Neuropsychological Rehabilitation Special Interest Group of the WFNR

12th NR-SIG-WFNR Conference
Monday 6th & Tuesday 7th July 2015

Conference Program

Lovers Cove, Daydream Island, Whitsundays, Australia
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INVITATION TO GLASGOW – One of the World’s top ten ‘must see’ cities Back Cover
On behalf of Barbara Wilson, the NR-SIG-WFNR Executive Committee, the local organising Committee and the Scientific Committee I would like to welcome you to Daydream Island Resort and Spa in the Whitsundays, Australia for the 12th Neuropsychological Rehabilitation Conference.

This is a multidisciplinary conference incorporating all rehabilitation disciplines including Neuropsychology, Clinical Psychology, Occupational Therapy, Speech and Language Therapy, Physiotherapy, Social Work, Medicine and Nursing. The primary focus of the conference is rehabilitation of neuropsychological consequences of acquired brain impairment.

The conference includes sessions on Paediatric Rehabilitation, New measures in community rehabilitation, Assessment and rehabilitation in multiple sclerosis, Adult and older adult rehabilitation, ABI & Stroke Rehabilitation, Methods and measurement, Single case and case series, Social cognition, self-awareness and social participation, Psychosocial issues in rehabilitation, Mood and emotional adjustment in neurological conditions, Post-traumatic amnesia and injury outcomes in TBI.

I would like to thank Slater Gordon Lawyers our Corporate Partners for their support and the Encephalitis Society, WFNR, ASSBI, Viator Travel and Cambridge Scholars Publishing for their support of the conference. I would also like to thank all the staff on Daydream Island Resort and Spa and last but not least Margaret Eagers-Rickit from MERS Events for managing the conference.

I hope you enjoy the conference!

Catherine Haslam
Conference Convenor

COMMITTEES

Executive Committee
Barbara Wilson – President, UK
Jim Malec – Treasurer, USA
Robyn Tate – Secretary, Australia
Anna Adlam, UK
Jon Evans, UK
Tamara Ownsworth, Australia
Michael Perdices, Australia
Jennie Ponsford, Australia

Local Organising Committee
Catherine Haslam – Australia, Convenor & Chair of the Local Organising Committee which included:
Jacinta Douglas
Suncica Lah
Gail Robinson

Conference Organiser (PCO) & EO of the NR-SIG-WFNR
Margaret Eagers-Rickit – MERS Events, Australia

Scientific Committee
Andrew Bateman, UK
Mathilde Chevignard, France
Fofi Constantinidou, Cyprus
Fergus Gracey, UK
Ashok Jansari, UK
Caroline van Heugten, Netherlands
Huw Williams (UK)

Student Volunteers
Flora Minsun Suh
Sally Romary
Daydream Island Map

The conference will be held in the ATRIUM (1 on the map).
The conference room is the Great Barrier Reef Room which is located on the 3rd floor.
The Exhibitors and Posters will be in the Sunlover Room and Terrace also located on the 3rd floor.
Morning / Afternoon Tea and Poster Sessions 1 and 2 in Sunlover Room.
Lunch will be held in the Restaurant on the ground floor.
The Meet and Greet will be held on the Sunlover Terrace.
The Slater Gordon Conference Dinner will be held on the beach at Lovers Cove.
### Conference Programme at a glance – MONDAY

<table>
<thead>
<tr>
<th>Time</th>
<th>Session/Activity</th>
<th>Speaker(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.30</td>
<td>Arrival, Registration and Dropping Posters at Registration Desk</td>
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<tr>
<td>8.30</td>
<td>Welcome and Introduction- Catherine Haslam (Program Chair)</td>
<td>Catherine Haslam</td>
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<tr>
<td>8.40</td>
<td>Professor Barbara Wilson – Opening Address Understanding Topographical Disorientation</td>
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<tr>
<td>9.10</td>
<td>Session 1: Paediatric Rehabilitation 9.10–10.10</td>
<td>Suncica Lah</td>
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<tr>
<td>9.10</td>
<td>Anna Adlam: Working memory training (Cogmed) in children who have survived brain injury: Acceptability and feasibility</td>
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<tr>
<td>9.30</td>
<td>Natalie Phillips: Working memory and its relationship to academic skills following paediatric traumatic brain injury</td>
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<tr>
<td>10.10</td>
<td>Session 2: New measures in community rehabilitation 10.10–10.50</td>
<td>Jennie Ponsford</td>
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<tr>
<td>10.10</td>
<td>Maria Hennessy: Measuring participant engagement in community rehabilitation with PERQy</td>
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<tr>
<td>10.30</td>
<td>Cynthia Honan: Piloting a new measure of social disinhibition: A failure to inhibit or produce favourable responses?</td>
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<tr>
<td>10.50-11.20</td>
<td>Morning tea and Posters</td>
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<tr>
<td>11.20</td>
<td>Session 3: Paediatric Rehabilitation – Datablitz 11.20–11.50</td>
<td>Huw Williams</td>
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<tr>
<td>11.20</td>
<td>Kelly Jones: Acceptability and satisfaction with an innovative online problem solving intervention for adolescents following brain injury sustained traumatic brain injuries in Cape Town South Africa (DB1)</td>
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<tr>
<td>11.25</td>
<td>Sally Romary: Use of learning principles in memory rehabilitation improves self-efficacy in children following acquired brain injury (DB2)</td>
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<tr>
<td>11.30</td>
<td>Andrew James: The jungle book of neuropsychology: Disentangling the influence of feral childhood from adult brain injury in order to provide effective rehabilitation (DB3)</td>
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<tr>
<td>11.35</td>
<td>Marie-Claire Reville: Predictors of cognitive flexibility in young girls with anorexia nervosa, and healthy controls (DB4)</td>
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<tr>
<td>11.40</td>
<td>Anna Adlam: Validating a parent-rated working memory questionnaire for children (DB5)</td>
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<tr>
<td>11.50</td>
<td>Session 4: Assessment and rehabilitation in multiple sclerosis 11.50–12.30</td>
<td>Michael Perdices</td>
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<tr>
<td>11.50</td>
<td>Hannah Gullo: Sensitivity of the Behavioural Assessment of the Dysexecutive Syndrome in multiple sclerosis and association with daily functioning</td>
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<tr>
<td>12.10</td>
<td>Wendy Longley: Randomized controlled trial of neuropsychological assessment with feedback as a therapeutic intervention in multiple sclerosis patients and caregivers</td>
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<tr>
<td>12.30</td>
<td>LUNCH POSTERS</td>
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<tr>
<td>1.30</td>
<td>Session 5: Adult and older adult rehabilitation – Datablitz 1.30–2.00</td>
<td>Gail Robinson</td>
</tr>
<tr>
<td>1.30</td>
<td>Linda Sigmundsdottir: Computerised cognitive training in acquired brain injury: A behind-the-megabytes systematic review of the methods, measures and meaningful outcomes (DB6)</td>
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<tr>
<td>1.35</td>
<td>Zoe Thayer: Does group size influence the ability of people with acquired neurological disorders to benefit from a memory training program? (DB7)</td>
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<tr>
<td>1.40</td>
<td>Sarah Prescott: Exploring factors related to participation in client centred goal planning (DB8)</td>
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<tr>
<td>1.45</td>
<td>Kerryn Pike: Memory training in subjective memory decline: How does office-based training translate into everyday situations? (DB9)</td>
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<tr>
<td>1.50</td>
<td>Anita Rose: I can’t find my way: A pilot study of anterograde disorientation (DB10)</td>
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<tr>
<td>Time</td>
<td>Session 6: ABI Rehabilitation  2.00-3.20</td>
<td>Jon Evans</td>
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<tr>
<td>2.00</td>
<td>Petrea Cornwell: Achieving greater engagement in meaningful activities for people with hypoxic brain injury: A preliminary investigation of a goal directed intervention</td>
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<tr>
<td>2.20</td>
<td>Breda Cullen: Positive PsychoTherapy in ABI Rehab (PoPsTAR): A pilot randomized controlled trial</td>
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<tr>
<td>2.40</td>
<td>Brian O’Neill: Development and efficacy of assistive technology for cognition in scaffolding performance and learning of activities of daily living in people with impaired memory and executive function</td>
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<tr>
<td>3.00</td>
<td>Matthew Jamieson: The useability of Smartphone reminder software for adults with acquired brain injury</td>
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<tr>
<td>3.20</td>
<td>Poster Session 1  Afternoon Tea</td>
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<table>
<thead>
<tr>
<th>Time</th>
<th>Session 7: Stroke Rehabilitation  4.20-5.40</th>
<th>Ashok Jansari</th>
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<tbody>
<tr>
<td>4.20</td>
<td>Rene J. Stolwyk: Characterising neurobehavioural disability following stroke</td>
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<tr>
<td>4.40</td>
<td>David Copland: Investigating the effect of treatment intensity in a comprehensive aphasia program</td>
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<tr>
<td>5.00</td>
<td>Ronelle Hewetson: Cognitive communication deficits, access to rehabilitation and functional outcomes following a right hemisphere stroke</td>
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<tr>
<td>5.20</td>
<td>Fergus Gracey: Exploring the HeART of stroke: Protocol ad preliminary findings of a randomized controlled feasibility study of an Arts for Health group to support self-confidence following stroke</td>
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<tr>
<td>6.30</td>
<td>Slater Gordon Conference Dinner at Lovers Cove</td>
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**POSTERS – MONDAY**

<table>
<thead>
<tr>
<th>#</th>
<th>Author</th>
<th>Title</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Leander Mitchell</td>
<td>Rehabilitation in dementia: Can’t see the trees for the forest?</td>
</tr>
<tr>
<td>2</td>
<td>Maggie Murphy</td>
<td>Exploring ethical dilemmas in a community rehabilitation setting</td>
</tr>
<tr>
<td>3</td>
<td>Marie-Claire Reville</td>
<td>Clusters analysis from the ravello profile scores for an Anorexia Nervosa and a healthy sample of young girls</td>
</tr>
<tr>
<td>4</td>
<td>Kristen Kiong</td>
<td>Cross language effects in aphasia therapy for English-Mandarin bilinguals</td>
</tr>
<tr>
<td>5</td>
<td>Sara Da Silva Ramos</td>
<td>The development of an occupational therapy assessment of functional skills</td>
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<tr>
<td>6</td>
<td>Sara Da Silva Ramos</td>
<td>The use of mental rehearsal to promote achievement of functional rehabilitation goals following acquired brain injury (ABI)</td>
</tr>
<tr>
<td>7</td>
<td>Deborah Fortescue</td>
<td>Brain injury and offending: The development of a Linkworker intervention</td>
</tr>
<tr>
<td>8</td>
<td>Breda Cullen</td>
<td>Post-traumatic growth in adult survivors of brain injury: A qualitative study of participants completing the PoPsTAR trial of brief positive psychotherapy</td>
</tr>
<tr>
<td>9</td>
<td>Breda Cullen</td>
<td>A comparison of post-traumatic growth after acquired brain injury or myocardial infarction</td>
</tr>
<tr>
<td>10</td>
<td>Suzanne Barker-Collo</td>
<td>Neuropsychological outcome and its correlates in the first year after mild traumatic brain injury: A population based New Zealand study</td>
</tr>
<tr>
<td>11</td>
<td>Suzanne Barker-Collo</td>
<td>Maori experiences of neuropsychological assessment</td>
</tr>
<tr>
<td>12</td>
<td>Janet Leathem</td>
<td>Smartphones as prospective memory aids after traumatic brain injury</td>
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<tr>
<td>13</td>
<td>Rima Salame</td>
<td>Improving Quality of Life through Cognitive and Compensatory Strategies: A Case Study</td>
</tr>
<tr>
<td>14</td>
<td>Tasha Kvelde</td>
<td>Collaboration in cognitive rehabilitation in an Australian public hospital setting: challenges and rewards</td>
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<tr>
<td>15</td>
<td>Erik Hessen</td>
<td>Goal Attainment in cognitive MS Rehabilitation is achieved and maintained regardless of executive capability, neurological disability, depression and general cognitive ability</td>
</tr>
<tr>
<td>16</td>
<td>Aniko Bartfai</td>
<td>Predictive factors for cognitive rehabilitation after acquired brain injury (ABI)</td>
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<td>17</td>
<td>Anna Adlam</td>
<td>Investigation into the frontal lobe functioning of young offenders with and without a head injury</td>
</tr>
<tr>
<td>18</td>
<td>Anna Adlam</td>
<td>Ecological Assessment of the Supervisory Attentional System in People with Intellectual Disabilities</td>
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</tbody>
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<thead>
<tr>
<th>#</th>
<th>Author</th>
<th>Title</th>
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<tbody>
<tr>
<td>1</td>
<td>Nathan Hughes</td>
<td>Understanding disrupting pathways to serious and persistent offending following childhood brain injury to</td>
</tr>
<tr>
<td>2</td>
<td>Wendy Longley</td>
<td>The role of self-perceived cognitive impairment in multiple sclerosis: subgroups with different profiles and potentially useful “yellow flags”</td>
</tr>
<tr>
<td>3</td>
<td>Jessica Barnes</td>
<td>Can EBIG identify change in ability to make friends?</td>
</tr>
<tr>
<td>4</td>
<td>Phil Howard</td>
<td>Can a cognitive prosthesis assist people with face-naming</td>
</tr>
<tr>
<td>5</td>
<td>Jill Winegardner</td>
<td>“Fatigue is part of who I am and the life I want to lead”: Implementing a clinical model to guide intervention and evaluate outcomes</td>
</tr>
<tr>
<td>6</td>
<td>Bronwyn Moorhouse</td>
<td>ABI, Aggression and Art Therapy - Group Art Therapy in a Brain Disorders Unit and the Impact on Rates of Aggression: A Pilot Study</td>
</tr>
<tr>
<td>7</td>
<td>Barbara Wilson</td>
<td>From the vegetative state to meaningful life: Rehabilitation through music therapy; one man’s journey</td>
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<tr>
<td>8</td>
<td>Barbara Wilson</td>
<td>Patterns of Recovery from Severe Brain Injury as Measured by The Wessex Head Injury Matrix (WHIM)</td>
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<tr>
<td>9</td>
<td>Barbara Wilson</td>
<td>Delayed recovery from the Vegetative and Minimally Conscious States</td>
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<tr>
<td>10</td>
<td>Janet Hodgson</td>
<td>Improving access to neuropsychological support for people with Encephalitis</td>
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<tr>
<td>11</td>
<td>Michael Perdices</td>
<td>Perceived Quality of Life many years after a severe brain injury</td>
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<tr>
<td>12</td>
<td>Chiharu Niki</td>
<td>Cognitive status and quality of life in glioma patients</td>
</tr>
<tr>
<td>13</td>
<td>Heather Francis</td>
<td>Heart rate variability in response to an anger provocation can be attenuated by a single session of biofeedback</td>
</tr>
<tr>
<td>14</td>
<td>Matt Thomas</td>
<td>Proposal to trial and evaluate a multi-disciplinary approach to cognitive rehabilitation in inpatients with schizophrenia</td>
</tr>
<tr>
<td>15</td>
<td>Amee Baird</td>
<td>Self deception and self-awareness after acquired brain injury: two contrasting cases</td>
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<tr>
<td>16</td>
<td>Amee Baird</td>
<td>Marrying memories: Collaboration with an intimate partner facilitates retrograde episodic memory after acquired brain injury</td>
</tr>
<tr>
<td>17</td>
<td>Brian O’Neill</td>
<td>Effect of an orientation clock on orientation for time and place in people with acquired brain injury</td>
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### Conference Programme at a glance - TUESDAY

