

Women with Alzheimer's-related gene lose weight more sharply after age 70

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Researchers led by Deborah Gustafson, PhD, MS, professor of neurology at SUNY Downstate Medical Center, have shown that women with a gene variant (APOEε4 allele) associated with Alzheimer's disease experience a steeper decline in body mass index (BMI) after age 70 than those women without the version of the gene, whether they go on to develop dementia or not. The finding adds to a body of evidence suggesting that body weight change may aid in the diagnosis and management of Alzheimer's disease.

The results of the study are published online in the *Journal of Alzheimer's Disease* 48(4). The article is entitled, "37 Years of Body Mass Index and Dementia: Effect Modification by the APOE Genotype: Observations from the Prospective Population Study of Women in Gothenburg, Sweden." Dr. Gustafson is also docent and affiliate researcher, University of Gothenburg, Sahlgrenska Academy, Neuropsychiatric Epidemiology Research Unit, in Sweden.

Dr. Gustafson notes that women tend to evidence a U-shaped relationship between age and [body weight](#) or [body mass index](#) (BMI), a common marker of overweight and obesity. From middle age to approximately 70 years of age, adults gain weight on average. After age 70, weight tends to decrease on average. This weight change over the life course may be due to aging, changes in body composition, energy metabolism, sensory changes, and changes in the brain related to regulation of basic body processes.

Among adults who develop dementia, however, the life course of BMI differs. Studies have shown that being more overweight or obese in mid-life may increase risk for dementia. Studies have also shown that after age 70 years, adults who develop dementia may lose weight more rapidly compared to those who do not develop dementia and that if one is a bit more overweight in later life, it is protective for both dementia and death.

Dr. Gustafson explains, "In this study, we followed Swedish women for almost 40 years from mid-life ages of 38-60 years. We tracked their BMI in relation to dementia onset, and considered the potential role of the APOEε4 allele, a known risk factor for late-onset dementia." She adds, "In a previous publication, we showed that development of dementia is associated with specific pattern of BMI change over the life course. Women who developed dementia after age 65 tended to gain BMI at a slower rate during middle age."

Dr. Gustafson concludes, "Now, we show that those with the APOEε4 allele experience greater or steeper decline in BMI after [age](#) 70 years, whether they develop dementia or not. Body weight change and BMI are easily measured, noninvasive potential prognostic indicators for dementia. Better understanding of a relatively common risk allele such as APOEε4 and how it modifies risk may aid in our understanding of how we can better intervene among those at highest risk for [dementia](#)."

More information: Bäckman, EJ, Waern, M, Östling, S, Guo, X, Blennow, K, Skoog, I, Gustafson, DR, 37 Years of Body Mass Index and Dementia: Effect Modification by the APOE Genotype: Observations from the Prospective Population Study of Women in Gothenburg, Sweden, *Journal of Alzheimer's Disease* (2015), [DOI: 10.3233/JAD-150326](#)

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