

New hope from the 'seven year switch' in type 1 diabetes

June 8 2018

New research has shown that the rapid decline in insulin production that causes Type 1 diabetes continues to fall over seven years and then stabilises.

A team at the University of Exeter Medical School found evidence that the amount of [insulin](#) produced declines by almost 50 percent each year for seven years. At that point, the [insulin levels](#) stabilise.

The finding is a major step forward in understanding Type 1 diabetes and contradicts previous beliefs that the insulin produced by people with the condition drops relentlessly with time. It offers the hope that by understanding what changes after seven years, new strategies could be developed to preserve insulin secreting beta-cells in patients.

The study, published in *Diabetes Care*, measured C-peptide, which is produced at the same time and in the same quantities as the insulin that regulates our blood sugar. By measuring C-peptide levels in blood or in urine, scientists can tell how much insulin a person is producing themselves, even if they are taking [insulin injections](#) as treatment. The team studied 1,549 people with Type 1 diabetes from Exeter, England and Tayside, Scotland in the UNITED study.

Dr. Beverley Shields, at the University of Exeter Medical School, who led the research, said: "This finding is really exciting. It suggests that a person with Type 1 diabetes will keep any working beta-cells they still have seven years after diagnosis. We are not sure why this is; it may well

be that there is a small group of "resilient" beta-cells resistant to [immune attack](#) and these are left after all the "susceptible" beta-cells are destroyed. Understanding what is special about these "resilient" beta-cells may open new pathways to treatment for Type 1 diabetes."

Type 1 diabetes affects around 400,000 people in the UK. The disease commonly starts in childhood but can develop at any age, and causes the body's own immune system to attack and destroy the [insulin-producing cells](#) in the pancreas, leaving the patient dependent on life-long insulin injections.

Professor Andrew Hattersley, a Consultant in Diabetes at the Royal Devon and Exeter Hospital and Research Professor at the University of Exeter Medical School, looked forward. "Now we know there is a "seven year switch", the next question is why? Has the immune attack stopped or are we left with "super beta-cells" that can resist the immune onslaught. Any insights into halting the relentless destruction of the precious insulin-producing cells are valuable. We could not have made this progress without the help of over 1,500 patients. We owe it to them to try to find answers that might help patient care quickly."

Karen Addington, UK Chief Executive of the type 1 diabetes charity JDRF, said: "These results provide further evidence that the immune system's assault on insulin-producing beta cells is not as complete as we once believed—and may change over time. This further opens the door to identifying ways to preserve [insulin production](#) in people diagnosed with or living with type 1 diabetes."

The full paper, 'C-peptide decline in type 1 [diabetes](#) has two phases: an initial exponential fall and a subsequent stable phase', is published in *Diabetes Care*.

More information: Beverley M. Shields et al. C-Peptide Decline in

Type 1 Diabetes Has Two Phases: An Initial Exponential Fall and a Subsequent Stable Phase, *Diabetes Care* (2018). [DOI: 10.2337/dc18-0465](https://doi.org/10.2337/dc18-0465)

Provided by University of Exeter

Citation: New hope from the 'seven year switch' in type 1 diabetes (2018, June 8) retrieved 25 April 2024 from <https://medicalxpress.com/news/2018-06-year-diabetes.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.