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<th>CHAIR</th>
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<tr>
<td>8:00</td>
<td>Arrival – Drop Posters at Registration Desk 8.00-8.30</td>
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<tr>
<td>8.30</td>
<td>Session 8: Methods and measurement 8.30-8.30</td>
<td>Jacinta Douglas</td>
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<tr>
<td>8.50</td>
<td>Michael Perdices: Reliability of the reliable change index in the analysis of neurorehabilitation outcomes</td>
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<tr>
<td>9.10</td>
<td>Catherine Haslam: “Don’t remind me of my age!”: Quantifying the negative effects of age stereotypes on test performance</td>
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<tr>
<td>9.30</td>
<td>Session 9: Single case and case series – Datablitz 9.30-10.05</td>
<td>Robyn Tate</td>
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<tr>
<td>9.35</td>
<td>Michael Perdices: An unusual case of number agnosia (DB1)</td>
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<tr>
<td>9.40</td>
<td>Jill Winegardner: Perspectives group: An innovative approach to treating hostility bias in a brain injury population (DB2)</td>
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<tr>
<td>9.45</td>
<td>Jenny Fleming: A metacognitive skills training program to enhance compensatory strategy training for prospective memory impairment following traumatic brain injury (DB3)</td>
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<tr>
<td>9.50</td>
<td>Karen Croot: Lexical retrieval treatment for functionally-relevant vocabulary in primary progressive aphasia: Investigating generalization to a structured interview (DB4)</td>
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<tr>
<td>9.55</td>
<td>Gail Robinson: Effectiveness of a strategy intervention to overcome suppression failure in two brain tumour cases (DB5)</td>
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<tr>
<td>10.05</td>
<td>Morning tea and Posters</td>
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<tr>
<td>10.30</td>
<td>Session 10: Social cognition, self-awareness and social participation 10.30-11.30</td>
<td>Tamara Ownsworth</td>
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<tr>
<td>10.30</td>
<td>Skye McDonald: Problems understanding diplomacy after severe TBI</td>
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<tr>
<td>10.50</td>
<td>Caroline van Heugten: Changes in impaired self-awareness after acquired brain injury in patients with intensive outpatient neuropsychological rehabilitation</td>
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<tr>
<td>11.10</td>
<td>Jacinta Douglas: “I don’t have many friends – well I don’t have any actually” Exploring the source and quality of social relationships experienced by adults several years after traumatic brain injury</td>
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<tr>
<td>11.30</td>
<td>Session 11: Psychosocial issues in rehabilitation – Datablitz 11.30-12.00</td>
<td>Jenny Fleming</td>
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<tr>
<td>11.30</td>
<td>Helen Harrington: The essential components of rehabilitation: Science and compassion (DB7)</td>
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<tr>
<td>11.35</td>
<td>Anita Rose: Caregiver burden in traumatic brain injury: The experience of formal caregivers working in an inpatient rehabilitation centre (DB8)</td>
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<tr>
<td>11.40</td>
<td>Caroline van Heugten: Reducing challenging behaviour after brain injury: effects of the ABC-method (DB9)</td>
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<td>11.45</td>
<td>Huw Williams: The epidemic that is no longer silent: Role of TBI in crime and the promise of neurorehabilitation (DB10)</td>
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<td>11.50</td>
<td>Elizabeth Beadle: Desired versus actual occupational participation following severe TBI (DB11)</td>
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<tr>
<td>12.00</td>
<td>Lunch Posters</td>
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Session 1: Paediatric Rehabilitation

Working memory training (Cogmed) in children who have survived a brain injury: acceptability and feasibility

Adlam, Anna-Lynne (1,2); Dunning, Darren (1,2,3,4); Westgate, Briony (1); Holmes, Jon (1); Gracey, Fergus (1,2); Shepstone, Lee (1); Wilson, Edward (1,3) and Gathercole, Susan (1)

1Centre for Clinical Neuropsychology Research,
2School of Psychology, University of Exeter, Exeter, UK
3Cambridge Centre for Paediatric Neuropsychological Rehabilitation, Cambridge and Peterborough Foundation Trust, Cambridge, UK
4Norwich Medical School, University of East Anglia, Norwich, UK
5Cognition and Brain Sciences Unit, Medical Research Council, Cambridge, UK

Background and aims: Working memory (WM) is critical for learning and difficulties in childhood can result in a failure to engage in education, participate in meaningful activities, and achieve future employment. Improvements in WM are common following paediatric acquired brain injury (pABI). Research has demonstrated that children can show WM gains following computerised training (Cogmed). To date, no studies have investigated whether children with pABI benefit from Cogmed. The current study aimed to assess the feasibility and acceptability of delivering Cogmed to children with pABI, aged 8-16 years.

Methods: Twenty-six children were randomised to either adaptive (n=12) or non-adaptive (n=14) home-based Cogmed training. Parents and children completed acceptability questionnaires. The criterion for sufficient treatment completion was defined as completing 20 or more training sessions.

Results: The groups were comparable at baseline for age, IQ, sex, and SES. It took on average 9-weeks to complete adaptive training, with 75% of children reaching treatment completion criterion (only 50% of children reached treatment completion in the non-adaptive control condition over 7-weeks). Parents and children gave high ratings for satisfaction and ease-of-use, and parents found it easier to motivate their child at the beginning compared to the end of training.

Conclusion: Children with pABI and their parents found Cogmed acceptable and accessible. Findings suggest that children with pABI might require Cogmed to be delivered over a longer period than the standard 5-weeks protocol to complete treatment. Future RCTs might benefit from enhanced motivational features to maintain engagement in the non-adaptive control condition.

Correspondence: Anna Adlam a.adlam@exeter.ac.uk

MONDAY ABSTRACTS are in presentation order
It’s my party! Investigating Executive Impairments in Children with Atypical development (ASD & ADHD) Using a Novel Ecologically-valid Assessment of Executive Functions.

Session 2: New measures in community rehabilitation

Measuring Participant Engagement in Community Rehabilitation with PERO:

Background and aims: Children who sustain traumatic brain injury (TBI) are at risk of deficits in working memory (WM; comprising a central executive (CE), and two slave systems: phonological loop [PL] and visuo-spatial sketchpad [VSSP]) and academic skills. This study sought to examine whether WM outcomes relate to reading and mathematics in this patient population.

Method: Twenty-eight children with moderate-to-severe TBI and 28 typically developing control (TDC) children matched on age, sex, and Full Scale IQ (FSIQ). WM was assessed using the Automated Working Memory Assessment (AWMA) that contains subtests measuring CE, PL, and VSSP. Academic skills (reading accuracy and comprehension, and number skills) were assessed using the Wechsler Individual Achievement Tests-Third Edition (WIAT-III). Results: Children with TBI obtained significantly lower scores compared to TDC children on the AWMA tests of CE [f(54)=3.01, p=0.004] and PL [f(54)=2.31, p=0.03]. The groups did not differ on tests of VSSP or IQ. Performance of children with TBI was reduced relative to controls on tests of reading accuracy [f(54)=2.18, p=0.03] and reading comprehension [t (54)=3.20, p=0.002], but not number skills [t(54)=1.91, p=0.06]. In the TBI group, correlation analyses indicated that poorer PL performance was associated with reduced performance on all three measures of academic skills (p<.05). In contrast, no significant correlations were found between visuo-spatial CE and academic skills. Conclusions: Results from this study indicate that reduced PL capacity is associated with poorer reading and mathematical skills in children with TBI. Our findings suggest that treatments targeting PL may be particularly important in this patient population. Future studies should examine the impact of interventions for remediation of PL deficits on academic skills in this at-risk population.

Correspondence: Suncica Lah; suncica.lah@sydney.edu.au

Piloting a new measure of social disinhibition: A failure to inhibit or produce favourable responses?

Correspondence: Maria Hennessy; maria.hennessy@jcu.edu.au

Session 3: Paediatric Rehabilitation – Datablitz

Acceptability and satisfaction with an innovative online problem solving intervention for adolescents following traumatic brain injury

Background and aims: Common to many neurological conditions involving frontal lobe dysfunction are deficits in social disinhibition, a failure to inhibit automatic responses in favour of producing more socially acceptable responses. Measures of inhibition or interference control (such as the Haylings Sentence Completion test or the Stroop test), are often undertaken in clinical practice to infer difficulties in behaviour and emotion regulation. However, these measures may not be tapping into the type of difficulties that occur in social settings. This study aimed to develop and pilot a new clinical measure of social disinhibition.

Method: Participants included 19 moderate-to-severe TBI and 14 healthy controls. They viewed scenes of complex social situations, and were asked to describe a character in them (Part A), describe character while inhibiting inappropriate or negative responses (Part B), and describe a character while not only inhibiting negative responses, but also providing positive utterances (Part C).

Results: While TBI individuals and healthy control participants were both inherently negative in their responding in Part A, when asked to inhibit this negative responding in Part B, TBI individuals were significantly impaired. There was a trend towards TBI individuals in Part C being impaired in their ability to produce positive and more socially acceptable responses.

Conclusions: This pilot study makes an important contribution toward meeting the need for a well-validated clinical assessment tool that is capable of assessing social disinhibition deficits in those with frontal lobe dysfunction.

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term morbidity resulting in executive dysfunction, behavioural difficulties and reduced social competence. Treatment availability for adolescents and support for their families may be improved by the provision of online telehealth interventions. We report findings of the American Teen Online Problem Solving (TOPS) program.

Method: Six adolescents who sustained TBI in the previous 24 months, their families, and two TBI health professionals completed the TOPS program. This intervention consists of 10-14 online modules providing education and interactive training in self-regulation, social skills, and problem solving. All participants completed measures of usability and programme satisfaction. Focus groups gathered additional feedback on the appropriateness of developing a New Zealand (NZ) version of TOPS.

Results: The majority of participants were comfortable using the technology (93%), felt that TOPS would help teenagers with TBI to feel less stressed (86%), perform better at school (79%), and plan for handling future problems (93%). Most participants felt the program would lead to positive changes in the family (92%). Increasing visual stress (86%), perform better at school (79%), and plan for handling future problems (93%). Most participants felt the program would lead to positive changes in the family (92%). Increasing visual stress (86%),

Conclusions: The TOPS programme shows potential for good acceptability by teenagers, their families, and support for their families may be improved by the provision of online telehealth interventions. We report findings of the American Teen Online Problem Solving (TOPS) program.

The Jungle Book of neuropsychology: disentangling the influence of feral childhood from adult brain injury in order to provide effective rehabilitation

Background and aims: There are few studies investigating both the efficacy of learning principles and their impact on the self-efficacy and self-esteem of young people with acquired brain injury (ABI). The present research addresses this gap in two ways. First, it aims to determine the effectiveness of TOPS in facilitating adolescent recovery and family functioning.

Method: The TOPS program shows potential for good acceptability by teenagers, their families, and health professionals in NZ. Following development, further research is required to determine the effectiveness of TOPS in facilitating adolescent recovery and family functioning.

Results:

- Participants completed measures of usability and programme satisfaction. Focus groups gathered additional feedback on the appropriateness of developing a New Zealand (NZ) version of TOPS.

Conclusions: The TOPS programme shows potential for good acceptability by teenagers, their families, and health professionals in NZ. Following development, further research is required to determine the effectiveness of TOPS in facilitating adolescent recovery and family functioning.
Session 4: Assessment and rehabilitation in multiple sclerosis

Background and aims: Cognitive impairment is common in multiple sclerosis (MS), and many patients are referred for neuropsychological assessment. This study aimed to investigate the benefits of neuropsychological assessment with feedback as a therapeutic intervention.

Method: This was a two-arm, randomised controlled trial (RCT). MS patients were randomly allocated to either neuropsychological assessment or delayed treatment control. A range of psychological outcome measures (e.g. DASS-21, MS Self Efficacy Scale, Caregiving Tasks in MS) were administered by a blind assessor before and after the intervention.

