SEARCH AUTHOR; TITLE OR KEYWORDS:
CTRL B

2024 THE 15TH NORDIC MEETING IN NEUROPSYCHOLOGY

WORKSHOPS, SESSIONS, ORAL AND POSTER PRESENTATIONS

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WS-1: Evidence based practice in the clinic: Acceptance and Commitment Therapy for people with acquired brain injury

Presenters:
Johanne Rauwenhoff, PhD Postdoctoral researcher at the Norwegian University of Science and Technology and Clinical Neuroscience Laboratory.

Anne-Fleur Domensino, PhD Postdoctoral researcher at Maastricht University and Limburg Brain Injury Centre, Netherlands.

Brief description of workshop:
Brain injury can have widespread and long-lasting consequences, which can profoundly impact overall wellbeing. One in three people affected by brain injuries experience depressive or anxiety symptoms. Acknowledging the importance of addressing these psychological challenges, Acceptance and Commitment Therapy (ACT) emerges as a promising treatment option. ACT teaches people not to avoid or fight negative thoughts, but to adopt a flexible approach while making choices based on what is truly important to them. This is called psychological flexibility. However, since people with a brain injury can experience cognitive complaints, psychotherapy for mood problems after brain injury needs to be adapted accordingly. Therefore, we recently developed an ACT treatment adjusted to the challenges and needs of people with a brain injury: BrainACT.

In this interactive workshop, participants will have the opportunity to become familiar with ACT, BrainACT, and the various ACT processes through experiential exercises.

In addition to exploring the clinical implications of ACT, the workshop will delve into the research evidence supporting the use of ACT and psychotherapy for people with a brain injury. Furthermore, it will be discussed how to measure the effectiveness of ACT within a clinical context. As ACT strives to improve psychological flexibility and not symptom improvement, the question arises: How do we define treatment success? Various outcomes and measurement techniques will be discussed and explored.

This workshop aims to provide attendees with a comprehensive understanding of the therapeutic approaches involved in the BrainACT treatment. Additionally, it focuses on providing knowledge and strategies for evaluating treatment success, enabling participants to implement evidence-based practices in their clinical settings.

Learning-goals:
- Gain an in-depth understanding of Acceptance and Commitment Therapy
- Learn how to deliver Acceptance and Commitment Therapy to patients with brain injuries
- Learn how to evaluate treatment success in the context of Acceptance and Commitment Therapy

WS-2: "Indications for and expected effects of anti-amyloid treatments in Alzheimer's disease: -A focus on cognitive aspects."

Presenters:
Bjørn-Eivind Kirsebom, PhD, Associate professor, University Hospital of North-Norway/University of Tromsø, Norway

Tormod Fladby, Professor at Institute for Clinical Medicine, University of Oslo/Akershus University Hospital, Oslo, Norway

Brief description of workshop:
For the first time, large clinical phase 3 trials have shown definite treatment effects on early Alzheimer's Disease (AD) progression. Effect sizes are from > 25% up to 46% compared to placebo, and vary depending on compound (Leqembi, Donanemab), and on patient inclusion criteria. Treatments are likely to be approved in the EU and Nordic countries late 2023 or 2024. Availability in the clinic is expected to be met with large demand, and a corresponding need for cognitive testing.

Trial results suggest larger effects at early AD stages, pointing to the need for early case identification. Thus, there is a need for a detailed understanding of incipient AD-related cognitive changes, and relation to non-AD (e.g. late-life depression-related, LLD) cognitive symptoms. Furthermore, a detailed understanding of clinical criteria for treatment is needed, as well as of expected treatment effects on cognitive aspects of disease progression.

The workshop will also cover key aspects of AD neuropathologies and diagnostic techniques (clinical, imaging, fluid biomarkers) as well as typical clinical manifestations and risks of side effects of treatments

Learning-goals:
• Be familiar with cognitive criteria for anti-amyloid treatment in AD
• Understand the distinction between non-AD subjective and mild cognitive impairment, non-AD LLD and AD-related pre-dementia cognitive impairment.
• Understand expected treatment effects and possible side-effects as well as key neuropathological aspects of AD and treatments

WS-3: "Cognitive rehabilitation for children and adolescents with acquired brain injury: Clinical application of online problem-solving therapy, and individualized and group-based interventions"

Presenters:
Prof. Shari Wade, PhD, Division of Pediatric Rehabilitation Medicine, Cincinnati Children's Hospital Medical Center, Cincinnati; Department of Pediatrics, University of Cincinnati College of Medicine & Cincinnati Children's Hospital Medical Center, Cincinnati, USA

Nina Rohrer-Baumgartner, PhD, Sunnaas Rehabilitation Hospital, Nesodden, Norway

Ingvil Laberg Holthe, Sunnaas Rehabilitation Hospital, Nesodden, Norway

Ruth Hypher, PhD, Department of Clinical Neurosciences for Children, Oslo University Hospital, Oslo, Norway.

Torunn Finnanger, PhD, Children's Clinic, St. Olavs Hospital, Trondheim University Hospital, Norway

Brief description of workshop:
Pediatric acquired brain injury (pABI) is the most common source of acquired morbidity and mortality in children. Among the most disruptive and persistent, even life-long, symptoms following pABI are changes in cognition, and in particular executive functions (EFs). Thus, there is a great need for the identification of effective treatments for rehabilitation of children following pABI. In this workshop, Prof. Wade will introduce teen online problem-solving therapy for adolescents (TOPS) with ABI. TOPS includes training in stress management, problem-solving, self-regulation, communication, and social skills. Here, a review of TOPS content and a demonstration of the problem-solving process will be provided. Rohrer-Baumgartner and Laberg Holthe will present the Child-in-Context-Intervention (CICI) study, where an individualized, goaloriented approach is combined with a family-centered approach, while also working closely with schools. In CICI, the aim is to tailor the intervention to the needs and problem perception of each child and family. Finally, Hypher and Finnanger will introduce materials and experiences from the COgnitive REhabilitation in pediatric acquired brain injury (CORE) study. In this trial, group-based Goal Management Training (GMT) and a psychoeducational brain health intervention addressing topics such as brain injury and (dys)function, plasticity, memory and learning, EF, fatigue, and lifestyle issues, were employed to improve EFs. The aim of the workshop is to highlight the complexity and clinical utility of different cognitive rehabilitation methods, spanning from online therapy to individualized and group-based intervention.

Learning-goals:
- Participants will be able to understand underlying principles of problem-solving therapy, goaloriented rehabilitation, and goal management training in the pediatric population.
- Participants will be able to consider implementation of these treatment approaches in their clinical work.

WS-4 «Sleep and Brain Health: Practical Approaches to Nonpharmacological Treatment of Sleep Problems»

Presenter:
Håvard Kallestad, PhD, Senior Researcher and Clinical Psychologist, Head of the Trondheim Sleep and Chronobiology Research Group, Norwegian University of Science and Technology, St. Olavs Hospital

Brief description of workshop:
Sleep problems are common and also linked with a range of psychiatric and neurological conditions. They can have a substantial impact on daily functioning and the overall quality of life for a large part of the population. Nonpharmacological approaches are generally the most effective means of improving sleep quality, but these methods have typically not been given sufficient attention within clinical education programs.

This workshop will offer practical and focused insights. Participants will gain a comprehensive understanding of the importance of addressing sleep problems within a clinical context. Additionally, they will acquire practical techniques for evaluating sleep health clinically, along with effective nonpharmacological strategies for addressing prevalent sleep disorders such as insomnia and circadian rhythm disruptions.

Learning-goals:
Workshop attendees will develop both theoretical and hands-on proficiencies in the following areas:

- The significance of sleep-wake disturbances in mental and physical health, encompassing the impact on cognitive and emotional functioning.
- Utilization of clinical assessment instruments for the diagnosis and differentiation of sleepwake disorders.
- Implementation of evidence-based, nonpharmacological interventions that can be readily integrated into diverse clinical practices.

Session 1 - Nordic symposium Denmark. Technology-based interventions in treatment and rehabilitation – how to promote uptake, effect, and sustainability

Presenters:

Presentation 1:
Title: Virtual Reality Assessment and Treatment of Spatial Neglect.

Presenter: Lars Evald, Lars Evald, PhD, Head of Neuropsychological Research, Hammel Neurorehabilitation Centre and University Research Clinic Central Denmark Region.

Presentation 2:
Title: App-based memory control training in children and adolescents.

Presenter: Julie Ertman Nørkær Lundsgaard, PhD Student, Department of Psychology, University of Copenhagen.

Presentation 3:
Title: Virtual reality for anxiety disorders (VR8) – improving treatment interventions using technology.

Presenter: Per Trads Ørskov, PhD, Postdoc, Research Unit for Digital Psychiatry (READI), Centre for Digital Psychiatry, Region of Southern Denmark.

Presentation 4:
Title: Design, implementation, and sustainability of cognitive support technology for people with dementia.

Presenter: Laila Øksnebjerg, PhD, Associate professor, Department of Psychology, University of Copenhagen

Brief description of symposium:
The use of technology-based tools and methods in treatment and rehabilitation of neuropsychiatric and neurological conditions is rapidly expanding. Many research projects show promising results, but often face challenges when it comes to implementation in professional practice and daily life of end-users. The overarching theme of this symposium is how we, based on expertise from various clinical research perspectives, can promote uptake, effect, and sustainability of technology-based interventions in treatment and rehabilitation. This theme will be discussed based on perspectives from four different research project.

First, results from a proof-of-concept study on the use of virtual reality in assessment and treatment of spatial neglect in right-hemisphere stroke patients will be presented. The second talk present results from the first validation study of AMEMO project. The aim of this project is to investigate whether app-based memory control training improves mental health in children and adolescents with anxiety and affective disorders. Thirdly, results from the VR8 project will be presented. In this RCT the effect of individually adapted exposure therapy in virtual reality, as part of cognitive behavioural therapy, is compared to cognitive behavioural therapy with exposure in vivo. Finally, results from the ReACT project will be presented. This research project investigated co-design and user-centred implementation of an app-based technology for cognitive support of people with dementia.

The symposium will end with a discussion on shared themes and perspectives on the uptake, effect, and sustainability of such technology-based interventions in treatment and rehabilitation of various neuropsychiatric and neurological conditions.

Session 2. Neuropsychological outcomes after COVID-19

Presenters:

Kamilla Miskowiak, Professor at the Department of Psychology, University of Copenhagen, Denmark

Stein Andersson, Professor at the Department of Psychology, University of Oslo, Norway

Sofie Buer, psychologist and PhD candidate at Lovisenberg Diaconal Hospital, Norway

Kristina Struksnes Fjone, Physiotherapist, MSc and PhD-student at Oslo University Hospital, Norway

Brief description of symposium:
Persons who have survived COVID-19 frequently complain of neuropsychological dysfunctions, such as difficulties with executive function, memory, and concentration. In this symposium, Professor Kamilla Miskowiak will present findings from a study investigating the frequency, pattern, and functional implications of cognitive impairments in patients at a long-COVID clinic in Denmark. Professor Stein Andersson will present findings from the Norwegian study of nervous system manifestations and sequelae of COVID-19 (NeuroCOVID), including neuropsychological consequences 6- and 12 months post COVID-19. Furthermore, PhD candidate Sofie Buer will present self-reports of executive functioning from the Norwegian Corona Cohort, and preliminary findings from an RCT examining the efficacy of Goal Management Training in adults with cognitive complaints after COVID-19. Finally, Associate Professor Kristin Hofsø will present results from a study investigating cognitive impairments after intensive care unit admission in a Norwegian cohort of COVID-19 patients.

Session 3 - Nordic symposium Sweden. "Towards a Deeper Neuropsychological Understanding of the Post-COVID Condition -from Subjectivity to Intervention"

Presenters:

Presentation 1:
Title: To Combine Subjectivity and Neuroscience in the understanding of the Post-COVID Condition.

Presenter: Richard Levi, MD, PhD, MBA, Professor, Department of Rehabilitation Medicine and Department of Health, Medicine and Caring Sciences, Linköping University, Linköping, Sweden.

Presentation 2:
Title: Fatigue and Cognitive Function after Covid-19 in in People with Post-COVID Condition Compared to People recovered from COVID-19.

Presenter: Agnes Andersson, Licensed Psychologist, PhD-student in Rehabilitation Medicine, Department of Rehabilitation Medicine and Department of Health, Medicine and Caring Sciences, Linköping University, Linköping, Sweden.

Presentation 3:
Title: Personality and Illness Perception in People with Post-COVID Condition Compared to People Recovered from COVID-19.

Presenter: Ulrika Birberg Thornberg, Specialist in Neuropsychology, PhD, Department of Rehabilitation Medicine and Department of Health, Medicine and Caring Sciences, Linköping University, Linköping, Sweden and Department of Behavioural Sciences and Learning, Linköping University, Linköping, Sweden.

Presentation 4:
Title: Effects on Subjective Visual Function and Fatigue after Visual Rehabilitation for Patients with PostCOVID Condition.

Presenter: Stina Gunnarsson, RN, PhD, Department of Rehabilitation Medicine and Department of Health, Medicine and Caring Sciences, Linköping University, Linköping, Sweden.

Brief description of symposium:
For most people symptoms after a SARS-CoV-2 infection gradually decrease, but some people get persistent or severe symptoms that demands examination and rehabilitation. To date, approximately 40 000 individuals fulfill the criteria for post-COVID condition in Sweden. But still, the understanding of post-COVID, its clinical features, prognostic factors, and rehabilitation effects remains incomplete. Severe fatigue, cognitive deficits and vision related symptoms are common. Plentiful studies have investigated fatigue and cognitive deficits after COVID-19, but assessment methods vary and there is a lack of control groups. Further, the impact of psychological factors as personality, illness perception and subjective experiences are not well examined.

At the Department of Rehabilitation Medicine in Linköping, researchers have been interested in both subjective experiences and clinical and neuropsychological characteristics of post-COVID. Data from two studies will be presented. The first study, with ongoing data collection, includes 40 persons with post-COVID condition and 40 matched controls, recovered from COVID-19, but not suffering from post-COVID condition. Methods from medical humanities and neuroscience are combined, and subjective and objective assessment methods are used to examine fatigue, cognition, personality, and illness perception. The second study investigates effects from a visual rehabilitation intervention for patients with visual impairment after COVID-19. Visual function, fatigue, and subjective occupational performance (reading, screen use etc.) are outcome measures.

This symposium will address different methodological aspects on the study of post-COVID. Insights from the results of the subjective and objective measurement methods, as well as the rehabilitation of people with post-COVID condition, will be discussed.

Session 4. Is there a role for web-based neuropsychological testing in the clinic?

Presenters:

Kamilla Miskowiak, neuropsychologist, Professor, University of Copenhagen, Denmark: “Is there a role for web-based cognitive testing in affective disorders?”

Tor Ivar Hansen, neuropsychologist, PhD, St Olav/NTNU, Norway: «Feasibility and results from screening and following somatic and psychiatric patient groups over time with a flexible webbased neuropsychological platform”

Richard Gershon, Professor, Chief of Outcome and Measurements Science, Department of Medical Social Sciences, Northwestern University Feinberg School of Medicine, USA: “Measurement validity, replicability and standardization between neuropsychological test tools, experience from the NIH toolbox and other national clinical initiatives in the US”

Brief description of symposium:
Over the past decade, web-based cognitive testing using classical as well as novel neuropsychological tests, has been developed and implemented for mapping of neuropsychological profiles in general populations and patient groups, as well as tailored to specific patient groups. Still, the use, reliability, validity, safety, and added value of such testing in the clinic remain largely unexplored. This session includes presentations of the design and implementation of two different web-based neuropsychological test platforms in patient groups. The first presentation focuses on affective disorders and uncovering cognitive impairments and biases in this group of patients while the second presentation centers on neuropsychological testing in somatic and CNS diseases cross - sectionally and over time. The security and measures taken to safeguard the personal data in these web-based systems will be discussed. The third presentation covers considerations regarding neuropsychological measurement methodologies including lessons from the development of the NIH toolbox. The presentations will create a backdrop for a plenary discussion on the feasibility and role of such methodology in neuropsychological practice.

