

Health

DIABETES

5 Things You Need To Know About The First Artificial Pancreas For Diabetes

OCTOBER 4, 2016 By [BARBARA BRODY](#)



Last week, the FDA approved the first-ever "artificial pancreas," which is pretty big news for anyone with type 1 diabetes. Here's the scoop on what it is and why it has the potential to be such a game-changer.

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1/5 MEDTRONIC

It doesn't look anything like an organ.

The pancreas is an organ located in the center of your abdomen, [behind your stomach](#). In healthy people, it produces

insulin—a [hormone](#) that helps take sugar from the foods you eat and moves it into the cells when it can be used for energy. But people with type 1 diabetes don't produce any insulin. The new so-called "artificial pancreas"—technically called Medtronic's MiniMed 670G hybrid closed looped system—is designed to do the job that the pancreas can't, but it doesn't actually look like the organ in your body. The main part [looks kind of like a walkie-talkie](#) or remote control, which most people wear on their waistband, and the whole system actually consists of a few different devices that work together to monitor your blood sugar and provide appropriate doses of insulin.



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It's not the same thing as an insulin pump.

People with type 1 [diabetes](#)

must take insulin to avoid developing very high blood sugar levels, which can be fatal. The flip side is that if they take too much, their levels can dip too low (hypoglycemia), which can also be deadly, so getting it right is a constant balancing act. To make sure you don't screw it up too much, you have to check your blood sugar often. Most people with type 1 also need to do some math based on their current blood sugar and how many [carbs they plan to eat](#) (which raises blood sugar) or how much [exercise they plan on getting](#) (which could lower it).

Most people with type 1 diabetes give themselves injections several times a day, but [some use insulin pumps](#)

instead. These devices allow you to load the pump up with enough insulin for a few days and program it to release the right amount at specific times. But you still have to check your blood sugar level frequently—usually by taking a small sample of blood from your fingertip—so you know how to adjust the pump.

Medtronic's MiniMed 670G combines an insulin pump with a glucose monitor, so it automatically checks your blood sugar level and adjusts your insulin dose. In a healthy person, that's the job of the pancreas—hence the nickname "artificial pancreas."



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It does a really good job of keeping people safe.

Convenience aside, the MiniMed 670G seems to work better than other methods of blood sugar management. Research published in the Journal of the American Medical Association found that no study participants using the system ended up with severe hypoglycemia or ketoacidosis

(<http://www.prevention.com/health/diabetes/how-handle-diabetes-emergencies>) (which results from dangerously high blood sugar). The device also helped keep people within their target blood sugar range 73.4% of the time. Without the system, patients were only able to stay in their desired range 67.8% of the time.



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It's not foolproof.

Even though the MiniMed 670G is designed to automatically adjust insulin levels based on your current blood sugar levels, it can't predict what's coming next. So [users will still need to adjust it](#) based on the carbs that they plan to eat. It won't completely eliminate finger pricks, either. The manufacturer says that the info provided by the glucose sensor it comes with is "not intended to be used directly for making therapy adjustments, but rather to provide an indication of when a finger stick may be required."



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It's not for everybody.

Patients, doctors, and researchers are pretty psyched about the approval of the MiniMed 670G, since this type of technology has been in the works [for about 50 years](#). But that doesn't mean everyone with type 1 diabetes ought to run out and get one as soon as it hits the market in spring 2017. For starters, [you can't use it if](#) you require fewer than a total of 8 doses of insulin per day, you're not willing to do at least four blood glucose tests each day, or if you're vision or [hearing impaired](#) (because you won't be able to see or hear the system's alarms). Women who are pregnant and people with [kidney disease](#) aren't eligible, either. And it's not approved for children younger

than 14, though studies designed to determine if it's safe in kids are ongoing.

Despite these caveats, it's [clearly a major milestone](#) that people with type 1 diabetes have been waiting a very long time for.