

Conclusions: Both groups benefit from cognitive stimulation, and the use of tDCS does not appear to enhance the cognitive effect or the MEPs. It seems that cognitive stimulation alone is capable of modifying cortical excitability and improving cognitive performance.

P31: Neuropsychological and brain profiles in elderly adult cancer survivors: A population-based cross-sectional study

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Objectives: Cancer's impact on physical and mental health varies by sex. This study explores physical and neurocognitive characteristics among elderly cancer survivors and investigates sex-specific differences in cortical thickness related to a history of cancer.

Methods: This study is part of the Arakawa geriatric cohort study for people aged 65 years or older, consisting of 1,098 individuals. Participants provided a self-reported history of cancer and underwent face-to-face diagnostic interviews, Mini-Mental State Examination (MMSE), Geriatric depression scale 15 (GDS-15), Pittsburgh Sleep Quality Index (PSQI), and three-dimensional T1-weighted magnetic resonance imaging. Cortical thickness was measured using FreeSurfer software. We explored the associations between cortical thickness, cancer history, and clinical-demographic data using univariate and multivariable regression analyses. Each analysis was conducted for the entire sample and then stratified by sex.

Results: Of 1,098 participants, 189 (17.2%) reported a history of cancer. These individuals were generally older, with a higher proportion being men. Among men, those with cancer history had lower BMI, a higher prevalence of sleep disorders (PSQI ≥ 6), lower MMSE registration scores, and more MMSE comprehension impairments. Women with a cancer history showed no significant differences in sleep or cognitive functions. After adjusting for age, imaging acquisition site, education, estimated total intracranial volume, and dementia diagnosis, cortical thicknesses of cancer survivors was found to be reduced in the left posterior cingulate in men (B [95%CI] = 0.31 [0.12–0.78]) and in the left paracentral lobule in women (B [95%CI] = 0.22 [0.02–0.54]).

Conclusions: Cancer history in elderly adults is associated with sex-specific differences in physical, psychological, and brain structural characteristics. In men, links were observed with underweight, sleep disturbances, and specific cognitive dysfunctions alongside reduced cortical thickness in the left posterior cingulate cortex. In women, no neuropsychological changes were noted, although reduction in left paracentral cortical thickness were identified. Future research should employ longitudinal Methods to deepen understanding of cancer's long-term psychophysical effects, with an emphasis on sex-based differences.