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Calcium and vitamin D intakes may be positively associated with brain lesions in depressed and nondepressed elders.

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Abstract

Studies indicate that diet and vascular calcification may be related to the occurrence of brain lesions, although the importance of dietary calcium and vitamin D has not been investigated. The objective of this study was to test the hypothesis that calcium and vitamin D intakes would be positively associated with brain lesion volumes in elderly individuals with and without late-life depression. A cross-sectional study was performed as part of a longitudinal clinical study of late-life depression. Calcium and vitamin D intakes were assessed in 232 elderly subjects (95 with current or prior depression, 137 without depression) using a Block 1998 food frequency questionnaire. Calcium, vitamin D, and kilojoule intake were determined. Brain lesion volumes were calculated from magnetic resonance imaging scan. Subjects were 60 years or older. Calcium and vitamin D intakes were significantly and positively correlated with brain lesion volume ($P < .05$ and $P < .001$, respectively). In 2 separate multivariable models, controlling for age, hypertension, diabetes, heart disease, group (depression/comparison), lesion load (high/low), and total kilocalories, these positive associations remained significant ($P < .05$ for calcium; $P < .001$ for vitamin D). In conclusion, calcium and vitamin D consumption were associated with brain lesions in elderly subjects even after controlling for potentially explanatory variables. These associations may be due to vascular calcification or other mechanism. The possibility of adverse effects of high intakes of calcium and vitamin D needs to be further explored in longitudinal studies of elderly subjects.

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