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Obesity and dementia

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Abstract

Anthropometric measures of obesity, such as Body Mass Index (BMI) and waist circumference or waist-to-hip ratio (WHR) are linked to clinical dementia and Alzheimer's Disease (AD) in epidemiological studies. Overweight and obesity, measured as BMI or WHR, in mid- and late-life may increase risk for dementia, whereas decline in body weight or BMI, and subsequent underweight in the years preceding and at the time of dementia diagnosis may relate to dementia. The role of adipose tissue during these periods of life in relation to later and concurrent risk for cognitive decline and dementia is not understood. Biological mechanisms linking adipose tissue to the aging brain and neurocognitive symptoms may be related to interactions between peripheral and central metabolism. Hypotheses relating adipose tissue to cognitive decline and dementia may relate to the peripheral and cerebral vasculature; actions of adipose tissue hormones (adipokines), such as leptin and adiponectin, and adipose tissue-related hormones, such as ghrelin, on brain regions that are important for neurocognition; adipose tissue effects on energy metabolism; change in adipose tissue morphology over time; and genetic susceptibility based on the identification of genes important for both adipose tissue and the brain. Given the ubiquity of adipose tissue and its multi-functionality, metabolic implications over the life course on health of the aging brain and dementia risk are great. The purpose of this presentation is to overview the epidemiology of anthropometric measures and dementia, and to discuss potential underlying mechanisms of action whereby adipose tissue influences neurocognitive processes in the brain.

Biography

Deborah Gustafson received her degrees in Biology, Nutrition Science, and Nutritional Epidemiology from the University of Minnesota. After a postdoctoral fellowship in Genetic Epidemiology, in 1996, Dr. Gustafson held two faculty positions in the U.S. She moved to Sweden in 2004 to work with the Neuropsychiatric Epidemiology Unit at the University of Gothenburg. In 2009, she moved to Brooklyn where she is Visiting Professor of Neurology and Medicine at State University of New York - Downstate Medical Center. Dr. Gustafson has received numerous research grants, has published over 100 papers and book chapters, and is involved in several multinational collaborations.