Session 5. Mobile Healthcare (mHealth) in brain disorders and beyond

Presenters:

Gøril Storvig, MPhil., Department of Psychology, Norwegian University of Science and Technology, Trondheim, Norway: *"Digital solutions for concussion (DiSCO): a development and usability study"*

Dr. Bert Lenaert, Faculty of Psychology, Open University, Heerlen, the Netherlands: *"Using mHealth tools to monitor and treat common symptoms in brain disorders."*

Anker Stubberud, MD, ph.d., Department of Neuroscience and Movement Disorders, Norwegian University of Science and Technology, Trondheim, Norway: *"Forecasting migraine and postconcussion symptoms with machine learning based on mobile phone diary and wearable sensor data."*

Roshan das Nair, MPhil, PhD, Health Division, SINTEF, Trondheim, Norway, & School of Medicine, University of Nottingham, UK: *"Using mHealth tools to deliver cognitive screening and rehabilitation in multiple sclerosis."*

Brief description of symposium:
Mobile Health (mHealth) is an emerging field with great potential to radically change how research is performed and efficient healthcare can be provided. This symposium aims to inspire healthcare professionals, researchers and stakeholders by demonstrating the immense potential of mHealth in brain disorders. Practical aspects of developing and testing mHealth solutions, as well as its clinical and scientific value will be discussed. This will include presentations of work on early-stage development of new solutions, as well as use of mHealth solutions in clinical trials, and technologies currently being embedded within healthcare services. Ethical considerations regarding mHealth use and challenges related to data privacy and security, and issues of digital exclusion will also be discussed. The symposium will provide insight into recent studies using mobile phone-based and wearable solutions to capture data from patients with brain disorders such as mild traumatic brain injury, migraine, early dementia, and multiple sclerosis. These studies will also show-case how advanced analytical techniques, including machine learning, can generate crucial insights for enhanced diagnostics, treatment and rehabilitation. Presentations will highlight how mHealth solutions can enable personalized and highly granular symptom mapping for patients with persistent postconcussion symptoms, delineate variability in subjective and objective cognitive functioning in daily life in older age and early dementia, enable prediction of disease progression and symptoms in people with migraine using machine learning, provide innovative ways for reducing fatigue after brain injury, and enable routine screening for cognitive problems in multiple sclerosis.

Session 6. More real than ever – the application of virtual realities in health and rehabilitation

Presenters:

Albert “Skip” Rizzo, Director, Medical Virtual Reality - Institute for Creative Technologies; Professor, Dept. of Psychiatry and School of Gerontology, University of Southern California, USA

Martin Matre, Neuropsychologist/PhD candidate, Sunnaas Rehabilitation Hospital, Nesodden, Norway

Truls Johansen, Occupational therapist/PhD candidate, Sunnaas Rehabilitation Hospital, Nesodden, Norway

Michael Riegler, Professor SimulaMet and Oslo Metropolitan University, Norway

Gunn Astrid Baugerud, Associate Professor, Oslo Metropolitan University, Norway

Brief description of symposium:
Rizzo will talk about how the Evolution of Conversational Virtual Human (VH) Agents in Mental Healthcare has advanced with the growth of artificial intelligence (AI). VH representations can now perceive and act in a 3D virtual world, engage in face-to-face dialogues with real users, and exhibit human-like emotional reactions. Rizzo will provide an overview of research showing the benefits of using VH e.g.in the role of virtual patients for clinical training, as social skill trainers for persons with autism, and as online healthcare support agents with students and Veterans. Matre and Johansen will describe the introduction of virtual reality (VR) into neurorehabilitation. Matre will present the rationale behind the development and validation of a Norwegian VR-version of a test of social cognition after brain injury. Johansen will describe a randomized controlled trial exploring the effect of using commercial VR-games in cognitive rehabilitation. The experiences of patients with brain injury in using VR will be explored, included how factors such as fatigue, motivation and presence is affected by VR training. Baugerud and Riegler will describe the development and application of an artificial avatar in therapeutic intervention and engagement. They will delve into how AI technologies can transform therapeutic practices by providing interactive, personalized, and immersive experiences. Baugerud will emphasize how AI avatars can be used in training of communication skills and their potential to assist patients with anxiety and interpersonal communication challenges. Riegler will provide a technical overview, shedding light on the challenges and opportunities in the realm of AI-driven avatars.

Session 7 - Nordic symposium. Neuropsychological monitoring of patients undergoing brain surgery

Presenters:

Sallie Baxendale, Professor of Clinical Neuropsychology at the University College of London

Eli Berit Kyte, clinical neuropsychologist and PhD candidate at Oslo University Hospital, Norway

Signe Delin Molderup, Clinical neuropsychologist at Rigshospitalet, Copenhagen, Denmark

Guro Minken, Clinical neuropsychologist and PhD candidate at Oslo University Hospital, Norway

Brief description of symposium:
Brain surgery is the best treatment option for some patients with brain tumor or difficult-to-treat epilepsy. When operating on parts of the brain that are critical for language or other cognitive functions, it is crucial to reduce the risk of side effects that can result in permanent dysfunction and reduced quality of life. In her presentation on preoperative neuropsychological assessment, Professor Sallie Baxendale will introduce us to the construct of prehabilitation and discuss the impact of psychology in ensuring informed consent. Neuropsychologist Eli Berit Kyte will present findings from her study of patients having undergone epilepsy surgery 10 years or more ago, focusing on long-term cognitive change and the patient perspective. Neuropsychologist Signe Delin Moldrup at Rigshospitalet, Copenhagen, will present methodological issues related to monitoring cognitive functions in patients undergoing brain surgery, and finally neuropsychologist Guro Minken will present a newly developed assessment protocol for use with pediatric patients before, under and after surgery.

Session 8 - Nordic symposium Finland. "Extending neuropsychological evaluations and rehabilitation with virtual reality and web-based programs"

Presenters:

Presentation 1:
Title: Assessing goal-directed behavior in virtual reality

Presenter: Erik Seesjärvi, neuropsychologist, PhD, Department of Child Neurology, Helsinki University Hospital, University of Helsinki

Presentation 2:
Title: Feasibility of web-based neuropsychological rehabilitation after acquired brain injury

Presenter: Outi Vuori, MA, PhD student, Brain Center/Neurocenter, Neuropsychology, Helsinki University Hospital, University of Helsinki

Presentation 3:
Title: Web-based neuropsychological rehabilitation of learning problems in adolescents

Presenter: Samuel Hannukkala, MA, PhD student, Department of Child Neurology, Helsinki University Hospital, University of Helsinki

Brief description of symposium:
This symposium presents ongoing PhD studies related to a virtual reality task designed for assessing goaldirected behavior and two web-based neuropsychological rehalibitation programs.

Unlike traditional pen and paper methods, EPELI (Executive Performance in Everyday LIving) offers a more realistic environment with a virtual reality based task designed to quantify cognitive processes of goaldirected behavior, including executive functions and prospective memory, using ecologically more valid, stimulus-rich, and open-ended everyday life scenarios. Furthermore, EPELI allows measurement of other behavioral aspects, such as ADHD symptoms. EPELI is available both for children and adults, in different languages (e.g., English, Finnish, French, Swedish), and it can be performed remotely.

The two digital rehabilitation programs presented in this symposium were developed at Helsinki University Hospital within a national project called the Health Village (HealthVillage.fi) providing digital health care services for several medical specialties. IRENE (Internet-mediated REhabilitation of NEuropsychological impairments) Digital Pathway is a structured neuropsychological rehabilitation program for adults with acquired brain injury utilizing psychoeducative information and self-evaluation questionnaires for attentional, memory and executive disorders with feedback. The program provides training for internal and external memory and other cognitive strategies. BEATLE (BEtter AT LEarning) Digital Pathway is a structured neuropsychological rehabilitation program providing meta-skills and tools for learning to adolescents with learning problems due to developmental language disorder, dyslexia, or other developmental issues. If proven feasible, these web-based cognitive interventions may broaden the variety of neuropsychological interventions and have the potential to equalize regional differences, make rehabilitation more costeffective, and reduce waiting times for rehabilitation services.

Session 9. Mechanisms mediating cognitive effects of physical training

Presenters:

Atefe Rafiee Tari, leader research group on circulation and imaging, Faculty of Medicine & Health Science, Norwegian University of Science and Technology, Trondheim, Norway.

Gry Bang-Kittilsen, PhD candidate, clinical neuropsychologist, Vestfold Health Care Trust, Tønsberg, Norway

Jonna Nilsson, Assistant Professor, Swedish School of Sport and Health Sciences, Stockholm, Sweden

Joseph Firth, MD, PhD, University of Manchester, UK.

Brief description of symposium:
Tari's talk will be about the underlying mechanisms of the seemingly protective effects of exercise on the brain. Findings from her group suggest that systemic neurotrophic factors are induced by exercise, and that some factors released into blood following exercise might cross the blood-brain barrier, or exert protective brain effects via other neurotrophic factors. She asks whether transfusion of exercise-induced molecules protect against Alzheimer's disease?

Bang-Kittilsen asks what characterizes patients with schizophrenia that respond with improved neurocognitive functions following physical exercise? It could be intervention factors such as exercise mode, intensity, frequency and duration, or sex, age or duration of illness. She will explore mediating and moderating factors in secondary analyses from a previous RCT, especially the relationship between the brain-derived neurotrophic factor and neurocognitive response to exercise.

Nilssons's talk will first summarize the current state of the research field, using a recent umbrella review as a starting point. The absence of firm theoretical models of the mechanisms involved will be highlighted as one likely cause of the unsatisfactory progress in the field. She will describe findings from experimental studies centered on some of the proposed mechanisms, including brain-derived neurotrophic factor and conclude with a humble call for continued theory building to allow progress beyond the present black-box approach.

Firth will depart from general population research demonstrating how physical exercise improve cognitive function, increase brain health and reduce risk and effects of aging-related diseases. Findings from interventional research in people with psychotic disorders will be presented, the neurological mechanisms explored, and detail how exercise type, dose and style of administration impact on effectiveness. The presentation will conclude with examples of practical and effective implementation of exercise schemes in mental healthcare for psychosis, discussing how future research can build on the existing findings.

Session 10. Neurocognitive Landscape of Healthy Aging and Brain-Related Diseases

Presenters:

Maryam Ziaei, Associate Professor, NTNU, Norway

Alireza Salami, Associate Professor, Umea University and Karolinska Institute, Sweden.

Thanh Doan, Group leader, NTNU and resident physician, St. Olav's Hospital, Norway

Brief description of symposium:

Aging increases individuals' vulnerability to mood disorders and cognitive decline. Thus, it has become increasingly important to identify cognitive and neural markers that underlie healthy aging. This identification can help us pinpoint risk and protective factors against mood disorders and cognitive decline later in life, ultimately reducing a significant burden on caregivers and medical systems. Various aspects of aging have been under investigation over the past decades including social-emotional and cognitive domains. While these two domains have been studies separately, there are still overlap between these systems while studying neuro mechanisms of aging. In this symposium, our aim is to present cutting-edge research on these major topics related to both cognitive and emotional functioning in healthy aging and mention consequences of brain-related diseases on these aspects. Firstly, we will explore the neurocognitive mechanisms that underlie higher-order cognitive functions, such as memory. Secondly, we will examine emotional functioning in the aged population and its contribution to healthy aging. Subsequently, we will discuss disturbances of the brain networks and the role of neuromodulators in brainrelated diseases. The overarching goal is to provide an overview of the current literature to unravel how aging impacts on brain health, cognitive function, and emotional balance.

Session 11. ADHD: Psychological interventions

Presenters:

Tatja Hirvikoski, Associate Professor, Center for Neurodevelopmental Disorders at Karolinska Institutet, KIND, Sweden. *"Non-pharmacological interventions for people with neurodevelopmental conditions in stepped-care models."*

Ingvild Haugen, Post doc, Innlandet Hospital Trust and Agnete Dyresen, PhD candidate, University of Oslo and Lovisenberg Hospital, Norway. *"Executive control training for adolescents with ADHD: A randomized controlled effectiveness trial.*

Daniel Jensen, PhD Helse Bergen: *"Goal Management Training in adults with ADHD."*

Emilie Nordby, PhD candidate University of Bergen: *"A blended intervention targeting emotion dysregulation in adults with ADHD." Helse Bergen.*

Brief description of symposium:
In this seminar, we will present psychological interventions adapted to the needs of adolescents and adults with ADHD. Tatja Hirvikoski, our keynote speaker, has a long-term clinical and research experience of assessment and treatment of neurodevelopmental conditions. She has developed first-line nonpharmacological interventions in stepped-care services model, including the PEGASUS psychoeducational program for adults with ADHD and their close relations, SCOPE internet-delivered psychoeducation for autistic emerging adults, and currently being responsible for evaluation of psychoeducation intervention Prisma for autistic adults and their close relations. In her presentation, she will present her work to develop and investigate effects of non-pharmacological interventions for people with neurodevelopmental conditions.

Three psychological intervention studies will then be presented by Norwegian researchers. Two of those are inspired by the Goal Management Training program and target executive function in adolescents and adults with ADHD. A third study combines group sessions with a companion app in a program targeting emotion regulation in adults with ADHD, inspired by principles of dialectic behaviour therapy. Designs, results from pilot and RCT studies and future direction will be presented.

(OT-7) ADHD traits, comorbid psychopathology, and executive functioning in adolescence: A multi-informant, population-based twin study?

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Background
Both ADHD and symptoms of mental disorders are known to be associated with problems in executive functions (EFs), and psychiatric comorbidity in ADHD is relatively common. Still, there is comparatively little research on how comorbid psychopathology in ADHD affects executive functioning, particularly in the general population. For more accurate clinical evaluations of ADHD symptomatology, more information is needed on how ADHD symptoms assessed by different informants are associated with performance in neuropsychological tests assessing EFs. Additionally, despite the well-known genetic component to EF performance in ADHD, it is unclear whether familial factors similarly contribute to ADHD symptoms assessed by multiple informants.

Objective
To investigate associations of symptoms of ADHD based on DSM-criteria, and inattention and hyperactivity-impulsivity assessed by multiple informants with EF performance in adolescence, and whether co-occurring symptoms of mental disorders and familial factors explain these associations.

Method
In 14-year-old twins from the population-based FinnTwin12 study (N=698-1845), we assessed visuospatial planning, inhibition, and set-shifting with neuropsychological tests. Symptoms of ADHD and psychiatric disorders were assessed with a semi-structured interview. Inattention and hyperactivity-impulsivity were assessed by the twins, their co-twins, and teachers at age 14, and by parents and teachers at age 12.

Results
Teacher-rated inattention had the strongest associations with poorer EF performance across measurement points; this was not explained by symptoms of mental disorders. Within-pair analyses of twin pairs suggested the associations of inattention and hyperactivity-impulsivity with EF were partly explained by familial factors.

Conclusion
Even at subclinical levels, ADHD symptoms are associated with poorer EF performance independent of comorbid psychopathology. From the core symptoms of ADHD, inattention appears to be more consistently associated with EF performance than hyperactivity-impulsivity. Our findings highlight the importance of including teachers' evaluations in assessing ADHD in adolescents.

Keywords ADHD, Adolescents, Cognition, Executive function, Psychiatric symptoms

(OP-15) Psychological intervention following acquired brain injury - a multiple case study

Thøgersen, Cecilie Marie Schmidt - Author[1]; Glintborg, Chalotte - Co-Author[1]; Hansen, Tia - Co-Author[1]; Trettvik, Johan - Co-Author[1]

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Background
When acquiring an injury to the brain (ABI) a person's life changes dramatically and many experiences psychological distress. Rehabilitation often focuses on the physical aspect of rehabilitation, while the psychosocial part is lacking. However, psychological distress after ABI can affect the outcome of entire rehabilitation process. Therefore, interventions that support psychological adjustment has a critical impact on the individual's capacity to engage in rehabilitation in general. This multiple case study (N=8) explores the benefits of a psychological intervention as part of comprehensive rehabilitation following ABI.

Objective and Method
The case study is design as an ABA experimental design using self-reported measurements: HADS, PGIS, WHO-5, SCS and DASS, pre-, post-, and at 3 months after intervention. Furthermore, an evaluating interview was conducted with all participants. The psychological intervention was based on the BackUp© program in supplement to a comprehensive rehabilitation program at an inpatient rehabilitation center in Denmark. Data from assessment tests were analyzed by visual inspection and Tau-U, while the evaluating interviews were analyzed drawing on Thematic Analyses.

Results
The quantitative results were mixed. The participants did not experience either depression or anxiety before or after the intervention. Based on the interview the participants experienced the intervention as overall effective. The intervention gave the participants room for reflection and opportunity to share emotional reactions. This helped them to participate in the overall rehabilitation program, and thus enhance biopsychosocial outcome in general.

Conclusion
Based on this multiple case study, we recommend psychological rehabilitation as a part of comprehensive rehabilitation. An intervention based on the BackUp manual is one possible option. Future studies need to explore other intervention forms and their benefits to clarify the best psychological intervention after an ABI. Furthermore, the study exemplifies how a multiple case study can contribute to the investigation of psychological interventions to adults with ABI as a very heterogenic group.

Keywords Case study/case series, Quality of life, Quantitative, Rehabilitation, Therapy

(OP-21) Bridging cognitive assessment and biological markers in depression: IL-6 plasma levels and sustained attention difficulties as a unified classification tool.

