation approaches.

Keywords: Cerebrospinal fluid; Glymphatic; Lymphatics; enhanced external counterpulsation; Magnetic Resonance Imaging

Biography

Dr. Hou, M.D., is a Chief Physician , Received postdoctoral training at UVA and was a visiting scholar at HKU. He holds leading roles in multiple neurology societies and has led six research projects

ISBN: 978-1-917892-19-3

doi.org/10.51219/URForum.2025.Qinghua-Hou

4th International symposium on Cognitive Neuroscience and Psychology

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Lee Ya Kim[1,†], Eun Ji Kang[1,†], Dae Ki Hong[2], Seung Hoon Jeon[1], Yumin Heo[1] and Eun Hee Ahn[1, 3]*

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[2] Department of Pathology and Laboratory Medicine, Emory University School of Medicine, Atlanta, GA 30322, USA

[3] Neurology, College of Medicine, Hallym University, Chuncheon 24252, Korea

Netrin-4 Mitigates Tau Pathology in Alzheimer's Disease Across Hippocampal and Myenteric Neurons via UNC5A

Alzheimer's disease (AD) neuropathological hallmarks include senile plaques with aggregated amyloid beta as a major component, neurofibrillary tangles (NFTs) containing truncated and hyperphosphorylated tau, significant neuronal loss, and chronic neuroinflammation. However, molecules associated with Tau and early Alzheimer's disease pathology remain largely unexplored. Notably, netrin-4 (NTN-4) is highly expressed in the healthy adult subiculum, a region located at the base of the hippocampus between the hippocampus proper and the entorhinal cortex. Protein-protein interactions between NTN-4 and Tau (4R2N) using ClusPro 2.0 revealed multiple interaction sites between the Tau N1 and NTN-4 NTR protein domains. This observation prompted us to investigate a role of the NTN-4/ UNC5 pair in hippocampal neurons by assessing the expression levels of NTN-4 and Tau in human AD patients, cellular models, and mouse models of AD. We infected Tau (4R2N) virus at primary hippocampal neurons and HT-22 cell line, and performed stereotaxic injection of Tau virus into the mouse hippocampus region to observe differences in NTN-4, UNC5A-D, DCC, and DSCAM expression levels with tauopathy compared to control group. Surprisingly, the overexpression of Tau led to NTN-4 depletion in hippocampal neurons, which subsequently induced apoptosis in myenteric neurons. In addition, chronic dextran sulfate sodium (DSS)-induced gut inflammation further reduced Netrin-4 expression and exacerbated Tau pathology in MAPT mice, leading to hippocampal structural damage and cognitive impairments. Furthermore, we observed NTN-4 depletion in brain samples from AD patients but not in those from healthy controls. These results highlight the critical role of NTN-4 in inhibiting Tau pathology during Alzheimer's disease progression and reveal a mechanistic link between gut inflammation and neurodegeneration through the modulation of NTN-4 and Tau, underscoring the therapeutic potential of targeting NTN-4/UNC5A signaling in AD.

Keywords: NTN4, neurofibrillary tangles, Alzheimer's disease, Tau, amyloid beta, UNC5A, hippocampal neuron

Acknowledgement

This research was supported by Basic Science Research Program through the Research Foundation of Korea National (NRF) funded by Ministry of Education (2022R1C1C1006166)

ISBN: 978-1-917892-19-3

doi.org/10.51219/URForum.2025.Lee-Ya-Kim

Biography

I am an undergraduate student in the Department of Biomedical Sciences at Hallym University, where I began my studies in 2022. Since 2023, I have been conducting research in the Department of Physiology at Hallym University College of Medicine under the supervision of Prof. Ahn. Currently in my second year of research, I focus on neurodegenerative diseases, particularly Alzheimer's and Parkinson's disease. My research aims to uncover the underlying mechanisms of these disorders and explore potential therapeutic approaches. Through my work, I strive to contribute to advancements in neuroscience and the development of improved treatments for neurodegenerative diseases.

ISBN: 978-1-917892-19-3

doi.org/10.51219/URForum.2025.Lee-Ya-Kim

4th International symposium on Cognitive Neuroscience and Psychology

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Aleš Macela[1], Klára Kubelková[1], Jela Hrnčiárová[2], Josef Fusek[1]

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[2]Psychiatric Clinic, Charles University, University Hospital, Hradec Králové, Czech Republic.

