

Neurophysiological characteristics in older adults with subjective cognitive decline (SCD)

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In addition to objective cognitive deficits, the subjective decline in cognitive function experienced by older adults has gained more attention in health-care settings since the number of individuals with such concerns who seek medical help is rapidly growing. Both patients with mild cognitive impairment (MCI)/Alzheimer's disease (AD) and cognitively-normal older adults usually complain the deterioration of cognitive function, called subjective cognitive decline (SCD). However, SCD is not only a symptom, but also a specific "diagnosis". According to the research criteria proposed by the SCD-Initiative working group in 2014, SCD is operationally defined as self-reported cognitive deterioration in the absence of detectable objective impairments as revealed by standardized neuropsychological tests, which are used to classify MCI or AD. Evidence from longitudinal cohort studies has indicated that compared to individuals without SCD, those with SCD demonstrated significantly higher risks in the development of MCI or AD. Therefore, early identification of SCD through cross-sectional design is very important because it can help clinical practitioners probe the potential abnormalities and then provide preventive strategies. In this talk, I will present our data collected from those with and without SCD using task-related magnetoencephalographic (MEG) recordings, including paired-stimulus paradigm (sensory gating) and oddball paradigm (mismatch negativity). Furthermore, our group also provided the intervention of physical and cognitive activities to SCD subjects in the community for 6 months. The treatment efficacy of such a randomized-controlled trial will be determined in terms of electrophysiological responses (e.g., mismatch negativity, sensory gating).