

# Broccoli could reverse the heart damaging effects of diabetes

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Researchers have discovered eating broccoli could undo the damage caused by diabetes to heart blood vessels.

Professor Paul Thornalley and his team from the University of Warwick have found a broccoli compound called Sulforaphane. This compound can encourage the body to produce more enzymes to protect the vessels, as well as reduce high levels of molecules which cause significant cell damage.

Past studies have shown that a diet rich in vegetables – particularly brassica vegetables such as broccoli – is linked to decreased risk of heart disease and stroke. People with diabetes have a particularly high risk of heart disease and stroke and other health impairments, such as kidney disease, are linked to damaged blood vessels.

Professor Thornalley, at the University's Warwick Medical School, tested the effects of Sulforaphane on blood vessel cells damaged by high glucose levels (hyperglycaemia).

His team observed a significant reduction of molecules in the body called Reactive Oxygen Species (ROS). Hyperglycaemia can cause levels of ROS to increase three-fold and such high levels can damage human cells. The results of the study showed that Sulforaphane reversed this increase in ROS by 73 per cent.

They also found Sulforaphane activated a protein in the body called nrf2, which protects cells and tissues from oxidative stress by activating protective antioxidant and detoxifying enzymes. The study showed the presence of Sulforaphane in human microvascular cells doubled the activation of nrf2.

Professor Thornalley said: "Our study suggests that compounds such as Sulforaphane from broccoli may help counter processes linked to the

development of vascular disease in diabetes. In future, it will be important to test if eating a diet rich in Brassica vegetables has health benefits for diabetic patients. We expect that it will."

A copy of the paper can be found online at [diabetes.diabetesjournals.org/...abstract/db06-1003v1](http://diabetes.diabetesjournals.org/...abstract/db06-1003v1)

Provided by University of Warwick

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