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Exercise Can Improve Speed of Behavior in Older Drivers

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The main aim of this research was to study the effects of a specific exercise program on the speed of behavior of older adults during on-the-road driving. Twenty-six drivers (55–78 yr old) were randomly assigned to either an exercise group or a control group. The exercise program (3 sessions of 60 min/wk for 8 wk) incorporated tasks that induced the participants to respond quickly to challenging situations. On-the-road driving tasks (under single- and dual-task conditions) included measures of simple and choice reaction time, movement time, and response time. Significant positive effects were found at follow-up resulting from participation in the exercise program: Improvements were found for several measures in all driving tasks, and a composite score reflected a better general drivers' speed of behavior. These results show that exercise can enhance speed of behavior in older drivers and should therefore be promoted.

Keywords: automobile driving, aging, reaction time, physical activity

Slowing and increasing variability of motor performance during human aging is a well-demonstrated phenomenon (Der & Deary, 2006; Hultsch, MacDonald, & Dixon, 2002; Spirduso, Francis, & MacRae, 2005). The negative effect of age on reaction time (RT) is more pronounced in tasks that have high levels of complexity (Der & Deary, 2006) and could affect the way people perform daily functional tasks such as driving a car (Spirduso et al., 2005). Research has shown that speed of behavior (i.e., RT to environmental stimuli and speed of execution) can be improved by the practice of physical activity, in both simple and choice reaction tasks (American College of Sports Medicine [ACSM], 1998; Spirduso, 2006). However, few studies have explored this potential link among older drivers.

Previous studies have established an association between speed of behavior and on-road tests (McKnight & McKnight, 1999; Odenheimer et al., 1994) or crashes (Margolis et al., 2002). Driving is a complex and interactive task involving a variety of skills and requires the ability to make appropriate and timely decisions.

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