

Keeping older drivers on the road

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A research car which monitors our concentration, stress levels and driving habits while we're sat behind the steering wheel is being used to develop new technologies to support older drivers.

The Intelligent Transport team at Newcastle University, UK, have converted an electric car into a mobile laboratory.

Dubbed 'DriveLAB', the car is kitted out with tracking systems, eye trackers and bio-monitors in an effort to understand the challenges faced by older drivers and to identify where the key stress points are.

Research shows that giving up [driving](#) is one of the key factors responsible for a fall in health and well-being among [older people](#), leading to them becoming more isolated and inactive.

Led by Professor Phil Blythe, the Newcastle team are investigating in-vehicle technologies for older drivers which they hope could help them to continue driving into later life.

These include bespoke navigation tools, night vision systems and intelligent speed [adaptations](#).

Phil Blythe, Professor of Intelligent Transport Systems at Newcastle University, explains: "For many older people, particularly those living alone or in rural areas, driving is essential for maintaining their independence, giving them the freedom to get out and about without having to rely on others.

"But we all have to accept that as we get older our reactions slow down and this often results in people avoiding any potentially challenging driving conditions and losing confidence in their driving skills. The result is that people stop driving before they really need to.

"What we are doing is to look at ways of keeping people driving safely for longer, which in turn boosts independence and keeps us socially connected."

Funded by Research Councils UK's Digital Economy programme the research is part of the Social inclusion through the Digital Economy (SiDE) project, a £12m research hub led by Newcastle University.

Using the new DriveLAB as well as the University's [driving simulator](#), the team have been working with older people from across the North East and Scotland to understand their driving habits and fears and look at ways of overcoming them.

By incorporating the eye tracker and bio-monitor with the driving simulator the team are able to monitor eye movement, speed, reaction, lane position, acceleration, braking and driving efficiency.

Dr Amy Guo, the leading researcher on the older driver study, explains: "The DriveLAB is helping us to understand what the key stress triggers and difficulties are for older drivers and how we might use technology to address these problems.

"For example, most of us would expect [older drivers](#) always go slower than everyone else but surprisingly, we found that in 30mph zones they struggled to keep at a constant speed and so were more likely to break the speed limit and be at risk of getting fined.

"We're looking at the benefits of systems which control your speed as a

way of preventing that."

Another solution is a tailored SatNav which identifies the safest route – such as avoiding right turns and dual carriageways - and uses pictures as turning cues, such as a post box or public house.

Researcher Chris Emmerson, explains: "One thing that came out of the focus groups was that while the older generation is often keen to try new technologies it's their lack of experience with, and confidence in, digital technologies which puts them off. Also, they felt most were designed with younger people in mind."

The work is being presented at the Aging, Mobility and Quality of Life conference in Michigan in June.

The driving simulator is also being used to look at how distractions such as answering a mobile phone, sending a text or eating can affect our driving.

Provided by Newcastle University

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