Modulation of autistic symptoms using dietary supplement of a psychobiotic nature: A Case Report

Antidepressants, antipsychotics, anti-anxiety drugs, or sleeping pills are most often used to treat autism spectrum disorders. However, drug treatment is often poorly tolerated. Since a certain association of autism with gut microbiota dysbiosis has been demonstrated, modulation of dysbiosis with prebiotics, probiotics, symbiotics or psychobiotic preparations could contribute to alleviation of some categories of autism manifestations. The food supplement Juvenil represents a complex of natural molecules containing free amino acids, including all the essential ones, short peptides, nucleotides, and traces of phospholipids. Juvenil helps normalize the intestinal microbiome and eliminates dysbiosis, which, through the microbiota–gut–brain axis, is reflected in modulation of the expression of functional systems of the body. Here we present one of the cases of alleviation of autism symptoms after application of the Juvenil food supplement. Thomas is a 14-year-old boy with a pervasive developmental disorder specified as autism spectrum disorder (Asperger's syndrome), which was diagnosed at 4 years of age. Thomas, after the Juvenil supplementation, rid himself of dark thoughts, lost his negative attitudes toward the world around him, and began to perceive his surroundings and activities around him positively. The anxiety has also disappeared. Thomas, who was only interested in himself, has stopped being egocentric. He now shows interest about his mother and all family members every day. He wants to receive more information. Patient perspective: His ability to understand human feelings has improved, he is better able to engage in conversation with adults and he is not verbally aggressive. He is able to be with children and adults; he is interested in being part of events and to participate in independent decision making.

Keywords: Autism Spectrum Disorger, Food Supplement, Juvenil

Biography

The author's dominant topic is infection biology oriented towards host-pathogen interactions with a special focus on early innate immune responses of hosts. A parallel topic is basic research on modulators of biological responses. The author is also a recognized expert in the field of biosecurity and biological defense, he was a member of working groups of the European Defense Agency and NATO task forces. The author was the founder of the Institute of Immunology of the Military Medical Academy and the Center for Advanced Studies of the University of Defense.

ISBN: 978-1-917892-19-3

doi.org/10.51219/URForum.2025.Ales-Macela

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Inter-Organ Crosstalk in Neurodegenerative Diseases: Insights from Brain-Body Interactions.

The vagus nerve, a critical component of the peripheral nervous system, is essential for regulating various physiological functions, including heart rate, immune responses, and digestive processes. In neurodegenerative diseases such as Parkinson's disease (PD) and Alzheimer's disease (AD), increasing evidence suggests that dysfunction in the vagus nerve contributes to early non-motor symptoms, particularly those affecting the digestive system. Gastrointestinal disturbances, including constipation and delayed gastric emptying, are frequently observed in Parkinson's disease, often preceding the onset of motor symptoms. Similarly, early-stage Alzheimer's patients may exhibit gastrointestinal abnormalities linked to impaired vagal signaling. This presentation will explore the intricate crosstalk between the vagus nerve and the central nervous system, focusing on how these interactions affect brain health and disease progression. Emphasis will be placed on the vagus nerve's role in modulating inflammatory pathways, gut-brain communication, and metabolic regulation, revealing potential therapeutic targets for neurodegenerative conditions. Understanding the connection between vagal dysfunction and digestive system disorders could pave the way for early diagnostic markers and novel interventions aimed at mitigating disease progression through the regulation of systemic inflammation and gut microbiota.

Acknowledgement

This research was supported by Basic Science Research Program through the Research Foundation of Korea National (NRF) funded by Ministry of Education (2022R1C1C1006166)

Keywords: Akkermansia muciniphila, BDNF, Serotonin, Gut-organ axis, Liver injury, Cognitive impairment

ISBN: 978-1-917892-19-3

doi.org/10.51219/URForum.2025.EuN-Hee-Ahn

Biography

I earned my Doctoral degreefrom Hallym University in 2014 with a dissertation titled “Neuroprotective Effects of Cell-Permeable Proteins for Parkinson’s Disease.”Following my doctoral studies, I conducted research as a Postdoctoral Fellow at the Department of Neurology, Harvard Medical School, where I studied Huntington’s diseaseuntil 2016.After that, I joined the Department of Neuropathology, Emory University School of Medicine, where I actively pursued research on dementia and Parkinson’s diseaseas both a Postdoctoral Fellow and later as an Instructor.To date, I have published a total of 61 research papers, including 10 articles as the first or corresponding author in journals ranked within the top 5% of the Journal Citation Reports (JCR)over the past five years.

Since 2021, I have been serving as a faculty memberin the Department of Physiology at Hallym University College of Medicine, where I focus on identifying pathogenic factors and developing early diagnostic tools for neurodegenerative diseases, including Alzheimer’s and Parkinson’s disease. Moreover, I am actively involved in educating medical students.

My recent research primarily explores the brain-multi-organ communication mechanisms mediated by the vagus nerve, aiming to identify potential therapeutic candidates for early intervention in the progression of neurodegenerative diseases.

ISBN: 978-1-917892-19-3

doi.org/10.51219/URForum.2025.EuN-Hee-Ahn

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From Molecular to Clinical Implications of Sleep-Related Breathing Disorders on the Treatment and Recovery of Acute Stroke: A Scoping Review

Background

The aim of this review is to map research into the molecular mechanisms linking sleep-related breathing disorders (SRBDs) and acute stroke and their clinical and therapeutic implications and to identify existing knowledge gaps to suggest new areas of research.

