**Review: plant based oestrogens do not relieve hot flushes or other menopausal symptoms**


**Q** Are plant based oestrogens (phyto-oestrogens) effective and safe for women with hot flushes or other menopausal symptoms?

**METHODS**

**Data sources:** Medline (1966 to March 2004), Cochrane Library, reference lists of retrieved studies and reviews, and hand searches of Menopause and Obstet Gynecol to identify abstracts of annual meetings.

**Study selection and assessment:** English language randomised controlled trials (RCTs) of 4 weeks' duration comparing supplements or foods containing phyto-oestrogens with placebo or non-phyto-oestrogen control in perimenopausal or postmenopausal women with hot flushes or other menopausal symptoms. Methodological quality of individual studies was assessed based on allocation concealment, blinding, intention to treat analysis, and follow up.

**Outcomes:** frequency of hot flushes, changes in menopausal symptom scores, and adverse effects.

**MAIN RESULTS**

25 RCTs (n = 2348) (22 full reports and 3 abstracts) met the selection criteria. The participants' mean age was 53 years (21 RCTs), mean duration of menopause was 4 years (13 RCTs), mean daily hot flush frequency was 7 (range 3–11) (16 RCTs), and mean study duration was 17 weeks (range 4–104) (25 RCTs). Phyto-oestrogens evaluated were soy foods, beverages, or powders (11 RCTs); soy extracts in capsules or tablets (9 RCTs); and red clover extracts tested in a proprietary formula (Promensil [Novogen Ltd, Sydney, Australia]) (5 RCTs). Overall, soy foods, beverages, and powders did not reduce hot flush frequency (table). No trial showed improvement in overall symptom scores, but 2 trials showed improvements in subscale scores favouring the soy group (table). Soy extracts reduced hot flush frequency in 2 RCTs and improved menopausal symptoms in subscales of symptom scores in 4 RCTs (table). Red clover extracts reduced hot flush frequency in 2 RCTs of 30 women each (table). Meta-analysis of 5 RCTs using a random effects model showed no improvement in menopausal symptoms (weighted mean difference -0.60, 95% CI -1.71 to 0.51). 2 RCTs that included a flaxseed arm showed improvements in hot flush rate similar to those in the other groups. 2 of 12 RCTs showed more adverse effects with phyto-oestrogens than control.

**CONCLUSION**

Phyto-oestrogens do not relieve hot flushes or other menopausal symptoms.

**Phyto-oestrogens v placebo or non-phyto-oestrogen control for hot flushes and other menopausal symptoms**

<table>
<thead>
<tr>
<th>Phyto-oestrogen</th>
<th>Number of RCTs (n)</th>
<th>Number of RCTs showing improvement/total number of RCTs measuring outcome</th>
<th>Hot flush frequency</th>
<th>Menopausal symptoms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soy foods, beverages, or powders</td>
<td>11 (1094)</td>
<td>1/8</td>
<td>2/8†</td>
<td></td>
</tr>
<tr>
<td>Soy extracts</td>
<td>9 (854)</td>
<td>2/6</td>
<td>4/5‡</td>
<td></td>
</tr>
<tr>
<td>Red clover extracts</td>
<td>5 (400)</td>
<td>2/5</td>
<td>0/5</td>
<td></td>
</tr>
</tbody>
</table>

*RCTs = randomised controlled trials. Mean study duration was 17 weeks.
†Improvement in some subscales (vaginal dryness [1 RCT], hot flush severity [2 RCTs], and aetrogenic symptoms [1 RCT]).
‡Improvement in Kupperman index score [1 RCT], hot flushes and night sweats [1 RCT], 12 of 15 domains of a symptom questionnaire [1 RCT], and hot flush rate and symptom scores (no statistical comparison) [1 RCT].

**Commentary**

Phyto-oestrogens have become a popular alternative for many women experiencing perimenopausal vasomotor symptoms such as hot flushes or night sweating. Phyto-oestrogens are naturally occurring plant compounds with some properties similar to oestriol, although they tend to have weaker effects than most oestrogens. The 3 main dietary classes of phyto-oestrogens are isoflavones (found in soy products), lignans (found in flaxseed, cereal, legumes, and alcohol), and coumestans (found in alfalfa and clover).

Hormonal treatment of perimenopausal symptoms with prescription drugs has fallen out of favour since the early completion of the Women’s Health Initiative (WHI). The conclusions of the WHI have left many searching for non-pharmaceutical solutions to the vasomotor disturbances that frequently compromise quality of life for middle aged women. Unfortunately, the findings of the review by Krebs et al do not support the use of phyto-oestrogens.

The methodological shortcomings of the studies in this review are regrettable similar to others investigating the effectiveness of biological substances: the substances examined varied considerably as did the symptoms and levels of severity among the women studied. Other methodological problems include inadequate allocation concealment, high drop out rates, and lack of intention to treat approaches to analyses.

Future randomised trials should examine biochemically equivalent substances and include standardised measurement of menopausal symptoms. As numbers of perimenopausal women increase and prescription drugs become a less popular symptom relief option, clinicians and researchers will need to work collaboratively to identify safe and effective management strategies for women with menopausal symptoms.

Cathy R Kessenich, ARNP, DSN
University of Tampa
Tampa, Florida, USA