



**Medical
Blueprints**

DIABETES TYPE 1: DON SHATTERS EXPECTATIONS! REPORT #2699

BACKGROUND: Glucose is a critical source of energy for your brain, muscles, and tissues. When you eat, your body breaks down carbohydrates into glucose and this triggers the pancreas to release a hormone called insulin. Insulin acts as a “key” that allows glucose to enter the cells from the blood. Your body can’t function or perform properly if it doesn’t produce enough insulin to effectively manage glucose. This is what produces the symptoms of diabetes. Uncontrolled diabetes can lead to serious complications by damaging blood vessels and organs. It also increases the risk of heart disease, stroke, kidney disease, nerve damage, and eye disease. Nutrition and exercise help manage diabetes, but it’s also important to track blood glucose levels. Treatment may include taking insulin or other medications.

(Source: <https://www.healthline.com/health/diabetes/facts-statistics-infographic#1>)

COPING WITH TYPE 1 DIABETES: People who have had type 1 diabetes for a long time may develop what’s called “diabetes burnout.” This can happen when you start to feel burdened by the disease. A good support system is essential to coping with type 1 diabetes. Spending time with friends and family or talking with someone you trust are ways to manage diabetes distress, which can include stress and anxiety. Taking good care of yourself can reduce diabetes stress and help you cope with the condition. Making sure to eat well, exercise, and learn how to monitor blood sugar levels are important. Getting enough sleep each night and taking time to relax and enjoy life are also very important. There are resources available to help you manage type 1 diabetes such as apps designed to count carbs, watch blood sugar levels, and track progress with diet and exercise. The more you know about your condition, the better prepared you’ll be at taking care of yourself. Your doctor can also recommend books about type 1 diabetes.

(Source: <https://www.healthline.com/health/type-1-diabetes/living-with-type-1/how-you-can-cope#4>)

NEW DISCOVERY FOR DIABETES: Matthias Hebrok, PhD, director of the UCSF diabetes center, and Gopika Nair, PhD, have discovered how to transform human stem cells into healthy, insulin producing beta cells. “We can now generate insulin-producing cells that look and act a lot like the pancreatic beta cells you and I have in our bodies. This is a critical step towards our goal of creating cells that could be transplanted into patients with diabetes,” said Dr. Hebrok. For the longest time, scientists could only produce cells at an immature stage that were unable to respond to blood sugar levels and secrete insulin properly. The team discovered that mimicking the “islet” formation of cells in the pancreas helped the cells mature. These cells were then transplanted into mice and found that they were fully functional, producing insulin and responding to changes in blood sugar levels. Dr. Hebrok’s team is already in collaboration with various colleagues to make these cells transplantable into patients.

(Source: <https://blog.cirm.ca.gov/2019/02/05/breakthrough-for-type-1-diabetes-scientist-discovers-how-to-grow-insulin-producing-cells/>)

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