Results: The sample comprised 71 patients: 68% female, aged M=45.0 years (SD=12.2), diagnosed M=10.4 years (SD=8.7); plus 53 caregivers: 59% spouses & 26% parents, 58% female, aged M=48.4 years (SD=15.7), caregiving M=8.1 years (SD=8.5). Between-group analysis showed that the intervention tended to improve social confidence (F=3.8, p=.05) and reduce level of distress (F=2.9, p=.09) in the patients. It significantly reduced caregivers’ need to provide psychological support to patients (F=4.3, p=.04).

Conclusions: Results from this RCT showed positive trends regarding the benefits of neuropsychological assessment as a therapeutic intervention in MS. A strength of the study was that the intervention was delivered by expert clinical neuropsychologists working within a multi-disciplinary team setting, thus it contributed to a holistic approach to MS self-management. However, the sample size was relatively small and the effect sizes were small. It is likely that subgroups of patients with different initial perceptions of their level of cognitive impairment responded differently to the intervention, and this impacted on the overall group outcomes.

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Session 5: Adult and older adult rehabilitation - Datablitz

Computerised cognitive training in acquired brain injury: A behind-the-megabytes systematic review of the methods, measures and meaningful outcomes

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Background and aims: In our increasingly computer-dependent lives, computerised cognitive training (CCT) presents as an appealing remedy for people experiencing cognitive symptoms. This review aimed to systematically evaluate the evidence for CCT in acquired brain injury (ABI), with a focus on how outcome measures used reflect efficacy across components of the International Classification of Functioning, Disability and Health.

Methods: Studies were identified through PsychBITE, which catalogues peer-reviewed publications on non-pharmacological interventions in ABI from six source electronic databases. Included were studies evaluating CCT to treat cognitive symptoms in adult ABI. Scientific quality was rated using the PEDro-P and RoBiNT Scales.

Results: Eighty-two studies met criteria. 67% were control group designs, but 13% were RCTs of strong methodological quality. Outcome measures reflecting Body Functions (e.g., performance on cognitive tests) were most common, with studies in multiple sclerosis more consistently showing treatment effects than other ABI groups. Activities/Participation outcomes were utilised in only 44% of studies, and measures commonly relied on subjective cognitive experiences. Examining CCT in the context of changes in Body Structures (e.g., neuroimaging) is a newly emerging area, with positive findings, especially regarding training of neuroplasticity in ABI.

Conclusions: The CCT literature is currently characterised by great heterogeneity. There are some positive effects in ABI, especially regarding training of attention/working memory, but evidence is largely limited to Body Function outcomes. The routine use of Activity/Participation measures in CCT research would provide more meaningful evidence for its efficacy in ABI.

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Does group size influence the ability of people with acquired neurological disorders to benefit from a memory training program?

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Background and aims: There is a need to better understand how group size impacts on the efficacy of memory training programs (MTP) for adults with neurological disorders. This preliminary study sought to re-evaluate this memory training program (MTP) when delivered to very small groups. We wanted to examine if benefits from MTP are different for those in the original large group (LG) (10-15) compared to those in small group (SG) (1-3) settings. Small groups, if beneficial, have the potential for greater flexibility and tailoring to the needs of the individual.

Methods: 85 patients with neurological disorders and memory complaints (79 in LGs, 6 in SGs) completed the 6-week MTP and pre- and post-training assessments. The training program involved 2-hour weekly meetings in which mental and compensatory strategies, neurological and lifestyle factors that influence memory were taught. Assessment scores included (1) number correct on an identity association memory task; (2) total learning and delayed recall on the Rey Auditory Verbal Learning Test; (3) total number of strategies reported; (4) self-report on the Comprehensive Assessment of Psychological Symptoms and Coping (CAPS); and (5) self-report on the Everyday Memory Questionnaire. T-tests compared participants in the LG vs the SG for pre- to post-training change.

Results: Both small and large groups showed improved scores on all measures, t-tests revealed no significant differences between the two groups. We noted SG participants reported more gains in strategy use than the LG, yet showed less improvement on objective memory measures.

Conclusions: This preliminary study indicates that training gains are similar for neurological patients irrespective of whether a 6 week memory rehabilitation program is administered in small or larger group settings. Once more data are collected we will re-evaluate the trend indicating that improving strategies are similar for all group sizes.

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Exploring factors related to participation in client-centred goal planning

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Background and aims: Client-centred goal planning includes clients as participants in decision making to establish goals of importance and meaning to clients. Establishing goals may be particularly important for neurological patients irrespective of whether a 6 week memory rehabilitation program is administered in small or larger group settings. Once more data are collected we will re-evaluate the trend indicating that improving strategies are similar for all group sizes.

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participation in goal planning and importance and relevance of their goals. This study aimed to explore relationships between C-COGS scores and self-awareness, motivation and therapeutic alliance, and describe characteristics of goals perceived as important to clients.

Method: The C-COGS scale, the Awareness Questionnaire (AQ), the Motivation for Traumatic Brain Injury Questionnaire (MOT-Q) and the Helping Alliance Questionnaire (HAQ-II) were administered to 42 participants with ABI after rehabilitation goals were established. Relationships between C-COGS scores and AQ discrepancy, MOT-Q and HAQ-II scores were explored using correlations.

Results: There were significant positive correlations between C-COGS and helping alliance and motivation, however, between self-awareness and C-COGS were not significant. Non-jargonistic and participation focused goals were perceived as more important to clients and were considered important to clients.

Conclusion: Goal planning is mediated by motivation and therapeutic alliance. The presence of self-awareness impairment is not necessarily related to client participation in goal planning.

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Memory training in Subjective Memory Decline: How does office-based training translate to everyday situations?

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Background: Subjective memory decline (SMD) in older adults is increasingly recognised as a risk factor in the clinical stage of Alzheimer’s disease, and thus an ideal phase for memory training. Most memory training research is conducted within an office based setting, however, and applicability to everyday settings is unknown. Our aim was to examine whether people with SMD benefited from memory training to the same degree as healthy older adults (HOAs), in both an office based and an everyday setting.

Method: Participants 60 years and over were recruited from the community and defined using the MAC-Q as having SMD and 64 people with SMD. They were randomised to one of three conditions: Spaced Retrieval, Semantic Association, or No Training. Following training, all participants completed a face-name associative learning task, and delayed recall was assessed post-training. 91 HOAs and 49 SMD completed booster training and attended a morning tea, where the effect of training was assessed in an everyday setting by learning the names of attendees at the morning tea.

Results: In the office setting, a two-way ANOVA demonstrated significant differences between training groups, F (2, 181) = 5.46, p<.005, but no differences between SMD and HOA, and importantly no training effect. Post-hoc analyses using the Tukey HSD test revealed that Spaced Retrieval was superior to No Training, but Semantic Association did not differ from either of the other groups. In contrast, in the everyday setting, the training effect was not significant (nor was the interaction of SMD effect).

Conclusions: People with SMD benefit from Spaced Retrieval on office based face-name associative tasks as much as HOAs. Translation to everyday memory tasks is not straightforward. The contribution of other factors including demographics, cognitive and social profiles of each participant may require further examination.

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“I cannot find my way”: a pilot study of anterograde disorientation

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Background: Topographical disorientation and route finding difficulties are common consequences of acquired brain injury yet there is still a paucity of research around these deficits. Aguirre and D’Esposito (1996) identified four kinds of topographical disorders: landmark agnosia; egocentric disorientation; heading disorientation and anterograde disorientation. The latter involves difficulty learning new environments.

Aims: First we wanted to identify at least one patient with anterograde disorientation; second we wanted to show that other patients with brain injury could learn a novel route and third we wanted to show that controls could easily learn a novel route.

Method: We tested 13 patients with acquired brain injury (including one patient with the amnestic syndrome following a right hemisphere stroke and an ischemic attack) and 6 controls on a standardised new route comprising 9 “landmarks” which participants had to “visit” in order. Up to ten learning trials were administered plus one delayed trial. The correct number of places visited and the correct order were scored.

Results: Of n=27 participants (median age 57; P3-81.1%), 2 achieved only one goal (25%). Goal attainment by P1 and P3 didn’t generalise to improved community integration, however P3 reported improved quality of life.

Conclusions: Individuals with HBI have the potential to benefit from this goal-directed intervention, although generalisation to broader measures of community integration and quality of life is equivocal. Cognitive and social profiles of each participant may have influenced their response to treatment, and requires further examination.

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Positive PsychoTherapy in ABI Rehab (PoPSTAR): A pilot randomised controlled trial

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Background: While there is evidence for psychological distress is common following acquired brain injury (ABI), but the evidence base for psychotherapeutic interventions in this population is small and equivocal. Positive psychotherapy aims to foster personal growth by increasing experiences of pleasure, engagement and meaning. We believe there is a strong rationale to apply this intervention to reduce psychological distress after ABI. This study investigated the feasibility and acceptability of brief positive psychotherapy in adults with ABI.

Method: Parallel group, single-blind pilot randomised controlled trial (RCT). ABI survivors with emotional distress were assessed and randomly assigned to receive brief positive psychotherapy as well as usual treatment from their clinical services, or to receive usual treatment only. Brief positive psychotherapy was delivered individually over eight sessions. All participants were assessed using the Depression Anxiety Stress Scales (DASS-21) and Authentic Happiness Inventory (AHI) at five, nine and 20 weeks post-baseline. Those who received the study intervention were also asked to give detailed feedback on their experiences.

Results: Of n=27 participants (median age 57;
63% male; median 5.7 months post-injury, n=14 were assigned to positive psychotherapy, of whom n=8 completed treatment. Feedback on treatment experience was positive. Retention to 20-week follow-up was 63% overall. The group difference in change scores between control and intervention was significant at 20 weeks for DASS-21 Depression was d=0.73 (95% CI -0.34, 1.80; positive favours intervention). A full-scale trial would require n=39 per group to detect a significant difference in change scores of 7 points (two-tailed alpha=0.05, power=0.80). Trial designs including an active control arm would require larger sample sizes. Conclusions: Brief positive psychotherapy is feasible and acceptable to deliver in a randomised trial context with ABI survivors. A full-scale RCT to investigate efficacy is warranted.

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The Usability of Smartphone Reminder Software for Adults with Acquired Brain Injury

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Background and aims: Smartphone reminder applications (apps) have the potential to help people with memory impairment after acquired brain injury (ABI) to perform everyday tasks. However, the majority of current apps are not designed for, and may be unsuited to, the particular needs of this group. The issues impacting the usability of smartphone reminder apps for people with ABI are poorly understood.

Method: To address this, three focus groups (N=12) were held with adults with memory impairments after an ABI and professional and family caregivers of adults with ABI. Participants were asked about issues which, in their experience, influence the usability of reminding technology. The Google Calendar smartphone app was used as an example to encourage critical thinking about interface design and reminder app functions.

Results: Qualitative analysis revealed six key themes which were combined into a conceptual framework of issues which impact usability of reminder apps for this user group; Perceived Need, Social Acceptability, Experience and Expectation, Desired Content and Functions, Cognitive Accessibility and extreme low Motor Accessibility.

Conclusions: We will discuss how this conceptual framework can be used to guide the development and evaluation of smartphone reminding software which would be suitable for adults with memory impairment following ABI.

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Session 7: Stroke Rehabilitation

Characterising neurobehavioural disability following stroke

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Background and aims: There have been many investigations of challenging behaviour following acquired brain injury, but few on the broader construct of neurobehavioural disability (NBD) following stroke. This study aimed to (i) characterise the frequency of NBD within a subacute inpatient stroke sample; (ii) identify demographic and disease variables associated with NBD; and (iii) investigate the impact of NBD on clinician burden.

Method: Ninety two participants who suffered either ischaemic or haemorrhagic stroke were consecutively recruited during their rehabilitation admission. For each patient, nursing staff completed the St Andrews–Swansea Neurobehavioural Outcome Scale (SASNOS) and a measure of nursing burden.

Results: Nurses reported that behavioural difficulties following stroke were common: 42% related to interpersonal relationships; 48% related to cognition; 7% with inhibition; 6% with aggression; and 6% with communication. The presence of NBD was significantly (all p < 0.001) correlated (Spearman’s rho with cognitive impairment (0.25), lower functional ability (0.37), self-reported anxiety (0.42) and depression (0.38). NBD was not significantly correlated with demographic (age, gender, education) or stroke (severity, lesion location, time since) variables (all p > 0.05).

The presence of NBD was strongly correlated with nursing care burden (Spearman’s rho range 0.44 - 0.55, all p < 0.05)

Conclusions: NBD is common within a subacute stroke inpatient population, particularly interpersonal and cognitive difficulties. Furthermore, NBD is associated with patient psychological disturbance and clinician burden. There is a need to identify effective rehabilitation interventions for NBD following stroke, and to educate and provide resources to clinicians to better manage stroke-related NBD.

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Investigating the effect of treatment intensity in a comprehensive aphasia program

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Background and aims: Delivery of aphasia therapy in an intensive schedule is often recommended, however, evidence for the benefits of intensity is lacking. Most studies comparing different levels of aphasia treatment intensity have not controlled the dosage of therapy provided. This study investigated the effect of a dosage-controlled, aphasia therapy program, Aphasia Language, Impairment and Functioning Therapy (Aphasia LIFT) when delivered in an intensive versus distributed schedule on communication outcomes in adults with aphasia.

Method: A parallel-groups, pre/post-test design was employed. Thirty-four adults with chronic, post-stroke aphasia participated in an intensive (n = 16, 16h per week, 3 weeks) versus distributed (n = 18, 6h per week, 8 weeks) therapy program. Treatment included homework, functional, computer and group-based aphasia therapy.

Results: Distributed therapy resulted in significantly greater gains on the Boston Naming Test compared with intensive therapy at post-treatment (p = 0.032) and 1 month follow-up (p = 0.002). Furthermore, distributed therapy resulted in significantly greater gains on the Communicative Effectiveness Index at post-therapy (p = 0.049).

Conclusions: Aphasia LIFT resulted in superior languageospace and functional communication gains when delivered in a distributed versus intensive schedule. These findings have important implications for service delivery models in aphasia rehabilitation.

