

Muscle strengthening exercise, protein and vitamin D could be the best medicine for type 2 diabetics

22 May 2014, by Mandi O'garretty



(Medical Xpress)—Sometimes the best medicine doesn't come in a bottle. And for people with type 2 diabetes, a healthy diet, losing weight and regular exercise is often all that is needed to manage the condition.

However, Deakin University researchers believe it may be possible to squeeze more benefit out of this regime by changing up the exercise routine to focus on building strong muscles and adding in a daily dose of protein and vitamin D.

The researchers are putting this theory to the test through the first study of its kind to examine if protein and vitamin D (both known for their muscle enhancing properties) improves the benefits of a resistance exercise program on blood glucose control and body composition in older people with [type 2 diabetes](#).

"Strong muscles are the unsung heroes of type 2 [diabetes](#) treatment," said Deakin's Professor of Exercise and Ageing Robin Daly.

"Lifestyle changes that include energy restriction, losing weight and exercise are the cornerstone of treatment for people with type 2 diabetes. What is

often overlooked is the importance of building strong, healthy muscles as a way to improve [blood glucose](#) control."

Muscle is the largest mass of insulin-sensitive tissue in the body and the main reservoir for glucose disposal.

"To effectively manage type 2 diabetes it's not just about body weight that matters, but what proportion of your weight is muscle," Professor Daly explained. "The more muscle you have, the more glucose you can dispose of in response to insulin. For older adults with diabetes muscle health is particularly important as the rate of muscle loss accelerates with age."

The researchers are looking for people with type 2 diabetes aged 50 to 75 years to join the six month trial that will have participants take part in a resistance (strength) training program called 'Lift for Life' and take a daily protein drink and vitamin D supplements.

"We want to see if adding protein and vitamin D will enhance the impact of the Lift for Life program which, on its own, has been shown to improve the [blood glucose levels](#) and muscle mass in adults with type 2 diabetes," Professor Daly said.

"Protein and vitamin D both have properties that improve muscle strength and mass while low vitamin D levels are also associated with increased risk of developing type 2 diabetes. It is therefore possible that increasing protein and vitamin D intake will provide added benefits to the Lift for Life resistance training program.

"The results of the study will help inform exercise and nutrition guidelines for people with type 2 diabetes and hopefully help reduce the \$3billion

annual cost of treating the condition in Australia."

Type 2 diabetes facts and figures

- Type 2 diabetes is a condition that interferes with the body's ability to process sugar, or glucose, and convert it into energy
- It is caused by the pancreas not producing enough of the hormone insulin to convert sugar into energy or the insulin it does make is not enough and cannot work properly
- Almost 1 million Australians have type 2 diabetes, with 280 developing the condition each day
- Type 2 diabetes accounts for up to 90 per cent of people with diabetes
- It is more common in adults, however is starting to affect more children
- Type 2 diabetes is not a 'fat persons' disease with those at highest risk of getting the condition if there is a family history, are over the age of 55 years, have high blood pressure, are women who have had [gestational diabetes](#), a lack of physical activity, being overweight
- Up to 60 per cent of type 2 diabetes cases can be prevented through maintaining a healthy weight, physical activity, a [healthy diet](#), keeping blood pressure and cholesterol levels in check and giving up smoking
- It costs the Australian health system an estimated \$3billion to treat type 2 diabetes each year

Provided by Deakin University

APA citation: Muscle strengthening exercise, protein and vitamin D could be the best medicine for type 2 diabetics (2014, May 22) retrieved 21 November 2022 from

<https://medicalxpress.com/news/2014-05-muscle-protein-vitamin-d-medicine.html>

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