

Dahlia flower extract has anti-diabetic properties, improves insulin 1 function in the brain: Study

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Dahlia pinnata. Credit: [Lukas Riebling](#)/Wikimedia Commons, [CC BY-SA](#)

An extract from dahlia flower petals has been found to stabilize blood sugar levels of diabetes patients in University of Otago-led clinical trials.

A team led by neuroendocrinologist Associate Professor Alexander Tups, of the Center for Neuroendocrinology, showed that the inhibition of brain inflammation—brought about by the excess consumption of a Western diet—markedly improves [blood sugar](#) regulation.

His team then went on to discover an anti-inflammatory plant molecule that acts in the brain and potently improves the ability of the body to process blood sugar. The work is published in the journal *Life Metabolism*.

"We then found that the dahlia plant is a cultivatable source of this molecule and that it contains two additional plant molecules that enhanced the effect of the original one. This specifically blocked brain inflammation and improved blood sugar regulation in preclinical trials," Tups says.

About 25% of the [adult population](#) in Aotearoa have prediabetes—a condition where [blood glucose levels](#) are slightly elevated, indicating that a person is at risk of progressing to type 2 diabetes. Without intervention about 70% of people go on to develop type 2 diabetes later in life.

In a randomized controlled cross-over clinical trial on participants with prediabetes or type 2 diabetes, researchers were able to show that the dahlia extract considerably improved blood sugar regulation.

In preclinical animal studies researchers were able to reverse brain inflammation, improve sensitivity to the hormone insulin in the brain and improve blood sugar regulation.

The project started with a grant in 2015 in collaboration with Plant and

Food Research, and eight years on Tups considers it a career high.

"As scientists, often our work finishes when we find the mechanism of how something works. So in this case finding three compounds that occur in a flower that in combination improved blood sugar regulation was a dream come true.

"Impaired blood sugar regulation is a debilitating condition affecting millions of people around the world. I hope and I really believe that the outcome of our intensive research will benefit people suffering from this condition," he says.

The technology has been patented and the research team has worked with Otago Innovation Limited (OIL) and external stakeholders to bring a natural dahlia-extract supplement to the market, aiming to support normal blood sugar and insulin levels.

OIL project lead Dr. Graham Strong says the collaboration brings together diverse perspectives, knowledge, and expertise, leading to an innovative and science-based nutraceutical product.

"This diversity, along with our and other stakeholder investment, resulted in the launch of a product we are very proud to be associated with.

"The product provides a unique blend of nutritional compounds to support normal blood sugar and insulin levels. The trials showed that this will be useful for those diagnosed with prediabetes or type 2 diabetes to help stop the progression of the condition," Strong says.

More information: Dominik Pretz et al, A dahlia flower extract has anti-diabetic properties by improving insulin function in the brain, *Life Metabolism* (2023). [DOI: 10.1093/lifemeta/load026](https://doi.org/10.1093/lifemeta/load026)

Provided by University of Otago

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