SOPT on other cognition-based instrumental activities of daily living (IADL) in everyday situations is incomplete. The strengths of CIMT, based on its Transfer Package (TP), are to facilitate 1) transfer of improved function from the treatment setting to IADL in everyday settings, and 2) long-term retention of the improved performance of IADL. This study sought to determine in a preliminary case series whether the TP of CI Movement Therapy combined with SOPT would have the same effect on a wide range of impaired cognition-based ADL.

Participants and Methods: Participants were 6 adults with chronic stroke: mean chronicity = 36.2 months, (range, 16-56 months); mean age = 59.7 years, (range, 47-55); 1 female; 3 African American and 3 European American. Five had mild cognitive impairment, while one had moderate impairment. Participants received 35 hours of outpatient treatment in 10-15 sessions distributed over 2-6 weeks, depending on the participants' availability. Sessions began with 1 hour of SOPT training followed by training of cognition-based ADL by the process of shaping, a common method in the behavior analysis field. Other behavior analysis methods employed in the TP of CI Movement Therapy were used, including: 1) behavior contracting, daily assignment of homework, participation of a family member in the training and monitoring process, daily administration of a structured interview assessing amount and quality of performance of 30 IADL, problem solving to overcome perceived (or real) barriers to performance of IADL. Participants were given daily homework assignments in follow-up and were contacted in periodic, pre-arranged phone calls to determine status, compliance and problem-solve.

Results: All six participants showed marked improvement on the SOPT test similar to that in the Ball et al studies. However, here transfer to IADL outside the treatment setting was substantial. On the main real-world outcome, the Canadian Occupational Performance Measure (COPM), there were increases of 2.7±1.3 and 2.1±1.6 on the two scales (d's = 1.9 & 1.3, respectively). (Changes on the COPM > 2 points are considered clinically meaningful and changes in d' >.8 are considered large). On two other real-word measures, the Cognitive Task Activity Log (CTAL) and inventory of Improved and New Cognitive Activities (INCA), there was a marked increase during the acquisition phase of training. There was no loss in retention over

the 6-16 months (mean = 12.2) of follow-up to date. Instead, the INCA showed strong further improvement after the end of treatment-setting training, especially in the New Activities Not Performed Since Before Stroke Onset category, going from a mean of 8.2 after training to 14.6 at the end of follow-up.

Conclusions: These very preliminary results suggest that CICT may be an efficacious therapy for mild to moderate cognitive impairment in chronic stroke and possibly other disorders.

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4 Initial Application of Constraint-Induced Cognitive Therapy to Long COVID Brain Fog

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Objective: Persistent brain fog is common in adults with Post-Acute Sequelae of SARS-CoV-2 infection (PASC), in whom it causes distress and in many cases interferes with performance of instrumental activities of daily living (IADL) and return-to-work. There are no interventions with rigorous evidence of efficacy for this new, often disabling condition. The purpose of this pilot is to evaluate the efficacy, on a preliminary basis, of a new intervention for this condition termed Constraint-Induced Cognitive therapy (CICT). CICT combines features of two established therapeutic approaches: cognitive speed of processing training (SOPT) developed by the laboratory of K. Ball and the Transfer

Package and task-oriented training components of Constraint-Induced Movement therapy developed by the laboratory of E. Taub and G. Uswatte.

Participants and Methods: Participants were ≥ 3 months after recovery from acute COVID symptoms and had substantial brain fog and impairment in IADL. Participants were randomized to CICT immediately or after a 3-month delay. CICT involved 36 hours of outpatient therapy distributed over 4-6 weeks. Sessions had three components: (a) videogame-like training designed to improve how quickly participants process sensory input (SOPT), (b) training on IADLs following shaping principles, and (c) a set of behavioral techniques designed to transfer gains from the treatment setting to daily life, i.e., the Transfer Package. The Transfer Package included (a) negotiating a behavioral contract with participants and one or more family members about the responsibilities of the participants, family members, and treatment team; (b) assigning homework during and after the treatment period; (c) monitoring participants' out-of-session behavior; (d) supporting problem-solving by participants and family members about barriers to performance of IADL; and (e) making follow-up phone calls. IADL performance, brain fog severity, and cognitive impairment were assessed using validated, trans-diagnostic measures before and after treatment and three months afterwards in the immediate-CICT group and on parallel occasions in the delayed-CICT group (aka wait-list controls).

Results: To date, five were enrolled in the immediate-CICT group; four were enrolled in the wait-list group. All had mild cognitive impairment, except for one with moderate impairment in the immediate-CICT group. Immediate-CICT participants, on average, had large reductions in brain fog severity on the Mental Clutter Scale (MCS, range = 0 to 10 points, mean change = -3.7, SD = 2.0); wait-list participants had small increases (mean change = 1.0, SD = 1.4). Notably, all five in the immediate-CICT group had clinically meaningful improvements (i.e., changes ≥ 2 points) in performance of IADL outside the treatment setting as measured by the Canadian Occupational Performance Measure (COPM) Performance scale; only one did in the wait-list group. The advantage for the immediate-CICT group was very large on both the MCS and COPM (d's = 1.7, p's < .05). In follow-up, immediate-CICT group gains were retained or built-upon.

Conclusions: These preliminary findings warrant confirmation by a large-scale randomized controlled trial. To date, CICT shows high promise as an efficacious therapy for brain fog due to PASC. CICT participants had large, meaningful improvements in IADL performance outside the treatment setting, in addition to large reductions in brain fog severity.

Categories: Cognitive Intervention/Rehabilitation
Keyword 1: cognitive rehabilitation
Keyword 2: information processing speed
Keyword 3: activities of daily living
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Paper Session 12: Assessment related topics

1:45 - 3:15pm
Friday, 3rd February, 2023
Town & Country Ballroom D

Moderated by: Dalin Pulsipher

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1 Race, Ethnicity, Education, Sex and Gender Effects on Neuropsychological Test Scores: Limitations of Current Evidence and Impact on Clinical Trials and Clinical Practice

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Objective: Interpretation of neuropsychological (NP) tests depends on the quality of the normative standards available for the tests. Co-norming across tests is necessary when interpreting differences between scores on different tests. The relevance of specific norms for an individual examinee further depends on multiple design features of the standardization studies, including: when the studies were conducted, sampling strategy,