



Soy and Cardiovascular effects beyond cholesterol-lowering

Effects of soya products on blood pressure and vascular function

Observational studies suggest that increased protein consumption, especially from plant sources, can reduce the risk of hypertension, and several studies in which soya protein was administered found significant improvements in blood pressure (with doses of soya protein ranging from 18 to 66 g/d). In contrast, isoflavone supplements are not associated with lower blood pressure, although they may be important in reducing arterial stiffness. These improvements in blood pressure and vascular function may result from the antioxidant and lipid-lowering effects of soya.

Anti-oxidant and anti-inflammatory effects

Oxidative damage of LDL particles in the subendothelium of blood vessels appears to contribute substantially to foam cell formation with subsequent plaque formation. Soya isoflavones have important antioxidant effects and decrease evidence of in vitro oxidation. Thus, intake of soya protein rich in isoflavones may act like vitamin E to reduce risk for CHD. Inflammation of components of the subendothelial plaque also are likely to contribute to the progression of the atherosclerotic process. Soya protein and its isoflavones appear to have anti-inflammatory effects that would dampen this vascular inflammation. The favorable effects of soya protein intake on serum C-reactive protein levels tend to confirm anti-inflammatory effects in humans.

Other cardiovascular effects/platelets

Soya protein and isoflavones exert effects on the blood to decrease the risk of clot formation. Soya protein inhibits a primary step in blood clot formation by reducing platelet aggregation, or 'clumping'. The isoflavones seem to decrease the tendency of the formation of thromboses in the blood which reduces the risk of thrombotic occlusion of the blood vessel. Elevated serum homocysteine levels also accentuate thrombosis formation. Soya protein intake also is associated with decreases in serum homocysteine values.

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