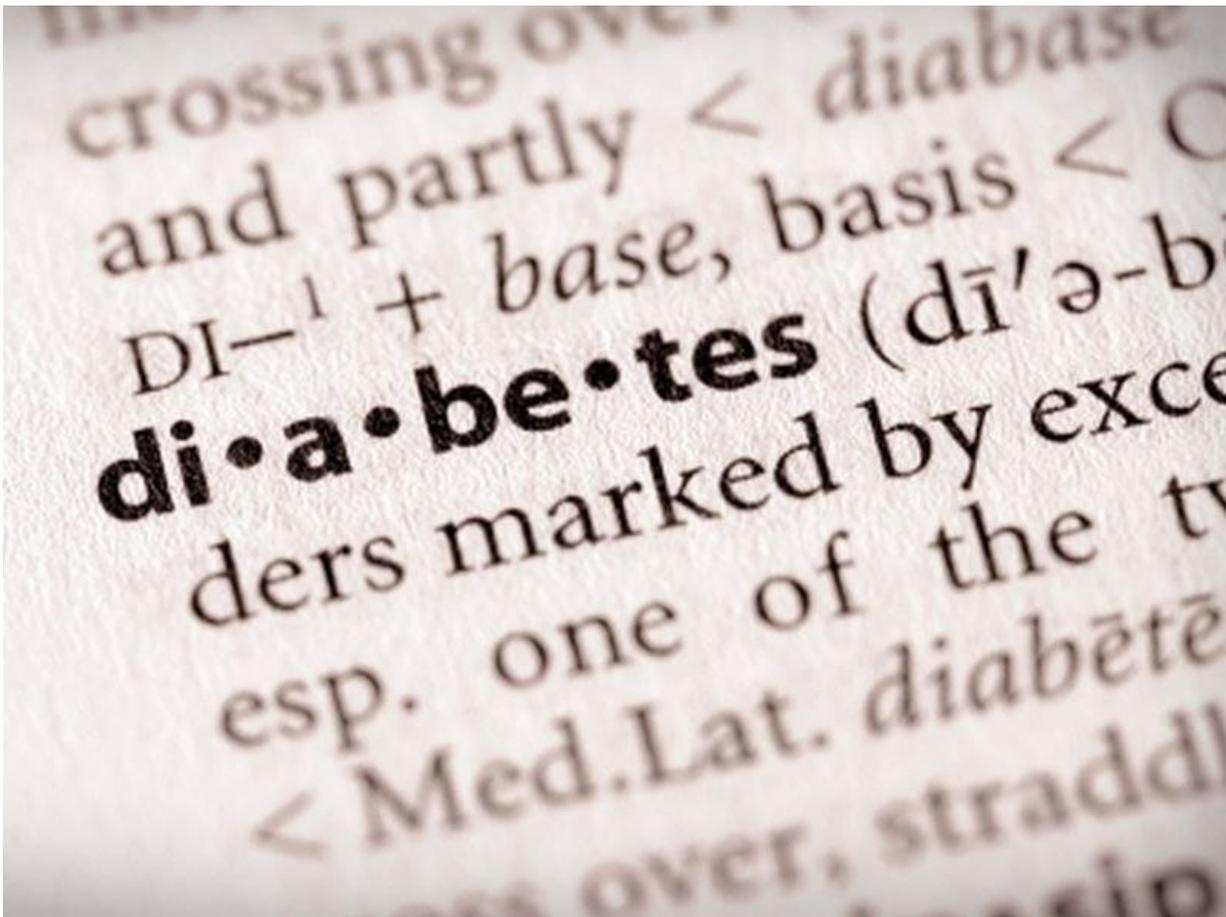


Artificial pancreas helps hospitalized type 2 diabetics

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(HealthDay)—Using an artificial pancreas can help hospitalized patients

with type 2 diabetes maintain good blood sugar control, a new study suggests.

That's important because when [diabetes](#) isn't managed well, high [blood sugar](#) levels can lengthen hospital stays and increase the risk of complications and even death, the researchers said.

The [artificial pancreas](#)—an automated insulin pump and continuous glucose monitor—is still fairly new and more commonly used in people with type 1 diabetes, who must receive insulin multiple times throughout the day to survive.

But the researchers thought the device might also be helpful in people with type 2 diabetes. People with type 2 diabetes don't always need to use insulin, but many do.

The artificial [pancreas](#) has "great potential to improve glucose control," while people with type 2 diabetes are in the hospital, said study senior author Roman Hovorka. He's director of research at the University of Cambridge's Metabolic Research Laboratories, in England.

In this study, Hovorka said the device "considerably improved glucose control [and didn't] increase the risk of hypoglycemia [low [blood](#) sugar] for in-patients requiring insulin on the general ward."

In the United States, as many as one in four hospital patients is diabetic, the researchers said. And diabetes control in the hospital can be affected by many variables, such as illness and changes in diet and medication. These changes often mean diabetics need more attention from hospital staff, the study authors noted.

The artificial pancreas, which uses a computer formula to direct insulin delivery from a pump based on blood sugar readings obtained from a

continuous monitor, can automate much of the care that would normally need to be done by hospital staff.

To see if this could be done safely, researchers recruited 136 adults with type 2 diabetes who were hospitalized in the United Kingdom and Switzerland. Seventy patients were placed on an artificial pancreas system. Sixty-six got standard insulin injections and periodic blood sugar monitoring.

The artificial pancreas group had [blood sugar levels](#) that were within the desired range—100 milligrams per deciliter (mg/dL) to 180 mg/dL—66 percent of the time. Meanwhile, the standard care group had blood [sugar](#) levels within that range just 42 percent of the time.

Average glucose levels were 154 mg/dL for the artificial pancreas group and 188 mg/dL for the standard care group.

Neither group experienced severe [low blood sugar](#) levels.

Hovorka said researchers "had very positive feedback [from patients] for in-hospital use" of the devices. He said it's not clear from this study if people with type 2 diabetes would be willing to wear the two mechanical components of an artificial pancreas (insulin pump and continuous glucose monitor) outside the [hospital](#).

Larger in-patient studies are the next step in artificial pancreas research for people with type 2 diabetes, and then possibly outpatient trials, he said.

Larger studies are also needed to see if the device is a cost-effective option for people with type 2 diabetes.

Dr. Joel Zonszein, director of the Clinical Diabetes Center at Montefiore

Medical Center in New York City, says he doesn't foresee using the artificial pancreas for his hospitalized type 2 patients in the near future because of the expense.

Also, right now, most hospitals don't have policies for their use because the devices are so new. (The first artificial pancreas was approved by the U.S. Food and Drug Administration in 2016.)

Still, Zonszein noted, "This was a nice study that demonstrated improvement over conventional regimens, and we would like to see a simpler way to manage patients."

The study was published June 25 in the *New England Journal of Medicine*.

More information: Roman Hovorka, Ph.D., F.Med.Sci.; director, research, Metabolic Research Laboratories, University of Cambridge, UK; Joel Zonszein, M.D., director, Clinical Diabetes Center, University Hospital of Albert Einstein College of Medicine, Montefiore Medical Center, New York City; June 25, 2018, *New England Journal of Medicine*, www.nejm.org/doi/full/10.1056/NEJMoa1805233

Learn more about artificial pancreas systems from the [U.S. Food and Drug Administration](#).

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