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Background
Major Depressive Disorder (MDD) is a prevalent mental illness characterized by mood disturbances and significant cognitive impairments, including difficulties in attention. Despite its recognized importance, the understanding of attention impairment in MDD remains limited due to historical conceptualizations of depression and the lack of integration between clinical and cognitive neuroscience.

Objective
To investigate the potential link between altered levels of Interleukin-6 (IL-6) and sustained attention impairment in individuals diagnosed with MDD. IL-6, a multifunctional cytokine implicated in immune response and acute phase reactions, has been associated with depressive symptoms and cognitive dysfunction. However, its specific role in sustained attention impairment among MDD patients remains underexplored.

Method
86 MDD patients recruited from outpatient care services underwent clinical assessment, neuropsychological examination of attention using the Conner's Continuous Performance Test (CPT3), evaluation of psychosocial functioning, and fasting blood draw to measure IL-6 levels. Statistical analyses, including multivariate regression and cluster analysis, were performed to identify potential factors affecting attention performance and inflammatory patterns.

Results
The study revealed a significant association between elevated IL-6 levels and poorer sustained attention performance, particularly in CPT detectability and omission rates ($p<0.001$). Factors such as sex ($p=0.01$), educational attainment ($p<0.001$), and depressive severity ($p=0.04$) also influenced attention outcomes. Cluster analysis identified two distinct groups of patients: an affected group with higher IL-6 levels and worse sustained attention, and a preserved group with relatively better attention performance.

Conclusion
This study highlights the potential role of IL-6 in mediating sustained attention impairment among individuals with MDD. Understanding the underlying mechanisms linking inflammation and cognitive dysfunction could contribute to the development of targeted interventions aimed at alleviating the burden of cognitive symptoms in MDD. Further research exploring the neurobiological pathways involved in attention impairment is warranted to inform more precise diagnostic and therapeutic strategies in MDD management.

Keywords Attention, Cognition, Depression

(OP-22) Cognition as independent predictor of functional outcome after cardiac arrest

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Background
Cognitive function is often impaired for cardiac arrest (CA) survivors as an effect of hypoxic-ischemic brain injury. An important factor in CA recovery is global functional outcome, commonly assessed with the modified Rankin Scale (mRS). Little is known about the role of cognition as a potential predictor of outcome following CA.

Objective
To investigate cognitive function at hospital discharge as a predictor of global functional outcome at 1-month post-discharge. Our hypothesis was that cognitive function would be a significant independent predictor of functional outcome after adjusting for sociodemographic and medical factors.

Method
Adult CA survivors were recruited at Columbia University Medical Center, New York, in the ongoing Psychological Predictors of Recovery after Acute Cardiac Events (PACE) Study. Cognition was measured with the Telephone Interview for Cognitive Status Modified (TICS-M) at hospital discharge, and mRS was the functional outcome scale 1 month later. We analyzed our data with stepwise logistic regressions: 1) unadjusted; 2) adjusted for age, sex, educational attainment, race/ethnicity, time from CA to return of spontaneous circulation; 3) additionally adjusted for depressive symptoms (Patient Health Questionnaire-8) at discharge.

Results
In our cohort of 112 participants (median age=56, 62% male) with completed TICS-M at discharge, 71% scored <36 indicating cognitive impairment, and 61% had mRS scores >3 equivalent to poor functional outcome at 1-month. Higher TICS-M scores at discharge independently predicted lower risk of poor 1-month mRS scores in all regression models, OR=0.84 (95% CI [0.74, 0.94]), p <.01 (model 3). Women had a greater risk of poor functional outcome. Hispanic participants had greater chances of good functional outcome.

Conclusion
Indicated cognitive impairment was a significant independent predictor of poor functional outcome after CA beyond the effects of demographics and CA downtime. This emphasizes the importance of targeting cognition in rehabilitation interventions, but also to identify other risk factors that could impede post-CA recovery.

Keywords Anoxia/hypoxia, Cognition, Longitudinal

(OP-23) Visual impairments after stroke: Results and clinical implications of the Back-of-the-Brain (BoB) project

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Background
Most of our knowledge about the consequences of stroke on high-level vision come from single case studies of patients with specific syndromes like alexia or agnosia. In the BoB-project, we took a different approach, and recruited patients based on lesion location in the areas supplied by the posterior cerebral artery (PCA).

Objective
In order to characterize the full spectrum of impairments following PCA-stroke, we designed a comprehensive test battery of visual and cognitive tests and tested all patients with the same battery. The aim of this presentation is to highlight our main findings, with a focus on clinically relevant results and assessment methods.

Method
64 patients in the stable phase of recovery (< 9 months) following PCA-stroke, and 45 controls were included. All patients underwent structural MRI scans. The tailor made test-battery included tests of low, intermediate, and high level vision, as well as screening-tools for general cognitive impairment. Taking a case-series approach, abnormality of scores was determined using single case statistics.

Results
Most patients showed impairment on one or more tests. These included visual field deficits (*n*=50), colour perception deficits (*n*=14), impairments in grouping or segmentation (mid-level vision; *n*=25). 43 patients showed various patterns of impairments in high-level visual tasks with faces, objects and written words, but very few (*n*=6) showed category selective impairments. Surprisingly, given the lesion location in the ventral stream, a large subgroup were impaired on a clinical screening test for neglect (*n*=27).

Conclusion
Visual impairments are very common after PCA stroke. The pattern and severity of impairments vary greatly between patients. Both colour perception deficits and neglect-like performance occur more often than the literature suggests. Appropriate screening and assessment methods are much needed, and some of the tests devised for the BoB-project may aid better assessment for this patient group.

Keywords Case study/case series, Cognition, Stroke /cerebrovascular, Vision

(OP-30) Early interdisciplinary intervention (GAIN) to reduce persistent post-concussion symptoms in adults: Results from a stepped-wedge, cluster randomised controlled trial

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Background
Around 15-50 % of patients with concussion experience persistent symptoms longer than 3 months post-injury, which are associated with reduced quality of life and high societal costs. Evidence for effective interventions is sparse. Recently, a novel interdisciplinary intervention, Get going After concussIoN (GAIN), showed effective in reducing persistent post-concussion symptoms (PCS) in young adults (15-30 years). However, more research is needed to test the effect of GAIN in different settings and in a broader age group.

Objective
In a stepped-wedge cluster randomised controlled trial (ClinicalTrials.gov ID NCT04798885) to test the effect of GAIN compared to enhanced usual care (EUC) in reducing persistent PCS in adults 2-4 months after injury, when delivered in a municipality setting by a larger group of health professionals.

Method
In total, 310 consecutively recruited patients (18-60 years) with persistent PCS 2-4 months post-injury were randomised to either 1) eight weekly sessions of GAIN, based on principles from cognitive-behavioral therapy and graded exercise therapy, or 2) EUC, including 30 minutes of information and reassurance about concussion, and advice about adaptive illness behaviors. Patients completed self-report measures at inclusion (baseline), end of intervention, and 3 months post-intervention (trial endpoint). The overall effect of treatment was assessed by the Rivermead Post-concussion Symptoms Questionnaire (RPQ). Secondary outcomes included psychological distress measured by SCL-8, and health-related quality of life and mental and physical functioning measured by the Short Form (36) Health Survey (SF-36).

Results
Results of linear regression analysis using an adjusted random effects model and pertaining to data obtained at trial endpoint will be presented.

Conclusion
This randomised controlled trial evaluates the effect of an early intervention (GAIN) on persistent PCS in adults. It may have the potential to prevent symptom chronification and long-term disability.

Keywords Adults, Intervention, mTBI (mild traumatic brain injury), RCT

(OP-31) Cognitive function in children and adolescents with psychogenic, non-epileptic seizures

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Background
Psychogenic non-epileptic seizures (PNES) are seizures that resemble epileptic seizures but are not caused by epileptic activity in the brain. The seizures are not voluntary and are understood as a reaction to psychological overload. Studies of children and adolescents with PNES are scarce, but indicate that factors underlying early onset PNES may differ from those described in adult populations[1,2].

Objective
The main objective of this study was to investigate associations between PNES, cognitive functioning, learning disabilities and mental health in children and youth diagnosed with PNES.

Method
70 children/adolescents with confirmed PNES diagnosis underwent a comprehensive neuropsychological assessment at the National Hospital for Epilepsy, Oslo University Hospital.

Results
Preliminary findings indicate an increased occurrence of neurodevelopmental disorders, learning difficulties, and cognitive impairments in our sample.

Conclusions
Cognitive difficulties, learning disorders and symptoms typically associated with autism spectrum disorder are highly frequent among children and adolescents with PNES, and are likely to play an important role as a causal and perpetuating factor in early onset PNES.

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Keywords Adolescents , Aetiology, Children , Cognition, Psychiatric symptoms

(OP-33) Sensory white noise stimulation as a treatment option for children with ADHD and RD: Who benefits and who performs worse?

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Background
Developmental dyslexia and/or reading disability (RD) is among the most common neurodevelopmental disorders with a prevalence of 5-12 % of the population. So is the neuro-psychiatric condition of attention deficit hyperactivity disorder (ADHD) where the prevalence rates are almost in the same range in childhood. Both groups struggle in school with poor achievement and high drop-out rates. Therefore, it is of crucial interest to develop tools and interventions for this large group of children that suffers from either reading disability or attention deficits in their everyday schoolwork. Stimulant medication is an effective treatment for ADHD symptoms *per se* in about 70% of cases, but it is not devoid of side-effects. In addition, less is known about the impact of stimulant medication on cognition and school achievement.

Objective
Advances have been made in developing effective interventions for each disorder separately. Surprisingly little research has explored a common intervention for children with co-occurring ADHD and reading disability. Sensory noise stimulation meets these criteria and has shown to address the core symptoms of both ADHD and RD.

Methods
This talk reviews empirical data from studies using various cognitive tasks where participants were exposed to either auditory- or visual white noise stimulation. Target groups were children with attention deficits (ADHD) and reading disability. Results from typically developing children will be used as comparison.

Results
Data show noise benefit on test performance for inattentive children and those with severe reading disability. Typically developing children perform worse under noise conditions. Children that display hyperactivity do not seem to benefit from noise exposure.

Conclusion
These data will shed further light on the large overlap between attention disorders and reading disability suggesting that these two neurodevelopmental disorders possibly have a shared etiology. We will suggest that noise benefiters may constitute a new endophenotype in neurodevelopmental disorders.

Keywords ADHD

(OP-36) Functional Magnetic Resonance Imaging for Preoperative Planning in Pediatric Epilepsy

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Background
A key challenge in neurosurgical treatment is to limit disease development by striving for clear margins, without causing new deficits. Mapping areas of the brain expected to play a critical role in cognitive and motor functions is a crucial goal in surgical planning, and determining language lateralization and location is one of the most frequently addressed questions. Functional magnetic resonance imaging (fMRI) is considered to be a robust method for establishing language lateralization and location, but the vast majority of research literature and methods used in the clinic are based on adult populations. Practical guidelines for the use of fMRI in surgical planning and our clinical experience reveal an urgent need to standardize the protocols to pediatric patients.

Objective
Evaluate new task-based fMRI paradigms for language mapping adapted to age and mental level.

Method
From 2021-2023 psychologists at SSE have conducted a pilot study preparing children prior to the fMRI examination. The results indicate that preparation and practice are beneficial, but not sufficient for all children, emphasizing the need for adapted paradigms. Therefore, our research group have developed new task-based fMRI paradigms for language mapping based on validated block design paradigms for adults. Overall we have customized instructions, inter-stimulus interval and task material to make the protocols developmentally appropriate for children. Also, we have standardized protocols for preparation and practice before the fMRI examination. Participants will be pediatric patients (age 6-18) enrolled in epilepsy surgery work-up at Oslo University Hospital.

Results
To be announced.

Conclusion
Hypotheses: 1. Preparation and practice prior to the fMRI examination will reduce stress and anxiety and improve the conditions for the child to master the tasks. 2. Adaptation of fMRI paradigms to age and mental level will increase success rates and validity of the test results, influence risk assessment and help guide surgical planning.

Keywords Children, Imaging, Language, Neurology

(OP-37) Children with brain tumors treated with radiotherapy: Important risk organs to spare to decrease neurocognitive impairments

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Background
Children with brain tumors are at high risk of neurocognitive decline, especially after radiotherapy. Neuropsychological assessment is highly recommended to interpret clinical outcome and implement rehabilitation interventions. However, there is a lack of studies on how radiotherapy doses to different organs at risk in the brain impacts neurocognition.

Objective
The overall aim was to examine dose-risk relationships for mean radiotherapy dose to different brain structures important for neurocognitive networks. We hypothesized that mean radiotherapy dose to organs at risk (previously established and potential new organs at risk) would correlate with neurocognitive impairment as measured by IQ measurements.

Method
44 pediatric brain tumor survivors who received proton and/or photon radiotherapy (January 2003 to June 2015) at Uppsala University Hospital in Sweden were included. Correlations between mean radiotherapy dose to organs at risk, planning target volume and confounding treatment factors with IQ indexes and subtests were analyzed.

Results
Mean radiotherapy dose to cochleae, optic nerve, hippocampus, cerebellum, vermis and pons correlated with lower performance on several IQ subtests and indexes. Planning target volume and chemotherapy did not correlate with IQ. Surgery and tumor size correlated with some IQ subtests, such as working memory and matrix reasoning.

Conclusion
We found a highly significant dose-risk correlation between neurocognition and mean radiotherapy doses to established and potential new organs at risk. Mean radiotherapy dose seems to further explain neurocognitive decline after radiotherapy and is an important measure for future research. A sparing radiation dose approach, whenever possible, is important for risk organs that can impact neurocognitive networks.

Keywords Children, Cognition, Tumour

(OP-39) Vision therapy in mild traumatic brain injury: a review of the rationale and the evidence

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Background
Patients with mild traumatic brain injury often have visual complaints. This leads to a diagnosis of post-trauma vision syndrome and a recommendation for 'vision therapy', which involves weekly visits for exercises of eye movements and focusing.

Objectives
We had four goals regarding the condition of mild traumatic brain injury. First, we identified the visual symptoms reported. Second, we reviewed the evidence for signs of ocular motor dysfunction. Third, we examined whether the visual symptoms described can be attributed to these ocular motor signs. Fourth, we reviewed the empiric evidence that eye movement exercises generate improvements in mild traumatic brain injury.

Methods
We performed a literature review to answer the above four questions.

Results
While post-traumatic convergence insufficiency occurs and can cause symptoms at near, there is no firm evidence for benefit from exercises (unlike the situation for the idiopathic childhood version). The same is true for accommodative issues. Abnormalities of pursuit and saccades are not likely to cause the symptoms. Furthermore, such abnormalities emerge mainly when patients perform tasks with more complex cognitive demands. This suggests that pursuit and saccade 'deficits' reflect cognitive rather than ocular motor dysfunction. The few empiric studies of treatment effects have significant methodological weaknesses, and some of their effects may have been due to inadvertent training of attention. We agree with a 2018 Cochrane review, that the single randomized study of 12 patients suffered from selection and detection bias, and its evidence has 'very low certainty'™.

Conclusions
We propose that the different eye movement abnormalities should be considered separately, rather than as a syndrome. We conclude that there is no evidence that abnormal conjugate eye movements are the cause of symptoms in mild traumatic brain injury, or that vision therapy improves this condition. Further studies are needed before this treatment can be accepted.

Keywords mTBI (mild traumatic brain injury), Neurology, Systematic review, Vision

(OP-40) Metacognitive therapy for people experiencing persistent post-concussion symptoms following mild traumatic brain injury: a multiple case study

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Background, Objective, Method, Results and Conclusion

After mild traumatic brain injury (mTBI), a considerable subgroup of patients experiences persistent post-concussion symptoms (PPCS) including headaches, cognitive complaints, and fatigue. The aim of this study was to investigate the preliminary effectiveness of Metacognitive Therapy (MCT) in improving PPCS, as well as maladaptive coping strategies and positive and negative metacognitive beliefs, following mTBI. In this multiple case study 9 participants were included. Reliable change was calculated with the Reliable Change Index, effect sizes were calculated using Tau-U, and to look at changes on a group level T-test were performed.
Of the nine participants who received MCT, all participants experienced a decrease in PPCS, which was a reliable improvement for eight participants. For all eight participants (we could calculate effect sizes for 8 out of 9 participants) moderate to very large decreases in maladaptive coping styles and positive and negative metacognitive beliefs were observed. Also on a group level, significant improvements were found for all outcome measures. Furthermore, no adverse events were observed. Based on these findings, it can be cautiously inferred that MCT holds promise as a potential treatment option for some people experiencing PPCS following mTBI. MCT is likely most effective for people experiencing high levels of rumination and worry about their PPCS. More research, such as large randomized controlled trials or replication with single case studies, into the effectiveness of MCT for this patient population is justified.

