# Muscle mass linked with physical function and quality of life in dialysis patients

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Dialysis patients with more muscle mass had better scores on a 6-minute walking test as well as better scores on physical and mental health questionnaires in a study appearing in an upcoming issue of the *Clinical Journal of the American Society of Nephrology* (*CJASN*). The findings suggest that physical activity that builds muscle mass may help improve the health and quality of life of dialysis patients.

Physical functional ability is often significantly impaired in patients on maintenance hemodialysis. Srinivasan Beddhu, MD (University of Utah), Macy Martinson, MD (University of Utah), T. Alp Ikizler (Vanderbilt University), and their colleagues wondered whether modifiable factors such as body size and body composition could influence dialysis patients' physical function and quality of life.

To investigate, the researchers assessed 105 maintenance dialysis patients' body mass index (BMI), waist circumference, and measurements of mid-thigh muscle area and intra-abdominal fat area. They also tested how far patients could walk in 6 minutes, and they examined other measures of physical and mental health through questionnaires. Assessments were made at the start of the study, after 6 months, and after 12 months.

The investigators found that higher BMI levels at the start of the study were linked with shorter 6-minute walking distances measured at both at the start of the study and at later time points. Results were similar for waist circumference and intra-abdominal fat. On the other hand, higher

levels of mid-thigh muscle—which indicates higher muscle mass—were linked with longer 6-minute walking distances. After adjusting for BMI, increases in mid-thigh muscle were also strongly linked with higher physical and mental health scores at the start of the study, but only weakly so at later time points.

"Because this study shows that higher muscle mass is associated with better physical function and quality of life in dialysis patients, interventions such as increased physical activity that decrease fat mass and increase muscle mass are likely to improve physical function, quality of life, and survival in dialysis patients," said Dr. Beddhu. "Such interventions need to be tested in clinical trials."

The findings may help explain the "obesity paradox" associated with dialysis patients, which relates to the prolonged survival sometimes seen in obese patients compared with normal-weight patients. "The obesity paradox has been interpreted in earlier studies as fat is good. Some have even argued that weight loss should be discouraged in dialysis patients," said Dr. Beddhu. "But the situation is more nuanced. This study provides a better understanding of the role of body composition in dialysis patients."

**More information:** The article, entitled "Associations of Body Size and Body Composition with Functional Ability and Quality of Life in Hemodialysis Patients," will appear online at cjasn.asnjournals.org/ on April 24, 2014.

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