Methods

This review was conducted according to the PRISMA extension for scoping reviews (PRISMA-ScR) and a predetermined protocol shared among all authors.

Results

The review of the thirteen studies analyzed provides a focused view of the molecular features about interaction between obstructive sleep apnea (OSA) and acute stroke. Our review identifies and highlights the biomarkers most frequently found to be associated with acute stroke, SRBDs, and their clinical repercussions.

ISBN: 978-1-917892-19-3

doi.org/10.51219/URForum.2025.Karol-Uscamaita

Conclusions

The association between the presence of sleep apnea, especially in its severe form, and elevated levels of inflammatory markers in patients with acute stroke is highlighted and new research topics in this area are proposed.

ISBN: 978-1-917892-19-3

doi.org/10.51219/URForum.2025.Karol-Uscamaita

4th International symposium on Cognitive Neuroscience and Psychology

September 11-12 | 2025 in Barcelona, Spain

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Evaluation of a Cognitive Intervention using Virtual Reality for People with Intellectual Development Disorder

People with intellectual disabilities have severe difficulties in carrying out Activities of Daily Living by themselves, limiting their independence.

In a increasingly technological world, it is essential to explore new methodologies that promote their quality of life.

Therefore, the aim of this study was to evaluate the effectiveness of a cognitive stimulation programme using Virtual Reality (VR) for people with Intellectual Developmental Disorder (IDD), to develop their functionality.

The study took a sample of 8 participants with IDD diagnosis from APPACDM-Portugal, using an experimental design with two groups.

The experimental group completed 8 sessions of a VR-based task, having to organise a virtual fridge with 10 food items, while the control group only benefited from traditional interventions.

Before and after the experience, all participants underwent a pre and post-test assessment for cognitive domains, such as selective attention, decision making, visual memory and planning.

The experimental group also participated in a final transfer of learning task, organising a real-context fridge that contained images of the same foods, with the same layout and categories as the virtual fridge.
The sample results were based on a statistical analysis using Wilcoxon non-parametric test, suggesting no statistically significant differences between moments.

However, qualitative evidence indicates promising outcomes. Participants progressively improved accuracy, while reducing the execution time across sessions.
In conclusion, this pilot study contributes to the emerging literature encouraging how the specific use of VR has the potential to complement the therapeutic approach, facilitating the practical application and consolidation of acquired knowledge and skills.

Keywords: Virtual Reality (VR), Intellectual Developmental Disorder (IDD), Cognitive Stimulation, Activities of Daily Living, Learning Transfer

ISBN: 978-1-917892-19-3

doi.org/10.51219/URForum.2025.Mararida-Oliveira

Biography

I am a dedicated and responsible person, willing to accept new challenges to broaden my knowledge and horizons.

I have the conviction that we all deserve dignity, quality of life and happiness, and so I integrate these values into my professional practice in order to maximise each client's potential.

I have a keen interest in Neurodevelopmental Disorders, Neurocognitive Disorders and Trauma-Related Disorders, seeking to intervene at a cognitive, behavioural and functional level with new technological approaches, such as Virtual Reality.

I have a Bachelor degree in Psychology and a Master's degree in Applied Neuropsychology.

ISBN: 978-1-917892-19-3

doi.org/10.51219/URForum.2025.Mararida-Oliveira

4th International symposium on Cognitive Neuroscience and Psychology

September 11-12 | 2025 in Barcelona, Spain

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Burnout in Assisted Reproduction Professionals: The Influence of Stressors in the Workplace

Background/objectives: Most of the research in assisted reproduction has focused on the stressful situation experienced by women or couples looking for a desired pregnancy; however, the stress experienced by assisted reproduction professional teams is seldom studied. The present study aims to evaluate burnout and its relationship with workplace stressors among assisted reproduction professionals. **Methods:** A cross-sectional design was used to conduct an online self-assessment national survey, sent to all members of the Spanish Association for Fertility. The questionnaire contained sociodemographic and occupational questions about stressors in the workplace and the Maslach Burnout Inventory (MBI-HSS) to assess the three subscales of burnout: emotional exhaustion, depersonalization and personal accomplishment. **Results:** The percentages showing high emotional exhaustion and depersonalization in the whole sample were 41.8% and 43.2%, respectively. Additionally, low personal accomplishment was displayed in 42.6% of the respondents. Embryologists stand out for presenting the highest percentages of burnout (emotional exhaustion = 72.1%; depersonalization = 48.1%; low personal accomplishment = 48.1%), whilst psychologists showed the lowest percentages in high emotional exhaustion (32.3%) and depersonalization (24%), and gynecologists in low personal accomplishment (28.5%). Working under pressure was the stressor most experienced by the sample (76.6%) and the one that better predicted the three subscales of burnout. **Conclusions:** This study highlights the close relationship between high levels of burnout and workplace stressors and shows the need to reduce workplace stressors to improve the well-being of professionals working in assisted reproduction, and, consequently, that of the patients they look after.

