Researchers devise new diabetes diagnostic tool

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Researchers at University of Exeter have developed a new test to help diagnoses diabetes, which they say will lead to more effective diagnosis and patient care.

Research published in the journal *Diabetes Care*, shows how a genetic test can help doctors to differentiate between type 1 and type 2 diabetes in young adults.

With rising obesity levels it is sometimes difficult for doctors to distinguish between type 1 diabetes, which requires treatment with insulin injections and type 2 diabetes, which can be controlled through diet and weight loss. The Exeter team has devised a genetic risk score which can help identify people between 20 and 40 who will require insulin treatment.

"This will be an important addition to correctly classifying individuals with diabetes and will improve the number of people who get the right treatment when they are first diagnosed, especially people who sit in the overlap between type 1 and type 2 diagnosis," said Dr Richard Oram, National Institute for Health Research Clinical Lecturer and specialist in Diabetes and Nephrology at the University of Exeter Medical School.

"There is often no going back once insulin treatment starts. This may save people with Type 2 diabetes from being treated with insulin unnecessarily, but also stop the rare but serious occurrence of people with Type 1 being initially treated with tablets inappropriately and

running of the risk of severe illness."

In work supported by NIHR and the Wellcome Trust, the Exeter researchers devised a test which measures 30 genetic variants in DNA and combines all the risks associated with them in a single score, which can then act as a summary of genetic risk for type 1 diabetes. If a person's score is high they are likely to have type 1 diabetes, if it is low then it will be type 2.

The researchers believe this will provide important additional information for doctors when making a diagnosis and suggest that the test can be used in addition to an existing commonly used test which measures anti-bodies.

Dr Oram says it will also benefit patients understanding and attitude towards their condition. "Having this information about their diabetes and about their genetic risk will make a big difference to the way people feel about their care. If you speak to people with [diabetes](#) they often want to know why they have developed the disease and whether some of their risk for the disease is genetic."

The Exeter team is now working to develop a test that any clinical laboratory could run cheaply and quickly.

The University of Exeter is one of the world's leading centres in genome-wide association studies. This latest development has demonstrates how scientific understanding in this area can be translated into improved clinical care.

Dr Mike Weedon, of the University of Exeter Medical School, said: "We think this is a really good example of taking results from large-scale genetic studies and translating them into clinical practice and improved [patient care](#)."