



Differential Sensibility of Information Processing Capacity with Age: Effects of Physical Activity and Task Complexity

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ABSTRACT

Study aim: Movement control systems are altered by the aging process. Numerous researches have explained the changes that occur with aging, and many of those changes are related to central nervous system (CNS) effects. This article evaluates the impact of age, the practice of regular physical activity, and the task complexity on decision-making ability. Methods: 120 healthy male subjects volunteered to participate in this study. They included 60 young adults (*i.e.*, 30 sedentary and 30 active) (age: 24.35 ± 2.82 years), as well as 60 older adults (age: 66.42 ± 4.06 years) (*i.e.*, 30 sedentary and 30 active). They performed two types of tasks (*i.e.*, simple and complex) to measure reaction time (RT). Subjects perceive visual stimuli through the computer screen. Results: Our results showed that older active subjects have lower RT than older sedentary subjects ($p < 0.05$). However, no significant difference was observed in young adults. Moreover, young adults had significantly lower RT than older subjects ($p < 0.05$). Besides, we observed a significant increase in the RT when task is complex compared to the simple task in all groups. In addition, active adults have better RT regardless the complexity of the task (*i.e.*, simple or complex). Conclusions: Physical activity improves the decision making ability in older subjects.

KEYWORDS

Aging-Physical Activity-Complexity-Decision Making

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