The study was registered in ClinicalTrials.gov (NCT02690584) on 24/02/2016 https://classic.clinicaltrials.gov/ct2/show/NCT02690584.

Keywords mTBI (mild traumatic brain injury)

(OP-42) The Phenomenology of Face Blindness â“ A Novel Approach to Developmental Prosopagnosia

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Background
Developmental prosopagnosia (DP) is a neurodevelopmental disorder of unknown origin, characterized by lifelong difficulties with recognition of face identity. Once thought to be a rare disorder, current prevalence estimates range from 1-3%, with a stark increase in studies over the last ~15 years. This increase in research has, however, not resulted in consensus on how to characterize or understand the condition. Most studies have taken an experimental approach based on (cognitive) neuropsychology and neuroscience, aiming to understand the levels of processing affected, and relate findings to current models of neurotypical face processing.

Objective
To contribute to the fundamental understanding of DP, we seek qualitative descriptions of the phenomenon. The aim of this study is to develop a phenomenology of DP based on participants' descriptions of how they experience perceiving, remembering and imagining faces.

Methods
We included six participants with confirmed DP according to the standard diagnostic procedure. Participants were interviewed using semi-structured phenomenological interviews. In total, 12 interviews were transcribed verbatim and analysed using Amadeo Giorgi's descriptive phenomenological method.

Results
We present preliminary results of our interview analyses indicating that face processing in DP is highly contextually dependent; that it is deliberate, rather than automatic; and that it is shifting, rather than stable. Further, we present case examples of the types of insights that may be gained from taking this novel approach, and how these may inform future research in face perception, recognition and imagery in DP.

Conclusion
Phenomenological interviews and analyses can contribute to our understanding of DP by providing in depth descriptions of the experience of faces. These descriptions may shine light on the cognitive processes and impairments underlying developmental prosopagnosia. Ultimately, this approach may lead to novel questions and hypotheses about the origins and core deficits in DP, as well as novel methods for assessment.

Keywords Developmental disorders, Interview, Qualitative

(OP-46) Assessment and monitoring of cognitive functioning in children with cerebral palsy

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Background
Children with cerebral palsy (CP) comprise a heterogeneous group, with large variations in functioning. There is a significantly increased risk of cognitive impairments in the group. Therefore, a follow-up protocol for systematic monitoring of cognitive functioning in children with CP, the CP*Cog*, was introduced in 2013. Implementation of the protocol was the focus of a quality improvement project in 2019.

Objective
The aims are to present how assessment practices of children with CP have changed over the last decade in Norway and how variations in cognitive functioning are related to functioning in other areas.

Method
Data come from the Norwegian Quality and Surveillance Registry of Cerebral Palsy (NorCP), which comprise 94% of all children with CP living in Norway.

Results
Prior to the introduction of the CP*Cog*, 29% of children with CP had undergone a formal assessment of cognition. By the end of 2023, this had increased to 67%. The aim is for all children with CP to have been offered a cognitive assessment. However, investigation of 1532 children registered in the NorCP, born 2002-2014, showed that children with the most severe motor impairments and children with little or no speech were least likely to be assessed. Mean IQ for children assessed is 82.3, ranging from 40 to 129. Mean IQ was lowest in children with spastic quadriplegic CP, epilepsy, and/or severe hearing impairment.

Conclusion
Introducing the follow-up protocol CP*Cog,* and in particular conducting a quality improvement project, led to an increase in number of children with CP offered cognitive assessments. This is positive, as there is very large variability in cognitive functioning in the group. It is troubling, however, that children clearly in need of interventions, such as children with little and no speech, are not assessed. This might imply that interventions, such as Augmentative and Alternative Communication (AAC), are not optimally tailored to the capabilities and challenges of the child.

Keywords Cerebral palsy (CP)

(OP-49) Face recognition impairments in developmental and psychiatric disorders: A pilot study and future directions

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Background
Developmental Prosopagnosia (DP) is a neurodevelopmental disorder that impairs face recognition. Much of the research on this condition has focused on whether DP is specific to faces, or additionally affects other visual domains, such as object recognition. However, a broader investigation of the overlap between DP and other neurodevelopmental conditions (outside of autism spectrum disorder) and psychiatric conditions has only recently been explored.

Objective
This presentation will summarize the current evidence for comorbidities in DP and present recent pilot data on the overlap between DP and other neurodevelopmental and psychiatric disorders.

Method
A group of subjects with developmental prosopagnosia (N=78) and a group of control subjects (N=62) were asked to self-report on whether they had been diagnosed with a variety of developmental disorders and common psychiatric conditions. In addition, as standards and practice for diagnosis have changed with time and some conditions are not commonly diagnosed by a physician (e.g. amusia), we asked participants to indicate if they *suspected* that they had each condition.

Results
As this was an exploratory study, we first compared the rates of each condition between DP subjects and controls. Those with DP were more likely ($p<.05$) to report Generalized Anxiety Disorder, Social Anxiety (suspected), ADHD, Synesthesia (suspected), ASD (suspected), Sensory Processing Disorder (suspected), Topographic Disorientation (suspected), and Aphantasia (suspected). In a logistic regression, anxiety, ADHD, topographic disorientation, and aphantasia were significant predictors of prosopagnosia. Overall, the DP group reported more conditions ($M=2.5$) than the control group ($M=1.47$; $t=3.42$, $p=0.0008$, $d=.56$).

Conclusion
These data suggest that DP may be indicative of a larger developmental syndrome than once believed. Interestingly, with the exception of anxiety, the DP group did not report any increased rates of diagnosed or suspected psychiatric disorders such as depression, bipolar disorder, or schizophrenia.

Keywords ADHD, Anxiety, Autism, Developmental disorders, Psychiatric symptoms

(OP-50) Executive Functioning is Associated with Pain Interference and Pain Management in Patients with Chronic Pain

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Background
Cognitive dysfunction is common among patients with chronic pain, including deficits in executive functions. However, the relationships between executive function and pain characteristics, or the relationship between executive functions and pain management have not been extensively studied.

Objective
To examine associations between executive functioning, pain characteristics, and self-assessment of pain management.

Methods
200 outpatients (170 women/30 men, mean age 33) with chronic pain underwent extensive neuropsychological assessment including several tests of executive functions. In addition, all participants completed self-assessment questionnaires regarding everyday interference and self-management of pain as well as pain experience and characteristics such as pain intensity, pain duration, and number of pain localizations.

Results
After adjusting for effects of age, education, depression, insomnia, and premorbid cognitive functioning, several aspects of executive functioning were significantly associated with self-assessed everyday interference of pain (rs = 0.13-0.22, all $ps < 0.05$), indicating that lower performance on tests of executive functioning was related to higher degree of pain interference and lower degree of self-management of pain. In line with previous research, insomnia (rs = 0.15-0.26, all $ps < 0.05$) and depression (rs = 0.18-0.41, all $ps < 0.05$) were also significantly associated with pain interference and self-management of pain. However, relationships between pain characteristics and executive functioning, did not survive adjusted analyses using the same covariates (all $ps > 0.05$).

Conclusions
The results indicate that preserved executive functions are related to a better coping with pain but not the pain itself in a young cohort of patients with chronic pain. Insomnia and depression are also related to poor coping outcome, indicating that patients with lower executive functions, depression and insomnia need special attention in rehabilitation of patients with chronic pain.

Keywords Cross-sectional, Executive function, Quality of life, Rehabilitation

(PT-6) Factors influencing return to work after stroke and traumatic brain injury (TBI)

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Background
Educational level (a proxy measure for cognitive reserve) and neuropsychological test results have been found to be related to long term outcome after acquired brain injury. However, more precisely which neuropsychological tests, as well as how these factors interact with both each other and other factors for long-term outcome are still unclear.

Objective
To investigate how educational level and results on neuropsychological tests relate to return to work after stroke and TBI.

Methods
We interviewed 83 patients about work participation, demographic information, and fatigue 5-15 years after their brain injury. We collected injury-related variables and results from neuropsychological tests through a retrospective chart review.

Results
Using a logistic regression model, we found that higher educational level (odds ratio (OR)=1.31, p=0.024) and higher cognitive processing index (CPI, encompassing processing speed and working memory, OR=1.06, p=0.037) were related to better chances of returning to work, when controlling for age at injury (OR=0.95, p=0.042) and present levels of fatigue (OR=0.77, p=0.034). Higher age and self-rated fatigue were related to lower rates of return to work. The model classified 75 % of the cases correctly in return to work (Wald test=11.8, p=0.04). Unlike verbal and visuospatial neuropsychological tests, the CPI did not correlate with educational level.

Conclusion
Our results underscore the importance of cognitive reserve and an efficient cognitive processing ability as relevant for return to work after brain injury. Verbal and visuospatial functions seem mainly to be related to educational level, while processing speed and working memory seem to be independent factors. The results serve as a guide for neuropsychologists, indicating important variables to consider in return-to-work assessments. Patients with fewer years of education and non-efficient cognitive processing ability might require more support in returning to work.

Keywords Assessment/test, Cognition, Stroke /cerebrovascular, TBI (traumatic brain injury)

(PT-8) A Danish Version of the Oxford Visual Perceptual Screen

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Background
Stroke can lead to a wide range of visual perceptual impairments that can have important consequences for the lives of those affected. To provide appropriate support and interventions, such impairments must be identified as early as possible. Assessment of visual perceptual impairments after stroke can be challenging. One reason for this has been the lack of an appropriate screening tool. In 2023, the Oxford Visual Perceptual Screen (OxVPS), a new tool that enables screening for visual perceptual impairments after stroke, was released. The tool takes 15 minutes to complete and screens for a wide range of visual perceptual problems including object recognition and face recognition impairments, reading deficits, visuo-constructive deficits, as well as visual neglect.

Objective
The aim of this study was to translate the OxVPS to Danish and standardize the OxVPS in a sample of healthy Danish participants.

Methods
The OxVPS was translated from English to Danish and culturally adapted for a Danish context. After piloting the tool on five patients with stroke, data from a sample of healthy participants was collected. Participants were screened for dementia with the Montreal Cognitive Assessment.

Results
We present the Danish version of the OxVPS as well as preliminary reference material based on the data collected. Influence of age and education on performance are discussed.

Conclusion
The OxVPS is a new screening tool for identifying visual perceptual impairments after stroke. It is user friendly and quick to administer and free to use in the public health sector. The translation of the tool represents the first step towards making OxVPS available in a Nordic context.

Keywords Adults, Assessment/test, Diagnostics, Stroke /cerebrovascular, Vision

(PT-9) Depression severity influences cortical processing and cognitive performance – an fMRI study

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Background
Major depression has previously been shown to be associated with reduced working memory and executive functioning performance. Few studies have investigated how symptom severity in depression affects neural processing during cognitive tasks.

Objective
To test whether depression severity impacts cerebral activation during an N-back task, and if symptom severity is associated with lowered performance on the N-back task. We hypothesized that higher levels of depressive symptoms would be associated with increased cognitive load and thereby increased neural activity.

Method
Thirty-nine patients (18 females) aged 22-65 years participated in a functional magnetic resonance imaging (fMRI) experiment investigating cerebral responses to an N-back task as part of the baseline assessment in a randomized controlled trial. The visual N-back consisted of a 2-back and a 0-back task. Depression severity was measured with the Montgomery and Aasberg Depression Rating Scale (MADRS). fMRI scanning was performed in a 3T Siemens Syngo system. fMRI data was analyzed in SPM12. A linear regression model was used, and p-values were adjusted for familywise error rates (FWER) at $p<0.05$ with an extent threshold for clusters set to > 30 voxels.

Results
The behavioral data showed significant correlations ($p<0.01$) between increased MADRS scores and lowered reaction times and errors, both in the 0- and the 2-back conditions. fMRI data revealed that the 2-back task activated several more cortical areas than the 0-back, and higher MADRS scores were significantly associated with activity in bilateral clusters in the ventromedial prefrontal cortex.

Conclusion
Increased severity of depression affects N-back performance negatively and increases neural activity in the frontal cortices during the task. The results suggest that worse symptom severity in depression may increase cognitive load during working memory tasks causing larger energy consumption and increased error rates.

Keywords Adults, Cognition, Depression, Imaging, Working memory

(PT-10) Student self-reported executive functions

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Background
The Behaviour Rating Inventory of Executive Functions Adult Version (BRIEF-A-sr) is a standardized, individually administrated self-report questionnaire measuring an adults' executive functions (EF) in daily life.

Objective
To explore associations between psychological distress, insomnia, sex, and personality with the BRIEF-A-sr in a non-clinical sample.

Methods
A convenience sample of 302 students (179 women, mean age 23.5 years, SD= 4.6) at the UiT - the Arctic University of Norway, were recruited prospectively on campus and completed the following questionnaires administrated face-to-face by a trained psychology student; the BRIEF-A-sr, the Beck Depression Inventory-II (BDI-II), the Beck Anxiety Inventory (BAI), the Bergen Insomnia Index (BIS), The Big-5 Inventory -10 (BFI-10). Exclusion criteria were ever-in-life psychiatric diagnoses including AD/HD, learning disabilities, substance use disorder and brain disease/injury. Approvals were granted from SIKT and the IPS-research Ethics Committee.

Results
A multivariate analysis with the Behaviour Regulation Index (BRI: mean =52, SD=9) and the Metacognition Index (MI: mean =56 , SD =9) as dependent variables, sex and insomnia as factors, and the sum scores of BDI-II, BAI and BFI-10 as covariates showed that higher BRI and MI scores, indicative of more EF problems, were significantly associated with more depressive symptoms on the BDI-II, lower conscientiousness, and higher extraversion on the BFI-10 (all p's < 0.001). Significantly associated with the BRI, but not the MI were lower agreeableness and higher neuroticism on the BFI-10, female sex, and more anxiety reported by BAI (all p's < 0.05). Insomnia and the personality dimension openness were not significant.

Conclusions
Preliminary findings show that psychological distress and personality contribute to elevated problem reports on the BRIEF-A-sr. Interestingly, the influence of certain personality traits and anxiety symptoms differed between the MI and BRI. The unexpected sex difference found for the BRI should receive attention in future standardization studies of the Norwegian version of the BRIEF-A-sr.

Keywords Adults, Cognition, Healthy, Mood, Personality

(PT-11) The impact of developmental concerns on early sociocognitive skills in Finnish children

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Background
Early Sociocognitive Battery (ESB) assesses sociocognitive skills (Social Responsiveness (SR), Joint Attention (JA) and Symbolic Comprehension (SC)) in young children and supports timely identification and intervention of children with a risk of social communication difficulties (SCD) and autism spectrum disorder (ASD). Roy, Chiat and Warwick (2019) found that 2- to 3-year-old children with current speech-language therapy performed weaker in the ESB than children without therapy needs.

Objective
Our focus was to investigate whether children with minor developmental concerns (DC), other than ASD or SCD, differ from typically developed (TD) children in their early sociocognitive skills.

Method
Data (n=40, age range 1;11-4;11) of children without diagnosed ASD or other major neurological disorder was collected from three play schools and from the longitudinal Gaze@Toddler-project. Parents reported whether their child had minor DC in language, motor or social-emotional skills observed by parents, health care or day care. Children with observed DC (n=7, M=41.9 months, SD=13.8) were compared to TD children (n=33, M=33.9 months, SD=12.8) in ESB total score and the subtests of SR, JA and SC using independent samples t-test.

Results
DC group performed significantly weaker in SC ($p<.001$) and in ESB total ($p=.005$), but the groups did not differ in SR ($p=.329$) and JA ($p=.131$).

Conclusion
Results suggest that developmental concerns are associated with the development of Symbolic Comprehension and therefore also affect the total ESB score. Children with minor developmental concerns might differ most markedly in their development on the most difficult ESB scale i.e. symbolic comprehension. This study is limited by its small sample size. Assessing sociocognitive skills as part of cognitive assessment could be clinically meaningful also in children with other developmental concerns than SCD and ASD to comprehensively evaluate their need for support. ESB's different scales could offer individualised information for tailoring developmental support.

Keywords Assessment/test, Children, Developmental disorders, Social cognition

(PT-12) State excitement in the assessment of early sociocognitive skills in Finnish children

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Background
Early Sociocognitive Battery (ESB) assesses sociocognitive skills of young children in a structured play situation. It aims to identify children with developmental concerns for social communication difficulties and autism spectrum disorder. However, besides communication and interaction problems, a child's excitement, enthusiasm, or nervousness (e.g., state excitement) can also influence test performance, especially in the beginning of the assessment.

Objective
This study aims to assess whether state excitement affects performance on the ESB.

