



# Remedy for Heart Failure with Preserved Ejection Fraction

**IP Status:** Pending US Patent; **Application #:** 15/899,174

## Increases volume of left ventricle

A manufacturing and delivery process design provides a medical device that can remedy heart failure with preserved ejection fraction. The device, a three-dimensional textile structure manufactured with a superelastic wire, is delivered and attached by catheter to the left ventricle of the heart, where the superelastic textile structure provides a radial outward force on the left ventricle, increasing the volume of the left ventricle.

## Preserved Ejection Fraction Clinical Treatment

Currently, there are no clinical interventions available to treat heart failure with preserved ejection fraction, a condition where the left ventricle of the heart does not expand properly, leading to a decrease in filling volume of the left ventricle, an increase in pressure in the left ventricle and left atrium, and pulmonary edema. Some pharmacological interventions showed early promise but later failed during clinical testing, and one device remedies the symptoms but does not address the underlying problems. This new technology provides a clinical intervention to treat heart failure with preserved ejection fraction.

### BENEFITS AND FEATURES:

- Treats heart failure with preserved ejection fraction
- Superelastic textile structure provides radial outward force to ventricle
- Three-dimensional textile structure
- Delivered and attached by catheter

### APPLICATIONS:

- Remedy for heart failure with preserved ejection fraction
- Designing three-dimensional textile structures to provide desired mechanical performance

**Phase of Development** - Conceptual model and early design specifications.

### Researchers

Andrew Khair, PhD

*Alumni Innovation Fellow, Medical Devices Center*

[External Link](http://www.mdc.umn.edu) (www.mdc.umn.edu)

Julianna Abel, PhD

*Assistant Professor, Mechanical Engineering*

[External Link](http://www.me.umn.edu) (www.me.umn.edu)

### Publications

[Hierarchical architecture of active knits](#)

*Smart Materials and Structures*, 1 November 2013, Vol 22, Num 12

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20170160

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