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Cognitive-communication deficits, access to rehabilitation and functional outcomes following a right hemisphere stroke

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Background and aims: Communication and cognitive difficulties contribute to poor functional outcomes for people with aphasia following a right hemisphere stroke. Objectives: The primary goal of this study was to evaluate the impact of communication and cognitive difficulties on rehabilitation access and functional outcomes. These difficulties were measured using scores from multiple tools and the extent to which these difficulties were associated with lower rehabilitation access and functional outcomes were investigated.

Conclusions: Higher cognitive communication deficits were associated with lower rehabilitation access and functional outcomes. Furthermore, the extent to which these difficulties were associated with lower rehabilitation access and functional outcomes was greater in people with severe cognitive communication deficits.
Background and aims: Cognitive-communication deficits after right hemisphere (RH) stroke may restrict communication-based participation; however the influence of severity of impairment on participation remains unclear. This study describes the presence and severity of cognitive-communication deficits, access to rehabilitation and functional outcomes at hospital discharge.

Method: A 12-month retrospective chart review from a tertiary hospital examined patients with first onset RH stroke without concomitant psychiatric or dementia diagnoses. Cognitive-communication deficits, access to rehabilitation, and outcome measures (viz. Australian Therapy Outcomes Measures, Functional Independence Measure) were analysed.

Results: Of 185 admissions, 55 met the inclusion criteria. Average age was 71.04 years (SD=15), 24% were employed pre-stroke, and 86% were living independently. Mean length of hospital stay was 28 days (SD=23), and 76% (n=42) received in-patient rehabilitation. The majority of patients (89%) were seen by speech pathology and 60% were diagnosed with a cognitive-communication disorder (CCD). Severity of CCD was often mild (67%, n=22); with lexical-semantics (85%) and aprosodia (52%) the most common deficits. Frequently reported cognitive deficits were neglect, reasoning and problem solving. Longer admissions and loss of independent living were found in those with more severe CCD. Initial AusTOM (cognitive-communication scale) and FGIM (cognition subscale) scores were strongly correlated (r=.718), however this relationship weakened at discharge (r=.552).

Conclusion: Preliminary data is supportive of a feasibility study of an Arts for Health group to explore arts for health for RH stroke so improving emotional outcomes. Engagement in creative activity may encourage art and problem solving. Longer admissions and problem solving. Longer admissions and loss of independent living were found in those with more severe CCD. Initial AusTOM (cognitive-communication scale) and FGIM (cognition subscale) scores were strongly correlated (r=.718), however this relationship weakened at discharge (r=.552).

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Clusters analysis from the ravello profile scores for an Anorexia Nervosa and a healthy sample of young girls
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English-Mandarin bilinguals
Cross-language effects in aphasia therapy for
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Background and aims: Most research on cross-language transfer for bilinguals with aphasia has focused on cognate alphabetic European languages with similar phonology. However, demonstrating that cross-language effects occur between dissimilar, non-cognate languages would provide stronger evidence that non-target language gains are not simply attributable to the activation of words common to both languages. The aim of this study was to investigate whether cross-language transfer is observable and the extent of cross-language assessment and training. The second part of the measure consists of structured forms for detailed task analysis.
Conclusions: This study identifies that it can be learned in either language, but workers are not able to gather information about their functional ability in a systematic way. The aim of this paper is to present a new behavioural assessment of functional skills that enables Occupational Therapists to plan and implement individual skills training programs. The new measure is objective and easy to score, provides quantitative results which can be tracked over time and reflects difficulties arising from cognitive impairment, as well as motor and sensory impairment.
Method: An informal survey of OTs guided the development of the new measure. This comprises two parts: An Independence Checklist, which can be used at initial interview with a client and a carer. The aim of this part of the assessment is to provide an overview of a client’s abilities and indicate which functional skills might require further assessment and training. The second part of the measure consists of structured forms for detailed task analysis.
Results: Data from a pilot sample of 15 individuals, illustrate how the two parts of the assessment can be used in research and clinical practice to assess a range of functional skills, plan interventions and monitor progress. They also highlighted the potential use of this tool to provide a holistic prescription of technology to support independent living.
Conclusion: The development of the new independent functional assessment battery for anorexia nervosa (The Ravello Profile) has been used for research and clinical use to identify deficits in functioning of patients with anorexia nervosa. Recent research has also identified distinct profiles of functioning based on this battery. However, it is unclear whether these profiles are specific to anorexia nervosa or are a feature of developing feeding disorders.
Method: One hundred and seventy healthy females aged 9-18 (inclusive) from the UK and Germany completed the Ravello battery, IQ tests, measures of eating disorder pathology, depression, anxiety and object relations. Data were converted to Z scores for direct comparison across tasks. A two-step cluster analysis was conducted with a hierarchical cluster analysis using Ward’s method of minimum variance with a squared Euclidean distance metric to identify profiles using cluster analysis to assign cluster membership.
Results: Analysis revealed two cluster solution, similar to two of the clusters previously identified in an anorexia nervosa sample. The similar clusters are the neuropsychologically average cluster and the verbal/visuo-spatial discrepancy cluster.
Conclusions: This study identifies that it can be normal for a proportion of adolescent females to have weaker visuo-spatial skills and stronger verbal skills. This study also promotes caution for using standardised scores to interpret deficits in clinical populations and supports the use of control groups when exploring neuropsychological scores of clinical populations to identify areas of deficits.
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The development of an Occupational Therapy (OT) assessment of functional skills
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Background and aims: Standardised measures of functional skills are scarce and often limited in the range of activities they cover. Some are expensive to purchase and require training, which has to be regularly renewed. This means that those who know a client well (carer or rehabilitation support worker) are not able to gather information about their functional ability in a systematic way. The aim of this paper is to present a new behavioural assessment of functional skills that enables Occupational Therapists to plan and implement individual skills training programs. The new measure is objective and easy to score, provides quantitative results which can be tracked over time and reflects difficulties arising from cognitive impairment, as well as motor and sensory impairment.
Method: An informal survey of OTs guided the development of the new measure. This comprises two parts: An Independence Checklist, which can be used at initial interview with a client and a carer. The aim of this part of the assessment is to provide an overview of a client’s abilities and indicate which functional skills might require further assessment and training. The second part of the measure consists of structured forms for detailed task analysis.
Results: Data from a pilot sample of 15 individuals, illustrate how the two parts of the assessment can be used in research and clinical practice to assess a range of functional skills, plan interventions and monitor progress. They also highlighted the potential use of this tool to provide a holistic prescription of technology to support independent living.
Conclusion: The development of the new independent functional assessment battery for anorexia nervosa (The Ravello Profile) has been used for research and clinical use to identify deficits in functioning of patients with anorexia nervosa. Recent research has also identified distinct profiles of functioning based on this battery. However, it is unclear whether these profiles are specific to anorexia nervosa or are a feature of developing feeding disorders.
Method: One hundred and seventy healthy females aged 9-18 (inclusive) from the UK and Germany completed the Ravello battery, IQ tests, measures of eating disorder pathology, depression, anxiety and object relations. Data were converted to Z scores for direct comparison across tasks. A two-step cluster analysis was conducted with a hierarchical cluster analysis using Ward’s method of minimum variance with a squared Euclidean distance metric to identify profiles using cluster analysis to assign cluster membership.
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Conclusions: This study identifies that it can be normal for a proportion of adolescent females to have weaker visuo-spatial skills and stronger verbal skills. This study also promotes caution for using standardised scores to interpret deficits in clinical populations and supports the use of control groups when exploring neuropsychological scores of clinical populations to identify areas of deficits.
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The use of mental rehearsal (MR) to promote achievement of functional rehabilitation goals for offenders with brain injury (ABI)
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Background and aims: Goals are a key component in neuropsychological rehabilitation programmes. However, rehabilitation goals often remain incomplete for a number of reasons, including cognitive and planning deficits associated with some types of acquired brain injury (ABI), and problems associated with actual behaviour (e.g. poor motor control, low energy). Mental rehearsal (MR) may offer a means of addressing some of these difficulties. It is a simple, cost-effective flexible and adaptable strategy, where one can ‘play out’ a variety of possible scenarios. MR has been shown to regulate current and future behaviour, and to have beneficial effects for re-learning daily living tasks when compared with standard functional retraining. The main aim of the present study was to test the effects of MR on goal achievement, in individuals with ABI of different aetiologies at the post-acute phase of recovery.
Methods: A total of 20 participants completed a multiple-baseline design in which several functional rehabilitation goals were selected. Two participants received standard rehabilitation procedures for all of their goals, and also engaged in MR for half of the goals. Goals were identified by the clinical team and service user, and were not restricted to a specific domain. The primary outcome measure was objective and specific, but varied with individual goals. For example, the time taken to swim five pool lengths was the measure for a goal of completing this in a specified time.
Results: Nonoverlap of All Pairs (NAP) statistics show better outcomes from MR than standard rehabilitation for some but not all of the goals.
Conclusions: MR may be a useful technique in post-acute rehabilitation, but further research is needed to clarify how and when it should be used. This may depend on the specific difficulties of the individual, type of goal, and other factors affecting the rehabilitation process.
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Brain injury and offending: The development of a Linkworker intervention
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Background and aims: There is an accumulating body of evidence suggesting a higher prevalence of trauma brain injury (ABI) than in the general population. There are also suggestions that the prevalence may vary within the offender population, depending on the type of offence. This leads to a variety of questions concerning implications for intervention. This paper presents the development of a cost-effective brain injury Linkworker intervention, designed to support prisoners who report a significant brain injury or multiple mild traumatic brain injuries, and addressing the question of how offenders with a history of brain injury differ from individuals with ABI of other aetiologies.
Method: The service model and the first two years of operation are described and case studies are presented as ‘proof of concept’.
Results: Initial outcomes confirm the presence of a significant brain injury amongst prisoners and demonstrate that a ‘light-touch’ intervention may be used to address brain injury-related problems with positive effects.
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Conclusions: The initial findings justify a formal scientific study of efficacy of this service.
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Post-traumatic growth in adult survivors of brain injury: A qualitative study of participants completing the PoPaTAR trial of brief positive psychotherapy
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Background and aims: Post-traumatic growth (PTG) is known to occur following acquired brain injury (ABI). It is not yet known how PTG in ABI survivors may be related specifically to the neurological nature of their injury, or more generally to illness/ injury experiences that are shared with other patient groups. This study aimed to compare PTG between ABI survivors and a group that has experienced a similar acute medical event but which does not have a primary neurological element.

Method: ABI survivors who had received PT or treatment as usual (TAU) were interviewed after the end of the trial (n=33). TAU participants were also interviewed via individual semi-structured interviews including open-ended questions derived from literature on PTG. Thematic analysis was used to code the transcripts, providing for known themes from PTG literature as well as newly emerging themes.

Results: Four participants (age=46-62; n=3 male; months since injury=11-20) from the PPT group and three (age=58-74; n=2 male; months since injury=9.5-22) from the TAU group were interviewed. The results showed five themes that were shared by both PPT and TAU participants: Personal Strength, Appreciation of Life, Relating to Others, Positive Attitude, and Feeling Fortunate Compared to Others. Three additional themes were expressed by the PPT participants only: Positive Psychology/ Psychotherapy, Lifestyle Improvements, and New Possibilities. Four of the themes corresponded to factors from the Posttraumatic Growth Inventory questionnaire. PPT participants focused on positive changes following the injury and the opportunities it brought to their lives, whereas TAU participants focused more on acceptance of the situation.

Conclusions: There is potential for PTG experiences following ABI to be influenced through psychological therapy; this merits further investigation in larger samples. A greater understanding of this process may promote better adjustment to life after brain injury by focusing on clients’ potential for positive change and enhancing their capacity for growth.

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A comparison of post-traumatic growth after acquired brain injury or myocardial infarction Karagiorgou, Olga1;2 and Cullen, Breda1
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2School of Psychology, University of Glasgow, Glasgow, UK

Background and aims: Post-traumatic growth (PTG) is known to occur following acquired brain injury (ABI). It is not yet known how PTG in ABI survivors may be related specifically to the neurological nature of their injury, or more generally to illness/ injury experiences that are shared with other patient groups. This study aimed to compare PTG between ABI survivors and a group that has experienced a similar acute medical event but which does not have a primary neurological element.

Method: ABI survivors and myocardial infarction (MI) survivors completed a written survey including the Posttraumatic Growth Inventory (PTGI), PTGI scores in the two groups were compared using t-tests. Open-ended comments were analysed using thematic analysis.

Results: n=33 ABI survivors (age=51.6±12.4 years; 52% male; years since injury=5.5±5.5; t=0.34) and n=47 MI survivors (age=66.4±9.9 years; 79% male; years since injury=9.9±8.6) took part. There were no significant group differences on PTGI total score (ABIt=5.0±18.6, MI=54.6±23.8; t=0.32, 95% CI -0.71 to 0.77) and for any of the five subscale scores. Comments from ABI participants highlighted the importance of having a positive attitude, while MI participants focused on lifestyle improvements.

Conclusions: PTGI scores in ABI survivors were very similar to both PPT and TAU participants. No significant differences were found from MI survivors’ scores. Differences in experiences between the ABI and MI groups (as suggested by open-ended comments) may not be captured by the PTGI, which was not designed for medical groups. Future studies should use larger samples and consider using a different PTG measure.

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Neuropsychological outcome and its correlates in the first year after adult mild traumatic brain injury: A population based New Zealand study
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Background & Aim: The relationship between moderate/severe traumatic brain injury (TBI) and cognitive deficits is well known. The nature, duration and predictors of cognitive difficulties post-mild TBI are not as well understood. This study examined cognitive, mood, and post-consecutive outcomes of mild TBI over 1-year post-injury.

