

# Protein made by fat cells may increase risk of heart attack in older adults

July 31 2008

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Adiponectin, a protein produced by fat cells, may play a pivotal and counterintuitive role in cardiovascular health for older Americans according to a new study accepted for publication in the *Journal of Clinical Endocrinology & Metabolism* (JCEM).

As people lose weight, the concentration level of adiponectin in the bloodstream increases. In previous studies, high adiponectin concentration has been associated with lower occurrence of diabetes and cholesterol abnormalities. The new JCEM study reveals, however, that despite the known association with blood sugar and cholesterol parameters, elevated adiponectin levels may lead to heightened risk of heart attack in older adults.

This study examined a sample of 1,386 participants of the population-based Cardiovascular Health Study from 1992 to 2001. Participants consisted of adults aged 65 to 100 years and were recruited from four field centers in the United States. Subjects underwent physical examinations and laboratory testing. Of these participants, 604 experienced a heart disease event. Those with the highest levels of adiponectin were most likely to suffer a heart attack.

"This study is significant because previous findings have been contradictory, and the present investigation includes the largest number of heart attacks in an elderly group to date," said Jorge Kizer, M.D., associate professor of medicine and public health at Weill Cornell Medical College and a cardiologist at New York-Presbyterian

Hospital/Weill Cornell Medical Center – both in New York, N.Y. "Our findings make a persuasive case that adiponectin is in fact associated with an increase in heart-disease risk in older persons."

Dr. Kizer initially expected that the higher levels of adiponectin would predict lower cardiovascular risk, and studies in middle-aged adults appeared to support this premise. Yet the findings are consistent with recent studies linking higher adiponectin to mortality in the elderly. He said that further studies are needed to understand why adiponectin has such beneficial effects on cholesterol profile and diabetes, but apparently different associations with cardiovascular disease in older adults as compared with middle-aged adults.

Dr. Kizer and others theorize that higher adiponectin concentration may reflect underlying disease processes in the body, or even have direct harmful effects, which may be amplified in the elderly. Adiponectin has been shown to increase energy expenditure through direct actions in the central nervous system in mice, and if this effect were also present in humans, it could be significantly harmful in older adults by accelerating the loss of skeletal muscle, a condition called sarcopenia.

"This study shows that this abundant product of fat cells is a marker and perhaps even a mediator of worsened outcomes in persons aged 65 years and older," said Dr. Kizer. "Further studies should target this protein to unravel the mechanisms responsible."

Source: The Endocrine Society

Citation: Protein made by fat cells may increase risk of heart attack in older adults (2008, July 31) retrieved 17 April 2024 from <https://medicalxpress.com/news/2008-07-protein-fat-cells-heart-older.html>

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