Categories: Cognitive Intervention/Rehabilitation
Keyword 1: information processing speed
Keyword 2: cognitive rehabilitation
Keyword 3: aging (normal)
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2 Cognitive Processing Speed Training in Individuals with Multiple Sclerosis

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Objective: Cognitive impairment is observed in up to two-thirds of persons with Multiple Sclerosis (MS). Impairments in cognitive processing speed (PS) is the most prevalent cognitive disturbance, occurs early in the course of disease and is strongly associated with disease progression, various brain parameters and everyday life functional activities. As such, cognitive rehabilitation for PS impairments should be an integral part of MS treatment and management. The current study examines the efficacy of Speed of Processing Training (SOPT) to improve processing speed (PS) in individuals with Multiple Sclerosis (MS). SOPT was chosen because of its significant positive results in the aging populations.
Participants and Methods: This double-blind, placebo-controlled randomized clinical trial included 84 participants with clinically definite MS and impaired PS, 43 in the treatment group and 41 in the placebo control group. Outcomes included changes in the Useful Field of View (UFOV) and neuropsychological evaluation (NPE) including measure of PS (e.g., Pattern Comparison and Letter Comparison). Participants completed a baseline NPE and a repeat NPE post-treatment. Treatment consisted of 10 sessions delivered twice per week for 5 weeks. After the 5 weeks, the treatment group was randomized to booster sessions or no contact. Long-term follow-up assessments were completed 6 months after completion of treatment. The primary outcome were tests of PS including UFOV and neuropsychological testing.
Results: A significant effect of SOPT was observed on both the UFOV (large effect) and Pattern Comparison with a similar pattern of results noted on Letter Comparison, albeit at a trend level. The treatment effect was maintained 6-months later. The impact of booster sessions was not significant. Correlations between degree of improvement on the UFOV and the number of levels completed within each training task were significant for both Speed and Divided Attention indicating that completion of more levels of training correlated with greater benefit.
Conclusions: SOPT is effective for treating PS deficits in MS with benefit documented on both the UFOV and a neuropsychological measure of PS. Less benefit was observed as the outcome measures became more distinct in cognitive demands from the treatment. Long-term maintenance was observed. The number of training levels completed within the 10-sessions exerted a significant impact on treatment benefit, with more levels completed resulting in greater benefit.

Categories: Cognitive Intervention/Rehabilitation
Keyword 1: cognitive rehabilitation
Keyword 2: multiple sclerosis
Keyword 3: information processing speed
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3 CI Cognitive Therapy: Initial Application in a Pilot Study to Improve Cognitive Impairment in Chronic Stroke Survivors

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Objective: CI Cognitive Therapy (CICT) is a combination of behavioral techniques derived from CI Movement Therapy (CIMT) modified to apply to the cognitive domain, and Speed of (Cognitive) Processing Training (SOPT). SOPT is effective in improving cognitive function in the treatment setting and driving ability in everyday situations. The data concerning the effect of

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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.

Categories: Cognitive Intervention/Rehabilitation
Keyword 1: cognitive rehabilitation
Keyword 2: stroke
Keyword 3: activities of daily living
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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

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