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Neuroplasticity-based cognitive remediation for chemotherapy-related cognitive impairment

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Advances in breast cancer treatment are resulting in a growing number of cancer survivors. This has broadened the scope of care from treating the disease alone to managing long-term effects of cancer survivorship. Chemotherapy-related cognitive impairment (CRCI) is a common long-term complication reported by breast cancer patients and survivors. The most common cognitive difficulties reported among breast cancer survivors involve executive functions. A novel cognitive enhancement strategy called neuroplasticity-based computerized cognitive remediation (nCCR) could be used to target the executive function cognitive deficits experienced by breast cancer survivors. We are completing a single-arm feasibility study aimed at demonstrating feasibility and acceptability of nCCR in cancer survivors with CRCI. Participants that completed the study thus far (n=16) completed an average of 7.45 hours of nCCR training per week and an average of 44.69 hours total. Preliminary analyses in an early subset of completed participants (n=7) show significant improvement on tasks of processing speed, cognitive flexibility, verbal memory, and attention following 6-weeks of nCCR. Participants also exhibit improvement in self-reported perceived cognitive impairment and perceived cognitive abilities. Preliminary results not only demonstrate feasibility, but also that nCCR confers cognitive benefits to both self-report and objective performance in cancer survivors with CRCI.