Method
Data (n=40, aged 1;11-4;11) of typically developed children (minor language or motor developmental concerns allowed) was collected from three play schools and from the longitudinal Gaze@Toddler-project. Children who were determined by the assessor to have state excitement (SE, n=9, M=36.8, SD=13.3) in the assessment were compared to typically performing children (TP, n=31, M=34.9, SD=13.3) in the ESB subtests of Social Responsiveness (SR), Joint Attention (JA) and Symbolic Comprehension (SC), and ESB total score using ANCOVA with developmental concerns (DC) as covariate.

Results
SE group performed significantly weaker than TP group in the first subtest, SR (p=.007) and in ESB total (p=.007), but the groups did not differ in JA (p=.307) and SC (p=.125) when DC was considered.

Conclusion
Results indicate that state excitement affects children's performance in the beginning of the ESB assessment in Social Responsiveness, which requires responsiveness to the assessor's facial expressions. Therefore, state excitement also affects the total ESB score, and may confound the interpretation of results. This study's limitations are small sample size, assessor's subjective evaluation of state excitement and focus only on Finnish children. Cross-cultural research is required to examine whether state excitement impacts children's ESB performance similarly in other cultural contexts. More research is needed to understand the effect of presentation order of ESB's subtests on children's test performance and test reliability.

Keywords Anxiety, Assessment/test, Children, Developmental disorders, Social cognition

(PT-13) Mindfulness-based Stress Reduction Groups for Autistic Adults – a Randomized Controlled Trial

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Background
Autistic adults often experience high levels of stress and difficulties in coping with everyday stressors. Mindfulness-Based Stress Reduction (MBSR) is a group-based intervention that has been suggested as a promising option.

Objectives
The aim of this study was to evaluate the effectiveness of the MBSR groups for autistic adults as compared to treatment as usual (TAU) condition.

Methods
The setting of the study was a publicly funded outpatient disability health care in Stockholm, Sweden. The therapists were ordinary staff members with further education in MBSR. The participants (n=77) were randomized into one of the two arms (the MBSR group n=39, or TAU n=38), after completing the (blinded) baseline measures. We used standardized self-reports to collect data on perceived stress (primary outcome measure) and secondary outcome measures. The data was collected at baseline, after the intervention, as well as at 3-month follow-up, and analyzed using linear mixed models (random intercept) in IBM SPSS 28.

Results
There were no significant differences between the two groups (MBSR versus TAU) at baseline regarding sociodemographic or clinical variables. The participants (52% female) were on the average 39 years old. Despite of the similar education level as in the general population in Sweden, 65 % of the study participants were not studying or working at inclusion, and 87% had at least one additional psychiatric diagnosis. The completion rate in the MBSR group was 81%. The MBSR participants reported a greater reduction of perceived stress from the pre-intervention to follow-up, than the TAU group. The analyses of the secondary outcome measures are currently in progress.

Conclusions
Mindfulness-based Stress Reduction groups for autistic adults may be an effective intervention in an outpatient context. Future studies should focus on the long-term maintenance of the acquired coping skills.

Keywords Adults, Autism, Psychiatric symptoms, RCT, Therapy

(PT-16) Fatigue and cognitive impairment in patients with irritable bowel syndrome (IBS). Two separate routes to psychological distress?

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Background
Irritable bowel syndrome (IBS) is characterized by recurring abdominal pain and changes associated with defecation, frequency, or form of stool, and a high percentage of patients with IBS report that they experience psychological distress. This distress includes fatigue, a pervasive sense of tiredness, lack of physical and mental energy, and cognitive problems that may affect domains like attention, memory, and executive function. Previous studies on the association between fatigue and cognition have presented conflicting results.

Objective
To further explore associations between fatigue and cognition in a group of adults with IBS and healthy controls (HCs).

Methods
The study included 84 participants, 49 patients with IBS (mean age 35.9 years) and 35 HVs (mean age 36.4 years), who completed the Chalder Fatigue Scale (CFQ-11) and performed all subtests of the Repeated Battery of Neuropsychological Symptoms (RBANS). Correlation analysis and linear regression analysis with the total CSF-11 as the outcome variable and the total RBANS score as the input were computed.

Results
Patients with IBS reported more severe fatigue on several CFS-11 items and obtained a significantly higher total CFS-11 score than the HCs. The total RBANS score was significantly lower in the patient group. The correlation and the regression analyses showed a statistically non-significant association between the total RBANS score and the Â CSF-11 score, with a value close to the border of significance when controlling for the effect of age (p = .052).

Discussion
Fatigue and cognitive impairment seem to represent two different routes to psychological distress. However, we could not rule out that adaption to the fatigue in the IBS group may have masked cognitive impairment on a relatively easy-to-perform test like RBANS. Co-occurrence of fatigue and cognitive impairment may still impede daily-life function. Our understanding of the impact of psychological distress symptom relationships definitely needs further development.

Keywords Cognition

(PT-17) Minimal improvement in self-reported symptoms the first years in Post COVID-19 condition

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Background
Cognitive dysfunction, as well as physical and emotional long- term symptoms, are common in Post COVID-19 condition (PCC). However, knowledge regarding symptom development in this group is lacking.

Objective
To investigate the development of self-reported symptoms for patients with PCC after an initially mild to moderate SARS CoV-2 infection.

Method
Patients admitted to the Cognitive Post COVID-19 Clinic at Danderyd University Hospital, Stockholm, for cognitive symptoms persisting ≥3 months after an initial mild to moderate infection were included. Questionnaires were administered at medical visit (T1) and neuropsychological assessment (T2). Danderyd symptomskala/DSS measure severity of 22 symptoms across 3 domains (cognitive, physical and emotional), with a maximum score of 4 (severe symptoms). Anxiety and depression were measured with Hospital Anxiety and depression scale/HADS. Mean scores on subscales were used in analyses (Wilcoxon signed-rank test).

Results
94 patients (mean age 45.8 y, 70% women) completed both assessments. 72% of the patients had a laboratory confirmed SARS CoV-2-infection. Mean time between infection and first visit was 18 months and between infection and second visit, 29 months. 56% of the patients were on sick-leave (part or full time) at the time of the neuropsychological assessment.

No significant differences were found when comparing symptom load at T1 and T2 (mean symptom load; cognitive 2.77 vs 2.72 p=.402, physical 1.91 vs 1.93 p=.472, emotional 2.51 vs 2.37 p=.069). Neither did levels of anxiety and depression differ significant between time points. On individual/specific cognitive symptoms, patients reported slightly reduced symptom load on memory (p=.012) and problem solving (p=.047) over time, but no significant differences were found on the other 10 symptoms.

Conclusion
In patients with PCC after a mild to moderate infection, cognitive, physical and emotional symptoms seem to be persistent. Symptom stability emphasizes the need of development of evidence-based rehabilitation for these patients.

Keywords Adults, Cognition, Covid-19, Infectious diseases, Longitudinal, Patients, Rehabilitation

(PT-18) Comparing the D-KEFS Color-Word Interference Test contrast scores to new regression-based derived measures in a Norwegian sample.

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Background
The D-KEFS Color-Word Interference Test (CWIT) is a neuropsychological test of executive function. The CWIT is an expanded version of the Stroop test and includes contrast measures created by subtracting lower-level conditions form higher-level conditions. These measures do not have available Norwegian norms and have been criticized for their low reliability.

Objective
We here propose new regression-based derived measures for the D-KEFS CWIT in a large sample of healthy Norwegians aged 20-85 years. Furthermore, we assess the stability over time of the new regression measures compared to the conventional contrasts measures.

Method
The study sample comprised 1011 healthy participants between ages 20-85, pooled from three cohorts: the Dementia Disease Initiation cohort (DDI), the Oslo MCI cohort, and the Lifespan Changes in Brain and Cognition cohort (LCBC). Multiple regression analyses were used to model the effects of the lower-level reading or naming conditions on higher-level inhibition or inhibition/switching conditions. Conventional contrasts and regression-based derived measures were assessed for residual effects of demographics and lower-level CWIT conditions. Stability over time was examined in a sub-sample with available follow-up data.

Results
Conventional contrasts showed residual effects of demographics and basic functions and were significantly correlated to all main measures. Regression-based derived measures showed no residual effects of demographics nor basic functions. Analyses of stability over time showed ICCs in the poor to moderate range (range = .39-.56) for conventional contrasts, and in the moderate range for the regression-based derived measures (range= .49-.65).

Conclusion
The new regression-based derived measures adequately adjust for demographics and lower-level conditions and show higher stability over time compared to conventional D-KEFS contrast measures.

Keywords Assessment/test, Cognition, Executive function

(PT-19) Exploring the Impact of INCREM Program in Major Depressive Disorder: Preliminary Insights into the add-on Computerized Cognitive Training.

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Background
Existing cognitive remediation programs and cognitive training interventions in patients with Major Depressive Disorder (MDD) have yielded inconsistent results in addressing cognitive symptoms and their impact on psychosocial functioning. The INtegral Cognitive REMediation program (INCREM) is a novel intervention combining group sessions of functional remediation with tailored computerized cognitive training (CCT). It is specially designed for depressive disorders, demonstrating feasibility and benefits in enhancing psychosocial functioning.

Objective
This study presents preliminary findings from a multicenter randomized clinical trial comparing INCREM to psychoeducation + mental skill games, focusing on the cognitive performance on CCT within the INCREM group.

Method
Forty-two MDD patients participated in 12 INCREM sessions, comprising functional remediation and personalized CCT. Pre- and post-intervention assessments over a 6-month period included measures of depressive symptoms, psychosocial functioning, objective cognitive performance, and subjective cognitive appraisal. CCT was administered via the NeuronUp platform, with personalized performance indexes automatically generated for attention, executive functioning, and memory. Paired t-tests compared changes in main clinical variables, and slopes were calculated for each NeuronUP cognitive domain.

Results
INCREM demonstrated significant improvements in psychosocial functioning (mean difference=4.8, p=0.007), objective cognitive symptoms (mean difference=-8.1, p>0.0001), and subjective cognitive symptoms (mean difference=4.6, p=0.004). Nevertheless, the curves for CCT unexpectedly showed limited changes in executive functioning (slope=0.025) and memory (slope=0.029), with negligible improvement in attention (slope=0.002) scores.

Conclusion
These preliminary findings suggest the potential efficacy of the INCREM program in enhancing psychosocial and general cognitive functioning among partially remitted depressed patients. However, the observed changes do not appear to be only influenced by a 12-session CCT, indicating the need for further investigation into the mechanisms underlying cognitive enhancement in MDD procognitive interventions.

Keywords Attention, Cognitive training, Depression, Executive function, Memory, Rehabilitation

(PT-25) Children with ADHD show difficulties in time-based prospective memory and strategic time-monitoring in a naturalistic virtual reality task

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Background
Time-based prospective memory (TBPM), the ability to carry out intentions at specific times in the future, requires frequent and strategical time monitoring. While previous studies, using conventional restricted experimental paradigms, have found TBPM to be compromised in children with Attention-Deficit/Hyperactivity Disorder (ADHD), this has not been studied with more ecological tasks simulating everyday life situations. Furthermore, it has not been examined if children with ADHD have problems with strategical time monitoring.

Objective
To study, if children with ADHD differ from typically developing (TD) controls in TBPM performance and time-monitoring behavior in a naturalistic virtual reality task, Executive Performance in Everyday LIving (EPELI, https://youtu.be/s8Q1eYxY65k).

Method
Age- and gender-matched groups of ADHD (*n*=72, mean age 10.4 years, 18% girls) and TD children (*n*=73, mean age 10.7 years, 33% girls) performed EPELI. TBPM performance, absolute (the total number of clock checks) and relative (strategicness of time-monitoring behavior) clock-checking were analyzed with general/generalized linear models.

Results
Children with ADHD displayed worse TBPM performance than TD children (*p*=.016, odds ratio 1:0.69). While absolute clock-checking did not differ between groups, TD children exhibited better relative clock-checking than children with ADHD (*p*=.002, *d*=.55).

Conclusion
Our findings support previous studies with restricted paradigms, showing that TBPM is compromised in ADHD children also in a naturalistic task. However, contrary to previous studies, there were no group differences in absolute clock-checking. It is possible that in experimental tasks with limited behavioral responses some of the clock-checking behavior in ADHD may be due to increased tendency to engage in extraneous actions. In EPELI, the children have more options for behavioral responses. Therefore, extraneous activity may be directed to other activities, like interacting with task-irrelevant but tempting objects. However, children with ADHD appear to display less strategic time-monitoring, which may explain their worse TBPM performance.

Keywords ADHD, Assessment/test, Children, Memory, Technology

(PT-26) Establishing and evaluating the gradient of item naming difficulty in post-stroke aphasia and semantic dementia

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Background
Anomia is a central symptom in semantic dementia (SD) and post-stroke aphasia (PSA). Picture naming tests are commonly used in clinical assessment and presumably contain a systematic gradient of item difficulty, but this remains to be formally demonstrated and investigated.

Objective
Our goal was a) to establish a systematic gradient of item naming difficulty in two large datasets of SD and PSA patients, b) to investigate the degree to which this gradient varies between anomic aetiologies and c) to explore how the gradient relates to a set of psycholinguistic properties.

Method
We adopted an Item Response Theory framework and analyzed individual item data from 240 patients, estimating item difficulty and discrimination parameters of each item on the 64 item picture naming test from the Cambridge Semantic Memory test battery. Analyses of differential item functioning were conducted to establish whether some items were systematically more difficult for patients with a specific aetiology (SD vs. PSA) regardless of their general level of the latent trait, anomia severity. Finally, individual item parameters were related to psycholinguistic properties of the items (e.g. Frequency and Familiarity of the words) by means of linear multiple regression analyses.

Results
Our analyses indicated that item naming difficulty a) varies systematically in patients with anomic symptoms, b) to some degree differs between aetiologies (SD vs. PSA), and c) is significantly related to psycholinguistic properties of the items, specifically Frequency and Familiarity for the SD group and Frequency and Word length for the PSA group.

Conclusion
The presented work introduces a novel approach to evaluating neuropsychological assessment tools, and our findings provide an empirical foundation for developing new, adaptive, time-efficient and patient-tailored approaches to naming assessment and therapy.

Keywords Assessment/test, Dementia / degenerative disorders, Language, Stroke /cerebrovascular

(PT-27) Virtual Reality for a Precise Quantification of Idiosyncratic ADHD Symptoms

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Background
Currently the diagnostics of attention-deficit/hyperactivity disorder (ADHD) relies on questionnaires and clinical interviews that are prone to subjective bias, and on simplified non-naturalistic tasks that are limited in capturing complex symptom patterns. To objectively measure real-life executional problems and attention deficits, we have recently developed a virtual reality (VR) task called EPELI, where participants perform everyday chores in situations imitating those where ADHD symptoms typically manifest.

Objective
Here, we aim to improve EPELI method with machine learning and Normative Modelling (NM) approaches. We tested previously defined EPELI features (Seesjärvi et al.,2022, *JAD*) against new lower level behavioral features. Both feature sets were tested for predicting participant's diagnosis with and without preceding NM step.

Method
EPELI data was obtained from 73 children with ADHD (9–13 y.o.) and 73 typically developing (TD) children matched in age and gender. Additional normative sample of 1042 children matched by age was obtained to model normative responses.

Support vector machine implemented to Sklearn Python package was used test prediction of participants' diagnosis. Sklearn K-means algorithm was used to investigate possible clusters among ADHD participants. NM estimation was implemented with Predictive Clinical Neuroscience toolkit.

Results
Preliminary results indicated that novel behavioral features provide improved predictions of? participant's group status (AUC=0.84/0.91 with/without NM) as compared with previous metrics (AUC=0.8/0.75 with/without NM). The highest features' importance was obtained for distance covered in the game and the number of human-environment interactions (reflecting hyperactivity).

Further analysis with the new features revealed two distinct clusters, one characterized by higher variability of hand's movements and high number of human-environment interactions, and the other one included participants with average scores.

Conclusion
The results suggest that combining high precision data reflecting goal-directed behavior in a naturalistic setting with advanced computational methods may potentially improve diagnostics of ADHD.

Keywords ADHD, Assessment/test, Children, Executive function, Technology

(PT-28) Doing it from home: Remote digital testing as a valid alternative to standard neuropsychological tests.

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Background
Neuropsychological assessment traditionally requires physical meetings where patients meet psychologists on site at a clinic. This procedure may pose logistical challenges, for instance when patients are less mobile, or in sparsely populated areas where the distance to healthcare facilities may be considerable. Digital tests for remotely assessing cognitive functions may provide invaluable tools in these situations but need to be validated.

Objective
We aim to investigate to what degree the tests in a remote digital neuropsychological test-battery (Mindmore Remote) correspond to traditional neuropsychological tests.