Method: Adults (>15 years) with mild TBI (N=260) completed neuropsychological (CNS-Vital Signs, Behavioural Dyscontrol Scale), mood (Hospital Anxiety Depression Scale), and behavioural assessments (Cognitive Failures Questionnaire, Rivermead Post-Concussive Questionnaire) at baseline, 1, 6, and 12-months post-injury.

Results: Over the 12-months post injury self-reported cognition (p=0.027), post concussive symptoms (p<0.001), depression (p<0.001), anxiety (p<0.001), and dyscontrol (p=0.025) improved significantly; as did memory, processing speed, executive function, psychomotor speed/reaction time, and tolerance attention and flexibility. At baseline, >20% of individuals produced very low scores on executive ability, complex attention and cognitive flexibility. At 1 and 6-month follow-ups >20% of participants were very low for complex attention, whereas at 12-months 12% of participants produced very low scores on executive ability, complex attention and cognitive flexibility. At 1 and 6-month follow-ups >20% of participants were very low for complex attention, whereas at 12-months 12% of participants produced very low scores on executive ability, complex attention and cognitive flexibility.

Conclusions: This study found that despite the evidence of cognitive difficulties post-mild TBI, these were not associated with self-reported cognition at 12-months post injury. Correspondence: Margaret Dudley; mdudley@aut.ac.nz

Smartphones as prospective memory aids after traumatic brain injury
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2Auckland University of Technology, Centre for eHealth; Centre for Person Centred Research, Auckland, New Zealand

Background and aims: Individuals living with traumatic brain injury commonly have difficulties with prospective memory. Traditionally a memory notebook has been recommended as a compensatory memory aid. Electronic devices have the advantage of providing a cue at the appropriate
time to remind participants to refer to the memory aid and complete tasks suggesting potential benefit and aid in remembering people as well as a decrease in “brain fog” and frustrations with distractions.

**Conclusions:** The combination of Cognitive Training and smartphone use resulted in improved MS’s quality of life, even though they were implemented 40 years post injury.

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**Collaboration in cognitive rehabilitation in an Australian public hospital setting: Challenges and rewards**

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²Speech Pathology Department, Prince of Wales Hospital, Sydney, Australia
³Occupational Therapy Department, Prince of Wales Hospital, Sydney, Australia

**Background and aims:** For many allied health practitioners working in public hospital inpatient rehabilitation, cognitive rehabilitation tends to be emphasised as the focus is on assisting patients to regain their physical function. It can return to independent living as soon as possible. The aim of this paper is to describe a multidisciplinary approach to cognitive rehabilitation undertaken at Prince of Wales Hospital in outpatient setting with a range of cognitive deficits.

**Method:** Several case studies are presented where a multidisciplinary approach to cognitive rehabilitation was used with patients who had specific goals; generally involving return to work or study. A description of the methods including compensatory strategies and techniques are presented as are the challenges and rewards of working as a team.

**Results:** Case one is a young man with a developmental dyspraxia of speech and social anxiety who has been able to return to work. Case two is a young woman who underwent removal of a pineal gland tumour, complicated by a thalamic infarct and significant memory impairment, who is in the process of returning to her previous position as a newspaper editor. Case three is a young woman who suffered a stroke with hemiplegia who is working towards the possibility of independence and Case four describes an older lady and the challenges she faces in her attempts to return to work in a large retail firm.

**Conclusions:** Cognitive rehabilitation in a public hospital setting can be challenging.

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**Goal Attainment in cognitive MS Rehabilitation is achieved and maintained regardless of executive capability, neurological disability, depression and general cognitive ability**

Hessen, Erik¹

¹University of Oslo, Norway

**Background:** The aim of the study was to investigate the predictive value of important disease related variables on goal attainment, in cognitive MS-rehabilitation.

**Methods:** The possible predictive value of executive functions, neurological disability, depression and general cognitive ability was assessed, employing Goal Attainment Scaling (GAS). Fifty-seven MS-patients were recruited and their executive functions, neurological disability, depression and general cognitive ability were assessed. They were then guided through the process of formulating GAS-goals for coping with cognitive challenges in everyday life during a four week long inpatient, cognitive rehabilitation program. GAS-goal attainment was scored during biweekly follow up calls in the three first months past discharge from the rehabilitation center, and finally at seven months following the commencement of the rehabilitation.

**Results:** Consistent with the first study hypothesis Manual Scoring System (MSS) in formulating and achieving GAS goals for coping with cognitive problems in everyday life. The patients were able to maintain a satisfactory level of goal attainment from the first measurement point after six weeks to seven months follow-up. However, contrary to the second hypothesis, statistically significant GAS-goals was not predicted by executive functioning. Neither was it predicted by neurological disability, depression or general cognitive ability.

**Conclusions:** The findings suggest that GAS may be a quick and robust method in cognitive MS-rehabilitation, regardless of important disease-related characteristics.

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**Predictive factors for cognitive rehabilitation after acquired brain injury (ABI)**

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²Department of Management and Engineering, IIE, Linköping University
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**Background and aims:** Recent research has established a high prevalence of head injuries in the adult and youth offending populations. Offenders often have difficulties with tasks assessing frontal lobe function and consequently, the offender research has often failed to control for the effect of head injury. This research aimed to investigate whether young offenders in the community, with...
self-reported traumatic brain injury (TBI), perform differently to young offenders without a TBI on tasks assessing frontal lobe functioning.

**Method:** Participants completed a battery of assessment measures that related to four aspects of frontal lobe functioning. In addition measures of mood, socio-economic status (SES) and IQ were taken to determine their possible influence as confounding factors. A total of 20 participants were recruited in the TBI group and 15 in the non-TBI group. Participants were aged between 12-17 years and had past/current involvement with Youth Offending Services.

**Results:** The TBI group had significantly lower IQ and SES than the non-TBI group but similar levels of self-reported depression. The TBI group were more impulsive on an inhibition task and were poorer at intuitive emotion-based decision making, and reading emotions from the eyes. There were no significant differences between the groups on reaction time tests.

**Conclusions:** The study concluded that within this sample of young offenders, those with a self-reported head injury had poorer performance on some tasks associated with frontal lobe functioning, but not others. The findings are considered in the context of theoretical and clinical implications with suggestions for further research.

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**Ecological Assessment of the Supervisory Attentional System in People with Intellectual Disabilities**

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3Tizard Centre, University of Canterbury, Kent, UK

**Background and Aims:** The aims of the current study were to adapt a version of the Multiple Errands Test for people with intellectual disabilities (IDs) and assess its ecological and construct validity.

**Methods:** Forty participants with IDs were invited to complete a battery of neuropsychological assessments, including the modified Multiple Errands Test for Intellectual Disabilities (mMET-IDs), and assess its ecological and construct validity.

**Results:** Task completion on the mMET-IDs correlated significantly the Tower of London Test and the Six Parts Test. These findings suggest that the mMET-IDs has construct validity. The findings, however, also showed that the relationship between the mMET-IDs and the Six Parts Test could be accounted for by Verbal IQ and receptive vocabulary. Also, the mMET-IDs failed to correlate with the DEX-IR and its subscales.

**Conclusions:** The mMET-IDs can be successfully used with people with IDs, but further research is needed to improve ecological validity.

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**TUESDAY ABSTRACTS are in presentation order**

**Session 8: Methods and measurement**

**The clarity of describing single-case research in the neurorehabilitation literature: Evidence suggests there is room for improvement**

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**Background and aims:** Neurorehabilitation interventions using single-case methods are commonly reported (e.g., 30% of 4,500 records on the Psychcube database, www.psychcube.com). Single-case methods comprise a wide variety of design options, yet concerns have been raised about the clarity and accuracy with which they are described in published reports. The aim of the present study was to evaluate the clarity of single-case design descriptions in the neurorehabilitation literature.

**Method:** All reports using a single participant published between 2004 and 2013 were retrieved from PsychBITE (n=687). A 30% random sample was selected (n=206), but seven reports did not meet eligibility criteria, leaving n=199. The design was classified using the taxonomy of Tate et al. (2013).

**Results:** Fifty-six percent (n=111) of reports provided no/vague description of the design. Examination of the full-text paper revealed that only 35% (n=70) used an experimental design, the most common of which was the multiple-baseline design. The majority (n=129, 65%) used designs with no experimental control, the pre-intervention/post-intervention design being the most common. In general, there was poor correspondence between the design of the paper and our classification.

**Conclusions:** An advantage of single-case methods is the opportunity they provide to directly translate research findings at the individual patient level and maximise evidence-based practice. But this advantage is compromised if clinicians/researchers use inappropriate designs without experimental control or if reports contain incomplete or inaccurate description. These results highlight an urgent need for education of single-case researchers, clinicians, reviewers and journal editors in single-case design.

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**Reliability of the Reliable Change index (RCI) in the analysis of neurorehabilitation outcomes**

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**Background:** When neurorehabilitation outcomes are evaluated with pre-post measures using standardised tests or scales, the Reliable Change index (RCI) can be used to determine whether intervention effects are real or due to measurement error. RCI computations, however, use parameters determined from theoretical and clinical implications with suggestions for further research.

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“Don’t remind me of my age!”: Quantifying the negative effects of age stereotypes on test performance

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**Background and aims:** Research has shown that increasing one’s awareness of head injury diagnosis reduces test performance. Similar findings have
been reported in older adults, in the context of questioning memory capacity. The challenge for clinicians is determining the extent to which this affects interpretation of a client's performance when planning and evaluating the outcome of intervention. This issue is investigated in a study with older adults that aimed to document the degree to which making one's age and cognitive capacity salient affected performance on standard tests. Method: 68 older adults were recruited to an experimental study in which their self-perception as Younger or Older, and expectations that aging involved a specific memory decline or generalized cognitive decline, was manipulated. Participants were randomly assigned to one of these conditions prior to undergoing baseline cognitive assessment. Age and deficit expectations were then primed before tests of memory and general ability, typically used in dementia screening, were administered. Results: Perceiving oneself as Older resulted in a significant reduction in performance, but the measure on which this effect emerged depended on deficit expectations. Participants who felt Older and expected memory to decline, performed worse on memory tests. Conversely, participants who felt Older and expected widespread decline, performed worse on the Psychomotor Vigil Test and state anxiety had a significant influence on this group. The clinical implications for the latter group were profound, as they met the diagnostic criteria for dementia, compared to an average of 14% in other conditions. Conclusions: The implications for test interpretation highlight the importance of providing interventions that can manage underperformance when conducting assessments in rehabilitation contexts. Drawing on other data, this includes discussion about the ways we can help patients resist age and diagnostic stereotypes to improve their performance.

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Session 9: Single case and case series - Datablitz

An unusual case of number agnosia

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Background: Deficits in the comprehension, production and manipulation of numbers have been reported in older adults, and may co-occur in different combinations and include dyscalculia, impaired number reading/ writing, transcoding deficits, difficulty recognising numbers in the context of apperceiptive agnosia. This paper reports on an individual presenting with an unusual and profound impairment of number processing. Method: WL was a 62 year old male with a 3 year history of headache, subjective left facial/limb weakness. This was a purposeful case report of left hemisphere aneurysm and subarachnoid haemorrhage. Neurological examination, EEG and MRI-brain revealed no abnormality. WL was referred for neuropsychological assessment.

Results: Assessment revealed variable, mild-to-moderate impairment of immediate attention, verbal new learning and delayed recall, planning, judgement, abstraction, conceptual flexibility and working memory. WL was also totally unable to: recite automatic number sequences, identify written single-digit numerals, determine which of two groups contained odd numbers, determine which of two spoken numbers was bigger/smaller, perform mental or written calculations. By contrast, he had no difficulties: copying written single or multi-digit numerals, reading number words (e.g., nine), identifying written numbers as same/different on the basis of shape without knowing the name of the word was. There was no evidence of dysgraphia, dyslexia, left-right confusion or constructional dyspraxia. Conclusion: WL's profound difficulty processing numbers was not attributable to the perfectionism test battery and other cognitive domains. It suggested category-specific associative agnosia reflecting loss of, or inability to, access stored knowledge of the basic concept of number, its functions and attributes, which does not seem to have been reported in the literature.

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Perspectives Group: An innovative approach to treating hostility bias in a brain injury population

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Background and aims: Impairment of prospective memory (PM), or memory for intentions, impacts negatively on psychosocial outcomes after TBI. Training in compensatory strategy use (e.g. diary, alarms) has been found effective for improving performance on PM testing, however gains may not generalise to everyday PM activities. We propose that compensatory strategy training may be enhanced by including a metacognitive training component which focuses on developing self-awareness of PM impairment. The aim of the study was to demonstrate the effectiveness of a metacognitive approach to compensatory PM training in an individual with TBI.

Method: Single-case experimental (ABA) design in which the target client, a 38-year-old male, underwent baseline, 3-week intervention phase and 4-week maintenance phase with an 8-month follow-up. The participant was a 22 year old male who sustained a severe TBI 55 months earlier. Therapy sessions incorporated training in mobile phone calendar and timetable use, family member involvement, feedback, self-prediction and self-evaluation of performance. Primary outcome measures were the number of spontaneous mobile phone-related timetable entries and number of PM failures in everyday life recorded in a memory diary by a family member. Other measures were the Awareness Questionnaire, Self-Awareness of Deficits Interview, and Depression Anxiety and Stress Scales. Results: Gains in strategy use and everyday PM performance were demonstrated during the intervention and maintenance phases and remained greater than baseline at 8-month follow-up. Level of self-awareness was stable throughout all phases but emotional status improved.

Conclusions: A metacognitive approach to PM strategy training shows promise for improving generalisation to everyday memory performance after TBI.

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whether a computer-based home treatment programme improved retrieval of functionally important words in confrontation naming and a structured interview in six people with non-fluent, logopenic or mixed PPA.

Method: Words relating to two topics that were personally relevant for conversation were identified for each participant, and half the words from one topic were treated. While viewing a picture of each treatment item, participants used repetition and/or reading to produce the name, once per day, for 10 days over 2 weeks. Participants completed three baselines and two post-test measures of picture naming and a structured interview.

