



## **Study Abstract:**

### **Soymilk or progesterone for prevention of bone loss A 2 year randomized, placebo-controlled trial**

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*Background* Given concerns over the use of hormone replacement therapy (HRT), women are seeking natural alternatives to cope with the symptoms and effects of menopause. The bone sparing effects of soy protein and its isoflavones is well established in animal studies, while 5 previous human studies on soy and bone have yielded variable outcomes due in part to their short duration of study. Progesterone has been suggested as a bone-trophic hormone, but the effect of long-term, low dose transdermal progesterone is unknown.

*Aim* The aim of the study was to compare for the first time the long-term effects of soymilk, with or without isoflavones with natural transdermal progesterone, or the combination, on bone mineral density in the lumbar spine and hip.

*Methods* Postmenopausal, Caucasian women with established osteoporosis or at least 3 risk-factors for osteoporosis, were randomly assigned, double-blind to one of four treatment-groups: soymilk containing isoflavones (soy+, n = 23), transdermal progesterone (TPD+, n = 22), or the combination of soy+ and TDP+, (n = 22) or placebo (isoflavone-poor soymilk, soy- and progesterone-free-cream TDP-, n = 22). All subjects received comparable intakes of calcium, minerals and vitamins. Bone mineral content (BMC) and density (BMD) were measured in lumbar spine and hip by using dual-energy X-ray absorptiometry (DEXA) at baseline and after 2 years.

*Findings* The percentage change in lumbar spine BMD and BMC respectively, did not differ from zero in the soy+ group (+1.1%, +2.0%) and TDP+ group (-1.1%, +0.4 %) but significant bone loss occurred in the control group (-4.2%, -4.3 %) and the combined treatment group (-2.8%, -2.4 %). No significant changes occurred for femoral neck BMD or BMC.

*Interpretation* Daily intake of two glasses of soymilk containing 76 mg isoflavones prevents lumbar spine bone loss in postmenopausal women. Transdermal progesterone had bone-sparing effects but when combined with soy milk a negative interaction between the two treatments occurs resulting in bone-loss to a greater extent than either treatment alone.

**Key words** soy - isoflavones - genistein - daidzein - equol - transdermal progesterone - bone density - bone conservation - postmenopausal women

Reference:

<http://springerlink.metapress.com/app/home/contribution.asp?wasp=9b6a715fwg6vtvb1bw7m&referrer=parent&backto=searcharticlesresults,6,12;>