

Flexing their muscles helps kidney disease patients live longer

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Kidney disease patients are healthier and live longer if they've beefed up their muscles, according to a study appearing in an upcoming issue of the *Clinical Journal of the American Society Nephrology* (CJASN). The results suggest that patients may benefit from pumping iron or taking medications to boost their lean body mass.

Kidney disease patients who are on dialysis live longer if they have a high [body mass index](#) (BMI); however, BMI measurements do not differentiate lean from fat mass. Kamyar Kalantar-Zadeh MD, PhD (Los Angeles Biomedical Research Institute at Harbor-UCLA Medical Center) and his colleagues examined the effects of lean and fat mass on 792 dialysis patients' health and survival by measuring patients' mid-arm muscle circumference (a measure of lean mass) and triceps skinfold (a measure of fat mass) over a 5-year period.

The researchers found that patients with a high mid-arm muscle circumference scored better on a mental health test and lived longer than patients with a low mid-arm muscle circumference. Patients with the highest mid-arm muscle circumference were 37 percent less likely to die during the study period than patients with the lowest circumference. Triceps skinfold measurements were not as predictive of patients' health and survival.

Larger studies with detailed body composition analyses are needed to verify the investigators' findings, but "it is possible that interventions that can improve muscle mass or increase lean body mass can lead to better

clinical outcomes and greater survival in tens of thousands of [dialysis patients](#) and probably millions of individuals with other stages of [chronic kidney disease](#) or other chronic disease states," said Dr. Kalantar-Zadeh.

Study co-authors include Nazanin Noori, MD, PhD, Usama Feroze, John Sim, MD, Sameer Murali, MD, Amanda Luna, Myra Gomez, Claudia Luna, Rachelle Bross, PhD (Los Angeles Biomedical Research Institute at Harbor-UCLA Medical Center); Csaba Kovesdy, MD (Salem Veterans Affairs Medical Center); Joel Kopple, MD (Los Angeles Biomedical Research Institute at Harbor-UCLA Medical Center, David Geffen School of Medicine at UCLA, and the UCLA School of Public Health); and Allen Nissenson, MD (DaVita Inc.).

In an accompanying editorial, Kirsten Johansen, MD (San Francisco VA Medical Center) noted that the study's results indicate that the association of high BMI with improved survival among dialysis patients is more complex than a simple association with greater body fat. "The next challenge will be to address the mechanisms underlying the associations between body composition and survival so that we can consider strategies to change [body composition](#) and determine whether such intervention can improve outcomes," she wrote.

More information: The article, entitled "Mid-Arm Muscle Circumference and Quality of Life and Survival in Maintenance Hemodialysis Patients," ([doi 10.2215/CJN.2080310](https://doi.org/10.2215/CJN.2080310)) and editorial, "Association of Body Composition with Survival Among Patients on Hemodialysis" ([doi 10.2215/CJN.07950910](https://doi.org/10.2215/CJN.07950910)) will appear online on October 14, 2010.

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