Results: After treatment, five of the six participants showed significantly better confrontation naming for treated than untreated items, generalising to untreated depictions of treated items, but there was no increase in use of treated words in the structured interview. We will further analyse the structured interviews, to determine whether there were more nuanced benefits of treatment.

Conclusions: Improved lexical retrieval in naming was consistent with previous findings. The study will provide valuable information about the limits and/or the potential of word retrieval treatments to improve connected speech in both acute-onset and progressive aphasia.

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Effectiveness of a strategy intervention to overcome a suppression failure in six brain tumour cases

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Background and aims: Suppression of prepotent responses is crucial for appropriate behaviour across different settings. Initiation and suppression difficulties are well documented following frontal damage, although task differences have limited our understanding. The Hayling Sentence Completion Test was designed to assess verbal initiation and suppression within the same task. This study investigated patients with large left frontal tumours to use a strategy to overcome profound suppression failures on the Hayling Test.

Method: Patients KI and MIK presented with a suppression failure but KI also had a selection deficit and was unable to implement a strategy. By contrast, MIK’s selection ability was intact and her deficit was in generating rather than implementing a strategy. The differential performance of KI and MIK provides insights into verbal initiation, suppression, selection and strategy mechanisms, which has implications for neurorehabilitation.

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Evaluation of rehabilitation for the cognitive effects of normal aging

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Background and aims: Normal aging is associated with decreases in some cognitive domains (e.g., information processing speed, attention, new learning and executive function) but not others (e.g., language). These changes can impact negatively on quality of life and daily functioning, especially for older adults who may mistake the changes as the symptoms of dementia. This study examined the relationship between neuropsychological test results and work related difficulties and the effect on coping of post-assessment feedback and use of cognitive strategies. Such an investigation is important because the percentage of the escalating number of older adults in the general population who chose to stay on at work after 65 years is steadily increasing.

Method: 10 older adults in full-time employment who were referred for neuropsychological assessment and who did not have any history of cognitive decline were included in the study. The main measures comprised awareness (measured by the discrepancy in answers between patients and the speaker alludes to what they mean by statements that are indirectly linked to their intended meaning. One way people may generate such indirectness is by reading the emotional demeanour of the speaker. Given many people with TBI have difficulty with, not only indirect language but also identifying emotional expressions, this study aimed to explore their ability to understand hints with and without emotional cues.

Methods: 31 adults (22 males) with severe TBI and 31 demographically matched healthy adults took part. They watched 12 video vignettes in which one speaker hinted to the other what they wanted. After the first “hint” in the vignette, the participant was asked what was meant. If they failed, the segment was played to the next more explicit hint and they were asked again. If they failed again they were shown a third explicit hint and asked again. The first six videos showed actors in a neutral state followed by six in which the actors were overtly emotional. Results: The TBI group performed similarly to the control group with the important exception that, unlike the controls, they did not improve in their accuracy when hints were emotionally laden compared to non-empathetic neutral hints. The TBI group also performed more poorly than the control group. Performance on neutral hints was associated with deficits in cognitive flexibility and reasoning as well as social cognition (TASIT). Performance on emotional hints was associated with social cognition alone.

Conclusion: This study suggests that problems understanding hints also arises as a result of TBI and are, to some extent, associated with poor social cognition.

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Changes in impaired self-awareness after acquired brain injury in patients following intensive outpatient neuropsychological rehabilitation

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Background & aims: Better awareness of deficits at the start of rehabilitation is associated with more favorable outcomes. Therefore, it is relevant to improve awareness of deficits in ABI patients. In the current study we investigated changes in impairments in self-awareness in ABI patients and the effect these changes have on treatment outcome.

Methods: This longitudinal study, with pre (T1)-post (T2) measurements and one year follow up (T3), include 78 patients with acquired brain injury (8.3 years post injury) who followed an intensive outpatient neuropsychological rehabilitation program. The main measures comprised awareness (measured by the discrepancy in answers between patients and significant others), depressive symptoms, psychological and physical dysfunction, and health related quality of life (HRQOL).

Results: Patients were divided into three awareness groups: underestimation, accurate estimation, and overestimation of competencies. Most patients, who underestimated their competencies at the start of treatment, accurately estimated their competencies directly after (9 out of 11). These patients also showed the largest treatment effects on depressive symptoms, psychological and physical dysfunction, and HRQOL. Most patients with impaired self-awareness (i.e. overestimation of competencies) at the start of treatment kept overestimating their competencies after treatment (10 out of 14). These patients showed a significant decrease in depressive symptoms, but no other treatment effects.

Conclusions: The exploratory results indicate that changes in outcome are related to changes...
Session 11: Psychosocial issues in rehabilitation – Datablitz

The essentials components for rehabilitation:

Science and compassion

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Background and aims: The efficacy of rehabilitation treatment models for persons with acquired brain injury (ABI) has evolved over the past decades. The models are informed by the researched evidence of the outcomes for persons with ABI. In more recent years research of rehabilitation therapy methods gives guidance for therapists providing treatment to aid the person’s recovery and improve the person’s functioning. Despite the increased knowledge of evidence based care, the therapists’ skills required to provide the therapy is often overlooked in the research and within the rehabilitation models. Underpinning the success of therapy is not only the provided therapy but the qualities of the therapist providing the therapy. This paper aims to explore the evidence regarding the therapists’ qualities used in providing therapy aiming to maximise the outcomes for persons with ABI and provide a revised foundation of ABI rehabilitation models.

Methods: The aim of this study was to understand the post injury experience of friendship from the perspective of adults with severe TBI. Participants’ stories clearly illustrated how rehabilitation can focus on friendship by embedding in the therapists’ description is an appropriate support and interventions for formal caregivers. This study is still continuing but the preliminary data analysis suggests the experience of formal caregivers working in an inpatient rehabilitation centre.

Results: Over half of the staff reported above moderate levels of carer burden as measured by the Burden Interview. One third scored above cutoff for depression, anxiety and stress and reported reduced wellbeing as measured by the GHQ. There were significant correlations between Carer Burden and reduced wellbeing (r=.79, p<.05) and between Carer Burden and depression (r=.86, p<.05). Results show a relationship between high stress and reduced wellbeing (r=.50, p<.05). No relationship was found between carer Burden and reduced wellbeing or between depression, anxiety and general wellbeing.

Conclusions: This study is still continuing but the preliminary data analysis suggests the experience of family caregivers is mirrored in that of formal paid caregivers. Findings highlight the importance of further research to consider which factors are most predictive of carer burden in order devise appropriate support and interventions for formal caregivers working in in-patient settings.

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Reducing challenging behavior after brain injury: effects of the ABC-method

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The efficacy of rehabilitation after severe traumatic brain injury (TBI) may experience feelings of burden, stress, anxiety and depression and also experience an impact on general wellbeing. However there is a paucity of studies considering the impact of carer burden, emotional health and general wellbeing on formal caregivers (i.e. paid carers) working in inpatient settings with TBI patients. The aim of this study was to explore the frequency, extent and relationship of carer burden, emotional distress and general wellbeing in formal caregivers of TBI patients in an inpatient setting.

Method: Care staff at an in-patient neurorehabilitation centre were asked to complete a number of standardised measures; Depression, Anxiety and Stress Scale (DASS), The General Health Questionnaire (GHQ) and the Burden Interview (BI). Demographic information was also gathered. To date 16 staff members have completed the measures.

Results: The results display limited focus on the outcomes for persons with ABI. In more recent years research of rehabilitation therapy methods gives guidance for therapists providing treatment to aid the person’s recovery and improve the person’s functioning. Despite the increased knowledge of evidence based care, the therapists’ skills required to provide the therapy is often overlooked in the research and within the rehabilitation models.

The review expanded to include the counselling literature exploring in the therapeutic relationship resulting in improved client outcomes. The review results were enriched by the reflections of therapists working in ABI rehabilitation. These reflections are based upon a semi structured interview conducted with therapists of 1-4 years, 4-10 years and 10 years and more experience in ABI rehabilitation.

Results: The results display limited focus on the outcomes for persons with ABI. In more recent years research of rehabilitation therapy methods gives guidance for therapists providing treatment to aid the person’s recovery and improve the person’s functioning. Despite the increased knowledge of evidence based care, the therapists’ skills required to provide the therapy is often overlooked in the research and within the rehabilitation models.

The results show a significant reduction in aggression, but not in apathy or overall neuropsychiatric rehabilitation. Effectiveness was measured in terms of reduction of neuropsychiatric problems and aggression and apathy in particular. We performed double baseline measurements and a post-treatment and follow up measurement.

The results show a significant reduction in aggression, but not in apathy or overall neuropsychiatric rehabilitation problem behavior. The reduction is however not permanent and not as a result of treatment. Ten patients were followed more closely in a single case experimental design. Only one of these patients showed a significant reduction in verbal aggression after treatment.

Conclusions: The present study did not show effectiveness of the ABC-method in this sample of patients. There does seem to be an anticipatory effect of paying more attention and therefore reducing the disrupting behavior during the baseline period. Formal caregivers working with the nurses who were trained to use the method in their daily clinical practice we know however that it was not implemented in their daily routines which may have influenced our data. For future studies we recommend putting more effort in implementation in addition to training the nursing staff in using new techniques.

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The Epidemic that is no longer silent: Role of TBI in Crime and the promise of neurorehabilitation

Williams, Huw1; McAuliffe, Karen1; Cohen, Miriam1; Ramsbotham, General Lord David 2; Parsonage, Michael2; Chitasbasan, Prathiba1 and Faziel, Senea1

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Caregiver Burden in Traumatic Brain Injury: the effectiveness of the ABC-method in a group of 56 patients with brain injury admitted to neuropsychiatric rehabilitation. Effectiveness was measured in terms of reduction of neuropsychiatric problems and aggression and apathy in particular. We performed double baseline measurements and a post-treatment and follow up measurement.

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Williams, Huw1; McAuliffe, Karen1; Cohen, Miriam1; Ramsbotham, General Lord David 2; Parsonage, Michael2; Chitasbasan, Prathiba1 and Faziel, Senea1

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participants attending holistic neuropsychological rehabilitation will be presented. CFT was integrated into the holistic rehabilitation programme. The Hospital Anxiety and Depression Scale (HADS) and the Forms of Self-Criticising and Self-Attacking Scale (FSCRS) were used before and after intervention and at 3 months follow-up. The aims were to decrease self-criticism and symptoms of anxiety and depression as well as increase participants' capacity to be self-compassionate. After follow-up, interviews were conducted with six participants and analysed using interpretative phenomenological analysis to gain a richer understanding of the role of CFT.

Results: Scores on the HADS and FSCRS changed significantly from start to end of the programme and were maintained at 3 months follow-up, indicating positive changes. Qualitative analysis mirrored quantitative results and highlighted beneficial elements of CFT in the change process.

Discussion and Conclusions: Preliminary findings suggest CFT can be used to alleviate depression and anxiety associated with self-criticism and shame following ABI. Additionally, CFT works well in the context of a holistic rehabilitation programme.

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Perceived impact of multiple sclerosis predicts poorer community participation: What roles do anxiety and depression play? Guilfo, Hannah L1; Scarlett, Shannon1; Bennett, Sally1 and Fleming, Jennifer1
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2Department of Occupational Therapy, Princess Alexandra Hospital, Brisbane, Australia

Background and aims: Despite community participation being an important goal of rehabilitation for people with neurological conditions, there has been limited exploration of modifiable factors that can be targeted during therapy to promote its achievement for people with Multiple Sclerosis (PwMS). This study examined whether perceived impact of MS and associated distressed predicted community participation, and tested whether anxiety and/or depression mediate this relationship.

Methods: 73 community-dwelling PwMS completed the Community Integration Questionnaire, Perceived Impact and distress with community participation, whilst highlighting the influential role of anxiety on outcomes. However, this relationship is complex. Further research is recommended to determine whether psychosocial interventions targeting perceived impact and anxiety would improve community participation outcomes for those living with neurological conditions.

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Behaviour Activation Therapy to improve participation and mood of people with depression following brain injury Gertler, Paul1; Tate, Robyn L1 and Cameron, Ian1
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Background and aims: Depression is common after brain injury, yet currently there are few studies that demonstrate effective psychological treatment approaches for depression (Gertler, Tate and Cameron, 2015). Behaviour Activation Therapy (BAT) is a promising intervention as it has demonstrated effectiveness in non-brain injured samples and is not cognitively demanding.

Methods: The benefit of BAT for mood and participation was investigated with a single-case experimental design (SCED), using a multiple-baseline across-subjects format. Three participants (aged 26 to 41) with a diagnosis of depression following brain injury (two traumatic, one acquired brain injury) underwent a course of BAT. Treatment consisted of 10 to 14 weekly sessions of 30 to 90 minutes duration, delivered by a clinical psychologist. The three target behaviours were exercise, social activity and functional independence. Participants recorded target behaviours and mood on a daily basis through an online form.

Results: There were mixed findings in relation to increases in participation. All participants demonstrated a statistically significant increase in participation in exercise and social activity. There was no change in participation in functional independence activities. Only one participant demonstrated any significant improvement in mood.

Conclusions: The study found mixed results in support of BAT, suggesting that BAT is more effective for increasing participation when the activity is intrinsically rewarding and convenient. Two participants achieved their TBIs as a result of medical intervention in reported symptoms of depression on the DASS21 inventory.

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**Background and Objectives:** Traumatic brain injury (TBI) is a leading cause of death and disability in children and young adults. TBI poses major global health and social challenges. Of particular concern is the increased evidence of TBI being associated with criminal behaviour. Children with TBI are likely to go enter the criminal justice and TBI is very high in offender groups. TBI in offenders is linked to psychiatric disturbance – particularly self-harm- and behavioural problems, such as aggression and violence. Further there appears to be a “double hazard” - those with social disadvantage who experience a TBI are at increased risk of worst outcomes.

