

Exercise Does a Renal-Impaired Body Good

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MedPage Today Action Points

- Explain that regular exercise improves health for chronic kidney disease patients.
- Point out that benefits of regular exercise included greater functional capacity, better blood pressure and heart rate, and a boost in health-related quality of life.

Review

Regular exercise improves health for chronic kidney disease patients, a Cochrane review affirmed.

Benefits included greater functional capacity, better blood pressure and heart rate, and a boost in health-related quality of life, according to Susanne Heiwe, PT, PhD, and Stefan H. Jacobson, MD, PhD, both of the Karolinska Institute in Stockholm.

Given this evidence, clinicians should encourage exercise training for adults with chronic kidney disease, including those with end-stage disease or people who've had a kidney transplant, they recommended in *The Cochrane Library*.

Patients with chronic kidney disease typically lose 30% or more of normal physical fitness and capacity for daily tasks because renal anemia and skeletal muscle disorder cause fatigue and inactivity that further decondition them, Heiwe and Jacobson explained.

Guidelines from the National Kidney Foundation Disease Outcomes Quality Initiative point to exercise and other lifestyle factors as "cornerstones" of treatment, especially for managing the elevated cardiovascular risk seen with chronic kidney disease.

The systematic review and meta-analysis encompassed 45 randomized controlled trials with a total of 1,863 adults with chronic kidney disease or kidney transplant recipients.

The exercise interventions lasted two to 18 months and ranged from yoga to cardiovascular conditioning to resistance training with sessions as short as 20 minutes and as long as 110 minutes.

Meta-analysis of the results of the 32 studies that could be pooled showed benefits compared with no intervention for exercises that address:

- Aerobic capacity with a standardized mean difference of 0.56, ($P < 0.00001$)
- Walking capacity with a standardized mean difference 0.48 ($P = 0.003$)
- Muscular strength with a standardized mean difference of 0.52 ($P < 0.00001$)
- Resting diastolic blood pressure with a mean reduction of 2.32 mm Hg ($P = 0.009$)
- Resting systolic blood pressure with a mean reduction of 6.08 mm Hg ($P = 0.002$)
- Heart rate with a mean increase of 6 bpm for maximum rate and a mean decrease of 4 bpm for resting rate (both $P = 0.002$)
- Blood levels of albumin with a mean decrease of 2.28 g/L ($P = 0.02$)
- Blood levels of pre-albumin with a mean decrease of 44.02 mg/L ($P = 0.002$)
- Energy intake with a standardized mean increase of 0.47 ($P = 0.03$)

Health-related quality of life results couldn't be pooled because of different instruments used to measure it, but 14 of the 18 studies showed an improvement with regular exercise training.

Benefits accrued to patients whether they were in the early stages of chronic kidney disease, on dialysis, or they had had a kidney transplant.

All types of exercise also seemed to help, but the one the reviewers recommended as most effective was four to six months of supervised, high-intensity mixed cardiovascular and resistance training with three sessions per week lasting 30 to 90 minutes.

Resistance training alone or mixed with cardiovascular exercise wasn't as well studied as cardiovascular training alone, Heiwe and Jacobson noted, and called for more focus on those types in future trials.

They cautioned that some of the studies included in the meta-analysis didn't blindly assess outcomes or use intent-to-treat analysis, which could have influenced results.

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The researchers reported having no conflicts of interest to disclose.

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Heiwe S, Jacobson SH "Exercise training for adults with chronic kidney disease"
Cochrane Database of Syst Rev 2011; 10: Art. No. CD003236.

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