



Online Newsletter *Volume 1, Number 1: August 2002*

Related Links:

[Traffic Safety Center Sonoma Study *summary*](#)

Other stories this issue:

[Older Adults Are Driving Transportation Policy](#)

[Why Older Adults Don't Walk](#)

[Scrambling for Safety](#)

[Making Oakland Safer for Older Pedestrians](#)

[Getting to the Heart of Aging and Mobility](#)

[The California Task Force](#)

[Local Transportation Programs](#)

[Top of page](#)

[Download PDF of this page](#)

[Download PDF of August 2002 issue \(1.5MB\)](#)

Aging Behind the Wheel

An epidemiological look at the older driver

Interview with Traffic Safety Center Director David Ragland, head of the Sonoma Study on Older Travelers' Driving Behavior (*Predictors of Driving Behavior and Adverse Driving Outcomes in an Elderly Population*)

With funding from the National Highway Traffic Safety Administration and the National Institute of Aging, UC Berkeley Traffic Safety Center Director David Ragland is heading a project that uses data collected from a longitudinal epidemiological study of some 2,000 adults 55 and older in Sonoma, CA, to examine how their driving behavior and their safety behind the wheel change as they age.

A key goal is to tease out the significance of various physical limitations and medical conditions distinct from the driver's chronological age. "Age per se doesn't cause anything by itself," Ragland notes. "That's why it's important to pull apart the functional status, medical conditions, and performance measures, independently from age, so that we don't have to use chronological age to determine whether or not you can successfully drive." Ragland hopes to use the findings to develop measures to assess drivers' fitness that are more reliable than the current ones based on chronological age.

Behaviors that the study will examine include:

- drivers' decision to continue to drive, or their choice to stop or limit their driving;
- limitations they experience in their driving;
- the amount they drive; and
- the number of adverse outcomes they experience, such as traffic citations and crashes.

Drivers' conditions that the study will examine for their effects on driving ability and safety include:

-

[Send us your comments
or email a letter to the
editor](#)

[Back to Front Page](#)

[Traffic Safety Center
Home](#)

physical disabilities such as deteriorating vision and reaction times;

- medical conditions;
- level of cognitive functionality; and
- social needs and support.

The study will also try to determine how cessation of driving by older people affects their social and support networks that provide access to shopping, medical visits, recreation, socializing with friends and family and attending entertainment events, political events, classes and religious services.

Ragland discussed the study in the following interview conducted by TSC staff member Melanie Abrahams with assistance from TSC project coordinator Tammy Wilder.

What were the origins of the study?

The basic idea of this project was to get information on a lot of variables within this 55-and-older demographic. That includes medical conditions, functional status, physical activity, several types of social variables, social support, and marital status. In the course of doing this epidemiological research, the researchers at the National Highway Traffic Safety Administration obtained a lot of information on driving habits. There was a baseline exam in the early 1990s, and since then they've done three other waves of data collection on the same people. This means that we've got longitudinal data on about 2,000 people.

I think this study is important to traffic safety because there is ample evidence that as one grows older, functional status changes quite a bit. Reaction time, vision, virtually everything changes, and these are all things that interfere with the ability to carry out a complex task such as driving.

One issue that is important in this research is whether it's age per se that limits driving habits, or if it's really medical conditions and functional limitations that might correlate with age, but aren't precisely linked with age itself. It very well could be that you could grow older chronologically and not have any of these conditions that limit you, and it might be that you're younger and have these limitations. That's why it's important to pull apart the functional status, medical conditions, and performance measures, independently from age, so that we don't have to use chronological age to determine whether or not you can successfully drive.

What is new about this study?

There has been quite a bit of data gathered, but there are things still to learn. We are looking at two variables, driving behavior and adverse outcomes. Whether you drive, how much you drive, when you drive, and whether you limit your driving for various reasons is linked to whether you experience adverse outcomes, such as getting citations, getting into crashes, and so forth. They are related because if you limit your driving behavior, you are less likely to get into a crash.