**Methods and Results:** We provide a health economic analysis of large scale populations (such as total population data from Sweden on TBI and crime) to indicate cost savings for such changes. Costs of offending to society in adolescence are at about £1 Million to £1.5 Million per offender. TBI increases chances of offending twofold.

**Conclusions:** In this paper we argue that screening for, and managing, the effects of TBI more broadly in society to enable children with TBI to stay in school and for forensics for integrating forensic and neuro- rehabilitation of young offenders in community and secure systems. And that this will save money and lives;

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**Session 12: Mood and emotional adjustment in neurological conditions**

Talk to be given by Jill Winegardner

An Exploration of Compassion Focused Therapy following Brain Injury

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3Plym Neurorehab Unit, Gould Hospital, Plymouth, UK

Background and aims: Severe traumatic brain injury (TBI) often leads to major changes in activity participation and can lead to significant changes in mood, activity participation. This study examined whether perceived impact of MS and associated distress predicted community participation, and tested whether anxiety and/or depression mediate this relationship.

Methods: 33 adults (79% males) participated in the study. Data were collected across three waves: baseline, 8 weeks and 16 weeks post injury. The Impact of Problem Profile and Hospital Anxiety and Depression Scale were administered before and after intervention and at 3 months follow-up. The mediation effect was assessed using linear regression analyses. The mediation effect was significant for increasing participation. All participants showed improved psychological wellbeing at 3 months follow-up.

Results: Scores on the HADS and FSCRS changed significantly from start to end of the programme and were maintained at 3 months follow-up, indicating positive changes. Qualitative analysis mirrored quantitative results and highlighted beneficial elements of CFT in the change process.

Discussion and Conclusions: Preliminary findings suggest CFT can be used to alleviate depression and anxiety associated with self-criticism and shame following ABI. Additionally, CFT works well in the context of a holistic rehabilitation programme.

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Session 13: Post-traumatic amnesia and injury outcomes in TBI

Using post-traumatic amnesia to predict outcome following traumatic brain injury
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Background and Aims: Duration of post-traumatic amnesia (PTA) has emerged as a strong measure of injury severity following traumatic brain injury (TBI). Duration of PTA has traditionally been segmented into intervals in an attempt to characterise injury severity. Despite the growing international adoption of this measure, there remains a lack of consistency in the way PTA duration is used to classify severity of injury. This study aimed to establish the classification of PTA that would best predict functional or productivity outcomes.

Methods: A cohort of 1041 individuals was recruited from inpatient admission to a TBI rehabilitation centre between 1985 and 2013. Participants had a primary diagnosis of TBI and were engaged in productive activities prior to injury. We evaluated eight classification models, six based on the literature and two that were statistically-driven. Models were assessed using area under the receiver operating characteristic curve as well as model-based Akaike Information Criterion and Bayesian Information Criterion statistics.

Results: All categorisation models showed longer PTA was associated with a greater likelihood of being nonproductive at one year following TBI. Classification systems with greater number of categories performed better than two-category systems. The dimensional (continuous) form of PTA, resulted in the greatest AUC, and lowest AIC as well as BIC, of the classification systems examined.

Conclusions: Greatest accuracy in prognosis is likely to be achieved using PTA as a continuous variable, enabling productive outcomes to be estimated with far greater precision than that possible using a classification system. Categorising PTA to classify severity of injury may be reducing the precision with which clinicians can plan the management of patients following TBI.

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Agitation during post traumatic amnesia and its association with disorientation and impairments in memory
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Background and Aims: Agitation is considered a common feature of post traumatic amnesia (PTA) after TBI, however, reported frequencies range from 7-70%. Few studies have prospectively examined agitation during PTA using a standardised measure, or studied the frequency of agitation during PTA, and its relationship to the coinciding cognitive impairments. The aims of this study were to: 1) examine the frequency and nature of agitation during PTA using daily prospective measurement; and 2) examine the relationship between agitation levels and the cognitive impairments (orientation and memory) during PTA.

Method: Daily assessments of agitation (Agitated Behavior Scale, ABS) and orientation/memory (Westmead PTA Scale) were conducted in 23 patients during the PTA phase after severe TBI.

Results: Based on commonly used criteria (ABS score>21 for 2 or more consecutive days), agitation was present in 22% of patients. Distractibility (78.3% of patients) and impulsivity (73.9%) were the most common forms of agitation, while violence was relatively rare (8.7%). A mixed effects regression model found that a quadratic relationship best explained the association between agitation and severity of cognitive impairment such that agitation increased with increased orientation and memory function was improving, but reached a peak and then declined as PTA emergence drew nearer.

Conclusions: Agitated behaviour was relatively common during PTA and most commonly involved impulsivity. The relationships between agitation and severity of cognitive impairments was improving, but reached a peak and then declined as PTA emergence drew nearer.

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Exploring the impact of traumatic brain injury on moral reasoning and how this relates to executive functioning, empathy and emotion-based decision making
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\(^3\)Evelyn Community Head Injury Services, Cambridge Community Service NHS Trust, Cambridge, UK
\(^4\)Tizard Centre, University of Canterbury, Kent, UK

Background and aims: Emotional distress following traumatic brain injury (TBI) leads to cognitive, behavioural, and social functioning difficulties, and is associated with increased risk of offending behaviour. Fronto-temporal brain regions are commonly affected in TBI and these regions are considered important for moral reasoning. Moral reasoning is important for upholding social function and preventing delinquent behaviour. Studies to date have indicated that there are greater difficulties in moral reasoning following a childhood TBI than adulthood TBI. The current study aimed to: i) examine the impact of childhood TBI on moral reasoning in early adulthood; ii) explore the neurocognitive processes underpinning moral reasoning in young adults with TBI.

Methods: Twenty survivors of TBI aged 17-25 years and 34 age-matched non-brain injured participants completed the Sociomoral Reflection Measure - Short Form (SRM-SF, Gibbs, Basinger & Fuller, 1992). The relationships between moral reasoning and executive functions, cognitive flexibility, inhibition, empathy, and emotion-based decision making were also explored.

Results: The healthy comparison group demonstrated significantly higher moral reasoning. This was maintained when the groups were matched on age, sex, socioeconomic status and when intellectual functioning was controlled. Significant relationships were found between TBI and moral reasoning and cognitive flexibility, inhibition, executive function difficulties and empathy in the healthy comparison group. Only one significant correlation was revealed in the TBI group: between cognitive flexibility and moral reasoning. This was attributed to insufficient power to detect other significant findings.

Conclusions: TBI sustained during childhood does disrupt moral development. Executive processes and empathy may be involved in moral reasoning.

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A Transdiagnostic Investigation of Emotional Distress after Traumatic Brain Injury
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Background and Aims: The transdiagnostic approach endeavours to understand and/or treat processes associated with multiple psychological disorders. Advocates of this approach suggest that there are common factors underlying anxiety and depression, and that these disorders may be part of the same fundamental emotional syndrome. This perspective may be highly relevant to the TBI population, as emotional distress post-TBI often presents as a range of neurobehavioural and emotional reactions. The main aim of this study was to identify psychological processes common to depression, anxiety and global distress after TBI. The psychological variables considered included: threat appraisals, avoidance, self-discrepancy, difficulties with emotion regulation, repetitive negative thinking and negative self-focused attention.

Method: Fifty adult participants with mild to severe TBI (chronicity: 12-66 months) were recruited from the community. Participants completed the Appraisal of Threat and Avoidance Questionnaire, Head Injury Semantic Differential Scale, Difficulties in Emotion Regulation Scale, Penn State Worry Questionnaire, Self-Focus Sentence Completion task, as well as measures of depression, anxiety and global distress.

Results: Significant correlations were found among the proposed transdiagnostic variables. Only 17% under-estimated their level of impairment. 36% over-estimated their level of impairment, whilst 44% reported cognitive impairment has been shown otherwise, so we sought to explore these factors.

Discussion: The overall study provided some support for the transdiagnostic framework with both unique and shared component processes identified. Namely, the emotion dysregulation factor was independently related to depression and global distress, but not anxiety.

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Poster Session 2: Tuesday

Understanding and disrupting pathways to serious and persistent offending following childhood traumatic brain injury

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The role of self-perceived cognitive impairment in multiple sclerosis: Subgroups with different personality traits and useful ‘yellow flags’

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2Research School of Psychology, The Australian National University, Canberra, Australia

Background and aims: Cognitive impairment is common in multiple sclerosis (MS), yet self-reported cognitive impairment has been shown to be a poor predictor of outcome on objective neuropsychological assessment and MS patients are often left to determine the true extent of their impairments. Our clinical experience suggests otherwise, so we sought to explore these factors.

Method: This study is part of a larger research project. A range of demographic and psychological outcome measures (e.g., age, type of MS, self-reported level of cognitive impairment, MS Neuropsychological Questionnaire, Memory Compensation Questionnaire, DASS-21) were administered to patients before and after neuropsychological assessment. A subset of patients involved in delivering the service. Patients were classified into 4 groups according to their self-reported level of cognitive impairment before formal assessment in comparison to the neuropsychologists’ rating after assessment.

Results: Subgroups comprised 71 community-dwelling patients. As a group, prior to the assessment patients’ self-ratings of their level of impairment did not correlate with the neuropsychologists’ (rs = -0.12, p = 0.48). However, subgroup analysis showed that 47% had self-ratings that were congruent with the neuropsychologists’ (23% nil-mild, 24% moderate-severe impairment), 36% over-estimated their level of impairment, whilst only 17% under-estimated their level of impairment. Subgroups had different profiles on demographic and psycho-social outcome measures.

Conclusions: Many people with MS do, in fact, have good insight into their level of cognitive impairment. Those whose self-ratings are not congruent with the neuropsychologists’ have profiles that could potentially serve as psycho-social ‘yellow flags’ to service providers and caregivers.

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Can EBIO identify change in ability to make friends?

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Background and aims: Friendships may be disrupted by disability. Often people living with brain injury present difficulties in fostering and maintaining relationships. This research aimed to investigate the usefulness of European Brain Injury Questionnaire (EBIQ) as a measure of ability to participate in friendships after completing a neurorehabilitation programme.

Method: Eight items of the 66 questions, were selected as related to the concept of friendship (16, 8, 12, 17, 19, 20, 38 & 40). Eighty-two adults participated (mean age = 36.25, SD = 11.54). The means of pre (T1) and post (T2) measures were compared using a T-Test; the difference between T1 and T2 was calculated; and the frequency in which each value occurred was verified (range = 2 to 3, negative numbers mean decline).

Results: There was a significant difference between T1 and T2 mean scores (t(81)=40.08, p<.000). Analysing each question, we found high frequency of improvement on Q20 (89.3%) Q46 (81%) and Q8 (others do not understand your problems) 46.5%, and Q8 (being unable to plan activities) 44.4%. Q17 (hiding your feelings from others) showed the lowest percentage of change (30% improved). Q39 (thinking only of self) showed 53.3% reported no change at all. Can EBIO identify change in ability to make friends?

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Can a cognitive prosthesis assist people with face-naming difficulties?

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3School of Psychology, Massey University, Wellington, New Zealand

Background and aims: This study investigated if a custom multi-touch smartphone application could improve functional face-naming ability in people with acquired brain injury, who had been identified as having face-name recall difficulties. It was hypothesized that use of the application would not only improve functional face-naming, but also result
in improvements in social interactions and wellbeing. 

**Method:** To test these hypotheses a single case AB design was employed with six participants, all of whom had been identified as having face-name recall difficulties. Participants were each issued with an Apple iPhone running the face-name application which had been developed for this research.

**Results:** Of the five participants who ultimately completed the study, the face-name application produced unequivocal improvement in face-naming on the famous faces test developed for this research. Participants also indicated that the application was also helpful in “real-world” situations. In this small trial there were mixed results regarding the hypothesis that improvements in face-name recall would result in improvements in social interactions and wellbeing.

**Conclusions:** How often the face-name application was used by participants was found to predict 85% of their observed change in overall self-reported wellbeing. One interpretation of this strong correlation is that this may represent evidence for a dose-response relationship.

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**“Fatigue is part of who I am and the life I want to lead”: Implementing a clinical model to guide intervention and evaluate outcomes**

Jill Winegarden will present poster Malley, Donna1; Oliver Zangwill Centre for Neuropsychological Rehabilitation, Cambridgeshire Community Services NHS Trust, Ely, UK

**Background and aims:** Fatigue is a common consequence of traumatic brain injury (TBI) and impacts rehabilitation outcomes, social participation and quality of life.

**Method:** Development and evaluation of clinical resources to lead: Implementing a clinical model to guide intervention and evaluate outcomes around the model.

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**From The Vegetative State to Meaningful Life: Rehabilitation Through Music Therapy: One Man’s Journey**

Cornell Melanie1; Florschutz Gerhard2 and Wilson Barbara1,2
1Raphael Medical Centre, Tonbridge, Kent, UK 2Oliver Zangwill Centre, Ely, UK

**Background and aims:** The prevalence of patients who make a delayed recovery 12 or more months after remaining with a DOC, and 2) to see if recovery patterns of recovery emerged in chronic patients using the same measures as Shiel (1999)

**Method:** Twenty nine patients surviving severe brain injury and who were in a Vegetative State (VS) or a Minimally Conscious State (MCS) for several months were assessed regularly with the WHIM.

**Results:** Three patients died. Of the remaining patients, 17 showed little evidence of change (Shiel’s group 1). Three showed gradual improvement over time (Shiel’s group 2) and one showed steady progress and then plateaued early (Shiel’s group 3). Only 1 patient rapidly improved (Shiel’s group 4). The final three patients were slow to start and then showed a marked improvement (similar to Shiel’s group 5).

**Conclusions:** The taxonomy suggested by Shiel (1994) described 4 phases of recovery: acute, chronic phase but with a delayed start of several months. The findings need to be replicated with a larger group of survivors.

