

## P02-98 - IMPROVING COGNITIVE FUNCTIONS OF SENIORS BY READING AND SOLVING ARITHMETIC PROBLEMS

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**Objectives:** In general, recent cognitive training has received increasing interest as a solution to age-related cognitive decline. Although the general public's interest in cognitive or brain training is increasing, the generalizing or transfer effect of such training remains unclear. We previously introduced a new cognitive intervention program for senile dementia, named learning therapy. The principle of learning therapy is to activate the prefrontal cortex by solving simple mathematical and language problems. The purpose of this study was to examine the beneficial effects of a new cognitive intervention program designed for normal aged people, the concepts of which are derived from learning therapy.

**Methods:** We applied a similar daily cognitive training program to community-dwelling seniors to determine the effects of training on cognitive functions, particularly on the function of the prefrontal cortex, by a single-blind randomized controlled trial and a large scale cohort study. In these studies, neuropsychological measures were determined prior to and after six months of the intervention (post-test) by mini-mental state examination (MMSE), frontal assessment battery at bed side (FAB), and a digit-symbol substitution test (DST) of WAIS-R.

**Results:** The results indicate that the transfer effect of cognitive intervention by reading and solving arithmetic problems on non-targeted cognitive functions was demonstrated in both studies, and are convincing evidence that cognitive training has the beneficial effects of maintaining and improving cognitive functions.

**Conclusion:** The psychological stimulations made possible by expertise and technology in brain science can improve the higher cognitive functions of seniors.