

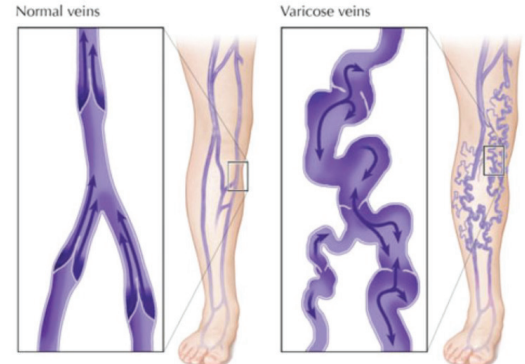
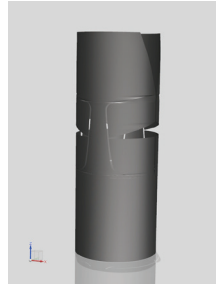
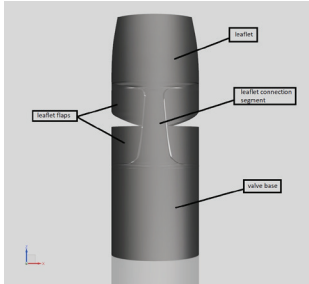


# Prosthetic Venous Valve

BYU #2018-002

## DESCRIPTION

The technology consists in a prosthetic valve that can be implanted in the veins of the legs to replace lost valve function due to varicose veins or related medical issues. The valve is normally open, producing extremely low rates of shear for blood flow through the valve and is expected to have very low rates of thrombosis.



## PROBLEM SOLVED

Chronic Venous Insufficiency (CVI) is a disease of the lower limbs that affects millions of people in the US. It is categorized by constant venous hypertension, which can lead to swelling of the legs, pain, skin changes and ulcers. One of the widely known symptoms that can lead to CVI is varicose veins. The main source of the problem of CVI is incompetent venous valves. Many prosthetic venous valves have been made, but none are clinically used because of problems with biocompatibility, thrombogenicity caused by high shear rates, and longterm functionality that has been hindered by leaflet stiffening. The invention has the potential to overcome these challenges as it is designed to be made out of carbon-infiltrated carbon nanotubes (CI-CNTs), a material that has been proven to be thrombo-resistant, biocompatible and durable.

## KEY ADVANTAGES

- » It has the lowest shear rate induced by a prosthetic venous valve
- » It closes under low reverse pressure, similar to real venous valves

**Offer:**  
License  
Exclusive  
World Wide  
All Fields of Use

## APPLICATIONS

The invention has the potential to be an effective treatment for CVI.

**IP Status:**  
Patent Pending

### Lead Inventors



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