

Older Drivers Recognize Their Shortcomings, Except One

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(PhysOrg.com) -- Many drivers over age 70 realize that their reaction time is slower so they naturally compensate by driving more carefully, says Matthew Romoser, who studies age-related physical and cognitive function and driving skills at the University of Massachusetts Amherst. The problem, according to his latest research, is that many older drivers don't realize that danger is coming at them sideways, not from head-on as they assumed.

For his recent doctoral dissertation, Romoser's study at the university's Human Performance Laboratory found that drivers 70 to 89 years old can best learn to use more side-to-side glances when executing practice turns at intersections in a driving simulator, compared to hearing a

lecture. As Massachusetts and other states consider new screening for older drivers before renewing their operators' licenses, the UMass Amherst researchers can recommend specific tests and effective refresher courses.

As people age, Romoser explains, they begin to process information more slowly, including visual information. This in turn makes it harder to process moving objects in the visual periphery. "The statistics reflect this," he adds. "Rear-end, head-on, single-car and car-pedestrian accidents actually decrease among older drivers in this age group, probably because they do self-regulate. But side-impact crashes increase markedly over age 70, and findings from our head-movement studies suggest a reason: older drivers fail to compensate for the loss of peripheral processing. They don't use enough side-to-side glances at intersections so they're having accidents."

"The problem is that, for some older drivers, once they cross the threshold into the intersection while making a turn, side-to-side scanning stops altogether. This is worrisome because without an additional quick side glance at the beginning of a turn, older drivers are likely to miss the sudden emergence of a previously unseen car. Compared to younger drivers, older drivers tend to focus only in the direction of the turn once they commit at an intersection," he adds.

Romoser and colleagues tested three groups of 18 subjects each, ages 70 to 89, who either received:

- classroom lectures on using more side glances at intersections (passive group)
- active behind-the-wheel training in a driving simulator (active group)
- no training (control group)

When the researchers compared results of a field drive before and after training, they found the actively trained group significantly increased side-to-side scanning from 44 percent of opportunities before training to 83 percent afterward, nearly doubling their use of side-to-side scans in intersections, (the target behavior). Meanwhile, the passive training and control groups showed no significant change in side-to-side scanning.

An unexpected and refreshing outcome of this study, says Romoser, is that he and colleagues did not meet the resistance or skepticism they had expected from drivers who, in essence, had to face up to a significant driving error. “We live in a car culture,” he notes, “and there’s a natural fear of losing your license.” But with just a single exception, the researcher says, “People were very receptive to learning more and doing better.”

This willingness to receive instruction encourages Romoser and colleagues as they develop a driving instruction course specifically geared toward older drivers. Expecting that as the population ages and states consider additional screening programs for testing older drivers, Romoser and colleagues plan to have a practical training option available.

Romoser favors a tiered approach in which motor vehicle licensing agencies could screen drivers first on relevant variables such as response time, peripheral information processing and cognitive workload capacity, for example, before re-licensing. The vast majority will pass without incident, but some drivers might be diverted for further instruction in a “safe driving after 70” course to improve their performance and keep their operators’ licenses, for example, while others might be referred to a physician for further testing.

“We’re now designing a training program for older adults that is deployable to a driving instruction school,” says Romoser. As for the

driver performance study, a one-year follow-up with the drivers in the active study group is just starting at the UMass Amherst's Human Performance Lab to see if these drivers are still using the new skills a full year or more after learning them.

Provided by University of Massachusetts Amherst ([news](#) : [web](#))

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