Method
Fifty-two healthy participants between ages 19 and 89 years underwent both traditional neuropsychological testing procedures on site and remote testing on a computer at home. To avoid sequence effects, the order of testing (traditional / digital) was randomized. The tests examined (1) processing speed, (2) visual-scanning and attention, (3) visual short-term and working memory, (4) verbal learning, (5) episodic memory, (6) verbal production, (7) inhibition, and (8) cognitive flexibility. Associations between traditional and digital versions were assessed by correlations.

Results
Significant positive correlations were found for all tests. The strength of the relationship between the remote and traditional tests ranged from r = .36 to r = .83 in the following order: visual working memory (r = .36), visual short-term memory (r = .40), visual scanning (r = .45), visuomotor speed (r = .59), inhibition (r = .62), visual attention and processing speed (r = .65), cognitive flexibility (r = .71), verbal learning (r = .71), verbal production (r = .78) and episodic memory (r = .81-.83).

Conclusion
Several of the remote digital tests have the potential to be used in neuropsychological assessment. However, relatively weak relationships between tests that requires motor responses warrants further investigations before clinical implementation.

Keywords Assessment/test, Cognition, Executive function, Processing speed, Technology

(PT-29) Psychoeducational groups for autistic adults and their close relations (Prisma)

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Background
The prevalence of diagnosed autism spectrum condition is increasing among adults. However, access to post-diagnostic services is still limited. Close relations often coordinate services but may themselves need support. Psychoeducation is a first-line intervention providing knowledge about autism and empowerment through peer-support.

Objective
These two studies aim to investigate the feasibility and effects of a new psychoeducational group-based program – Prisma – for autistic adults and their close relations in an outpatient setting.

Methods
The Prisma program consists of four weekly two-hour sessions. In two separate study phases, including different study participants, the feasibility and effects of Prisma have been evaluated in an outpatient context in Stockholm, Sweden. Twelve psychiatric and habilitation clinics for adults included 476 participants (open feasibility study *n* = 186; Randomized Controlled Trial (RCT) *n* = 290); 238 autistic adults and 238 close relations. Self-rating scales were administered pre- and post-intervention. In the RCT, the Prisma intervention was compared to a treatment as usual (TAU) condition.

Results
In the open feasibility study, the completion rate was acceptable: 77% of autistic adults and 73% of close relations completed the intervention. Both autistic adults and their close relations reported high treatment credibility and treatment satisfaction. However, the qualitative analysis also showed several suggestions for improvements in the program contents and delivery. After these adjustments, we proceeded to a randomized controlled trial. The results from the RCT are currently being analyzed.

Conclusion
Prisma is a feasible intervention for autistic adults in an outpatient setting. The results from the RCT will inform about the intervention's potential to increase autism knowledge and improve well-being in autistic adults and their close relations.

Keywords Adults, Autism, Intervention, RCT, Relatives

(PT-32) Cognitive function in older adults with congenital heart disease: results of a national centre study

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Background and Objective
The life expectancy of congenital heart disease (CHD) patients is rising, leading to an aging population. This study aimed to describe cognitive dysfunction in older adults with CHD.

Participants and Methods
We included 46 patients aged ≥ 40 years (median age: 55 [40-70], 37% women, 83% moderate, 17% complex CHD).
Cognitive function was evaluated using a battery of neuropsychological tests including the Montreal Cognitive Assessment (MoCA), Symbol Digit Modalities Test (SDMT), Trail Making Test (TMT1-5, D-KEFS), Verbal Fluency Test (VF1, D-KEFS), Color-Word Interference Test (CWIT1-4, D-KEFS), Brief Visuospatial Memory Test (BVMT-R), Dysexecutive questionnaire (DEX, BADS). Fatigue was assessed by the Multidimensional Fatigue Inventory(MFI-20).
Spearmans correlations were used to determine the relationship between MoCA and different cognitive tests.

Results
Based on the MoCA, 33 % had cognitive impairment in this total sample. The neuropsychological test SDMT measuring processing speed, 50 % had cognitive impairment, and TMT1 measuring processing speed and attention, 18 % had cognitive impairment, CWIT1 measuring processing speed and attention, 40 % had cognitive impairment in the total sample.
Test measuring executive function in this study; TMT3, 21 % had cognitive impairment, TMT4, 41 % had cognitive impairment; VF1, 28 % had cognitive impairment, regarding executive function.
Test measuring visual memory (episodic memory, learning and recognition memory) in this study; BVMT-total, 42 % had cognitive impairment and BVMT-delay, 31 % had cognitive impairment in the total sample (BVMT2, 44% had cognitive impairment. BVMT3, 36% had cognitive impairment). In our study 91% of the patients reported mild to very severe mental and general fatigue.
Based on the DEX, only 4 % in this sample reported mild to severe cognitive executive impairment.

Conclusion
This study describes relative high prevalence of cognitive dysfunction in older adults with moderate to complex CHD, which suggest that MoCA may be suitable to use as screening instrument in daily practice.

Keywords Adults, Cognition, Executive function

(PT-34) Executive functions four years after a stroke

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Background
Executive functions (EF) are understudied in the chronic phase after stroke.

Objective
i) Evaluate the core EF components *Shifting*, *Inhibition* and *Working Memory* using subjective and objective tests, ii) examine correlations between objective and subjective tests within these EF components and iii) investigate the relationships between EF and disability.

Method
At the University Hospital of North Norway, 65 adults (mean age = 64 (9), women =17) enrolled four years after an ischemic stroke. Neuropsychological tests comprised the Behaviour Rating Inventory of Executive Function - Adult version (BRIEF-A), Delis-Kaplan Executive Function System (D-KEFS), Wechsler Adult Intelligence Test (WAIS-IV), and Connors Continuous Performance Test (CCPT-3). Raw scores were converted to z-scores after age correction by published norms and reversed if needed for higher scores indicating better performance. Subjective EF scores comprised the BRIEF-A clinical scales Inhibition, Working Memory and Shifting. Objective EF composite scores were created for Inhibition by the Color-Word Interference Test condition 3 (D-KEFS) and commission errors on the CCPT-III, Working Memory consisted of Digit Span Backwards and Letter-Number Sequencing (WAIS-IV), and Shifting consisted of Trail Making Test condition 4 and Color-Word condition 4 (D-KEFS). The Modified Rankin Scale (MRS) assessed functional level ranging from 0-6, with higher scores indicating greater disability.

Results
All EF scores were below average ($z < 0$). Correlations between subjective and objective EF scores were significant only for the Shifting component ($r=.28$, $p=.025$), not Working Memory or Inhibition.
Worse performance in all EF, excluding subjective Inhibition, significantly correlated with poorer functional status ($p< .05$).

Conclusion
EF assessment is important after stroke in the chronic phase. Absence of significant correlations between objective and subjective test scores within the same EF component can result from test selection. Establishing evidence-based, cohesive EF definitions with core sets of standardized and precise measures is crucial towards advancing rehabilitation interventions for EF after stroke.

Keywords Assessment/test, Executive function, Patients, Quantitative, Rehabilitation, Stroke /cerebrovascular

(PT-35) The psychometric properties of the Psychopathology in Autism Checklist among children: Preliminary findings from a neuropediatric sample

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Background
In recent years, instruments for assessing mental health (MH) in autistic people have proliferated. However, a recent systematic review showed variable evidence of the reliability and validity of the various instruments, and a need for a greater evidence-base for MH assessment tools for autistic people.

Objective
This is the first study to examine the psychometric properties of the Psychopathology in Autism Checklist among children. We hypothesized: i) adequate internal consistency reliability; ii) adequate test-retest reliability; iii) meaningful conceptual overlap with the Developmental Behavior Checklist (DBC), and IV) criterion-related validity in terms of meaningful group differences in PAC scores between autism spectrum disorder (ASD) vs. other neurodevelopmental disorders (OND).

Method
The study took place at the University Hospital of North Norway, Department of Neuropediatric Rehabilitation, in the years 2020–2022. A total of 236 children with neurodevelopmental disorders or neurological conditions participated. Parent report of child MH problems was conducted by means of the PAC administered by a clinical psychologist/neuropsychologist, and the parents completed the DBC.

Results
The participants were 2 to 18 years of age (M = 8.52, SD = 4.37; 156 boys and 78 girls). The internal consistency was adequate to excellent for all subscales except for Obsessive-Compulsive Disorder (OCD) and Anxiety (α between .53–.82). The test-retest reliability was adequate for all subscales (r >. 60). The PAC subscales General Adjustment Problems, Anxiety, and Depression showed meaningful overlap with subscales from the DBC (r = .60–.75). Children with ASD had significantly higher PAC scores indicating worse functioning on the subscales General Adjustment Problems, OCD, and Psychosis compared to OND.

Conclusion
Preliminary evidence indicate adequate reliability and validity of the PAC in a clinical neuropediatric sample, and confirms the potential value of the PAC as a screening checklist for MH disorders.

Keywords Assessment/test, Autism, Children, Psychiatric symptoms, Psychopathology

(PT-38) The use of the Oxford Cognitive Screen as a cognitive screening tool in brain injury rehabilitation in Denmark.

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Background
Cognitive impairment is common among stroke survivors and is associated with poor functional outcomes. Accurate cognitive screening is essential for planning interventions and rehabilitation. The Oxford Cognitive Screen (OCS) is a recently developed, short screening tool designed to assess cognitive deficits following stroke.

Objective
The primary aim was to assess the general performance of the Danish OCS (OCS-DK) in a rehabilitation setting. More specifically, the study investigated differences in cognitive impairment between patients in the sub-acute and chronic phase and with left and right hemisphere brain damage, respectively. Convergent validity and sensitivity were assessed by correlating scores from subtests of the OCS-DK with scores from neuropsychological tests assumed to measure similar cognitive functions.

Method
The study is a retrospective registry-based analysis of cohort data from patients admitted to Vejlefjord Rehabilitation, a specialised neurorehabilitation hospital in Denmark.

Results
Sub-acute patients demonstrated higher rates of impairment on the OCS-DK, particularly in memory and executive measures, compared to patients in the chronic phase. Moreover, patients exhibited distinctive patterns of impairment according to the location of brain damage. Patients with right hemisphere damage exhibited significantly higher incidences of impairment in measures of visuospatial attention, whereas patients with left hemisphere damage showed higher incidences of impairment in number writing and memory. OCS-DK demonstrated poor convergent validity, low sensitivity, and high specificity; however, results should be interpreted with caution as neuropsychological test results were available for a limited number of patients.

Conclusion
The OCS-DK identifies cognitive impairment in patients with brain injury in the sub-acute and chronic phase and may provide useful information in an interdisciplinary rehabilitation setting. However, it is important to know its limitations as a short screening tool. The reliability and validity of the OCS-DK needs to be investigated further in larger patient samples.

Keywords Assessment/test, Cognition, Rehabilitation, Stroke /cerebrovascular

(PT-41) Face and word superiority: parallel tests of whole-object effects.

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Background
The perception of faces and words are expert visual functions. Some theories propose that these have overlapping neural substrates, so that neurologic patients may be impaired in both. However, most tests of face and word processing were developed independently, with different methods (e.g. part-whole advantage for faces, vs word superiority effects) and different outcome variables (accuracy vs reaction time).

Objectives
Our goal was to create and evaluate a test of face and word superiority effects, purported indices of whole-object processing, to permit more equitable comparisons between face and word operations.

Methods
40 subjects participated. Our superiority tests examined the discrimination of a letter or facial feature, briefly presented, embedded in larger contexts that varied in semantic familiarity and form regularity. For letters, these were words, pseudo-words (pronounceable letter strings) and non-words (random letter strings). For faces these were familiar faces, novel (pseudo) faces, and scrambled (non) faces. The chief outcome variable was reaction time.

Results
Compared to 'non'-stimuli, there were significant face and word superiority effects, of 387 and 465ms respectively, as well as significant pseudo-face and pseudo-word superiority effects (234ms and 281ms). ANOVA showed a main effect of class (faces vs words), with faster reaction times for word than for face tasks. There was a main effect of stimulus context, with a hierarchy from fastest performance for 'semantic' stimuli to 'pseudo'-stimuli and then 'non'-stimuli. Critically, there was no interaction between class and stimulus context. There were strong correlations within class (r = 0.78 to 0.91), and also significant correlations (r = 0.52 to 0.67) across the two classes matched for stimulus context - e.g. between non-words and non-faces.

Conclusions
Both words and faces show whole-object superiority effects of similar magnitude when their components are presented in stimuli with regular form (pseudo-words and novel faces) and in stimuli with semantic associations (real words, familiar faces).

Keywords Experimental, Vision

(PT-43) A pilot study examining the effects of group-based neuropsychological rehabilitation on quality of life for patients with mild neurocognitive disorder.

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Background
After mild brain injury giving proper information has shown to be effective supporting recovery and implementing intervention soon after injury can prevent the development of persistent post-traumatic complains (e.g. Turner-Stokes, Pick, Nair, Disler & Wade, 2015, Silverberg ym., 2013). Also, quality of life can improve through neuropsychological rehabilitation especially in younger persons (Guárdia-Olmos, Peró-Cebollero & Gudayol-Ferre, 2015). Group-based neuropsychological intervention for patients with mild neurocognitive disorder after brain lesion was developed in neurology outpatient clinic of Nova hospital of central Finland.

Objective
The aim of this pilot study was to assess the possible changes in health-related quality of life during rehabilitation.

Method
In this registry-based study quality of life was assessed with QOLIBRI (Quality of Life After Brain Injury, von Steinbüchel ym., 2010). 43 patients attending to the group-based rehabilitation completed QOLIBRI before the intervention and after the intervention. Test-retest change was examined by paired sample t-testing.

Results
The patients rated their health-related quality of life in general, to cognition, self and daily life and autonomy highly significantly (t-test, $p < 0,001$) better after rehabilitation. Quality of life related to social relationships was rated significantly (t-test, $p < 0,05$) better after rehabilitation. Quality of life related to emotions (t-test, $p = 0,066$) and physical problems (t-test, $p = 0,147$) was not rated significantly different after rehabilitation.

Conclusion
The results suggest that group-based neuropsychological rehabilitation can have effect on the health-related quality of life in patients suffering from brain lesions with mild neurocognitive disorder. More studies are needed to discover if the positive effect in quality of life is persistent in the longer term. A control group is needed to get more information whether the change in quality of life is related to spontaneous recovery after brain lesion or does the rehabilitation have effect on that.

Keywords Quality of life, Rehabilitation

(PT-44) Everyday Executive Functioning After COVID-19: Associations with Disease Severity and Informant-Report

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Background
COVID-19 can lead to changes in cognitive functioning, with executive functioning being one the most common cognitive domains affected. However, research on everyday executive functioning after COVID-19 is scarce.

Objective
To examine self-reported everyday executive functioning and its associations with disease severity and informant-report in three COVID-19 severity groups.

Method
We assessed 111 COVID-19 patients at three and six months after COVID-19: 42 treated in ICU (ICU), 40 in other hospital wards (WARD), and 29 isolated at home (HOME). A non-COVID-19 control group (n=43) was also evaluated. We assessed everyday executive functioning with the Behavior Rating Inventory of Executive Function-Adults (BRIEF-A) self-report and informant-report forms. The main outcome measure was the BRIEF-A summary score, the Global Executive Composite (GEC).

Results
No statistically significant differences in GEC scores between COVID-19 groups and control group were found at three (p=.738) or six months (p=.393) after COVID-19. Regarding change in follow-up, no significant effect of time (p=.097) was found, but a statistically significant interaction of measurement time and group (p=.027) was discovered: in the HOME group, GEC scores decreased from 3 to 6 months (p=.019). At three months, correlations between self- and informant-reports were strongest in the ICU (r=.847, p<.001) group and significant also in WARD (r=.529, p<.001) and CONTROL (r=.331, p=.030) groups but non-significant in the HOME (r=.242, p=.207) group.

Conclusion
We found no significant differences in BRIEF-A scores between COVID-19 patients and non-COVID controls. Overall, the state of everyday executive functioning did not notably change in follow-up, but in the HOME group, the mean GEC score decreased in follow-up. The highest correlations between self- and informant-evaluation were found in the ICU group. Our results suggest that everyday executive functioning seems not to be largely affected after COVID-19.

Keywords Adults, Covid-19, Executive function, Infectious diseases

(PT-45) Executive function in a treatment-naive ADHD cohort diagnosed in adulthood

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Background
Attention Deficit Hyperactivity Disorder (ADHD) is an early onset neurodevelopmental condition presenting with diverse cognitive/behavioral impairments that persist into adulthood for half of those affected.

Objective
To examine whether unmedicated adults show general- or specific reductions in core executive functions (EFs).

