

Stopping diabetes with insulin tablets

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Type 1 diabetes is the autoimmune form of diabetes, in which the patients' insulin-producing beta cells are destroyed by their own immune system.

"We know that if a person has two autoantibodies and one of them is against insulin, there is a 50 per cent risk that they will develop [type 1 diabetes](#) within five years. It doesn't matter how old you are", says Åke Lernmark, Professor of Experimental [Diabetes](#) Research at Lund University in Sweden.

"There are indications that oral insulin may prevent or delay the clinical onset of type 1 diabetes among individuals with autoantibodies against insulin, who are thus in the risk zone", says Åke Lernmark, who will be initiating and coordinating the Swedish TrialNet study.

Åke Lernmark refers to a study presented earlier in the year by American and Canadian researchers. In the study, which ran from 1994 to 2003, participants with relatives who had type 1 diabetes and at least two autoantibodies, one of which against insulin, took either oral insulin or placebo capsules containing an inactive substance. At first, the results were a [disappointment](#). Just as many people in the treatment group became ill as in the [placebo group](#).

"However, the subsequent analyses showed something different. Among those who had high levels of insulin autoantibodies at the start of the study, the oral insulin had an effect and the development of type 1 diabetes was delayed. The delaying effect lasted for as long as the

participants took the insulin", says Åke Lernmark, adding that those who are now being recruited for the Swedish TrialNet study with oral insulin also have high levels of autoantibodies against insulin.

No one knows how oral insulin might stop type 1 diabetes. However, Åke Lernmark believes a possible explanation could be that the [immune system](#) becomes accustomed to the low daily doses of insulin in the [gastrointestinal tract](#). The insulin is not perceived as a foreign substance to be rejected by the immune system.

This line of reasoning is the same as for desensitisation for allergies, in which the dose of the substance that provokes the allergy is gradually increased.

The oral insulin study will run for several years and is open to all those who meet the requirements and are aged between 3 and 45.

More information: 'Long-Term Outcome of Individuals Treated With Oral Insulin' Published online before print May 24, 2011, [doi: 10.2337/dc11-0523](#)

Provided by Lund University

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