We want to look at these two variables and link them to drivers' functional status and



health. Although there are quite a few studies on driving behavior, which try to predict driving outcomes or link various factors to driving cessation or limitation, there are a lot of medical conditions, and one has to systematically test each of these to see what the impact is on adverse driving outcomes. There ought to be some more systematic studies that look at different medical conditions and different driving outcomes in relation to different demographic groups—urban, rural, and so forth.

What have been some of the major reasons you have found for driving cessation or limitation? Have the people in your study been limiting their driving mainly based on medical concerns?

For driving limitations and driving cessation, we have looked at a range of medical conditions and then at a range of non-medical conditions. Among various other medical conditions, we've asked about vision, hearing, fatigue, and attention problems. By far, the most important condition that people mention is vision: 30 percent, 40 percent, even 50 percent of the people questioned, depending on their demographic within our test group, mention it. For all the other medical conditions, a very small percentage, like 1 percent or 2 percent, give them as a reason for limiting or stopping their driving.

Among the non-medical conditions, people have been telling us that they limit driving because they're afraid of being in an accident or causing an accident, and because they are afraid of crime. Interestingly, a large number of people say that they limit their driving simply because they don't have a place to go. We don't know if that's because there aren't the civic activities designed for that age group that there could be in our communities, or if it's because they simply don't want to go out.

What are the policy implications of you finding that vision is a leading reason that people stop or limit their driving? Does this suggest a strategy for extending people's driving years?

Absolutely. One obvious solution would be better kinds of glasses and correctional devices designed for individual use. The second would be different kinds of mirror systems that give a driver a wide-angle view or a better view that doesn't have blind spots, and things like this. A third kind of solution would be highway improvements such as larger signs and clearer markings on the road.

And those improvements would help all drivers?

Yes, this is what we're hoping.

Do you think that you've seen any indication of older drivers limiting their driving simply because they think that that is the appropriate thing to do, regardless of their actual ability?

We think that there are numbers of people who stop driving before they really need to because through stereotypes enforced either by the media or through people's cultural expectations, they're not thought of as being safe drivers anymore. Just making a mistake that anybody might make, if you're an older driver, might cause you to label yourself as unsafe or for others to label you as unsafe. On the other hand, there are people who don't stop soon enough, who deny or don't notice the decrease in function

taking place and delay making changes when in fact they should. It seems that we have both kinds of errors here, and with increased information from our research, fewer of these might happen.

So there could be younger drivers who should limit their driving, but don't, because they don't perceive themselves as old enough to be experiencing age-related decreases in driving abilities?

Exactly, and other people may not perceive younger, potentially dangerous drivers that way, either. An underlying theme of our research and other studies like this is to identify the factors besides age per se that affect driving, because age per se doesn't cause anything by itself. It's factors such as vision that actually are linked directly to driving ability.

Who will be influenced by this research, or who will find it the most valuable?

We hope that a range of people will find this useful. We hope that we can start with the drivers themselves. If they are aware of the factors that affect people's driving on average, they may be prepared to make informed decisions about what they should do in their own driving habits. We hope that health care providers might find these results valuable, insofar as they can examine people and evaluate them with respect to what kinds of functions they can perform safely in relation to their driving. Another group is engineers, the people who design vehicles and roadways. Finally, we would hope that policymakers would also find these results valuable—especially those people who make decisions about licensing and driving regulations and exams for testing people's ability to drive.

What would be a valuable next step?

Our sample is limited to people living in a fairly small town surrounded by rural areas. This kind of study should be repeated in urban areas and suburban areas with different population groups. I suspect that there will be differences in driving patterns, in the roadway systems, in alternative modes of transportation available, in the distances people have to go, in traffic conditions. Absolutely, we think that these kinds of studies should be done in different places around the country.

How are you getting out the word?

We have already presented these findings at some national conventions, the Transportation Research Board and others, and we plan to present our data at more conventions. When the study is complete, we will announce it on the TSC Web site. We are also submitting some of our results to peer-reviewed publications. When they are published, we will announce it on the Web site. People wishing to be notified should email us. [here](#). A summary of the study, along with other TSC research projects, can be found on the TSC Website. www.tsc.berkeley.edu