Method
Performance on tasks measuring memory span and working memory (Digit Span), interference control/response inhibition (Color Word Interference Test; CWIT-Inhibition), set-shifting/switching (CWIT-Switching; Trail Making Test [TMT]), and abstract reasoning (Wisconsin Card Sorting Test; WCST) was assessed in adult patients with ADHD, Combined type (n=36) and in healthy controls (n=34), matched on gender, age, and education level.

Results
There was no group difference in immediate memory span, but the patients performed significantly worse than controls when there was an additional demand on working memory. Statistically controlling for individual differences in information processing speed (using an independent reaction time measure) did not alter the result. Patients performed inferiorly on basic psychomotor speed conditions of the TMT, but the most pronounced group difference appeared on the set-shifting condition. The CWIT-Inhibition condition did not distinguish the groups, but patients had a near-significant tendency to perform more poorly when a concurrent demand on rapid set-switching was introduced. They completed fewer card-sorting categories on the WCST than controls, with more errors overall. There was no significant difference in perseverative errors, but patients committed more non-perseverative errors and failures to maintain set, indicating more random choices and/or losing track of the current sorting principle.

Conclusion
ADHD-related reductions of attention maintenance, switching, and working memory, but not inhibitory control, support the literature indicating that adult ADHD is not associated with an overall executive impairment, but rather with difficulty in specific aspects of EF. Accordingly, clinical assessment should span a range of EF tests, including the core control functions studied here.

Keywords ADHD, Adults, Executive function

(PT-47) Understanding the experiences with cognitive impairment and access to care among cancer survivors and health care professionals: a survey study

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Background
Cancer related cognitive impairment (CRCI) are one of the most common and long-lasting late effects after cancer treatment. These impairments are related to reduced functioning in daily life, yet understanding of access to care for CRCI among cancer survivors in Norway remains limited

Objective
This study aimed to explore the experiences of cancer survivors and health care professionals' regarding CRCI and access to care of these impairments. *Methods*: The survey was distributed digitally though patient organizations and health care organizations. A total of 725 cancer survivors and 98 health care professionals working with cancer patients responded to the survey. Data were organized using a descriptive approach

Results
Cancer survivors reported that CRCI "often or very often" negatively impacted their: work/school functioning (54%), mental health (50%), rumination and worries (61%), control over their own life (55%), and identity (54%). Health care professionals experienced that CRCI in their patients "often or very often" had a negative impact on: work/school function (90.4%), mental health (81.7%), rumination and worries (86.6%), control over own life (73.1%), and identity (67.1%). Despite these challenges, few cancer survivors responded to have "often or very often" received: information about CRCI (3.9%), questionnaires to assess CRCI (1.1%), neuropsychological assessment (1.4%), strategy training (1.7%), or computerized cognitive training (0.6%). While the health care professionals reported to have "often or very often" provided cancer survivors with: information about CRCI (71.3%), questionnaires to assess CRCI (6.3%), neuropsychological assessment (1.3%), strategy training (40.1%), or computerized cognitive training (1.3%).

Conclusion
These results underscore a common understanding of the negative impact of CRCI, and an unmet treatment need for cancer survivors experiencing CRCI.

Keywords Cognition, Patients, Professionals, Survey

(PT-48) A call for an open access transdiagnostic Psychiatric Register for Cognitive functioning in Norway (PReCogNor)

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Background
Cognitive deficits manifest across psychiatric disorders. This has been known for over a century; however, prevalence estimates vary, and no national overview exists. In addition, the nature of-, and what predisposes individuals for deficits are not known. To better understand how deficits manifest in- and across psychiatric disorders, a national registry of data on cognitive functioning in disorders based on prior research studies, is proposed. An initial focus will be to identify prevalence and factors that influence rates of deficits, and a relationship between severity of disorders, risk factors, and impairment is expected.

Objective
This register will provide open access and enhance our understanding of cognitive deficits in psychiatric disorders and generate research to better identify, treat and accommodate individuals with cognitive deficits and psychiatric disorders. The large transdiagnostic sample will be ideal to investigate risk factors and prevalence compared to smaller, single studies that often lack the sample size to investigate such hypotheses.

Method
Anonymized data from previous studies will be collected and analyzed with regards to diagnosis, prevalence of global and domain specific deficits. Risk factors for cognitive deficits will be identified. Tests of similar cognitive domains will be investigated through factor analysis, structural equation modeling and composite scores. Prevalence of general and specific deficits will be identified according to cut-off criteria specified in consensus papers for identification of deficits in psychiatric disorders. Data will be stored at a two-factor authenticated cloud system at the University of Bergen, following ethical approval for use.

Results
Results will be published in national and international peer reviewed journals, as well as national publications to influence health care policies.

Conclusion
Despite the long history of cognitive deficits in psychiatric disorders, knowledge, identification, rehabilitation and treatment of cognitive impairments are lacking. An open access registry will generate research to ameliorate these issues.

Keywords Anxiety, Bipolar disorder, Depression, Executive function, Memory, Processing speed, Psychiatric symptoms, Psychopathology, Spatial cognition, Working memory

(PT-51) Regression-based norms for the Trail Making Test on Norwegian older adults: understanding the effect of education

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Background
Education is often identified as the most important factor for late-life cognition, thought to protect against aging effects and dementia. It is not clear why, and some have suggested a reverse causation, i.e. that education attainments are downstream effects of pre-education cognitive abilities.

Objective
Prior to the nineteen-sixties, university education was limited in most western societies. From a stable growth rate, the number of students doubled every five years. We compare effects of education on cognition between subjects becoming adults before these societal changes, with younger elderly given more educational possibilities. If higher education explains variance in performance within all age cohorts, one would interpret this as an effect of education by itself.

Method
TMT results for 440 subjects between 70 and 92 years from the NorFAST and HUNT studies were analyzed as to effects of age, gender and education.

Results
Age predicted performance on all TMT measures, but none were affected by sex. Education interacted with age, and the interaction-effect was driven by the group with the least amount of education. The performance in this group did not decline with age, indicating a cohort effect because the oldest had less education due to lack of opportunity and not cognitive capacity. Completion of only the lowest level of education was rare with the youngest group compared to the oldest, and test performance did not differ as to education attainment.

Conclusion
That age did not affect performance in the group with the lowest level of education might give support for the reverse causation hypothesis. If education was the most important factor in late-life cognition, then this group would follow the predicted decline in performance with increasing age. However, based on our results, we speculate that the early-life cognitive level might be the most important factor.

Keywords Cognition

(PT 52) Intelligence and Working Memory as Predictors of Learning Outcomes in School-Aged Children

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Background
Intelligence and working memory are important factors for academic performance. However, previous findings on whether intelligence or working memory is more important for learning outcomes are mixed. Further, no information on how performance on the Scandinavian WISC-V relates to learning outcomes exists to date.

Objective
We investigated the predictive power of intelligence and working memory on learning outcomes in a sample of Swedish-speaking 7–16-year-old children from Finland (*N* = 109). The children attended school in Swedish but with the Finnish curriculum. The data was derived from The FinSwed Study.
Method: Teacher-assigned school grades in six major subjects (Swedish, Finnish, English, mathematics, biology, and history) were collected on a web-based questionnaire, filled out by the parents. A grade point average of the school grades was calculated. Intelligence and working memory were assessed with the General Ability Index, and the Working Memory Index from the Swedish WISC-V, respectively. These cognitive predictor variables were first entered in the linear regression analyses in one order and then in the reverse order to examine their mutual variance.

Results
The predictive power on school grades was stronger for intelligence than for working memory. This was the case for the whole sample, as well as for younger and older children separately (grade 2–5 vs. 6–9). Intelligence and working memory together accounted for one-fourth of the variance in school grades.

Conclusion
This study confirms the relationship between cognitive test scores and learning outcomes in a Scandinavian setting and for the newest test version, the WISC-V. This has clinical implications, as the findings suggest that cognitive assessments can be used for planning educational support. However, as the cognitive variables explained only one-fourth of the variance, also other factors have a strong influence on school performance.

Keywords Adolescents, Assessment/test, Children, Cognition, Working memory

(PT-53) Evidence of Clinical Utility of the PASS Theory in a Norwegian Sample

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Background
The PASS theory offers an alternative to the traditional "g" in understanding human intelligence in terms of cognitive processes. Planning-attention-simultaneous-successive cognitive processes covers Luria's three functional units of the brain.
The PASS processes can be measured with the Cognitive Assessment System CAS2, published first in 1997 and used in Norwegian PPT and BUP since 2008.

Objective
The objectives of the present study are:
(1) To compare the PASS mean scores for a clinical sample and the norm sample,
(2) To examine the PASS weaknesses for subgroups in the clinical sample.

Method
The clinical sample consists of individuals referred to the PPT in several parts of Norway. They are all given the Norwegian edition of the CAS2, and mean scores for PASS indexes and full scale are calculated. These are compared to the means of the normative sample for the Norwegian edition.
The sample has individuals referred for several problems, which provides subgroups in the sample. Means for the subgroups are calculated and compared. Individual PASS weaknesses and full-scale distributions are found in each subgroup.
The data are presented in line and sector diagrams to highlight differences and similarities.

Results

1. The PASS mean scores for full scale and PASS were found to be lower in the clinical sample than in the norm sample.
2. The number of PASS weaknesses in each of the subgroups were found to have different pattern.

In all subgroups PASS weaknesses were found in more than 50 % of the cases.

Conclusions
The lower score in the clinical sample supports the validity for the PASS theory and the Norwegian edition of the CAS2.
The distribution of PASS weaknesses in the sample supports the clinical utility of the PASS theory and CAS2.

Keywords Assessment/test

(PT-54) Factor structure of the Conners Continuous Performance Test 3rd Edition: Exploratory factor analysis in a mixed clinical sample

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Background
Conners Continuous Performance Test-3 (CPT-3) is a computer-based test that is widely used to measure different aspects of attention. No factor analysis has yet been performed to corroborate the structure of the third version.

Objective
In the present factor analysis we seek to replicate the structure found in the previous second version, and test the distinction between inattention, impulsivity, sustained attention and vigilance.

Method
Data from a mixed sample of 931 adults referred for neuropsychological assessment across four centers in Norway were analyzed. Nine standard and six experimental measures were subjected to an exploratory factor analysis, evaluating factor models ranging from one to six factors.

Results
The factor analysis clearly shows that performance must be explained by more than one factor. The analysis gave inadmissible solutions for the six- and five-factor solutions. Four-, three-, and two-factor solutions showed a consistent finding of an inattention factor with distinct loadings from variability measures and omission errors, and an impulsivity factor with loadings from commissions, response style and hit reaction time. Only the four-factor solution gave an interpretable solution with separate factors measuring sustained attention and vigilance, in addition to impulsivity and inattention. Thus, the analysis favored a four-factor model, which had overall similarity to the four dimensions suggested in the CPT-3 Technical Manual and factor analyses of the previous CPT-II. There were some discrepancies between the four-factor model and the recommended interpretation of the measures in the Technical Manual. Notably, perseverations loads on the inattention factor and not on the impulsivity factor, and reaction time loads solely on impulsivity in the four-factor model.

Conclusion
Exploratory factor analysis of CPT-3 supported a distinction between four dimensions that can inform the clinician whether performance is explained by inattention, impulsivity, sustained attention or vigilance.

Keywords Assessment/test, Attention

(PT-55) Relationships between parent-rated everyday behavior and cognitive test performance in 6–17-year-old Finland-Swedes

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Background
The Five to Fifteen-revised (FTF-R) is a parental questionnaire widely used in clinical assessments in the Nordic countries. The survey assesses everyday functions of children. Information from parental surveys is often used alongside cognitive tests to more comprehensively characterize a child's functioning. Previous research on clinical samples has suggested that higher cognitive test performances are associated with fewer parent-rated difficulties on the FTF-R. However, no previous studies have examined whether the FTF-R is sensitive enough to show these associations in non-clinical populations.

Objective
The main aim of this study was to examine the relationships between cognitive test performance and parental ratings (FTF-R) in a typically developing population. The secondary aim was to examine how Finland-Swedish children were rated on the FTF-R in comparison to the official norms.

Method
The current study assessed 168 typically developing Finland-Swedes aged 6–17 years with the FTF-R. Cognitive assessments were undertaken with either the Swedish version of WISC-V (*n* = 118) or WPPSI-IV (*n* = 50).

Results
Results from logistic regression analyses displayed few and weak associations between cognitive test scores and FTF-R ratings. The Visuospatial Index significantly predicted scores on the FTF-R Perception domain. Apart from this, no other associations were found between corresponding domains. The parental ratings largely corresponded with the official FTF-R norms gathered in Denmark, with the exception that significantly fewer difficulties on the FTF-R subdomains of learning and perception emerged in the Finland-Swedish sample.

Conclusion
These findings offer no strong support for associations between performance on cognitive tests and the FTF-R in a typically developing sample. The FTF-R may not be sensitive enough to display similar associations with cognitive tests in a non-clinical sample as has previously been shown in more heterogeneous clinical groups. However, the FTF-R with its Danish norms seems generalizable to a Finland-Swedish setting.

Keywords Adolescents, Assessment/test, Children, Cognition, Survey

(PT-56) Minding what we're Missing: A study of longitudinal post-stroke dropout

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Background
Acute ischemic stroke annually affects approximately 11 000 Norwegians (Fjærtoft, 2022). The majority of these experience minor strokes (Thomassen et al, 2011). Studies suggest a high prevalence of cognitive impairment, fatigue, anxiety and depression 12 months later (Morsund et al, 2019 x2). Our project involves 324 minor stroke patients approximately 10 years post ictus. We will compare current findings with assessments collected at 3 and 12 months after stroke.

Objective
The dropout rate between 3 and 12 months in the initial project was 11 %. Longitudinal studies rely on participants completing assessment at different points in time in order to determine the trajectory of symptom progression. The aim of this study is therefore to analyse available information about participants who dropped out at 12 months to determine whether this can inform existing results.

Method
These participants are invited to partake in the 10-year follow-up, and 24% have agreed so far. We will consider demographic information, assessment results, and stroke location between the main sample and the dropout sample.

Results
Preliminary findings show that 12% of dropout participants passed away, compared to the 6% mortality rate in the remaining sample. Approximately 6% of dropout group did not want to participate, and further 6% moved to another region. Gender (49% female) and age (45% < 60 years at ictus) were representative of the overall sample.
The follow-up data collection is ongoing and we aim to complete it during the summer of 2024.

Conclusion
Considering the cognitive, psychological, social and clinical factors within the dropout group compared to the overall sample can help accommodate these in longitudinal data collection. Ideally, such considerations can inform researchers about participants we never see due to participation bias (Elston, 2021).

Keywords Dementia/degenerative disorders, Longitudinal, Neurology, Psychiatric symptoms, Stroke/cerebrovascular

(PT-57) Cognition and Sleep in Bipolar Disorder: A Web-Based Investigation

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Background
In individuals with bipolar disorder (BD), understanding the relationship between objectively measured sleep and cognitive performance is crucial, as sleep disturbances are common. While previous research has explored sleep patterns using actigraphy, the role of oximetry adds a new dimension to our understanding.

Objective
Our study aims to investigate the associations between sleep parameters, including both actigraphy and oximetry, and cognitive function in individuals with BD.

Method
People with bipolar disorder (n=70) were recruited from an outpatient research-oriented university clinic. Participants were in full or partial remission defined as MADRS≤ 16 and YMRS≤ 8. They underwent a web-based battery of cognitive testing to evaluate various domains of cognition. Sleep were assessed with actigraphy for a minimum of one week. Overnight pulse oximetry was conducted to assess oxygen saturation.

Results
48 women and 22 men with BD type 1 (n=22) and BD type 2 (n=48) with mean age 37±10.6 years. Preliminary findings confirms irregularity of sleep-wake patterns in this group. Results further suggest that reaction time; number of mistakes and intrusions in verbal memory are related to this sleep regularity. Additionally, oxygen saturation from oximetry appears to be related to recognition in spatial memory.

Conclusion
Our ongoing study sheds light on the intricate interplay between sleep, cognition, and BD. As we continue data analysis, we anticipate further nuances and understanding of this important topic in bipolar disorder.

Keywords Bipolar disorder, Cognition

(PT-58) Exploring the discrepancy between subjective and objective measures of executive functions in long-term, adult survivors of childhood acute lymphoblastic leukemia

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Background
Childhood acute lymphoblastic leukemia (ALL) is associated with executive dysfunction in long-term survivorship in adulthood. This is evidenced by neurocognitive test results and self-report questionnaires. However, the two measures do not always align, and the discrepancy between subjective and objective executive function (EF) measures in this population is understudied.

Objective
The current study aimed to examine the association between global measures of subjective and objective EF in long-term, adult survivors of childhood ALL. Secondly, we aimed to explore how psychological distress, fatigue severity, IQ and self-efficacy, relate to the discrepancy between EF measures.

