

## Diabetes-to-heart dashboard from Ford Monday, 30 May 2011 00:36

By Keith Naughton

The black Ford Explorer had a warning for the test driver at the lab in Dearborn: "It is important for you to recheck your blood glucose now."

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The driver's blood-sugar reading was 81 milligrams per deciliter at 6:32am, the robotic female voice said in the prototype demonstration. When he replied that it has fallen to 71, close to where he can have lightheadedness or blurry vision, the car instructed him to take some glucose tablets and check again after 30 minutes. Then it signs off: "Have a nice drive."

For Ford, medical monitoring is the next key to a burst of car sales. About 10,000 baby boomers turn 65 every day and 26 million Americans have diabetes. Besides checking blood-sugar, Ford has developed a car seat to check the driver's heart rate that could warn of an impending heart attack, and new features may track breathing patterns for asthmatics or pollen counts for allergy sufferers and recommend remedies.

"The car is more than just a car," said Paul Mascarenas, Ford's chief technology officer. "People spend almost an entire week a year on the road and that's expected to increase. The car is a private space for conducting personal business. We see health and wellness as a core area."

The features Ford is researching may help boost the prices it can charge for cars. They may be added in one to five years to Ford's Sync software, the voice-activated communication system it developed with Microsoft and offers on most models. Sync, together with limited supplies and higher quality, helped boost Ford's average prices \$4,100 from two years ago.

General Motors also has begun offering emergency health-care instruction through its OnStar communication system, said Vijay Iyer, a spokesman.

About 78 percent of US consumers are interested in mobile health solutions, Ford said, citing a survey by Harris Interactive and CTIA-The Wireless Association. Ford said Apple's App store now has more than 17,000 health applications.

"The whole concept of monitoring the driver from a medical perspective is a booming potential area," said Bryan Reimer, a research scientist in the AgeLab at the Massachusetts Institute of Technology in Cambridge.

Hayley Schreiter, a 19-year-old diabetic, said she'd welcome a way to check her blood sugar while driving. The pre-nursing student at the University of Wisconsin-Madison has experienced a disorienting blood-sugar crash behind the wheel and the difficulty of finding the food she needed in an unfamiliar part of town.

"It could potentially prevent a fatal accident if my blood sugar went too low while I was driving, which is pretty amazing," Schreiter said.

Ford, the second-largest US automaker, said it is conducting the research with glucose-monitoring device maker Medtronic Inc.; WellDoc Inc., a provider of integrated health services, and SDI Health, creators of the allergy website [www.pollen.com](http://www.pollen.com).

A Bluetooth connection through the driver's mobile phone could transmit blood-sugar levels from a Medtronic body monitor to the dashboard, Ford said. Sync also can connect with mobile-phone applications like the WellDoc glucose-level coaching demonstrated in the Explorer on May 18. Using information on air quality and pollen count, the car's navigation system could direct the driver to the healthiest, smog-free route, Ford said.

In Germany, Ford worked with Rheinisch-Westfälische Technische Hochschule Aachen University to develop a seat with six sensors that detect electrical impulses from the driver's heart. Data from the seats could be transmitted to medical experts or onboard computer software that can warn the driver of heart problems in real time, Ford said.

The car might also intervene to reduce stress that is elevating the driver's heart rate, said Gary Strumolo, Ford's manager of health and wellness research.

"It might change the music in your car," Strumolo said. "If the driver is stressed, it might not be the best time to get a phone call, so the car could intercept that and send it directly to voicemail."

Ford didn't say when the heart-monitoring seats may reach production. The mobile applications for allergy sufferers may be on the road within a year, Mascarenas said. Connecting Ford cars to Medtronic glucose monitors may take three to five years, said Alan Hall, a Ford spokesman.

GM a year ago introduced "First Assist," a service on its OnStar system that allows drivers to push a red button in the car and reach a live attendant trained in emergency response. The feature augments a previous system in which OnStar attendants contact emergency responders after a crash.

"Instead of just being a comforting voice, we now have advisers who can provide medical instruction just as someone in an emergency room would," said Stefan Cross, an OnStar spokesman. "So if a driver is having a heart attack, they can push the red emergency button and an adviser could coach the passenger through how to administer CPR or chest compressions."

Such scenarios may become more common as the number of US residents aged 65 or older is expected to more than double to 88.5 million by 2050, according to the US Census Bureau. In Europe, people older than 65 will make up 30 percent of the population by 2050, Ford said.

"The idea of bringing wellness into the car is something we've all been talking about," said MIT's Reimer. "Biometrics could play an integral role in the future of driving."