Soy: No effect on menopausal hot flashes

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(Medical Xpress)—A team of investigators led by UC Davis found that eating soy products such as soy milk and tofu did not prevent the onset of hot flashes and night sweats as women entered menopause.

Unlike previous studies investigating the relationship between soy and these menopausal symptoms, the current study included a very large population over a long period of time: more than 1,600 women over 10 years.

The article, titled "Phytoestrogen and Fiber Intakes in Relation to Incident Vasomotor Symptoms: Results from the Study of Women's Health Across the Nation," was published online today in Menopause*: The Journal of The North American Menopause Society* and will appear in the March 2013 print issue of the journal.

"Given that most women experience unpleasant symptoms, particularly hot flashes and night sweats, during menopause, we were hopeful that certain dietary intakes would provide good alternatives to hormone therapy," said Ellen Gold, lead author of the study and professor and chair of the UC Davis Department of Public Health Sciences. "Unfortunately, based on our study, soy-related foods did not turn out to be the 'magic bullet.'"

The study analyzed data from the Study of Women's Health Across the Nation (SWAN), which followed more than 3,000 premenopausal and early perimenopausal women with annual visits for 10 years. Women answered detailed questionnaires of their dietary habits at baseline, year

five and year nine, and in each year were asked about the frequency of various menopausal symptoms, including hot flashes and night sweats.

The new study focused on the 1,651 women who had not yet had hot flashes and night sweats (called vasomotor symptoms) at the beginning of the study, because the investigators wanted to specifically evaluate the effect of dietary factors on preventing the onset of these symptoms.

The main dietary factor of interest in this study was phytoestrogens, also known as plant-based estrogens. Predominantly found in tofu, soy milk and other soy-containing foods, phytoestrogens have a chemical structure similar to estrogen and are believed to mimic the effects of the female hormone in the body. Since estrogen levels drop during menopause, the investigators hypothesized that a diet high in phytoestrogens would reduce menopause symptoms. They also evaluated the participants' consumption of fiber, because it is thought to increase the availability of estrogens in the body.

The study found no consistent correlations between dietary phytoestrogens or fiber and the onset of menopausal symptoms in women who were not yet postmenopausal when they started the study.

Although other studies have examined similar hypotheses, the outcomes have been somewhat inconsistent. Most previous studies evaluated women who were already postmenopausal and having symptoms. Also, a clear dose-response relationship—showing that the more phytoestrogens or fiber women consumed, the less likely they were to develop symptoms—has not been consistently found.

The authors conceded that to determine conclusively if a relationship exists between such dietary intakes and the onset of menopausal symptoms, a large, randomized, placebo-controlled trial would be needed with many years of follow-up. However, they stated that such a study

would be costly and difficult, and their results indicate that finding a clinically significant or large effect would be unlikely.

The study had many advantages over earlier studies. It included detailed dietary information on a large number of women from across the U.S. who were followed over the course of a decade. SWAN also included women from different racial and ethnic groups, including white, African-American, Hispanic, Chinese and Japanese women.

"In general, women of Asian ancestry report fewer menopausal hot flashes than do women of European backgrounds," said Gail Greendale, a specialist in geriatric medicine with UCLA Health System and the UCLA principal investigator of the SWAN Phytoestrogen Study. "The 'Eastern' dietary pattern, which is high in phytoestrogens, has been one of the proposed explanations for the ethnic differences in hot flash occurrence. Our findings do not support the theory that higher phytonutrient intakes are associated with lower hot flash rates."

"This study contributes to the discussion about the effects of phytoestrogens on symptoms at menopause," added Gold, who was principal investigator of the UC Davis/Kaiser Permanente site of the SWAN study. "But it is not the final word. Other advantages to these compounds may exist, or it may be that a subset of women will benefit from phytoestrogen intake because of their genetic makeup, which could affect their metabolism of these dietary factors."

Led by UCLA, the SWAN Phytoestrogen Study investigators are also studying the effects of phytoestrogens on bone density and cognition, as well as whether the ability to produce a metabolite called equol when digesting phytoestrogens may have an effect. Equol appears to have greater biological potency as an estrogen mimic than other breakdown products of phytoestrogens, and Asians are more likely to be equol producers than non-Asians.

Provided by UC Davis