

Age-related accumulation of abdominal fat associated with lower muscle density

Reviewed by Emily Henderson, B.Sc.

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A new study published in the *Journal of Clinical Endocrinology and Metabolism* found that age-related accumulation of abdominal fat is associated with lower muscle density. Low muscle density means the muscle has more fat in it, which can lead to less effective muscle function that in turn may lead to more falls. According to the study, individuals with the greatest 6-year accumulation of visceral adipose tissue (VAT), found in the abdomen, had significantly lower muscle density. Since VAT accumulation is a preventable risk factor for poor musculoskeletal outcomes associated with aging, these findings add to the growing dangers of accumulating fat in the body.

Entitled "Accumulation in Visceral Adipose Tissue Over 6 Years Is Associated With Lower Paraspinal Muscle Density," it is the first large, longitudinal study of the association between changes in VAT and muscle density.

“Most obesity research has focused on metabolic and cardiovascular outcomes such as diabetes, hyperlipidemia, hypertension, coronary heart disease, and osteoarthritis. But there is considerably less consensus on the role of obesity on the risk for low muscle mass or muscle density.”

Ching-Ti Liu, Ph.D., Lead Author, Professor in the Department of Biostatistics at Boston University School of Public Health, and Senior Author Douglas P. Kiel, M.D., M.P.H., Director, Musculoskeletal Research Center and Senior Scientist, Hinda and Arthur Marcus Institute for Aging Research

The study found that VAT may represent a modifiable risk factor for poor musculoskeletal outcomes with aging.

"The study adds important new information to public health efforts to reverse the trend of the growing obesity problem in the United States and worldwide," the authors said. "Fat that accumulates in the abdomen sometimes referred to

as the 'male pattern,' was shown to produce less dense muscle surrounding the spine, resulting in less-effective muscle function."

The other researchers on the study were Timothy Tsai, M.P.H., Research Software Engineer II at the Hinda and Arthur Marcus Institute for Aging Research; Brett T. Allaire, Research Assistant III at the Center for Advanced Orthopedic Studies, Beth Israel Deaconess Medical Center; Mary L. Bouxsein, Ph.D., Professor of Orthopedic Surgery, Center for Advanced Orthopedic Studies, Beth Israel Deaconess Medical Center; Marian T. Hannan, D.Sc., M.P.H., Senior Scientist, Hinda and Arthur Marcus Institute for Aging Research; and Thomas G. Travison, Ph.D., Director of Biostatistics and Data Sciences, Co-Director of the Interventional Studies in Aging Center, Senior Scientist, Hinda and Arthur Marcus Institute for Aging Research.

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Source:

Hebrew SeniorLife Hinda and Arthur Marcus Institute for Aging Research

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