

# INPLASY PROTOCOL

To cite: Stuart et al. The Neuropsychological Correlates of Cognitive Disengagement Syndrome: A Systematic Review Protocol. Inplasy protocol 202280102. doi: 10.37766/inplasy2022.8.0102

Received: 28 August 2022

Published: 28 August 2022

**Corresponding author:**  
Nicole Stuart

nicoleestuart@gmail.com

**Author Affiliation:**  
University of Western Australia

**Support:** None.

**Review Stage at time of this submission:** Data extraction.

**Conflicts of interest:**  
None declared.

## The Neuropsychological Correlates of Cognitive Disengagement Syndrome: A Systematic Review Protocol

Stuart, N<sup>1</sup>; Sheridan, A<sup>2</sup>; Pestell, C<sup>3</sup>; Dorrington, K<sup>4</sup>; Badcock, N<sup>5</sup>; Gignac, G<sup>5</sup>.

**Review question / Objective:** The aim of the current review is to delineate the cognitive profile of Cognitive Disengagement Syndrome (CDS), particularly where it is similar to or different from ADHD-related inattention. In addition, the review will provide an analysis of methodological factors that might account for discrepancies in research findings and guidance for future studies.

**Condition being studied:** CDS (previously known as sluggish cognitive tempo) is a constellation of symptoms originally identified among children with the inattentive subtype of attention deficit hyperactivity disorder (ADHD-I). These symptoms include daydreaming, inconsistent alertness, hypoactivity and lethargy. Although there is considerable overlap with ADHD-I, factor analytic and convergent and discriminant validity studies suggest that SCT is a distinct construct.

**INPLASY registration number:** This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 28 August 2022 and was last updated on 14 April 2024 (registration number INPLASY202280102).

### INTRODUCTION

**Review question / Objective:** The aim of the current review is to delineate the cognitive profile of Cognitive Disengagement Syndrome (CDS), particularly where it is similar to or different from ADHD-related inattention. In addition, the review will provide an analysis of methodological factors that might account for

discrepancies in research findings and guidance for future studies.

**Rationale:** CDS can have important clinical and functional implications, including social withdrawal, anxiety, depression and academic impairment. Despite these implications, however, CDS often goes under-recognised and under-treated because it is not yet recognised in

diagnostic manuals. A key issue may be that the cognitive and neural mechanisms underpinning CDS symptoms are not well understood. To date, the literature examining CDS's neuropsychological correlates, including how these correlates differ from ADHD-related inattention, has been mixed. A number of methodological issues might account for these discrepancies. Therefore, a systematic review and meta-analysis of studies investigating the neuropsychological correlates of CDS is proposed as a means of understanding the cognitive deficits that underpin CDS's symptom profile, as well as methodological issues that might account for mixed findings in the literature.

**Condition being studied:** CDS (previously known as sluggish cognitive tempo) is a constellation of symptoms originally identified among children with the inattentive subtype of attention deficit hyperactivity disorder (ADHD-I). These symptoms include daydreaming, inconsistent alertness, hypoactivity and lethargy. Although there is considerable overlap with ADHD-I, factor analytic and convergent and discriminant validity studies suggest that SCT is a distinct construct.

## METHODS

**Search strategy:** Searches will be conducted using PubMed, PsycINFO, PsycARTICLES, and Embase. The search terms will include "(sluggish cognitive tempo) " or "(cognitive disengagement syndrome)" and "(neuropsychology) or (neuropsychological) or (neurocognitive) or (cognitive) or (cognition)".

**Participant or population:** Human participants across the life span will be included, including both clinical and non-clinical populations.

**Intervention:** Not applicable.

**Comparator:** For between-subjects studies, a comparator group of participants without elevated CDS symptoms.

**Study designs to be included:** All study designs that allow for an understanding of the relationship between CDS and potential neuropsychological deficits will be included.

**Eligibility criteria:** 1. Peer reviewed study, published in English; 2. Used objective neuropsychological tests of CDS's neurocognitive correlates; 4. Employed a published measure, specifically designed for identifying and quantifying CDS symptoms.

**Information sources:** PubMed, PsycINFO, PsycARTICLES, and Embase.

**Main outcome(s):** Study outcomes will be categorised according to the following neuropsychological domains: attention, executive functioning, memory, language, perceptual-motor functioning, and social cognition.

**Additional outcome(s):** Other variables of interest include sample age and comorbid diagnoses.

**Data management:** Two reviewers will independently screen studies for inclusion using Covidence software, with conflicts resolved via discussion and/or input from an additional reviewer providing third-party oversight. Data extracted will include

- Study title, author, journal, and year of publication;
- Study aim;
- Study funding sources and conflicts of interest reported by the authors;
- Participant recruitment method and setting;
- Sample size, age, gender composition and clinical diagnoses;
- Measures of CDS and neuropsychological functioning employed in the study;
- Statistical analyses used; and
- Study results, including effect sizes and statistical significance.

**Quality assessment / Risk of bias analysis:** Risk of bias assessment will be conducted using an adapted version of the Joanna Briggs Institute Checklist for Analytical Cross Sectional studies. Two reviewers will

independently assess the studies, with conflicts resolved via discussion and/or input from an additional reviewer providing third-party oversight. Methodological items assessed will include inclusion/exclusion criteria; recruitment method; sample description; validity and reliability of the study measures; identification, measurement and strategies for dealing with confounding factors; use of a control group; and statistical analyses.

**Strategy of data synthesis:** Population level correlations with a series of meta-analyses between CDS and ADHD-I, between CDS and each of the neuropsychological domains, and between ADHD-I and each of the neuropsychological domains. Meta-analytic structural equation modelling (maSEM) will then be conducted in order to estimate the direct effects between CDS and the neuropsychological domains, and the indirect effects between CDS and neuropsychological domains via ADHD-I.

**Subgroup analysis:** If sufficient data are available, we will conduct the following subgroup analyses

1. Children (6-11 years of age), adolescents (12-17 years), adults (18 +)
2. ADHD, no ADHD.

**Sensitivity analysis:** Not applicable.

**Language restriction:** English.

**Country(ies) involved:** Australia.

**Other relevant information:** Not applicable.

**Keywords:** cognitive disengagement syndrome, sluggish cognitive tempo, cognition, neuropsychology, systematic review, meta-analysis.

**Dissemination plans:** TBC.

**Contributions of each author:**

**Author 1 - Nicole Stuart -** Conceptualisation of the review, literature search, study screening, data extraction, quality assessment, data analysis and

literature review, first draft of the manuscript, and approval of the final manuscript.

Email: nicoleestuart@gmail.com

**Author 2 - Andrew Sheridan -** Guidance on the systematic review process, study screening, quality assessment, manuscript review and approval of the final manuscript

Email: andrew.sheridan@uwa.edu.au

**Author 3 - Carmela Pestell -** Guidance on systematic review process, study screening, quality assessment, manuscript review and approval of the final manuscript.

Email: carmela.pestell@uwa.edu.

**Author 4 - Karina Dorrington -** Study screening, data extraction, quality assessment and approval of the final manuscript

Email: karinadorrington@gmail.com

**Author 5 - Nicolas Badcock -** assistance with meta-analysis, manuscript review and approval of the final manuscript

Email: nicholas.badcock@uwa.edu.au

**Author 6 - Gilles Gignac -** meta-analytic strategy and guidance, oversight of data extraction, synthesis and analysis, review and approval of the final manuscript.

Email: gilles.gignac@uwa.edu.au