

Study on clinical application of choice reaction time tasks using visual and auditory stimuli

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This study used a dual task design to examine the abilities of information process on daily living during the concurrent performance of an attentionally demanding cognitive task in young and older adults with and without a history of Central Nerves System disease. Choice reaction time tasks were auditory stimuli discrimination task, visual stimuli discrimination task, and visual-auditory stimuli discrimination task for clinical evaluation. We tested them with twenty healthy young subjects, eighteen healthy aged subjects, and thirteen aged patients. In order to analyze the data from three tasks, we employed four measures that were the median and quartile deviation of reaction times and the number of errors and no responses in tasks. The means of medians of aged patients were larger than those of healthy older subjects in visual stimuli discrimination and visual-auditory stimuli discrimination tasks. The means of quartile deviations of aged patients were larger than those of healthy older subjects in all tasks. The number of errors and no responses increased with aged patients. From these results, we set reference values for each four measures by using data from healthy aged subjects. It was revealed that at least one measure was deviated from its reference value for all aged patients. We concluded that the tasks and four measures and their reference values could be useful for clinical occupational evaluation of aged patients.