

# Novel rehab program improves outcome for older heart-failure patients, study finds

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Heart failure (HF) - when the heart can't pump enough blood and oxygen through the body—affects approximately 6.2 million adults in the United States and is the primary cause of hospitalization in the elderly. Unfortunately, older adults with heart failure often have poor outcomes resulting in reduced quality of life, high mortality and frequent rehospitalizations.

Despite many efforts to improve the prognosis in these patients, most previous studies testing a wide range of interventions were not successful.

Scientists from the Wake Forest, Duke University and Thomas Jefferson schools of medicine tried a different approach—tailoring rehabilitation treatment to the individual and beginning it while the patient was still recovering in the hospital, which is not standard care for these older HF patients.

Using this novel approach, the researchers found that hospitalized [older patients](#) with acute [heart failure](#) had significant gains in physical function, including balance, mobility, strength and endurance, compared with those receiving usual care, regardless of their heart's squeezing ability (ejection fraction).

The findings are published in the May 16 issue of the *New England Journal of Medicine* and reported simultaneously at the annual meeting of the American Association of Cardiologists. The study was funded by

the National Institute on Aging.

"In an earlier pilot study, we had observed these patients had marked physical dysfunction, with 97% being frail or pre-frail," said the study's lead author, Dalane Kitzman, M.D., professor of cardiovascular medicine and gerontology at Wake Forest School of Medicine, part of Wake Forest Baptist Health.

"And the types of dysfunction were not commonly associated with [heart failure](#)—problems with balance, mobility and strength, as well as endurance. One-third could not get out of a chair without using their arms or other assistance and their endurance was twice as bad as similarly aged patients with HF who had not been hospitalized. We also found high rates of depression and cognitive dysfunction, which were usually unrecognized clinically."

Kitzman's team hypothesized that these patients' physical function, which was already compromised due to age and [chronic heart failure](#), worsened and was further exacerbated by their hospital experience and bedrest, and the deficits often persisted after discharge.

To test their theory, they assembled a team of physical-rehabilitation experts to develop the REHAB-HF program, which was specifically designed to meet the unique needs of these patients. The intervention began as early in the hospital stay as possible, transitioned to an outpatient facility for three sessions a week for 12 weeks, and then transitioned to exercise at home, Kitzman said.

This Phase 2 trial included 349 patients, age 65 and older, of whom more than 50% were women and nearly 50% were non-white, at seven medical centers, including four community hospitals.

At three-month follow-up, the scientists found large, statistically

significant improvements in physical function as determined through standard measurements of balance, mobility, strength and endurance. Also, rates of frailty and depression declined.

Notably, at six-month follow-up, 83% of patients were still exercising on their own, suggesting they may continue to do so long-term, Kitzman said.

However, at six months there were no statistically significant differences in clinical events such as rates of readmission for any reason, with 194 and 213 rehospitalizations occurring in the intervention group and usual care control group, respectively. Heart failure-related hospitalizations also were no different at six months. There were numerically more deaths among people in the rehab group, but this was not statistically significant and may have been due to chance.

"The study was not large enough to really look at clinical events" Kitzman said. "But by improving quality of life and physical functioning, the patient feels better, which is a positive outcome."

Provided by Wake Forest University Baptist Medical Center

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