

Daily hemodialysis helps protect kidney patients' hearts

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Frequent hemodialysis improved left ventricular mass (heart size) and self-reported physical health compared to conventional hemodialysis for kidney failure, according to the Frequent Hemodialysis Network (FHN) Daily Trial funded by the National Institutes of Health and the Centers for Medicare & Medicaid Services. Results were published online Nov. 20, 2010, in the *New England Journal of Medicine* to coincide with a presentation at the American Society of Nephrology meeting in Denver.

Six hemodialysis treatments per week improved left ventricular mass and physical health compared to conventional, three weekly dialysis therapy sessions. Frequent hemodialysis was also associated with improved control of high blood pressure and excessive phosphate levels in the blood, a common problem in patients on hemodialysis. There were no significant effects on cognitive performance, self-reported depression, or the use of drugs to treat anemia.

Previous observational data suggested that the dose of hemodialysis correlates directly with patient survival. However, results from the HEMO Study (<http://www.nih.gov/news/pr/dec2002/niddk-18.htm>), funded by the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK) of the NIH and published in 2002, showed no added benefit of increasing the per-treatment dose of hemodialysis in the conventional three times per week method. A few small, single-center studies found that the dialysis dose could be greatly increased by adding more dialysis sessions. Those findings led FHN researchers to test the hypothesis that almost daily treatment would improve both objective and

subjective, or patient-reported, outcomes, authors said.

"We confirmed that by administering dialysis more often, although with a smaller dose each time, we could effectively deliver a higher weekly dose overall," said Griffin P. Rodgers, M.D., NIDDK director. "As a result, patients' hearts remained healthier, they enjoyed better blood pressure control and they enjoyed better physical health than those receiving the standard three treatments per week."

The FHN Daily Trial involved 245 patients at 10 university and 54 community-based [hemodialysis](#) facilities in North America between Jan. 2006 and March 2010. Patients were randomly assigned to receive either conventional three weekly dialysis treatments or six treatments a week. The study measured two co-primary outcomes:

- Death, or change in left ventricular mass – the size of the heart's left ventricle – a sign of heart health
- Death, or change in the [physical health](#) component (PHC), compiled from the RAND-36, a patient questionnaire widely used in clinical medicine to determine how well a person feels and functions

Patients randomized to six treatments a week were more likely to undergo treatment for vascular access problems.

The FHN Daily Trial was not designed to detect differences in mortality between treatment groups. However, the study showed promising results that more frequent dialysis could be of benefit to some patients.

Provided by National Institutes of Health

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