

November 2024

NeuroBITE

NEWSLETTER

Welcome to the November 2024 edition of the NeuroBITE newsletter!

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This month, we're spotlighting a single-case rehabilitation study involving four patients with acquired brain injury (ABI), three of whom completed the intervention successfully. By incorporating a commercially available smartwatch as a prompting device, participants demonstrated improved memory performance while using the smartwatch. The study shows that off-the-shelf smartwatch technology is a feasible tool for supporting memory in people with ABI in community settings. It achieved a score of 19/30 on the RoBiNT scale and is available for free download!

In other news - In response to user feedback, we're developing a step-by-step tutorial that will be featured on the main NeuroBITE page. This hands-on guide will provide clear instructions for navigating and using the website. Stay tuned!

Happy reading!

Dementia

Bielderman, A., van Corven, C. T., Koopmans, R. T., Leontjevas, R., de Vugt, M. E., Bakker, C., & Gerritsen, D. L. (2024). Evaluation of the SPAN intervention for people living with young-onset dementia in the community and their family caregivers: A randomized controlled trial. *Aging & Mental Health*, 28(2), 275-284.

OPEN ACCESS

PEDro-P score: 5/10

Alzheimer's Disease / Mild Cognitive Impairment / Parkinson's Disease

Kraft, J. D., & Hampstead, B. M. (2023). A systematic review of tacs effects on cognitive functioning in older adults across the healthy to dementia spectrum. *Neuropsychology Review*, 1-26.

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Mild Cognitive Impairment

Chen, H., Wang, Y., Zhang, M., Wang, N., Ge, S., & Liu, Y. (2024). Effectiveness of Tai Chi on cognitive function among older adults with mild cognitive impairment: A systematic review and meta-analysis of randomized controlled trials. *Aging & Mental Health*, 28(2), 285-293.

Cheng, C. P. W., Wong, C. S. M., Lee, K. K., Chan, A. P. K., Yeung, J. W. F., & Chan, W. C. (2018). Effects of repetitive transcranial magnetic stimulation on improvement of cognition in elderly patients with cognitive impairment: A systematic review and meta-analysis. *International Journal of Geriatric Psychiatry*, 33(1), e1-e13.

Chiu, H.-M., Hsu, M.-C., & Ouyang, W.-C. (2023). Effects of incorporating virtual reality training intervention into health care on cognitive function and wellbeing in older adults with cognitive impairment: A randomized controlled trial. *International Journal of Human-Computer Studies*, 170, 1-12.

PEDro-P score: 6/10

Traumatic Brain Injury

Barua, U., Ahrens, J., Shao, R., MacKenzie, H., Wolfe, D., Sequeira, K., Teasell, R., Loh, E., & Mehta, S. (2024). Cognitive behavioral therapy for managing depressive and anxiety symptoms after brain injury: A meta-analysis. *Brain Injury*, 38(3), 227-240.

Gervais, C., Hjeij, D., Fernandez-Puerta, L., & Arbour, C. (2024). Non-pharmacological interventions for sleep disruptions and fatigue after traumatic brain injury: A scoping review. *Brain Injury*, 38(6), 403-416.



Stroke / Epilepsy / Anoxia / Traumatic Brain Injury

Jamieson, M., Monastra, M., Gillies, G., Manolov, R., Cullen, B., McGee-Lennon, M., Brewster, S., & Evans, J. (2019). The use of a smartwatch as a prompting device for people with acquired brain injury: a single case experimental design study. *Neuropsychological rehabilitation*, 29(4), 513–533. **OPEN ACCESS**

RoBiNT score: 19/30

Brain Tumour

Egset, K. S., Rokke, M. E., Reinfjell, T., Stubberud, J. E., & Weider, S. (2024). Cognitive and behavioural rehabilitation interventions for survivors of childhood cancer with neurocognitive sequelae: A systematic review. *Neuropsychological Rehabilitation*, 1-28. **OPEN ACCESS**

Other - COVID-19 Sequelae

Albu, S., Zozaya, N. R., Murillo, N., Garcia-Molina, A., Figueroa Chacon, C. A., & Kumru, H. (2022). Multidisciplinary outpatient rehabilitation of physical and neurological sequelae and persistent symptoms of COVID-19: A prospective, observational cohort study. *Disability and Rehabilitation*, 44(22), 6833-6840. (Case series)



Ratings

NeuroBITE also evaluates the methodological rigor (methodological quality) of primary studies that use a control condition to demonstrate the efficacy of a treatment. The primary studies involved are randomised controlled trials (RCTs), non-RCTs, and single-case experimental designs (SCEDs). Two method quality rating scales are used: the PEDro-P Scale to rate RCTs and nRCTs, and the Risk of Bias in N-of-1 Trials (RoBiNT) Scale to rate SCEDs. For more information, and to learn how to critically appraise studies using these scales, please visit our [Rating Information](#) and [Training](#) pages.

PEDro-P Scale

The PEDro-P Scale consists of 11 items (10 of which contribute to the total score). Often, complex (behavioural) intervention studies can only score a maximum of 8/10 because it is difficult to meet criteria on the two PEDro items for blinding participants and blinding therapists given the nature of behavioural interventions. For score interpretation, by convention, a score of 6 or more on the PEDro Scale is considered to reflect 'moderate' or 'good' methodological quality.

RoBiNT Scale

The RoBiNT Scale consists of two subscales: the Internal Validity (IV) Subscale (7 items) and the External Validity and Interpretation (EVI) Subscale (8 items). Items are rated on a 3-point scale (0-2), resulting in a maximum score of 14 for the IV Subscale, 16 for the EVI Subscale, and 30 for the total score. Score interpretation for the IV subscale, which reflects the methodological rigor (methodological quality) of a study, uses a validated algorithm, which is described in a supplement (Perdices, Tate & Rosenkoetter, 2019) to the RoBiNT Manual. The algorithm classifies the weighted scores of the seven IV Subscale items into six categories of methodological rigor, ranging from 'very high' to 'very low'.

