A diet rich in protein, zinc and niacin and low in saturated fat makes blood vessels more flexible, research suggests

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A new study being presented at the European Congress on Obesity (ECO) in Maastricht, the Netherlands (4-7 May), has linked key

nutrients, including protein, zinc and niacin, to improvements in heart health.

Improvements in metabolic and cardiovascular health seen during weight loss in people with obesity are traditionally attributed to either the weight loss itself or the accompanying changes in glucose, blood pressure or blood fats.

The possibility that the make-up of the diet itself is also involved has not been studied extensively, other than for protein, carbohydrates and fats.

The researchers, from the Sagol Center for the Metabolic Syndrome, Institute of Endocrinology, Metabolism and Hypertension, Tel Aviv-Sourasky Medical Center and the Sackler Faculty of Medicine, Tel Aviv, Israel, were interested in whether other nutrients might also be important.

A total of 72 participants with metabolic syndrome and obesity (55.5% male, average age 53 years) were enrolled in a one-year intensive multidisciplinary weight loss program.

This included personalized diet and exercise plans and regular meetings with a physician and dietician.

The participants, who had a BMI of 34.28 kg/m^2 at baseline, were asked to fill in a detailed dietary questionnaire a week before starting their diet and exercise plans and a year later.

Arterial wall stiffening is linked to a heightened risk of cardiovascular morbidity and mortality and so blood vessel flexibility was used as a proxy for cardiovascular health.

Three different meaures of blood vessel flexiblity were taken: pulse

wave velocity (PWV), common carotid artery intima media thickness (IMT) and flow mediated dilation (FMD).

One year on, BMI had fallen by 9.4% and all three measures of blood vessel flexibility had improved. FMD had improved by 47% on average, PWV had improved by 13% and IMT had improved by 1%.

The improvements in PWV were associated with reductions in calorie and saturated fat intake and with increases in zinc intake.

Zinc plays a key role in the synthesis of nitric oxide in the blood vessels. Nitric oxide helps relax the inner muscles of the blood vessels, leading them to widen.

The improvements in IMT were linked to reductions in calorie and saturated fat intake and increases in protein.

The improvements in FMD were linked to increases in niacin (vitamin B3) intake. Niacin is known to dilate blood vessels, mainly in the upper part of the body.

Lead researcher Dr. Brurya Tal, of Tel Aviv-Sourasky Medical Center, says: "We found changes in the consumption of specific food components to be linked to better vascular structure and function.

"A Mediterranean diet, rich in protein (lean dairy products, fish, poultry, and eggs), rich in vegetables, nuts, seeds and with moderate consumption of fruits and grains, can contribute to improving vascular flexibility, thus indirectly protecting the cardiovascular system.

"The zinc-rich foods in the diet plan were sunflower seeds, pumpkin seeds, nuts and meat. Meat and fish provided niacin."

Provided by European Association for the Study of Obesity