



A neuropsychological test (CWPT: Colour Word Pick-up Test) to be able to be used for screening of PCD and MCI of dementia

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Abstract

This study was started with the aim of developing a neuropsychological test that can be used for screening tests for MCI (Mild Cognitive Impairment) and PSCD (Preclinical Stage of Dementia) prior to dementia. Several Methods are studied to measure the decline in the function of the prefrontal cortex for the screening of MCI and PCD prior to dementia, based on the hypothesis that human behaviour is controlled by the prefrontal cortex using cognitive information of 5 senses. Finally, CWPT which is the combination of stroop effect's application and recalling the episodic memory is found to be quite suitable one. In order to obtain evidence, analysis by near-infrared spectroscopy, comparison with other neuropsychological tests, and correlation with WCST (Wisconsin Cards Sorting Test) which is well known as a Neuropsychological test were examined. As a criterion of this test, using data of 1584 healthy people, a histogram was drawn out every 60's, 70's and 80's, and a mean value ± 1.5 SD was taken as a normal range in each histogram. About 5,000 elderly people in Shizuoka Prefecture have taken this test and are instructed to receive specialist doctors for those who have an average value of -1.5 or less. The evidence of CWPT was confirmed, the criteria were completed, and full use began. Since this test can be easily translated into foreign languages, we are looking for collaborators and sponsors to translate into other foreign languages.

Biography

Takaki Shimura worked in the field of Biomedical Engineering at Fujitsu Laboratories Ltd., developing and researching ultrasound imaging, MRI, bio-magnetics measurement by SQUID, X-ray imaging by flat panel detector, remote health care system by TV telephone and so on from 1969 to 2000. He worked at Tokai University as a Professor, researching mainly BME on dementia, such as the prefrontal lobe imaging using infrared spectroscopy and neuropsychological tests for early stage of dementia from 2000 to 2007. He founds daycare service houses at Sosei Ltd to apply his inventions of the brain rehabilitation to the elderly by himself since 2009. He is the Engineering Fellow of the Japan Society of Ultrasound in Medicine, the President of Japan Society for Early Stage of Dementia formerly and the chairman of BME on Dementia Group of the Japanese Society for Medical and Biological Engineering.

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