



Soy and Diabetes

Data in the literature show that soy may favorably alter insulin resistance, glycemic control, serum lipids and proteinuria in diabetic patients.

Experimental studies suggest several mechanisms for a direct pharmacological action of soy on glycaemic control. These include a tyrosine kinase inhibitory action, changes in insulin receptor numbers and affinity, intracellular phosphorylation and alterations in glucose transport.

Studies in healthy animals and humans have shown that diets containing soy protein (rich in isoflavones), improve insulin resistance and reduce insulin levels.

It is not clear at present if the benefit is due to either the soya protein or isoflavones or indeed it both need to act synergistically for optimum benefit.

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References

Goodman-Gruen D, Kritz-Silverstein D. Usual dietary isoflavone intake is associated with cardiovascular disease risk factors in postmenopausal women. *J Nutr* 2001;131:1202-6.

Jayagopal V, Albertazzi P, Kilpatrick ES, et al. Beneficial effects of soy phytoestrogen intake in postmenopausal women with type 2 diabetes. *Diabetes Care* 2002;25:1709-14.

Teixeira SR, Tappenden KA, Carson L, et al. Isolated soy protein consumption reduces urinary albumin excretion and improves the serum lipid profile in men with type 2 diabetes mellitus and nephropathy. *J Nutr* 2004;134:1874-80.

Bhathena SJ, Velasquez MT. Beneficial role of dietary phytoestrogens in obesity and diabetes. *Am J Clin Nutr*. 2002 Dec;76(6):1191-201. Review

Hermansen K, Sondergaard M, Hoie L, Carstensen M, Brock B. Beneficial effects of a soy-based dietary supplement on lipid levels and cardiovascular risk markers in type 2 diabetic subjects. *Diabetes Care*. 2001 Feb;24(2):228-33.

Azadbakht L, Shakerhosseini R, Atabak S, Jamshidian M, Mehrabi Y, Esmail-Zadeh A. Beneficiary effect of dietary soy protein on lowering plasma levels of lipid and improving kidney function in type II diabetes with nephropathy. *Eur J Clin Nutr*. 2003 Oct;57(10):1292-4.

Stephenson TJ, Setchell KD, Kendall CW, Jenkins DJ, Anderson JW, Fanti P. Effect of soy protein-rich diet on renal function in young adults with insulin-dependent diabetes mellitus. *Clin Nephrol*. 2005 Jul;64(1):1-11.