Keywords: assisted reproduction professionals; burnout; depersonalization; emotional exhaustion; personal accomplishment; working under pressure.

Biography

I am a General Health Psychologist, Psycho-oncologist and Fertility Psychologist. For the past 23 years I have dedicated my professional life to psychological care, carrying out cognitive-behavioural therapy in my practice or in multidisciplinary teams.I extended my training to the fields of Psycho-Oncology and Infertility with two Master's degree. Intense involvement in the Spanish Fertility Society, belonging to diferent interest groups as well as to the National Register of the SEF. I attend fertility-related events, working to raise awareness. I am currently doing my PhD at the University of Valencia in the Department of Clinical and Health Psychology

ISBN: 978-1-917892-19-3

doi.org/10.51219/URForum.2025.Raquel-Urteaga-Garcia

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Mind Over Miles: Cognitive Functioning and Health in Multi-Marathon Runners

Multi-marathoners are endurance athletes who complete numerous marathons over extended periods, often achieving hundreds of finishes. This study examined whether multi-marathoning is associated with domain-specific cognitive benefits, particularly in executive function, attentional control, and cognitive resilience, while also exploring potential cognitive trade-offs. Theoretical frameworks included Cognitive Reserve Theory, Lifespan Theory of Cognitive Development, and the Exercise-Cognition Interaction Model. A cross-sectional study assessed 130 multi-marathoners (mean age = 53.3 years; 57% male) using the Sustained Attention to Response Task (SART), Choice Reaction Time (CRT) test, and Mini-Mental State Examination (MMSE). Cognitive performance was compared to normative data from The Irish Longitudinal Study on Ageing (TILDA). Principal Component Analysis (PCA) and K-Means clustering identified cognitive subgroups. Results showed that multi-marathoners had significantly fewer SART omission errors and faster CRT cognitive and motor reaction times than TILDA controls (all $p < 0.001$). MMSE scores were significantly higher overall ($p < 0.001$), with similar patterns by gender. Clustering revealed two cognitive subgroups: one with superior attentional control, response inhibition, and decision-making efficiency (associated with higher educational attainment) and another with greater cognitive variability and lower educational attainment. No significant differences were observed in age or gender distribution between clusters. Findings support the Exercise-Cognition Interaction Model, showing that multi-marathoning is linked to enhanced executive function. Differences between cognitive subgroups underscore the moderating role of cognitive reserve, particularly education, in shaping outcomes. These results suggest that while endurance training supports cognitive resilience, individual variability must be considered when promoting long-term brain health among endurance athletes.

ISBN: 978-1-917892-19-3

doi.org/10.51219/URForum.2025.Leo-Lundy

Keywords: Executive, Endurance , Cognition, Reerve, Attention , Inhibition

Biography

Leo Lundy is a computer scientist and serial entrepreneur who returned to academia to explore his lifelong passion: multi-marathoning. With over 400 marathon completions personally, he specialises in the psychology and cognitive performance of endurance athletes as they age. His research applies latent class analysis to identify hidden cognitive perforamnce subgroups within this high-performing population. Leo's work aims to document the lived realities of multi-marathoners and influence policy to make the sport safer and more sustainable. He combines technical expertise, statistical precision, and first-hand experience, and has presented his findings at major international conferences in sport science globally.

ISBN: 978-1-917892-19-3

doi.org/10.51219/URForum.2025.Leo-Lundy

4th International symposium on Cognitive Neuroscience and Psychology

September 11-12 | 2025 in Barcelona, Spain

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Identification of a neuron-specific ferroptosis in the neurodegenerative mucopolysaccharidosis IIIB model

Mucopolysaccharidosis type IIIB (MPSIIIB or Sanfilippo B) is a lysosomal storage disorder marked by progressive neurodegeneration resulting from the accumulation of abnormal heparan sulfate oligosaccharides (HSOs) in the brain. Although neuroinflammation and brain iron accumulation have been reported in both patients and animal models, the mechanisms underlying selective neuronal vulnerability remain largely unresolved.

Our recent findings using an MPS IIIB mouse model reveal compelling evidence suggesting that ferroptosis, an iron-dependent, lipid peroxidation-driven form of regulated cell death, may contribute to the neurodegenerative process of MPSIII. We identified marked brain iron accumulation, disrupted iron transport and storage mechanisms, and a collapse of antioxidant defense systems, notably through impaired activity of the xCT/GPX4 axis. Additionally, we observed neuron-specific mislocalization of ferroportin (the major iron exporter) and elevated neuronal lipid peroxidation, both hallmarks of ferroptosis.

These results indicate a cell-autonomous iron dysregulation in neurons, likely exacerbated by pathological lysosomal expansion due to HSOs accumulation. Importantly, emerging studies have demonstrated that lysosomes can facilitate toxic iron release and promote ferroptosis, especially in cancer cells. In MPS IIIB, we propose that lysosomes may act as active contributors to ferroptotic neuronal death.

