

Study finds little cognitive benefit from soy supplements for older women

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In a new study of the effects of soy supplements for postmenopausal women, researchers at the Stanford University School of Medicine and the USC Keck School of Medicine found no significant differences — positive or negative — in overall mental abilities between those who took supplements and those who didn't.

While questions have swirled for years around a possible link between [soy](#) consumption and changes in cognition, this research offers no evidence to support such claims. "There were no large effects on overall cognition one way or another," said the study's lead author, Victor Henderson, MD, professor of health research and policy and of neurology and neurological sciences at Stanford.

The findings from the 2.5-year study in middle-aged and older [women](#), which was larger and longer than any previous trials on soy use, will appear in the June 5 issue of *Neurology*, the medical journal of the American Academy of Neurology. The results are in line with the largest previous study in this area: a 12-month trial of Dutch women during which daily soy intake showed "no significant effect on cognitive endpoints." That work was published in a 2004 issue of the *Journal of the American Medical Association*.

Still, there are a number of randomized clinical trials on soy's effect on cognition and memory in women that have presented conflicting takes about its benefits and harms. While improved cognition was seen in some findings, other research suggested that soy could have an adverse

effect on memory.

Soy and soy-based products contain an estrogen-like compound called isoflavones, and some women choose to take soy [supplements](#) as an alternative to estrogen. It has been thought that isoflavones might be able to boost memory and perhaps overall brain function. The hippocampus, the part of the brain that controls memory, is rich in estrogen beta receptors, and isoflavones are known to activate these receptors.

Henderson's interest in the matter is part of his broader research agenda on finding new strategies to improve cognitive function in aging.

For this work, he and his colleagues conducted the National Institutes of Health-sponsored Women's Isoflavone Soy Health Trial, which was done between 2004 and 2008 to determine the effect of soy isoflavones on the progression of atherosclerosis and, secondarily, the effect on cognition. During this study, 350 healthy women ages 45-92 were randomized to receive daily 25 grams of isoflavone-rich soy protein (a dose comparable to that of traditional Asian diets) or a placebo. A battery of neuropsychological tests was given to the participants at the start of the study and again 2.5 years later.

Henderson and his colleagues examined changes to the composite of 14 scores and found no significant differences in global cognition — that is, overall mental abilities — from baseline to study-end between women who took the supplements and those on placebo. During a planned secondary analysis, they did identify a statistically significant difference in one of the identified cognitive factors: Women in the supplement group showed a greater improvement in visual memory (memory for faces). Henderson said this could be important, but "the finding needs to be replicated in future studies."

According to Henderson, this research "helps provide a firm answer"

about soy and overall cognition, and he and his co-authors note in the paper that [postmenopausal women](#) shouldn't pursue a high-soy diet or take supplements for the primary goal of global cognitive benefit.

At the same time, Henderson said the work is not meant discourage women who consume soy for other purposes. "I don't think they should be disappointed at all," he said. "They should be pleased that there aren't negative effects on overall cognitive function and that there are potential gains in aspects of memory. If a woman enjoys eating soy and if there may be other health benefits, she should keep doing what she's doing."

The researchers note that while these results are reasonably definitive — Henderson said the sample size was large enough that if there were major effects, the researchers would have likely seen them — the cognitive effects of soy isoflavones might differ for women of reproductive age and for men. More study is needed in these populations, he said. He also emphasized the need for researchers to continue studying a variety of interventions to improve cognition among older adults, including nutritional approaches, physical and mental activities, and pharmaceutical approaches.

Provided by Stanford University Medical Center

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