Method
Long-term, adult survivors of childhood ALL (N=53), completed a clinical trial baseline assessment. The summary composite Global Executive Composite (GEC) from the Behavior Rating Inventory of Executive Function for Adults (BRIEF-A) was used to assess subjective EF. Results from six neurocognitive tests were combined to represent a summary score for objective EFs. Discrepancy scores were calculated by subtracting the objective EF composite score from the subjective EF composite score. Spearman's correlations and multiple regression analysis were performed to explore associations and relevant predictors for the EF discrepancy.

Results
Subjective and objective measures of EF were moderately correlated (r_s = .407). More psychological distress (HSCL, r_s = -.600) and fatigue severity (FSS, r_s = -.500) were associated with reporting more subjective EF complaints. More self-efficacy (GPSS, r_s = .469) was associated with reporting fewer subjective EF complaints. Higher estimated IQ was associated with fewer subjective (GAI, r_s = .320) and objective EF impairments (GAI, r_s = .640). The only significant predictor in the multiple linear regression was psychological distress (B = -.46).

Conclusion
Our results suggest that long-term, adult survivors of childhood ALL have relatively good insight into their objective EFs. However, screening for anxiety and depression in tandem with subjective EF complaints could be important for adequate interpretation of the latter.

Keywords Assessment/test, Executive function, Psychiatric symptoms

(PT-59) Depression after traumatic brain injury (TBI):exploring neuropathological mechanisms

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Background, Objective, Method, Results, Conclusion
Depression symptoms are common following traumatic brain injury (TBI). People can experience different physical and cognitive consequences, therefore they often cannot live the life they lived before the TBI, which leads to feelings of loss, grief, and depression. Next to these psychological processes, there is increasing evidence that there are also neuropathological mechanisms that contribute to depression symptoms following TBI. Previous studies have found promising targets that warrant large and more rigorous studies. With this study we will try to uncover if there are neuropathological changes specific to TBI which contribute to the development of depression symptoms. We will specifically look at subcortical brain alterations and white matter disturbances. We plan to conduct analyses using data from the ENIGMA consortium. ENIGMA is a MRI data sharing initiative. We plan to meta-analyze three-dimensional brain magnetic resonance imaging and diffusion tensor imaging data from TBI patients with and without depression symptoms and people with depression but without TBI. In the poster the study plan will be presented alongside the expected results and implications.

Keywords Depression, TBI (traumatic brain injury)

(PT-60) Assessment of Visuospatial Neglect Using Eye Tracking in a Custom Developed and Flexible, Fully Immersive, VR Framework

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Background
Egocentric and allocentric visuospatial neglect are commonly experienced neuropsychological conditions affecting the contralesional side in post-stroke patients, leaving patients with egocentric or allocentric perceptual problems. Diagnostic tools for visual neglect include the apples test, balloons test, and bells cancellation test. All administered on paper. While psychometrically sound, these tests are administered in an overtly clinical setting, lacking depth as a test parameter, only allowing for crude temporal data collection and gaze observation, and also being limited in spatial scope to the size of the paper. By having a limited set of test parameters, the status quo represents a barrier to advancing our understanding of the mechanisms behind visouspatial neglect and its effect in everyday settings of the patients.

Objective and Method
To mitigate these limitations, we propose a novel setup for assessment of neglect by utilizing low-cost, off-the-shelf, VR headsets with integrated eye trackers, along with a custom-developed and highly flexible virtual environment, where the test parameters can be altered based on the needs of the clinician. The utilization of eye tracking enables the gathering of more detailed data in an ecologically valid setting, addressing the limitations inherent in clinical and lab environments. Furthermore, it offers the potential for automated diagnostic support and statistical tools that yield insights difficult to achieve through traditional pen-and-paper tests.

Results
Our study evaluates the technical feasibility of the setup and accuracy of the data collected by comparing our results to traditional tests used in the clinic today. We further explore the potential afforded by eye tracking, such as taking accurate temporal data and depth perception into account, as well as the effect of having a non-laboratory setting through an ecologically valid environment.

Conclusion
The conclusions from this study will guide further development and research on a novel approach of assessing visouspatial neglect.

Keywords Assessment/test, Spatial cognition, Stroke /cerebrovascular, Technology, Vision

(PT-62) The Impact of COVID-19 Cognitive Functioning and Negative Affect in the Swedish Population

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Background
The COVID-19 outbreak inflicted long-lasting consequences on societies worldwide in many aspects of both physical and psychological health. Understanding its impact is an initial step toward aiding the post-COVID population still suffering from the repercussions of the virus.
Objective:
The study's main objective was to assess cognitive functioning and negative affect in the post-COVID Swedish adult population. In a mixed-design study, online self-report data was collected twice with a gap of around 4 months (years: 2022-2023), examining differences between COVID+ (n=82) and COVID- (n=33) individuals within three domains; cognition, negative affect, and neurological functioning.

Results
The Mann-Whitney U test of between-subjects differences revealed significant differences.
COVID+ individuals had higher levels of impairment in processing speed (U=675.00, z=-4.51, r=-0.42, p≤0.001), attention (U=763.00, z=-3.85, r=-0.36, p≤0.001), memory (U=691.00, z=-4.35, r=-0.42, p≤0.001), planning (U=730.00, z=-4.08, r=-0.38, p≤0.001) and problem solving (U=663.50, z=-4.78, r=-0.45, p≤0.001) than COVID-.
The results show that COVID+ individuals had higher levels of impairment in gustatory (U=522.5, z=-5.56, r=-0.52, p≤0.001), olfactory (U=450.00, z=-5.93, r=-0.55, p≤0.001), and motor functioning (U=1096, z=-2.21, r=-0.21, p≤0.001) than COVID -.
Additionally, COVID+ individuals had higher levels of results in: depression (U=936, z=-2.58, r=-0.24, p≤0.01) and negative affect (U=902, z=-2.92, r=-0.27, p≤0.003) than COVID -. However, COVID+ individuals would not report significantly higher levels of anxiety than COVID – (U=1150, z=-1.26, r=-0.12, p≤0.207)
The Wilcoxon Signed Rank test showed no significant differences in the COVID+ group between the first and second measures.

Conclusion
The Swedish Government adopted a more liberal approach that did not enforce strict lockdown or social distancing regulations. Was it the crucial factor resulting in similar anxiety levels in infected and non-infected populations?
The results of the study add value to the prevention of long-lasting chronic impairments, informing methods for evidence-based treatment programs, and increasing public health preparedness.

Keywords Adults, Anxiety, Cognition, Covid-19, Longitudinal

(PT-63) BackUp© A manual based psychotherapeutic intervention for relatives to adults with acquired brain injuries.

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Objectives
Emotional distress in partners to brain injury survivors are related to or result from the life changing brain injury. These consequences may be underpinned and maintained by shame, self-criticsm, disenfranchised grief alongside an inability to self-soothe. Compassion Focused Therapy (CFT) was developed to address shame and self-criticism and foster the ability to self-soothe. The concepts and clinical application of CFT have yet to be explored in depth with partners to brain injury survivors. Therefore, we developed BackUp© which is a six-session manual-based short term psychological intervention for relatives to brain injury survivors. It combines elements from Compassion Focused Therapy, Cognitive Behavioral Therapy, Mindfulness, and Narrative perspectives adjusted to relatives.

Methods
This study is a small feasibility study of BackUp© given in an online format. Five relatives of brain injury survivors will recive an online psychological intervention according to the BackUp© programme (six sessions). Self-report measures of quality of life (WHO5), Self-compassion (Neff-SCS), and Cohen's Perceived Stress Scale (PSS) will be collected pre- and post-intervention, analyzed, and compared with the general population. Moreover, an evaluating interview will be conducted with all five participants post-intervention.

Results

At the present the study is ongoing, but data collection will be completed in June and preliminary results will be presented at the conference and discussed in the light of current neurorehabilitation and the need for psychosocial interventions for relatives.

Keywords Adults, Caregivers, Interview, Quality of life, Relatives, Therapy

(PT-64) EnVision – CP: Subjective experiences of visual impairments in adults with cerebral palsy

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Background
Cerebral palsy (CP) is a group of motor disorders that occur in the developing fetal or infant brain. The condition can be accompanied by other impairments, such as cognitive and visual impairments.

Objective
The aim of this study was to investigate the subjective experiences of visual perceptual impairments in a group of adults with CP. Participants who had subjective complaints of visual impairments that could not be corrected with glasses or contact lenses were recruited for the study.

Method
Eight participants aged between 21 and 50 years volunteered for the study. The severity of their CP ranged from mild to severe. Semi-structured interviews were used to investigate their subjective experiences of visual impairments, and if they had received any assessment and/or rehabilitation. All participants were able to communicate on their own or with the support of a personal assistant. The interviews were transcribed verbatim and analyzed using thematic analysis.

Results
The participants reported a wide range of visual impairments from low visual acuity, visual field deficits, reading difficulties, bumping into things, to wayfinding difficulties. Five themes emerged that were related to 1) experiencing visual impairments, 2) experiencing a lack of support and available interventions, 3) the influence of visual impairments on the participants lives, 4) ideas for improving care and interventions for visual impairments, as well as a theme about a general feeling of 5) “that is just the way it is”.

Conclusion
The participants reported a wide range of visual impairments, and many had experienced not receiving the right kind of help from the health care system. The study demonstrates the importance of assessing a wide range of visual functions in adults with CP. Furthermore, interventions targeting visual impairments should be improved.

Keywords Adults , Cerebral palsy (CP), Interview, Vision

(PT-65) Association between subjective prospective memory complaints and prospective memory performance in adults with ADHD

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Background
Prospective memory (PM) can be defined as an ability to remember planned actions in the future. Attention-deficit/hyperactivity disorder (ADHD) is associated with significant cognitive deficits, including memory problems, affecting work and everyday life. Less is known about the relationship between subjective PM complaints and PM assessed with objective methods among adults with ADHD. Subjective memory complaints (SMCs) have been reported to be associated with objectively measured cognitive performance in the elderly.

Objective
We investigated the association between subjective PM complaints and PM performance in adults with ADHD.

Methods
The study participants (n = 30) comprised a subsample of a perinatal risk cohort prospectively followed since birth, and were 40 years old at the time of the follow up. The participants were diagnosed with ADHD retrospectively using childhood data. Subjective PM complaints were measured with the PM subscale of the Prospective and Retrospective Memory Questionnaire (PRMQ). PM performance was conducted using the new Finnish Proper Prospective Memory Test (PROPS) involving tasks in laboratory and real-life settings. Time-based (TB) PM performance, event-based (EB) PM performance and a total score were computed. We calculated Spearman's correlation coefficient between the PM subscale of the PRMQ and the five PROPS scores.

Results
The PM subscale of the PRMQ correlated significantly with the PROPS test in the real-life setting (rs= -.43, p < .05) and in TBPM (rs= -.39, p < .05). The PM subscale of the PRMQ correlated with EBPM (rs= -.20), with the laboratory setting (rs= -.15) and with the total score (rs= -.33).

Conclusion
Subjectively reported prospective memory (PM) complaints, measured with the PM subscale of the PRMQ, were associated with PM performance measured with the PROPS test in adults aged 40 with childhood ADHD. Our results suggest that clinically evaluated PM performance concurs with PM complaints in adults with childhood ADHD. Evaluating PM functions objectively in the clinical setting allows developing interventions to improve PM performance in work and everyday life.

Keywords ADHD

(PT-66) The impact of neurocognitive structure on language learning in students not fully meeting curriculum objectives at Finnish primary schools

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[1]Independent researcher

Background
Neuropsychologists widely use the WISC-IV (Wechsler Intelligence Scale for Children) and NEPSY-II (Developmental Neuropsychological Assessment) to assess learning difficulties. However, the relevance of these methods is discussed and debated. This study uses Structural Causal Models (SCM) and Directed Acyclic Graphs (DAGs) to explore intellectual and neurocognitive structures related to language learning.

Objective
1. Compare neurocognitive profiles of low achievers in Finnish and English with those of average achievers and the general population.
2. Analyze the neurocognitive structure of these students.

Method
We used six WISC-IV tests, the phonological awareness test (PhA), and the visual attention test (VA) from NEPSY-II. Participants included 132 students (mean age 10.79, SD 2.45). We conducted SEM analyses using the lavaan package in R, focusing on model fit and cognitive intervention possibilities.

Results
Low achievers showed significant delays in phonological awareness (PhA), phonological working memory (Digit Span), and verbal concept formation (Similarities), but age-appropriate fluid intelligence, which was measured with Matrix Reasonig and Picture Concept tests.
The SEM model fit was good, with the fit indices $\chi^2(16) = 12.129$, $p = .735$, RMSR = .034, RMSEA = .000, CFI = 1.000. The general neurocognitive factor (g) strongly affected school achievement (SA) in Finnish (FI) and English (EN). Effect sizes for g → SA → FI (0.509, $p<0.001$) and g → SA → EN (0.517, $p<0.001$) indicated robust influences.

Conclusion
Targeted interventions to enhance phonological skills and general cognitive abilities could improve language learning. Future research should develop and test cognitive training interventions to validate these findings and address potential biases due to cultural factors in standardized tests. These measures could include phonological awareness training in English, cognitive training programs to improve students' phonological memory, and teachers' training in supporting students with neurocognitive challenges.

Keywords Assessment/test, Cognition, Intervention, Language, Working memory

(PT-67) Behavioral and Electrophysiological Markers of Altered Mind Wandering and Sustained Attention in Adult ADHD

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Background
Attention deficit hyperactivity disorder (ADHD) is a neurodevelopmental disorder that often persists into adulthood. Difficulties with executive control and sustained attention are key characteristics of the disorder that often lead to thoughts that are unrelated to the current task, i.e., mind wandering.

Objective
Investigate behavioral and neurophysiological correlates of sustained attention and mind wandering in adults with ADHD not on medication when examined.

Method
Sustained attention and propensity to mind-wander was investigated in ADHD patients (n=17) and in healthy controls (n=17), matched on gender, age, and IQ. Participants performed an auditory oddball task (participant feedback: On or Off Task), which required continuous manual responses to standard and target tones, while Electroencephalography (EEG) was measured. Sustained attentional control was additionally examined with the Test of Variables of Attention (T.O.V.A.). General IQ was estimated with a reduced version of the Wechsler Adult Intelligence Scale, 4th edition (WAIS-IV).

Results
ADHD patients reported significantly more episodes of mind wandering (Off Task), exhibited reduced target detection accuracy and more Off Task impulsive responses compared to controls.
Patients showed a significantly reduced P300 for the target-standard difference components, for both On and Off Task conditions. This target-standard P300 difference was less modulated between On versus Off Task conditions in patients compared to controls. In the T.O.V.A. test, patients committed significantly more Commission Errors, but did not differ from controls on other variables (Attention Comparison score, Reaction Time variability and latency, Omission Errors).

Conclusion
In comparison to controls, patients showed deteriorated behavioral performance, more episodes of mind wandering, and reduced P300 in an auditory oddball task. The P300 decrease likely reflects impaired control of attentional resources allocated to the task, which has an impact on high-level cognitive processing abilities, while early sensory-related stimulus processing is intact.

Keywords ADHD

(PT-68) The psychological history questionnaire (PSYq): towards a theory of Affective Reserve

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Background
Attention deficit hyperactivity disorder (ADHD) is a neurodevelopmental disorder that often persists into adulthood. Difficulties with executive control and sustained attention are key characteristics of the disorder that often lead to thoughts that are unrelated to the current task, i.e., mind wandering.

Objective
Investigate behavioral and neurophysiological correlates of sustained attention and mind wandering in adults with ADHD not on medication when examined.

Method
Sustained attention and propensity to mind-wander was investigated in ADHD patients (n=17) and in healthy controls (n=17), matched on gender, age, and IQ. Participants performed an auditory oddball task (participant feedback: On or Off Task), which required continuous manual responses to standard and target tones, while Electroencephalography (EEG) was measured. Sustained attentional control was additionally examined with the Test of Variables of Attention (T.O.V.A.). General IQ was estimated with a reduced version of the Wechsler Adult Intelligence Scale, 4th edition (WAIS-IV).

Results
ADHD patients reported significantly more episodes of mind wandering (Off Task), exhibited reduced target detection accuracy and more Off Task impulsive responses compared to controls.
Patients showed a significantly reduced P300 for the target-standard difference components, for both On and Off Task conditions. This target-standard P300 difference was less modulated between On versus Off Task conditions in patients compared to controls. In the T.O.V.A. test, patients committed significantly more Commission Errors, but did not differ from controls on other variables (Attention Comparison score, Reaction Time variability and latency, Omission Errors).

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Keywords Anxiety, Assessment/test, Cognition, Dementia / degenerative disorders, Depression