This lysosome-ferroptosis axis represents a novel and underexplored mechanism of neurodegeneration in MPS IIIB. Investigating the role of lysosomal iron handling in neuronal vulnerability is a priority for our team and collaborators, with the aim of identifying new therapeutic targets to slow neurodegeneration in affected individuals.

Keywords: Iron accumulation, Oxydative stress, Ferroptosis, Neurons, MPSIIIB

ISBN: 978-1-917892-19-3

doi.org/10.51219/URForum.2025.Mathilde-Larribau

4th International symposium on Cognitive Neuroscience and Psychology

September 11-12 | 2025 in Barcelona, Spain

Julia Bend, Anssi Öörni, Åbo Akademi

University, Turku, Finland

Numerosity Perception and Perceptual Load: Exploring Sex Differences Through Eye-Tracking

The study investigates sex differences in numerosity perception and visuospatial abilities in adults using eye-tracking methodology. We report the results of a controlled dual-task experiment that assessed the participants' visuospatial and numerosity estimation abilities. We did not observe sex differences in reaction times and accuracy. However, we found that females consistently underestimated numerosity. This underestimation correlated with higher perceptual load in females, as evidenced by shorter fixation durations and increased fixation rates. These findings suggest that perceptual load, rather than visual or spatial abilities, significantly influences numerosity estimation. Our study contributes novel insights into sex differences in both numerosity estimation and visuospatial abilities. These results provide a foundation for future research on numerosity perception across various populations and contexts, with implications for educational strategies and cognitive training programs.

Keywords: eye-tracking, attention, numerosity perception, sex differences, visuospatial abilities, perceptual load

Biography

I am currently a Doctoral Candidate and Researcher at Åbo Akademi University (2020–present), where I also serve as a Lecturer and Master's Thesis Supervisor since 2021. Alongside my academic work, I gained international research experience as a Visiting Researcher at the University of Lübeck from August 2023 to April 2024. Previously, I led initiatives in academic development as the Project Lead for Open Science at Åbo Akademi University (Jan 2022–Dec 2022). Before transitioning to academia, I built a strong professional foundation in the corporate sector, working as a Commercial Project Manager at Siemens AG (2013–2018) and as a Commercial Sales Group Leader at Ford Motor Company (2010–2012). I hold an MSc in Business Administration (Governance of Digitalisation) from Åbo Akademi University (July 2020) and I am currently pursuing a PhD in Information Systems at the same institution in Turku, Finland.

ISBN: 978-1-917892-19-3

doi.org/10.51219/URForum.2025.Julia-Bend

4th International symposium on Cognitive Neuroscience and Psychology

September 11-12 | 2025 in Barcelona, Spain

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Behavioral evaluation of propranolol on fear memory reconsolidation and extinction

Post-traumatic stress disorder (PTSD) is a prevalent and debilitating psychiatric condition characterized by maladaptive fear memories. Fear memory is regulated through two fundamental processes: reconsolidation, which maintains and strengthens retrieved memories, and extinction, which reduces conditioned fear responses through new learning. Pharmacological interventions targeting these processes have been investigated, with propranolol, a non-selective β-adrenergic receptor antagonist, proposed as a potential disruptor of reconsolidation. However, its efficacy remains uncertain. In this study, we employed a validated rat model of PTSD to examine the effects of propranolol on fear memory reconsolidation and extinction. Adult male Sprague-Dawley rats underwent auditory fear conditioning, followed by drug exposure and retrieval procedures. Subsequent freezing behavior was assessed to evaluate changes in conditioned fear. Our findings demonstrated that propranolol, at the tested doses, failed to interfere with the reconsolidation of fear memory. In extinction paradigms, propranolol likewise did not exert significant effects on the eduction of freezing behavior. These results indicate that propranolol is ineffective in disrupting reconsolidation or facilitating extinction under the experimental conditions tested. This study underscores the importance of distinguishing between reconsolidation and extinction in the study of fear memory and highlights the boundary conditions of pharmacological interventions targeting PTSD.

Keywords: nicotine, mecamylamine, boundaryconditions, acute administration, extinction, PTSD

Biography

I am a medical student at Wuhan University of Science and Technology with research experience in neuroscience and behavioral science. I have been involved in projects focusing on the gut-brain axis, PTSD, and depression. My skills include animal behavioral testing, electrophysiology, and basic bioinformatics. I am particularly interested in the neurobiological mechanisms of stress-related disorders and the role of the microbiota in mental health.

