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Title	Comparison of brain activity in success and failure in single and multitask game
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Abstract

Attention-Deficit/Hyperactivity Disorder (ADHD) is the disorder that occur to neurodevelopment with symptoms of hyperactivity, impulsivity, and/or inattention in childhood. In 2020, the U.S. Food and Drug Administration (FDA) per-mitted the game-based digital therapeutic device for ADHD children which name is "EndeavorRx". We developed the game similar to that game recoding EEG and eyetracking. In this game, we constitute two types of single task and one multitask to compare between during single task and during multitask. We had two types of single task; single task of CDT (ST(CDT)), single task of TTT (ST(TTT)). In multitask, we did both of these tasks. We checked and compare ERP and rela-tive theta power of success and failure in single and multitask. We could see difference of ERP of success and failure in single and multitask. In relative theta power results, there was main effect of before and after stimulus in CDT single task only. From these results, it was found that there was a difference in success or failure depending on the ERP after stimulation, but there was no difference in success or failure in the theta power before stimu-lation. Therefore, in this experimental paradigm, it may be diffi-cult to predict success or failure at the stage before stimulation with theta power.