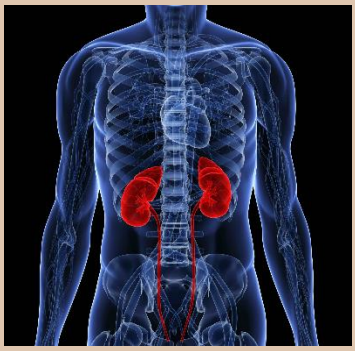
How to Protect Your Kidneys

Exercise slows kidney decline



Chronic kidney disease (CKD) means your kidneys are damaged and losing their ability to keep you healthy by filtering your blood. CKD affects more than 1 in 7 U.S. adults, an estimated 37 million Americans. Diabetes and high blood pressure are the two most common causes of kidney disease. Nearly 1 in 3 people with diabetes and 1 in 5 people with high blood pressure have kidney disease. Since early-stage kidney disease usually has no symptoms as many as 9 in 10 people who have CKD are not aware they have the disease, and many don't know they have CKD until it is very advanced.

What can we do to protect our kidneys? How can we prevent the problems that lead to kidney disease?

Abstract

- Importance: Observational evidence suggests that higher physical activity is associated with slower kidney function decline; however, to our knowledge, no large trial has evaluated whether activity and exercise can ameliorate kidney function decline in older adults.
- Objective: To evaluate whether a moderate-intensity exercise intervention can affect the rate of estimated glomerular filtration rate per cystatin C (eGFRCysC) change in older adults.
- Design, Setting, and Participants: This ancillary analysis of the Lifestyle Interventions and Independence For Elders randomized clinical trial enrolled 1199 community-dwelling, sedentary adults aged 70 to 89 years with mobility limitations and available blood specimens. The original trial was conducted across 8 academic centers in the US from February 2010 through December 2013. Data for this study were analyzed from March 29, 2021, to February 28, 2022.
- Interventions: Structured, 2-year, partially supervised, moderate-intensity physical activity and exercise (strength, flexibility) intervention compared with a health education control intervention with 2-year follow-up. Physical activity was measured by step count and minutes of moderate-intensity activity using accelerometers.
- Main Outcomes and Measures: The primary outcome was change in eGFRCysC. Rapid eGFRCysC decline was defined by the high tertile threshold of 6.7%/y.
- Results: Among the 1199 participants in the analysis, the mean (SD) age was 78.9 (5.2) years, and 800 (66.7%) were women. At baseline, the 2 groups were well balanced by age, comorbidity, and baseline eGFRCysC. The physical activity and exercise intervention resulted in statistically significantly lower decline in eGFRCysC over 2 years compared with the health education arm (mean difference, 0.96 mL/min/1.73 m2; 95% CI, 0.02-1.91 mL/min/1.73 m2) and lower odds of rapid eGFRCysC decline (odds ratio, 0.79; 95% CI, 0.65-0.97).
- Conclusions and Relevance: Results of this ancillary analysis of a randomized clinical trial showed that when compared with health education, a physical activity and exercise intervention slowed the rate of decline in eGFRCysC among community-dwelling sedentary older adults. Clinicians should consider targeted recommendation of physical activity and moderate-intensity exercise for older adults as a treatment to slow decline in eGFRCysC.

Kidney disease is not something that many of us have at the top of our list of health conditions to monitor. However, 1 in 3 adults in the US are at risk, mainly due to hypertension and diabetes and 40% of people with severe kidney disease are unaware of their condition. Rates of kidney disease are increasing in our young people due to higher rates of obesity and diabetes. Like everything else, prevention is key. How can we protect our kidneys and prevent kidney disease? This study evaluated community-dwelling elderly adults over 2 years. They were divided into two groups: one group received health education information only, and the other engaged in a partially supervised moderate-intensity exercise program. The group engaged in moderate-intensity exercise showed a significantly decreased decline in kidney function at the end of the study period. This again shows us that exercise is key to the maintenance of health and prevention of disease. As we look at the main causes of kidney disease – heart disease and diabetes, exercise again plays a key role in controlling

these conditions. This study adds to the list of reasons to start to exercise regularly or continue regular exercise habits as we age.

Shlipak MG, Sheshadri A, Hsu F, et al. Effect of Structured, Moderate Exercise on Kidney Function Decline in Sedentary Older Adults: An Ancillary Analysis of the LIFE Study Randomized Clinical Trial. *JAMA Intern Med*. Published online May 02, 2022. doi:10.1001/jamainternmed.2022.1449.