ISBN: 978-1-917892-19-3

doi.org/10.51219/URForum.2025.Jiayue-Pan

Dvija Mehta

University of Cambridge; Eindhoven University of Technology; Reminiscence Pvt Ltd

Brain-Computer Interface tool use and the Contemplation Conundrum: a blueprint of mental action, agency, and control

This paper approaches the role of intentional action in brain-computer interface (BCI) tool use to allow for an ethical discourse regarding the development and usage of neurotechnology. The exploration of mental actions and user control in BCI tool use brings us closer to understanding the philosophical underpinnings of intentions and agency for BCI-mediated actions. The author presents that under some theories of intentional action, certain BCI-mediated overt movements qualify as both voluntary and unintentional. This plausibly magnifies the ethical considerations surrounding BCI tool use. This problem is referred by the author as the contemplation conundrum. Thus, the paper proposes research scope for the neural correlates of intention formation and the neural correlates of imagination aimed at clarifying implementational control and safeguarding privacy of thought in BCI tool use.

Keywords: neurotechnology, mental action; implementational control; agency; neuro-ethics

Biography

Dvija Mehta is an ethicist of emerging technologies and a philosopher of mind, consciousness, and artificial intelligence. She received her formal education at the Leverhulme Centre for the Future of Intelligence, University of Cambridge, specialising in the ethics of AI, neuroscience, and emerging technologies. Her work on brain–computer interfaces (BCIs) has been published in Oxford Open Neuroscience, with preliminary versions featured by BBC Future. She has also spoken on the neuro-ethics of BCIs, including Neuralink, for platforms like CBC News. Dvija also advises technology companies on responsible innovation, focusing on safeguarding mental agency and cognitive integrity in an era of rapid neurotechnological development. Additionally, she is the founder of Reminiscence, a BCI company at the intersection of research and innovation.

ISBN: 978-1-917892-19-3

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The Diagnostic Value of Intravoxel Incoherent Motion Diffusion-Weighted Imaging in Evaluating Relapsing-Remitting Multiple Sclerosis

Background: Quantitative IVIM imaging, incorporating both diffusion- and perfusion-derived metrics, offers a promising imaging biomarker for clinical disability in MS. **Objectives:** This study aimed to evaluate IVIM ADC, D, D*, and f parameters in various types of MS lesions, including enhanced, non-enhanced, and black hole. In addition to the correlation and predictive values of IVIM MRI metrics with disability status, measured using the EDSS, in relapsing–remitting MS patients. **Methods:** This cross-sectional study retrospectively analyzed MRI data from 197 MS patients. Quantitative IVIM parameters were extracted from scans obtained using a 1.5 T MRI scanner. Clinical data were also obtained, including age, disease duration, number of relapses, DMT status, and need for mobility assistance. ROC analyses, including area under the curve, sensitivity, and specificity, were conducted to determine the cutoff values of IVIM parameters for distinguishing between the MS lesion groups. Bivariate analyses were conducted to compare mean values across subgroups. Pearson correlation was used to examine associations between EDSS score and imaging/clinical variables. Multiple linear regression was applied to identify independent predictors of EDSS score.

ISBN: 978-1-917892-19-3

Results: ADC, D, and D* maps demonstrated high sensitivity and specificity, whereas f maps exhibited low sensitivity but high specificity. This sensitivity suggests that these parameters may serve as potential diagnostic biomarkers, aiding in the identification and characterization of MS lesions. The bivariate analyses revealed that ADC, D, D*, and EDSS values were higher in patients over 50 years old, those with a longer disease duration, and those who required mobility assistance. Patients with longer disease duration and limited mobility had a higher number of MS lesions and relapses. The EDSS score exhibited positive Pearson correlations with ADC, D, D*, the number of MS lesions, and the number of relapses (p-value < 0.001). In the multivariate regression analysis, only the number of MS lesions and relapses emerged as independent predictors of EDSS score (p-value < 0.001). **Conclusions:** This study demonstrates the utility of IVIM parameters in evaluating alterations associated with MS impairment.

Keywords: relapsing–remitting multiple sclerosis (RR-MS); expanded disability status scale (EDSS); intravoxel incoherent motion (IVIM); disease-modifying treatment (DMT); disease duration; number of relapses.

Abbreviations

Multiple Sclerosis (MS), Magnetic Resonance Imaging (MRI), Intravoxel Incoherent Motion Diffusion (IVIM), Diffusion Weighted Imaging (DWI), Apparent Diffusion Coefficient (ADC), pure molecular diffusion (D), pseudo-diffusion (D*), perfusion fraction (f), Expanded Disability Status Scale (EDSS), disease-modifying therapy (DMT), Receiver Operating Characteristic Curve (ROC) analysis.

Biography

Dr. Alomair completed his PhD at the age of 34 at the University of Queensland, Australia. He is an assistant professor at King Saud University, Saudi Arabia. He has over 15 publications that have been cited over 200 times, and his/her publication H-index is 20, and he has been serving as an editorial board member of reputed journals.

