Public release date: 20-May-2010

Contact: Dawn Peters

medicalnews@wiley.com

781-388-8408

Wiley-Blackwell

Abdominal fat at middle age associated with greater risk of dementia

Study confirms that obesity is associated with lower total brain volume

Researchers from Boston University School of Medicine determined that excess abdominal fat places otherwise healthy, middle-aged people at risk for dementia later in life. Preliminary findings suggest a relationship between obesity and dementia that could lead to promising prevention strategies in the future. Results of this study are published early online in *Annals of Neurology*, a journal of the American Neurological Association.

A 2005 World Health Organization (WHO) report estimated that 24.3 million people have some form of dementia, with 4.6 million new cases annually. Individuals with dementia exhibit a decline in short-term and long-term memory, language processing, problem solving capabilities, and other cognitive function. Clinical diagnosis of dementia is made when two or more brain functions are significantly impaired. Symptoms of dementia can be attributed to irreversible causes such Alzheimer's disease, vascular dementia, and Huntington's disease, or caused by treatable conditions such as brain tumor, medication reaction, or metabolic issues.

For the current study, Sudha Seshadri, M.D. and colleagues recruited participants from the Framingham Heart Study Offspring Cohort. The sample included 733 community participants who had a mean age of 60 years with roughly 70% of the study group comprised of women. Researchers examined the association between Body Mass Index (BMI), waist circumference, waist to hip ratio, CT-based measures of abdominal fat, with MRI measures of total brain volume (TCBV), temporal horn volume (THV), white matter hyperintensity volume (WMHV) and brain infarcts in the middle-aged participants.

"Our results confirm the inverse association of increasing BMI with lower brain volumes in older adults and with younger, middle-aged adults and extends the findings to a much larger study sample," noted Dr. Seshadri. Prior studies were conducted in cohorts with less than 300 participants and the current study includes over 700 individuals.

"More importantly our data suggests a stronger connection between central obesity, particularly the visceral fat component of abdominal obesity, and risk of dementia and Alzheimer's disease," Dr. Seshadri added. The research showed the association between VAT and TCBV was most robust and was also independent of BMI and insulin resistance. Researchers did not observe a statistically significant correlation between CT-based abdominal fat measures and THV, WMHV or BI.

"Our findings, while preliminary, provide greater understanding of the mechanisms underlying the link between obesity and dementia," concluded Dr. Seshadri. "Further studies will add to our knowledge and offer important methods of prevention."

###

Article: "Visceral Fat is Associated with Lower Brain Volume in Healthy Middle-Aged Adults." Stéphanie Debette, Alexa Beiser, Udo Hoffmann, Charles DeCarli, Christopher J. O'Donnell, Joseph M. Massaro, Rhoda Au, Jayandra J. Himali, Philip A. Wolf, Caroline S. Fox, Sudha Seshadri . *Annals of Neurology*; Published Online Early: May 20, 2010 (DOI:10.1002/XXX).

This study is published in *Annals of Neurology*. Media wishing to receive a PDF of this article may contact medicalnews@wiley.com.

Annals of Neurology, the official journal of the American Neurological Association and the Child Neurology Society, publishes articles of broad interest with potential for high impact in understanding the mechanisms and treatment of diseases of the human nervous system. All areas of clinical and basic neuroscience, including new technologies, cellular and molecular neurobiology, population sciences, and studies of behavior, addiction, and psychiatric diseases are of interest to the journal. For more information, please visit http://www3.interscience.wiley.com/journal/76507645/home

Wiley-Blackwell is the international scientific, technical, medical, and scholarly publishing business of John Wiley & Sons, with strengths in every major academic and professional field and partnerships with many of the world's leading societies. Wiley-Blackwell publishes nearly 1,500 peer-reviewed journals and 1,500+ new books annually in print and online, as well as databases, major reference works and laboratory protocols. For more information, please visit www.wileyblackwell.com or www.interscience.wiley.com.