

Could a drug reverse Type 2 diabetes?

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Drugs that switch off the ‘master gene’ that controls Type 2 diabetes could be five years away. Credit: Flickr/ThomasThomas

Australian researchers have isolated a ‘master gene’ that controls Type 2 diabetes and say drugs that prevent or reverse the condition by switching off the gene may be as little as five years away

Type 2 diabetes, also known as adult-onset diabetes because it commonly affects older people, occurs when the pancreas cannot produce enough insulin to break down glucose, a vital function needed to supply energy to the body. Poor diet, high blood pressure, obesity and a sedentary lifestyle increase the risk of Type 2 diabetes developing.

While Type 1 diabetics need insulin injections, Type 2 diabetics can usually get by with drugs and better diet and exercise but there is no currently no cure.

However, scientists from the Diabetes and Obesity Research Program at the Garvan Institute of Medical Research in Sydney say they have done tests on mice and isolated a particular gene that is critical in the development of Type 2 diabetes.

“The insulin producing cells in the pancreas, a lot of genes are required for their normal function. This gene [we identified] is a master regulator of those other genes. That’s why it would be an effective gene to target,” said Dr. Ross Laybutt, whose paper on the finding, titled ‘Inhibition of Id1 Augments Insulin Secretion and Protects Against High-Fat Diet–Induced Glucose Intolerance’, is published today in the journal [Diabetes](#).

“If we can block this gene, we might be able to prevent or even reverse diabetes.”

Dr. Laybutt said the gene, known as Id1, was already known to play a role in cancer and that drugs targeting this gene already exist.

He is now planning tests to see if those drugs could work to ‘switch off’ Id1 and prevent or reverse Type 2 diabetes.

“It would be a five to 10 year process. Establishing the clinical benefits of a drug and the safety of drugs takes a lot of time. It would be in that sort of time frame before there would be a marketable drug for Type 2 diabetes to target this gene,” he said.

However, Professor Paul Zimmet, a diabetes research expert from Monash University’s Baker IDI Heart and Diabetes Institute, said there were likely to be many genes associated with Type 2 diabetes.

“Id1 is one of many genes that have been implicated and may have a role in one form of [Type 2 diabetes](#). As such, it may be an important

discovery,” said Professor Zimmet, who was not involved in the study.

“However, while I would wish that it is the total answer to the disease, it is unlikely to be the only important gene. This is a study in mice and to what extent the findings can be extrapolated to man will require confirmatory studies in humans.”

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