ISBN: 978-1-917892-19-3

Sleh Eddine Saadi

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Family Relationships and Executive Functions in Tunisian Children

The influence of family dynamics on the development of executive functions in children is a central issue in developmental neuropsychology. This study involved 120 Tunisian children aged 7 to 12 years. Family dynamics were assessed using the 24-item Family Relationship Index (FRI), measuring cohesion, expressiveness, and conflict. Executive functions were evaluated through the Hayling Sentence Completion Test (inhibition), Trail Making Test – Part B (flexibility), Tower of London (planning), and Digit Span and Corsi Block-Tapping tasks (working memory). Among children from functional families, Spearman's correlations showed moderate, significant positive links between cohesion and both planning and flexibility. A weak, non-significant positive correlation was also found with working memory. No significant link was observed with inhibition. Expressiveness was generally weakly correlated with executive functions, apart from a moderate, significant association with flexibility. In children from dysfunctional families, conflict showed moderate, significant negative correlations with planning and inhibition. A weak, non-significant negative link was also observed with working memory. Conflict was also associated with lower academic performance. Across the total sample, school performance was significantly related to flexibility and planning, while links with inhibition and working memory were weak and non-significant. Mann–Whitney U tests revealed significant group differences, with children from functional families achieving better results in inhibition and planning tasks and having higher academic performance. A robust regression analysis identified cognitive flexibility as the only significant predictor of academic performance, independent of family dynamics. Planning and inhibition were not significant predictors. These findings underscore the importance of considering family climate in neuropsychological assessment and support the specific role of cognitive flexibility in children's academic success.

Keywords: Executive functions, Cognitive flexibility, Academic performance, Tunisian children

Biography

Sleh Eddine Saadi is a clinical psychologist and psychotherapist specializing in various therapeutic modalities, including hypnosis, psychodrama, and schema therapy. He holds a master's degree in clinical psychology from the University of Tunis and completed a Certificate of Advanced Studies in Brief Therapies at the Faculty of Medicine of Tunis. His main areas of interest include mental health, addictions, and cognitive development in children. He is currently working as a clinical psychologist and psychotherapist in the Mental Health Department at Mohamed Tahar Maamouri Hospital in Nabeul, Tunisia.

ISBN: 978-1-917892-19-3

Bettina Falckenthal, Cláudia Figueiredo, Manuel Au-Yong-Oliveira

University of Aveiro, Aveiro, Portugal Ana Palma-Moreira, Universida de Europeia

Unretirement: Motivational Factors Among Financially Independent Seniors

The demographic shift toward an ageing workforce poses critical challenges for organizations but also offers untapped opportunities. This study, *Unretirement: Motivational Factors Among Financially Independent Seniors*, explores the drivers that lead older professionals who are not financially compelled to work to re-engage in professional activity after retirement. Drawing on 36 semi-structured interviews with senior experts and employers, we identify six motivational patterns: intellectual challenge, application of expertise, social belonging, recognition, identity, and the pursuit of purpose.

The study also distinguishes between paid and voluntary engagement. While some seniors are motivated by the wish to give back to society, many perceive an implicit expectation to contribute without pay. Importantly, financial compensation is experienced as recognition that their expertise holds real value, underscoring the psychological significance of acknowledgment in later life. These findings highlight how late-career professionals' motivation is deeply intertwined with cognitive processes such as self-efficacy, identity formation, and intrinsic meaning-making. By reframing retirement not as withdrawal but as a stage of lifelong learning and development, the study supplements the NEURO-2025 theme of "Cognitive Processes and Mental Health in Diagnosis and Treatment" with a business and societal perspective. Our results illustrate that maintaining cognitive engagement through purposeful work can reinforce resilience, well-being, and mental health in older adulthood.

This presentation will discuss the implications of unretirement for organisational culture, leadership capabilities and intergenerational knowledge transfer, as well as societal challenges in ageing economies.

Keywords: Unretirement, motivation, purpose, identity, knowledge transfer

Biography

Bettina Falckenthal is a seasoned executive, consultant, and PhD researcher with more than 20 years of leadership experience across life sciences, healthcare, and technology. She has served as CEO and coowner of a high-growth consultancy in regulated product development and advises organizations on transformation, strategy, and people development.

Her doctoral research focuses on tacit knowledge transfer between senior experts and younger generations, linking organizational resilience with motivational processes.

Bettina frequently speaks at international conferences, including keynotes on transformation and resilience.

She is fluent in German and English, with a strong international and cross-cultural perspective.

