



New claims for soya

Last Updated : 03 July 2000

Based on scientific evidence from more than fifty independent studies, the US Food and Drug Administration (FDA) is now allowing manufacturers of foods that have a minimum of 6.25 g of soy protein per serving, to claim on the pack of a food or drink product that “25 g of soy protein a day, as part of a diet low in saturated fat and cholesterol, may reduce the risk of heart disease”.

The US regulatory authorities saw a sufficient number of studies to convince them that when people with elevated blood cholesterol levels replace all or part of the animal protein in their diet with soy protein, their total cholesterol and LDL cholesterol (“bad” cholesterol) is significantly reduced.

Exactly how soy protein has this effect is still not known although researchers propose several mechanisms. It may work by enhancing bile acid secretion, which has the effect of removing cholesterol from the blood. Another suggestion is that soya protein stimulates the liver to remove LDL cholesterol from the blood or that the isoflavones in soya may act either as antioxidants or in helping blood vessels dilate, thus reducing damage to LDL cholesterol and its build-up on artery walls.

Whichever theory proves to be correct, when it comes to isoflavones, it is not just the heart that they are potentially capable of protecting. Seen by some experts as the secret weapon of the soybean, isoflavones along with lignans found in this legume are known to have structural similarities to the human hormone oestrogen.

During a woman’s reproductive years, one of the risk factors for developing breast cancer and other hormonally dependent cancers of the ovaries and endometrium appears to be over-exposure to human oestrogen. Capable of latching on to so-called beta oestrogen receptors in breast, ovarian and endometrial cells, large amounts of oestrogen may cause the cells to divide and then replicate in an uncontrolled manner - the process we call cancer.

The beauty of the plant oestrogens found in soya is that their similar shape and structure to human oestrogen means they can fit into beta oestrogen receptors, yet because they are much weaker than

human oestrogen, they appear to be able to reduce the risk of initiating the cell division process.

Dr Michael Morton, senior scientist at the BioClinical Research Services Laboratory in Wales, UK, helps to put this action into perspective: "A recent report demonstrated that in laboratory studies, genistein, the main isoflavone plant oestrogen in soya, binds to beta oestrogen receptors similar to tamoxifen, a drug used to help prevent and treat women with breast cancer."

Genistein also seems to have powerful effects on cell growth and regulation, helping to inhibit the action of enzymes needed for cell division as well as preventing the formation of new blood vessels to cancerous cells.

The benefits of soya do not end there. For pre-menopausal women the plant oestrogens in soya seem to help dampen down the effects of human oestrogen. For post-menopausal women, any oestrogenic effect, albeit a weak one, can be helpful for reducing both short and long term effects of menopause. Studies have revealed that giving 40 g of extra soya protein a day improves bone mineral content of some spinal vertebrae, as well as reducing the severity of menopausal symptoms such as hot flushes.

In countries such as Japan where estimated plant oestrogen intakes are in the region of 20 -50 mg a day compared with the 1mg a day in western Europe, there is a five to eight fold reduction in the risk of developing breast cancer. It would appear that increasing our daily intake of soya may not only help to reduce the risk of heart disease, but may potentially also have a role to play in improving the health of both pre and post menopausal women.

Chances are that you will come across more soya based foods in supermarkets which highlight its health benefits.

References

1. Anderson JW et al. (1995). Meta-analysis of effects of soya protein intake on serum lipids in humans. *New England Journal of Medicine* 333(5):276-282.
2. Xu X et al. (1998). Effects of soya isoflavones on oestrogen and phytoestrogen metabolism in premenopausal women. *Cancer Epidemiology, Biomarkers and Prevention* 7:1101-1108.
3. Albertazzi P et al. (1998). The effect of dietary soya supplementation on hot flushes. *Obstetrics and Gynecology* 91(1).
4. Potter S et al. (1998). Soya protein and isoflavones: their effects on blood lipids and bone density in postmenopausal women. *American Journal of Clinical Nutrition* 68 (supl):1375s-9s.
5. Setchell KD & Cassidy A (1999). Dietary isoflavones: biological effects and relevance to human health. *Journal of Nutrition* 129:758S-767S.