

New findings show what develops in body cells during type 2 diabetes onset

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Researchers at Dublin City University and their project partners in the EU FP7 funded DEXLIFE project have found fresh evidence to explain the processes that occur in the body's cells leading to the onset of type2 diabetes.

To date, the [molecular mechanisms](#), underpinning, the development of type2 [diabetes](#) is not completely understood. This new finding is important as it demonstrates what happens at a [cellular level](#) and how diabetes and insulin resistance occur.

The research has been published in the journal *Scientific Reports*.

The findings show that [amino acids](#), the building blocks of cells, play a contributory role in the onset of type2 diabetes in some younger and older patients, as the metabolism of specific amino acids is adversely affected.

The study carried out tests on the skeletal muscles and plasma from older and younger patients with type2 diabetes. It looked at a specific set of amino acids, called branched chained amino acids (BCCA).

Results found, that type2 [diabetes patients](#) showed an impaired expression of the genes involved in BCCA metabolism when compared to obese individuals without diabetes. These results suggest that a change in the ability of the cell to process amino acids may be an important factor in the development of type2 diabetes.

Commenting on the findings Associate Professor, DCU, Donal O'Gorman, Interim Director of the National Institute for Cellular Biotechnology and Head of the 3U Diabetes Consortium said:

"This study underlines the importance of the EU FP7 collaborative research projects. With our DEXLIFE partners we are able to offer a new insight into the pathophysiology of type 2 diabetes. The detailed clinical, physiological and cellular investigations performed allow us to provide an explanation for our observations in patients."

More information: María Isabel Hernández-Alvarez et al. Early-onset and classical forms of type 2 diabetes show impaired expression of genes involved in muscle branched-chain amino acids metabolism, *Scientific Reports* (2017). [DOI: 10.1038/s41598-017-14120-6](https://doi.org/10.1038/s41598-017-14120-6)

Provided by Dublin City University

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