ISBN: 978-1-917892-19-3

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Prevalence of protective levels of anti-HBs antibodies among 15-17 year old adolescents at Kawempe division Kampala-Uganda

Liver related cancer and cirrhosis mortality rates have been reduced globally by the Hepatitis B vaccine however decay still happens. We aimed at determining the prevalence of breakthrough HBV infections (Exposure, Acute and chronic infections) and the prevalence of protective levels of vaccine specific antiHBs antibody titers amongst 15–17-yearold adolescents in Kawempe division, Kampala, Uganda. A cross sectional study . Sample size: 288 participants. The results showed; Males;149 (51.7%), Females;139 (48.3%). First dose recipients; 26 (9.0%) , Second dose recipients; 45 (15.6%) and Third dose recipients; 217 (75.4%).Combo test results: Participants at exposure (Combo susceptible);221 (76.7%), Acute infections; 4 (1.5%), Chronic infections; 3 (1.0%) and vaccine protected 60 (20.8%).Titer test results: Responders ; 22 (36.7%) and non-responders were 43 (66.2%). In conclusion: Hepatitis B vaccine 3 dose coverage was good at 75.4% due to introduction of the HBV birth dose and screening of pregnant mothers however more awareness programmes on benefits of immunisation to parents are encouraged and provision of medicines in all health centers. The study revealed an exposure rate of 76.7% for adolescents who had primarily been vaccinated owing this to genetics, Storage, Usage of overdue medicines and in-completion of HBV doses. The prevalence of acute and chronic infections in our study was moderately high at 1.5% and 1.0% respectively due to indulgence in sexual intercourse at a young age plus having many sex partners, Use of drugs, Body piercings and body tattooing plus not knowing the HBV status especially to young mothers. Our study recorded a low prevalence of protective anti-body titers at 33.8% possibly due to genetics.

Keywords: Prevalence, Antibodies, Hepatitis B virus and Hepatitis B virus vaccine.

Biography

Miss Nambafu joan is a phd student at Makerere University. She has studied a master of science in immunology and clinical microbiology from the same university. She also holds a bachelor's degree in science technology biology from kyambogo University. She is an author and co-author. She enjoys doing scientific research.

ISBN: 978-1-917892-19-3

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The Digital Mind: How Technology Shapes Cognition and Decision-Making in Medical Training

Modern technology is reshaping the way medical students learn, think, and manage stress, serving as both a support system and a potential distraction. Yet, its long-term influence on the cognitive growth of future doctors remains uncertain. This study introduces the "Digital Mind" framework to explore how technology impacts memory, decision-making, and stress management among MBBS students. The central question is: Does technology strengthen learning and problem-solving, or does it encourage dependence and weaken independent thinking?

Methodology combines a literature review with a cross-sectional survey among MBBS students at AIIMS Madurai. A sample size of 80 students will be targeted over two months. Data will be collected using a structured questionnaire covering technology use, cognitive reliance, and stress management. Participation will be voluntary, with written informed consent obtained from all participants. Confidentiality will be maintained by anonymous responses. A pilot survey of 20 students will be conducted to refine the questionnaire and minimize bias. Ethical clearance will be secured from the Institutional Ethics Committee before data collection.

Expected results will show a dual role of technology—providing instant access to knowledge, improved reasoning, and stress relief, while also risking over-reliance and reduced independent judgment. The "Digital Mind" framework aims to guide educators and policymakers in balancing these effects. By promoting the wise—not blind—use of technology, this study envisions training future doctors who think independently, decide ethically, and thrive in a digital age.

Keywords: Technology, Cognition, Medical Students, ng, Stress Management, Digital Mind

Biography

Krish Jindal is a first-year MBBS student at AIIMS Madurai with a keen interest in clinical research, medical education, and healthcare innovation. His acaDecision-Makidemic pursuits focus on physiology, specially neurophysiology, public health, and the role of technology in medical training. Beyond medicine, he is passionate about entrepreneurship and just want to build something crazy. Krish has actively participated in research and academic competitions, aspiring to integrate innovation with clinical practice to create meaningful impact in healthcare.

ISBN: 978-1-917892-19-3

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Emotions and Decision-Making in Boardrooms – A Systematic Review from Behavioral Strategy Perspective

This systematic review examines the influence of emotions on strategic decision-making in business context, from the perspective of behavioral strategy. We examined 1227 articles from two databases (Web of Science and PsycInfo), and after applying the inclusion and exclusion criteria, the final sample resulted in 43 articles. Our systematic review focuses on the role emotions in strategic decision-making as well as the decision-making process itself. This systematic review explores research using a variety of approaches and a combination of theoretical and empirical perspective brought by the literature. It aims to address three main questions: how board members' emotions influence their decision-making; what insights behavioral strategy provides on the emotional aspect of strategic decision-making; and what are the main theories linking emotions to strategic decision-making in business context. The results demonstrate how emotions can affect the quality of decisions and imply that conflict resolution and emotional intelligence are relevant skills for making strategic decisions. This analysis supports the need for incorporating emotional insights into strategic planning methods by considering agreeable and divergent points of view.

Keywords: strategic decision-making, emotions, board members, emotional influence, organizational behavior, behavioral strategy.

Biography

Rosine Hasson Marques holds a PhD in Business Administration (PUCPR) and is a PhD candidate in Communication and Change (University of Barcelona). Her research focuses on behavioral strategy, particularly the influence of emotions on strategic decision-making within boards of directors. She has published in Frontiers in Psychology and presented her work at leading academic conferences such as the Academy of Management and EnANPAD.

ISBN: 978-1-917892-19-3