

Tai Chi exercises improve type 2 diabetes control

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Tai Chi exercises can improve the control of type 2 diabetes, suggests a small study, published ahead of print in the *British Journal of Sports Medicine*.

Tai Chi Chuan is a traditional Chinese martial art, which combines deep diaphragmatic breathing and relaxation with gentle movement.

The research team assessed the impact of a 12 week programme of Tai Chi exercises on the T helper cell activity of 30 patients with type 2 diabetes and 30 healthy people of the same age.

T cells are a key component of the body's immune system, producing powerful chemicals, including interleukins, which alter the immune response.

Type 2 diabetes is associated with chronic inflammation, caused by excessive glucose in the blood (hyperglycaemia).

After the 12 week programme glycated haemoglobin (when excess blood sugar combines with the oxygen transporter in red blood cells) levels fell significantly from 7.59% to 7.16 in the diabetic patients.

And levels of interleukin-12, which boosts the immune response, doubled. Levels of interleukin-4, which suppresses the immune response, fell.

T cell activity also significantly increased.

Strenuous physical activity depresses the immune system response, but moderate exercise seems to have the opposite effect, say the authors. Tai Chi is classified as moderate exercise.

Previous research has shown that it boosts cardiovascular and respiratory function, as well as improving flexibility and relieving stress, they add.

Tai Chi may prompt a fall in blood glucose levels, or improve blood glucose metabolism, sparking a drop in the inflammatory response.

Alternatively, the exercise may boost fitness levels and the feeling of wellbeing, which may then boost the health of the immune system, they suggest.

In a separate study, also published ahead of print, a 12 week programme of Tai Chi and Qigong (another Chinese exercise) prompted a significant fall in blood glucose levels and significant improvements in other indicators of the metabolic syndrome in 11 middle aged to older adults.

The metabolic syndrome is a cluster of symptoms, including high blood pressure and high blood glucose that is associated with increased risks of cardiovascular disease and diabetes.

The 13 participants exercised for up to 1.5 hours, up to three times a week, and were also encouraged to practice the exercises at home.

At the end of the 12 weeks, they had lost an average of 3 kg in weight and their waist size had dropped by an average of almost 3 cm.

Their blood pressure also fell significantly, and by more than would have been expected from the weight loss alone, say the authors.

Insulin resistance-whereby cells stop responding to insulin, a condition preceding full diabetes-also improved significantly.

Three people no longer met the criteria for metabolic syndrome.

Participants said they slept better, had more energy, felt less pain and had fewer food cravings while on the programme.

Source: British Medical Journal

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