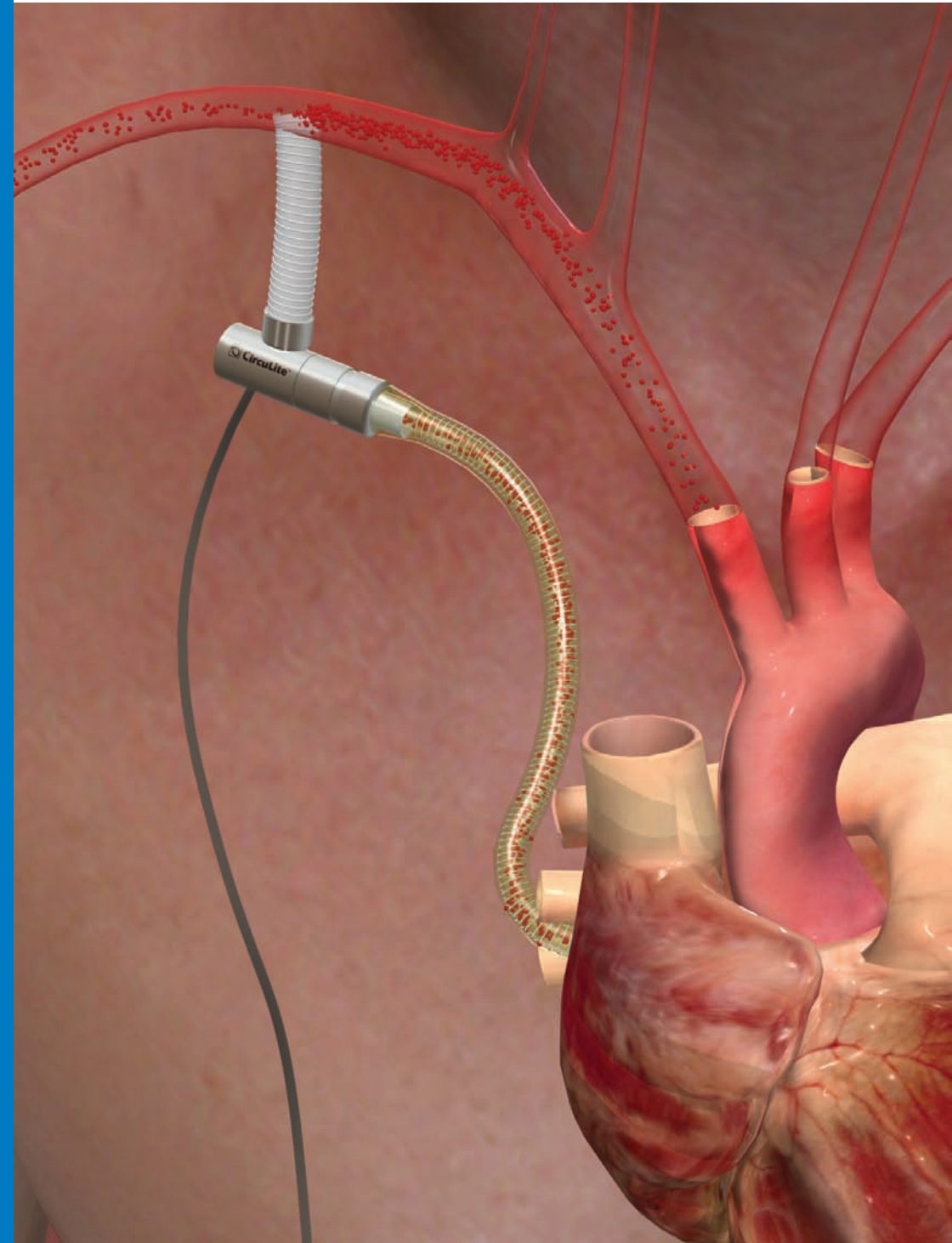


# Synergy<sup>®</sup> Breakthrough Pocket Micro-pump

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**Helping heart failure patients  
to improve quality of life.**

# Synergy<sup>®</sup>

## Pocket Micro-pump

“CircuLite’s Synergy device is truly needed and has the potential to significantly improve the quality of life of millions of chronic heart failure patients.”

BARTLEY GRIFFITH, M.D.

