

**GADGETS**

## Diabetic? Cloud-Connected Ford Could Someday Save Your Life

By [Doug Amoth](#) on October 20, 2011



DOUG AMOTH / TECHLAND

Ford's Microsoft-powered [Sync](#) system offers voice-activated control of music and navigation services, but the technology will be expanding to include health and wellness services in the not-too-distant future. On a rainy October day outside MIT's Media Lab, I hopped in a cloud-connected Ford Explorer for a demonstration by Ford's Group and Senior Technical Leader for Vehicle Design and Infotronics, K. Venkatesh Prasad.

Using the in-dash Sync system, Prasad dialed up Ford's health and wellness services to show off blood glucose management features for diabetics. As someone who's been diabetic for almost 30 years myself, I was immediately intrigued. Before long, a robotic female voice answered:

Car: "Services: What service do you want?"

Prasad: "Glucose."

Car: "Good morning. Is that you, Joe?"

Prasad: "Yes."

Car: "Great. I noticed that you had a blood glucose of 81 milligrams per deciliter at 6:32am today. Since this is close to being too low for you, I want to make sure you're safe to drive. Have you rechecked your blood glucose since 6:32?"

Prasad: "No."

Car: "Have you had your breakfast yet?"

Prasad: "No."

Car: "Okay. So since you have taken your diabetes medications which can and should lower your blood glucose, and have not had anything to eat, it is important for you to recheck your blood glucose now. Do you have your glucose meter with you?"

Prasad: "Yes."

Car: "Great. Check your glucose and tell me the result when you have it."

Prasad: "One hundred and thirty."

Car: "I heard you say one hundred-thirty. Is that right?"

Prasad: "Yes."

Car: "Joe, this is great. You checked your blood glucose. It had dropped more, and because you checked, you have prevented it from going too low. Do you have glucose tabs in the car?"

Prasad: "No."

Car: "Not a problem, but you do want to eat some fast-acting carbs. Examples are three ounces of juice, three to five hard candies—things like that. To be on the safe side, please recheck again in another 30 minutes. Your mobile phone is programmed to remind you if you are not in the car. Have a nice drive."

Here's a video of the above exchange:



This particular diabetes management feature found in Ford's upcoming health and wellness services package leverages technology from [WellDoc](#), a company that positions itself as an integrator of clinical, behavioral and motivational applications to support chronic disease management. So you'd have an account set up with WellDoc that you'd use to enter your blood sugar levels, and Ford's system would have access to that information along with customized dietary information for treating hypoglycemic episodes.

"The car has always been a little cocoon of privacy, and that cocoon of privacy can now be repurposed, as you saw, with respect to personal health," said Prasad. "Knowing Joe's condition—as volunteered by Joe—you can now get advice from the cloud that's specific to Joe. Given the slope in the drop of your blood glucose level, there's a certain hypoglycemic trend that then maps to three candies for you, but might be something else for me or might be something else for a third person. And so this kind of personalized guidance is now possible."

I'm on board with the personal guidance. That's a cool feature. Somebody my size—6' 4"—and someone much smaller are going to require vastly different amounts of sugar to bring blood glucose levels back into a normal range.

(Quick diabetic crash course: Insulin makes blood glucose levels go down, food makes them go up. Injecting insulin balances out too much food, food balances out too much insulin. A blood glucose level of around 120 is pretty optimal. When *you* eat something, your pancreas pushes out insulin to regulate your blood glucose level. *My* pancreas is a LAZY, BROKEN SACK OF CRAP, so I have to manually inject insulin.)

But the process of manually calling up a service to have it nag me about my blood glucose levels is something I'd never, ever do. I told Prasad that, and mentioned that if the car could just connect directly to my continuous glucose monitoring system (CGMS)—[this little doodad](#) that automatically checks my oil, so to speak, every five minutes—it'd be a killer feature. And much to my delight, Ford's actually working on that already.

"We have been working on a research basis with a provider of those kinds of devices. One of the ways in which we've been envisioning this is that you could be driving, and you just want an alert if you're trending toward being hypoglycemic. So if I was 120 and now I'm 90, and that happened in a half an hour, I really need to know that. If you're driving, you might miss the alert from your CGMS—you might be on the phone or listening to the radio. But coming straight from your CGMS and connecting to the car, the radio can get mediated out and you can get the alert."

I was later told that the provider Ford's working with is Medtronic. Prasad also mentioned that such a system could be paired with the continuous glucose monitoring systems belonging to other people in the car, using children as an example. "If your child's getting hypoglycemic, you want to know that. Or you might just say, 'I forgot to check that,' so you can press a button and ask, 'What's Janie's number back there?' So this is peace of mind."

This could be a hugely important safety feature, as I could theoretically program my car to not let me drive it if my blood glucose levels were too low. Prasad said that's a possibility, but it would have to be an opt-in feature. I'd contend that driving with low blood glucose levels can be just as dangerous as driving drunk for some people, and some diabetics have a hard time detecting when their blood glucose levels are running too low—or dropping too fast—so a feature like this could really, truly save some lives.

Ford's health and wellness services are currently in the research stages, so we may not see these features hit the market for a while. "We will run them through the gamut of our product development processes," said Prasad. "Next year, we plan to spend a lot of our time passing those milestones and getting feedback."