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Researchers from Canada’s St Boniface Hospital Research Center have determined that adding flaxseed to the diet can significantly drop blood pressure in patients with peripheral artery disease.

Peripheral artery disease is typically accompanied by hypertension or high blood pressure. Peripheral artery disease occurs when the walls of blood vessels throughout the body become thickened with a buildup of plaque. Often this is more pronounced among the blood vessels of the lower legs. This thickening of plaque drives up blood pressure.

In this latest study, the researchers gave 110 peripheral artery disease patients a placebo or 30 grams of ground flaxseed every day for six months.

After the six months, the flaxseed group had significantly higher levels of omega-3s in the bloodstream and their blood’s lignan levels – associated with lower cholesterol and less artery damage – increased by between double and fifty times. The placebo group had no such increases.

Furthermore, the blood pressure of the flaxseed group was lowered significantly. Their systolic blood pressure (SBP) on average was 10 mm Hg lower than the beginning of the study, and their diastolic blood pressure (DBP) was lower by 7 mm Hg on average.

But those patients who had extremely high blood pressure at the beginning of the study (more than 140 mm Hg systolic) and were part of the flaxseed group saw even greater reductions. These patients had an average reduction of systolic blood pressure by 15 mm Hg.

The researchers were astounded by the results, and stated that flaxseed supplementation is one of the best strategies to reduce blood pressure with diet:

*“In summary, flaxseed induced one of the most potent antihypertensive effects achieved by a dietary intervention.”*

Dr. Grant Pierce, the study’s lead researcher, stated that the results have surprised many. “This is the largest decrease in blood pressure ever shown by any dietary intervention – including the Mediterranean Diet and low-sodium diets,” said Dr. Pierce.

Dr. Grant also indicated that these sort of reductions will reduce heart attack and stroke incidence by as much as 50%.

Flaxseed contains a number of constituents that work synergistically to reduce cholesterol and blood pressure. These include alpha-linolenic acid, linoleic acid, oligosaccharide-rich fiber and various **lignans**.

Other research has found that flaxseed reduces cholesterol and helps maintain healthy bowel movements.

Another effect of flax is the decrease in oxylipins. Oxylipins arise from the oxidation of polyunsaturated fatty acids. Like lipid peroxides, oxylipins are heightened in cardiovascular disease.

In another examination of flaxseed supplementation, the researchers measured oxylipin levels in the placebo group and the flaxseed group following the supplementation period. The research found that oxylipin levels were significantly lowered in the flaxseed group.

**Lignan mechanisms to reduce lipid peroxidation and oxylipins**

The mechanisms at play with regard to flax and oxylipins relate to the fact that various lignans and sterols of flax reduce two problematic mechanisms linked to cardiovascular disease: lipid peroxidation and the formation of oxylipins.

Lipid peroxidation occurs when cholesterol vehicles such as low-density lipoproteins (LDL) and very low-density lipoproteins (VLDL) become oxidized.

Lipid peroxidation causes free radicals, and these oxidative free radicals damage blood vessel walls, producing the plaque that causes peripheral artery disease and other cardiovascular diseases.

The fact that the lignans in flaxseed lower lipid peroxidation was illustrated in a recent study from researchers at the University of California at Davis. For six weeks, 37 people (24 women and 13 men) were given either a bar with flaxseed with 0.41 grams of lignans or a bar with three grams of flaxseed with 0.15 grams of lignans. Both bars had the same amount of omega-3 fats (primarily alpha linolenic acid).

The researchers tested the various levels of cholesterol and lipoprotein carriers such as LDL and HDL.

The group that ate the high-lignan flax bars every day for six weeks had 12% lower cholesterol levels. They also had 15% lower LDL-c levels and more importantly, had 25% lower levels of oxidized LDL by 25% compared to the lower-lignan flax group.

The researchers concluded:

***“High-lignan FLX has the unique property of decreasing Ox-LDL, which is an independent risk factor for cardiovascular disease****.”*

Ox-LDL or oxidized LDL is an independent risk factor for cardiovascular disease specifically because it damages blood vessel walls as discussed above.

Another study done by the researchers from the St Boniface Hospital Research Center found that flaxseed supplementation significantly reduced oxylipin levels.

Oxylipins are formed when polyunsaturated fatty acids (PUFAs) are oxidized. This can occur from lipids such as DHA and EPA, along with others. The types of PUFAs typically related to oxylipin production are free PUFAs.

[**Learn about the perfect diet proven to reduce cardiovascular disease risk.**](http://www.realnatural.org/the-living-food-diet-the-ultimate-diet-for-increasing-vitality-losing-weight-and-preventing-disease/)

REFERENCES:

Rodriguez-Leyva D, Weighell W, Edel AL, LaVallee R, Dibrov E, Pinneker R, Maddaford TG, Ramjiawan B, Aliani M, Guzman R, Pierce GN. Potent antihypertensive action of dietary flaxseed in hypertensive patients. Hypertension. 2013 Dec;62(6):1081-9. doi: 10.1161/HYPERTENSIONAHA.113.02094.

Almario RU, Karakas SE. Lignan content of the flaxseed influences its biological effects in healthy men and women. J Am Coll Nutr. 2013;32(3):194-9. doi: 10.1080/07315724.2013.791147.

Caligiuri SP, Aukema HM, Ravandi A, Guzman R, Dibrov E, Pierce GN. Flaxseed Consumption Reduces Blood Pressure in Patients With Hypertension by Altering Circulating Oxylipins via an α-Linolenic Acid-Induced Inhibition of Soluble Epoxide Hydrolase. Hypertension. 2014 Apr 28.

Tourdot BE, Ahmed I, Holinstat M. The emerging role of oxylipins in thrombosis and diabetes. Front Pharmacol. 2014 Jan 7;4:176. eCollection 2014 Jan 7.