CDR System Attention Battery: Enhancing Patient Screening and CNS Clinical Trial Success

Helen Brooker & Pascal Goetghebeur

In the complex world of clinical trials, patient screening and recruitment remain significant challenges, especially in CNS indications which experience higher rates of poor trial outcomes. The Cognitive Drug Research (CDR) System Attention Battery has emerged as a game-changing tool for improving both screening and recruitment processes, providing unrivaled accuracy and sensitivity and an easy-to-use, web-based platform. Here's how this seven-minute assessment is transforming the way clinical trials sponsors select and monitor trial participants.

How CDR system transforms patient selection and monitoring

Measuring attention

Attention deficits are often the earliest and most sensitive indicators of cognitive decline. Measuring attention in early-phase clinical trials is critical for detecting potential neurocognitive safety signals, verifying target engagement of CNS-active compounds, and identifying early efficacy indicators while controlling for variables that could affect other outcome measures and patient compliance. The CDR System's attention battery provides three crucial measurements that take only seven minutes to perform. [1] Research has shown that these attention measures can effectively differentiate between various types of dementia, with studies demonstrating distinct cognitive profiles in Alzheimer's disease, vascular dementia, and dementia with Lewy bodies. [2-4]

Precise patient stratification

The CDR System's extensive normative database of over 5000 individuals enables researchers to make precise comparisons across different age groups and conditions. Studies have demonstrated its effectiveness in:

- Differentiating between types of dementia [5]
- Identifying early cognitive changes in mild cognitive impairment (MCI) [6]
- Detecting subtle cognitive impairments in various clinical populations [1]

Enhancing clinical trial recruitment

Efficiently identifying suitable participants early in the clinical process is key. The CDR System Attention battery is brief and provides objective measurement of the attentional processes, thus facilitating and enhancing recruitment of participants with the specific cognitive profile(s) required for the trial. Through publications [7-9], increased signal detection was observed when participants were selected using the CDR System attention battery as well as its normative database.

Objective baseline measurements

The system's validated Attentional factor scores provide central screening metrics:

- *Power of attention:* Combines three reaction time scores to measure concentration intensity
- *Continuity of attention:* Assesses sustained attention through accuracy measures

These factors have been validated through extensive factor analysis studies, showing robust and independent groupings of cognitive measures. [10]

Improving trial quality through better screening

The CDR System has the potential to revolutionize participant selection in clinical trials through its powerful cognitive screening capabilities. By leveraging the system's extensive database, researchers can establish precise cognitive inclusion criteria that significantly reduce group heterogeneity. This targeted approach allows for more sensitive detection of treatment effects, as participants are properly stratified based on objective cognitive performance metrics rather than subjective assessments. The system has been successfully employed in numerous clinical trials, including landmark studies across multiple therapeutic areas. In Alzheimer's disease research, McKeith et al. (2000) utilized the system to objectively measure cognitive changes, while Wesnes et al. (2004) demonstrated its sensitivity in Parkinson's disease trials. [11,12]

The platform has proven equally valuable in multiple sclerosis research, providing reliable cognitive assessments that complement traditional neurological measures. [13] More recently, McIntyre et al. (2023) applied the CDR System in schizophrenia trials, and Scholey et al. (1998) employed the technology in chronic fatigue syndrome investigations. [7,14] The result would be higher quality data, increased statistical power, and ultimately more efficient clinical trials—particularly crucial in CNS studies where cognitive endpoints are primary measures of efficacy.

Enhanced data quality

The system's reliability has been demonstrated across various trial types:

Category	Applications and Evidence
Dementia Research	• Successfully used in trials of Rivastigmine • Demonstrated sensitivity to treatment effects in Lewy body dementia [11] • Helped differentiate dementia subtypes [16]
Neurological / Psychiatric Conditions	• Assessed cognitive function in stroke patients [17] • Evaluated attention in Parkinson's disease [5] • Monitored cognitive changes in multiple sclerosis [13]
Cost-Effective Implementation	• Brief seven-minute duration makes it highly practical for clinical research [1,10] • Successfully implemented in multi-center international trials [18] • Used in large-scale screening programs • Applied in longitudinal studies tracking cognitive decline
Impact on Trial Outcomes	• Detected treatment effects in clinical trials • Monitored disease progression • Evaluated drug efficacy
Future Applications	• Digital therapeutic evaluation • Remote cognitive assessment • Real-time monitoring of treatment effects

Conclusion

The CDR System's extensive validation across numerous clinical trials and research studies makes it an invaluable tool for patient screening and trial recruitment. Its ability to provide quick, objective measurements of attention, supported by decades of research and hundreds of peer-reviewed publications, positions it as a crucial resource for ensuring trial quality and success.

For research teams planning clinical trials, the CDR System's attention battery offers a scientifically validated approach to participant selection that can significantly improve trial outcomes while reducing costs and timelines. As demonstrated by its extensive publication record spanning over two decades, the system continues to prove its value in both research and clinical applications.

For further reading on the CDR System's Attention Battery, *review our brochure*.

About the Authors

Helen Brooker is a specialist in cognitive test development and aging, with over 18 years of experience in academic and clinical research. She leverages her expertise in neuropsychological assessment, clinical trial delivery, and digital health solutions as a Senior Product Manager at Signant, where she oversees the company's proprietary computerized cognitive test solution.

Pascal Goetghebeur is an experienced CNS pharmacologist and behavioral scientist specializing in psychiatry and neurodegeneration. At Signant Health, he serves as Clinical Principal for Cognition, Science & Medicine in the Digital Health Sciences division, focusing on the role of cognition in drug development and managing the clinical aspect of Signant's proprietary cognitive assessment battery.

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