

Poster #38

Are High Doses of Isoflavones Neurotoxic to the Aging Brain?

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Many women are looking into the option of soy isoflavones for relief of menopausal symptoms, so more research is needed to determine the effects of these chemicals, especially now that isoflavone extracts are readily available in concentrated pill form. We attempted to determine the effects of pharmacological doses of dietary soy isoflavones on working memory, as tested in the Morris Water Maze, with the hypothesis that a very high dose would be deleterious to maze performance. Twelve-month-old female Sprague-Dawley rats received either a high isoflavone diet (ISO +) equivalent to 1500mg per 1800 calorie per day human diet or a diet free of isoflavones (ISO -). Soy isoflavone supplement powder obtained from 50mg Nature's Resource capsules were added to a casein-based diet. After 2 weeks on the treatment diet, 12 rats per group were tested for general motor coordination impairments, then were trained in the water maze for a working memory task (matching-to-place). Because a majority of the rats failed to learn to perform the maze task adequately, however, we shifted our focus to the ability of the rats to acquire and perform a new task. Only a handful of rats were able to perform the maze task after eight days of trials. Differences between diet groups in task acquisition and maze strategy will be assessed.

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