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**Patterns of Recovery from Severe Brain Injury as Measured by The Wessex Head Injury Matrix (WHIM)**

Dhamapurkar, Samira1; Wilson, Barbara1,2; Rose, Anita1 and Florschutz, Gerhard1
1Raphael Medical Centre, Tonbridge, Kent, UK 2Oliver Zangwill Centre, Ely, UK

**Background and aims:** In 1999, using the WHIM, Shiel identified five different patterns of recovery in survivors of severe brain injury: 1) little evidence of change 2) slow steady progress 3) rapid progress and with quick a plateau 4) initial rapid recovery, then slow progress and 5) little if any progress at all, then steady progress for a long period. These patients, however, were in the acute stage. What about patients who remain unaware for many months? This study aimed to determine if the same patterns of recovery emerged in chronic patients using the same measures as Shiel (1999)

**Method:** Twenty nine patients surviving severe brain injury and who were in a Vegetative State (VS) or a Minimally Conscious State (MCS) for several months were assessed regularly with the WHIM.

**Results:** Three patients died. Of the remaining patients, 17 showed little evidence of change (Shiel’s group 1). Three showed gradual improvement over time (Shiel’s group 2) and one showed steady progress and then plateaued early (Shiel’s group 3). Only 1 patient rapidly improved (Shiel’s group 4). The final three patients were slow to start and then showed a marked improvement (similar to Shiel’s group 5).

**Conclusions:** The taxonomy suggested by Shiel (1994) described 4 phases of recovery: acute, chronic phase but with a delayed start of several months. The findings need to be replicated with a larger group of survivors.

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**Delayed recovery from the Vegetative and Minimally Conscious States**

Dhamapurkar, Samira1; Wilson, Barbara1,2; Rose, Anita1 and Florschutz, Gerhard1
1Raphael Medical Centre, Tonbridge, Kent, UK 2Oliver Zangwill Centre, Ely, UK

**Background and aims:** Severity of brain injury is determined by the depth and duration of coma. Most patients who recover from coma open their eyes by four years post injury. They are then no longer in coma. They may have recovered full consciousness or they may still have reduced awareness/a disorder of consciousness (DOC). There is disagreement as to the percentage of patients who remain with a DOC after severe brain injury. The study had several aims: 1) to identify patients who made a delayed recovery 12 or more months after remaining with a DOC, and 2) to see if recovery
was more likely for those who survived traumatic brain injury (TBI) and those who survived from other causes (mainly hypoxia).

**Method:** All patients (N=26) with a disorder of consciousness, admitted to a rehabilitation centre over a three-year period, were assessed with the Wessex Head Injury Matrix (WHIM) and the Disability Rating Scale (DRS) to determine if they had emerged from a DOC.

**Results:** Three patients with hypoxic brain injury died. Eighteen patients remained with a DOC for 12 or more months (14 in the Vegetative State and 4 in the Minimally Conscious State. Five patients (19%) emerged from a DOC (showed delayed recovery). Of these 4 had sustained a TBI and 1 had hypoxic damage.

**Conclusion:** We found that 19% of people who had a DOC for 12 or more months recovered consciousness and those survivors of a TBI were more likely to show delayed recovery than non-TBI patients.

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**Improving access to neuropsychological support for people with Encephalitis**

Hodgson, Janet1 and Easton, Ava1

1The Encephalitis Society, Malton, UK

**Background and aims:** Throughout the UK, people with Encephalitis have variable access to neuropsychological support. In some regions they are excluded from generalist services by referral criteria that have a bias toward treating more commonly occurring acquired brain injuries (e.g., traumatic brain injury). Living remotely, cognitive and physical problems, as well as financial limitations pose further barriers. This presentation outlines an approach to develop and trial an innovative national service for improving access to services and applying new technologies potentially allows for improved access to services and better outcomes.

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**Perceived Quality of Life Many years after a severe brain injury**

García Sánchez, Olga1; González Agudo, Cristina1; Perdices, Michael1;2 and Tate, Robyn L.1

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2Department of Neurology, Royal North Shore Hospital, Sydney, Australia

**Conclusion:** It is suggested that a voluntary qualitative reports from service-users.

**Results:** We plan to develop and trial an innovative national service for improved access to neuropsychological services and applying new technologies potentially allows for improved access to services and better outcomes.

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**Cognitive status and quality of life in glioma patients**

Niki, Chiharu1; Kumada, Takatsune2; Takashi Manuyama1;3 and Muragaki, Yoshihiro1,3

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2Graduate School of Informatics, Kyoto University, Japan
3Department of Neurosurgery, Neurological Institute, Tokyo Women’s Medical University, Japan

**Background and aims:** It is suggested that although cognitive state after glioma resection operation affects Quality of Life (QOL), little is known how cognitive state relates to QOL of glioma patients. In this study, we have explored the interrelationships between cognitive state and QOL of glioma patients who have undergone a resective operation and examined their QOL.

**Method:** 39 glioma patients participated (21 in the left hemisphere glioma patients, 18 in the right, mean age=56.6 years). The patients were administered: Visual verbal learning task, Digit span (forward, backward) task, Letter-digit substitution task, Verbal fluency task, Stroop color-word task, and Concept shifting task at six months after their respective operation. We also administered the European Organization for Research and Treatment of Cancer (EORTC) QLC-C30 (EORTC QLQ-C30) and The European Organization for Research and Treatment of Cancer Brain Cancer Module QLC-BN20 (EORTC QLQ-BN20).

**Results:** We calculated the average performance on all the six cognitive tasks, and refer to this as the mean value “cognitive score”. Next, correlation analysis was used to measure the association between cognitive score and ratings of EORTC QLC-C30, with significant aggression (n=18). A single session of HRV biofeedback resulted in attenuation of HRV during anger induction, whereas those with normal trait aggression showed no such effect.

**Conclusions:** These results provide support for HRV as an index of emotion regulation and further suggest that HRV biofeedback may be a useful tool in improving emotion regulation in response to stressors.

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**Heart rate variability in response to an anger provocation can be attenuated by a single session of biofeedback**

Francis, Heather1; Penglis, Kathryn1 and McDonald, Skye1

1School of Psychology, University of New South Wales, Sydney, NSW, Australia

**Background and aims:** Research suggests that heart rate variability is a physiological indicator of the flexibility of the autonomic nervous system, and therefore can provide an objective measure of an individual’s ability to appropriately match emotional responses to environmental demands. HRV is reduced in conditions characterized by poor emotion regulation, including those with high trait aggression. The present study investigated whether emotional response to anger provocation could be attenuated using a single session of biofeedback in a healthy adult population, and in individuals with high trait aggression.

**Method:** In total, 58 participants received HRV biofeedback (n=29) or an active control condition (n=29). HRV was recorded across core sessions: resting state, treatment and anger induction.

**Results:** The anger induction procedure resulted in increased self-rated anger, which was accompanied by physiological changes measured using HRV. For those with high trait aggression (n=18), a single session of HRV biofeedback resulted in attenuation of HRV during anger induction, whereas those with normal trait aggression showed no such effect.

**Conclusions:** These results provide support for HRV as an index of emotion regulation and further suggest that HRV biofeedback may be a useful tool in improving emotion regulation in response to stressors.

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**Proposal to trial and evaluate a multi-disciplinary approach to cognitive rehabilitation in inpatients with schizophrenia**

Thompson, Prof. Glen and Shin, Jay1

1Charles Sturt University, Bathurst NSW Australia
2Bloomfield Hospital, Orange NSW Australia

**Background and aims:** People with schizophrenia...
have impairments in an array of cognitive functions, which contribute to functional disability, problems with participation in the community and poor quality of life. The aims of this proposed project are to develop, implement and evaluate a best practice approach to cognitive rehabilitation for inpatients with schizophrenia.

Methods: Two project sub-teams will be separately tasked with (1) development and implementation of the therapy approach and (2) development and implementation of the evaluation. The project will use an action research approach to support the development of a multi-disciplinary approach to cognitive rehabilitation. The therapy team will include valuable input from clinical staff in the hospitals’ psychiatry, psychology and occupational therapy departments. The evaluation team will be supervised by research staff from Charles Sturt University. Evaluation of therapy will involve a series of single case designs, focused on changes in patients’ cognitive capabilities, as well as aspects of independent activities of daily living.

Results: We anticipate reporting the evaluation of the outcomes of both the development of the proposed therapy programmes and a series of single case designs. The latter may be conducted by postgraduate clinical psychology students, under supervision.

Conclusion: A multi-disciplinary approach to cognitive rehabilitation has the potential to improve the functioning and quality of life of inpatients with schizophrenia. We welcome any input from those involved in rehabilitation of these patients.

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Self-deception and self-awareness after acquired brain injury: Two contrasting cases

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Background and aims: Impaired self-awareness after acquired brain injury (ABI) can be underpinned by psychological and/or neurological factors. Defensive denial, or ‘self-deception’ is one such psychological factor. Our aim was to investigate the patterns of self-awareness and self-deception in two patients with severe ABI compared with an age matched healthy control.

Methods: Two males with severe ABI (both approximately 5 years post injury) and one healthy male (all 29 years old) completed an 18 item self-report questionnaire measure of self-deception, the Positive Illusions Questionnaire (PIQ), which includes unreliable positive self-attributions about one’s self and the future. Participants are asked to rate themselves on a scale of 0-100%, relative to their ‘peers’, for each item. The two patients with ABI also completed the Self Awareness of Deficits Interview.

Results: Patient A demonstrated severely and globally impaired self-awareness on the SADI and his mean score on the PIQ was in keeping with the healthy control (both 75%). In contrast, Patient B displayed intact self-awareness on the SADI and a lower score on the PIQ (86%) compared to both Patient A and the healthy control. Patient A showed a much higher mean score for items relating to optimism about the future (94%) compared with the healthy control (76%) and Patient B (52%).

Conclusions: Self-deception in the form of unrealistic optimism for the future was evident in our patient with impaired self-awareness, but his overall score on a questionnaire measure of self-deception was not different to a healthy age matched control. In contrast, our patient with intact self-awareness did not show evidence of self-deception. These findings suggest that a lack of defensiveness may contribute to greater self-awareness after ABI.

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Marrying memories: Collaboration with an intimate partner facilitates retrograde episodic memory after acquired brain injury

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Background and aims: Couples can support and cue each other’s memory. We investigated how this occurs in the face of retrograde memory impairment after acquired brain injury (ABI). We examined the immediate and long-term effects of collaboration with an intimate partner on retrograde memory (episodic and semantic) in a man with a severe ABI.

Methods: A 64 year old man with severe ABI and associated retrograde amnesia extending back to childhood. He completed three experimental autobiographical memory tasks; (1) describing how he met his wife, (2) listing the holidays they had taken together and (3) viewing a photo of a shared holiday. These tasks were completed on 3 occasions each one week apart, (1) individually, (2) in collaboration with his wife and (3) individually post collaboration.

The interviews were transcribed and details recalled were scored by two raters as: specific episodic, extended episodic, repeated episodic, lifetime period, or semantic information.

Results: Collaboration facilitated episodic but not semantic memory, particularly for the episodic memory task (i.e. describing first meeting). In his pre-collaborative interview, AA was unable to recall any specific information about first meeting his wife, instead producing general details such as lifetime period: “Well it would have been back then, university days”. However, during collaboration both AA and his wife recalled specific details of their first meeting and early courtship – their collaborative recall included 15 specific episodic details of which AA himself produced 8 distinct details. Importantly, this beneficial effect persisted one week later in the individual post collaboration session – AA recalled 5 distinct episodic details compared to none prior to collaboration.

Conclusion: This is the first study of collaborative memory in ABI. Collaboration with an intimate partner has immediate and long-term benefits for retrograde episodic memory function.

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We would like to thank our Corporate Sponsor Slater and Gordon Lawyers for supporting us for the full year. Conference Exhibitors - The Encephalitis Society; Satchel Insert Sponsors Viatour Travel, Cambridge Scholars Publishing, The Australasian Society for the Study of Brain Impairment (ASSBI) and of course the World Federation for NeuroRehabilitation (WFNR).
As convenor of the 13th Neuropsychological Rehabilitation Conference in 2015 I want to invite you to historic Glasgow in Scotland, UK on 11th and 12th July 2016. Margaret will have the call for abstracts out soon so put the dates in your diary and join us in Scotland for the NR-SIG-WFNR conference. Glasgow has been voted one of the World’s top ten ‘must see’ cities by Fodor’s and Rough Guide. Glasgow is Scotland’s cultural hub, with more than 20 museums and galleries, over 3000 amazing and eclectic restaurants and cafés, more than 300 pubs and cozy bars, and over 130 music events every week. The conference venue is in the heart of the West End of Glasgow, home to one of the oldest universities in the World, as well as fine Victorian architecture, bohemian bars, restaurants and antique shops. The cobbled Ashton Lane is an Aladdin’s Cave of pubs, bistros and an arts cinema. Nearby the Botanical Gardens is a great place to unwind after a busy conference day. While you are here why not explore more of Scotland’s incredible landscape. Half an hour from the city centre you can try water sports on beautiful Loch Lomond. How about a game of golf in the home of golf? Or a visit to one of over 100 whisky distilleries or over 250 castles, with Edinburgh and Stirling castles each only 45 minutes away by public transport. If you are feeling energetic, there are over 280 Munros (mountains over 3000ft/914metres) to climb! Alternatively visit Europe’s Best Island, as voted for by Trip Advisor’s Traveller’s Choice 2014 – a visit to the Isle of Harris and Lewis is like stepping into the pages of a Scottish fairy tale with white sands and turquoise blue waters. Bring the family and have a holiday at the same time. The INS conference will be held in London immediately prior to our conference and it’s easy to get to Glasgow from there. So even more reason to visit Scotland and make a long break of it. See you all in Glasgow

Jon Evans, Convenor