Lifelong estrogen exposure and memory in older postmenopausal women.
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Abstract
Menopausal changes in endogenous estrogen have been associated with memory decline. However, because earlier findings regarding the effects of lifelong estrogen exposure on memory have been inconsistent, our purpose was to investigate these effects in older postmenopausal women with a comprehensive battery of memory measures. Participants were 126 nondemented naturally postmenopausal women, not currently using hormone therapy (HT), 60 to 89 years of age, who showed normal to below average verbal memory performance on a screening test. Memory measures included tests of visual, verbal, and working memory. Regression analyses were performed with each memory measure as the outcome and length of reproductive period (time between menarche and menopause) as the predictor, controlling for age, education, parity, duration of breastfeeding, previous HT and oral contraceptive use, as well as body mass index and depression. Longer reproductive period was significantly associated with better delayed visual memory, immediate and delayed verbal memory, and working memory. Previous HT use was also significantly associated with better verbal memory and delayed visual memory. Our findings suggest an enduring protective role of endogenous and exogenous estrogen on memory in older postmenopausal women with normal to below average verbal memory performance on a screening test. They also support our contention that the neuroprotective benefits of a longer reproductive period might only be evident after a longer period of postmenopausal estrogen deprivation, which would help clarify why such an association was not previously found in younger postmenopausal women. Replication is required with a larger sample representing a broader cross-section of the aging female population.