Chief of the Division of Cardiac Surgery and  
Director of Heart and Lung Transplantation, University of Maryland

The Synergy<sup>®</sup> Pocket Micro-pump represents a new approach to mechanical circulatory support that can transform chronic heart failure management by providing a less-invasive, elective treatment option for patients before their disease state becomes emergent. Synergy is the first and smallest implantable system specifically designed to provide partial circulatory support (PCS) for long-term use in patients that have NYHA Class IIIb/early IV disease.

CircuLite’s micro-pump provides up to 3L/minute of flow, which increases total cardiac output and off-loads the heart, allowing it to rest and potentially enabling beneficial recovery of heart function. The device is small enough to be implanted subcutaneously in a “pacemaker-like” pocket through a minimally invasive procedure.



**The Synergy<sup>®</sup> Pocket Micro-pump is the world’s smallest implantable blood pump in clinical evaluation at a weight of only 25g.**

## SYNERGY ADVANTAGES

- Synergy’s small size accommodates superficial and minimally invasive implantation of the device
- The Synergy device, placed in an elective procedure, is intended for chronic heart failure patients who are failing other options, but are not compromised to the point where insertion of a full support VAD is justified
- Synergy’s innovative design and simplified implantation procedures allow cardiothoracic surgeons to implant the device in approximately 90 minutes with potentially less risk and enabling a faster patient recovery

## FEATURES

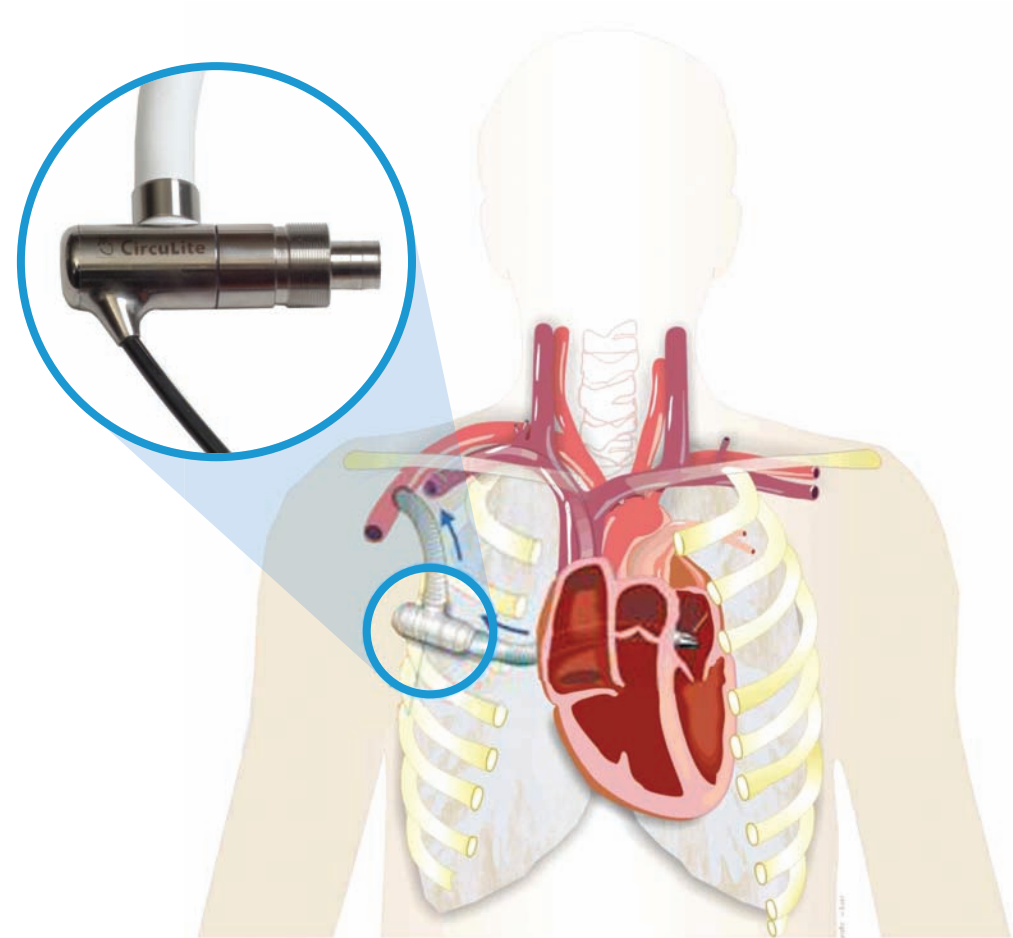
- World's smallest implantable blood pump (25g)
- World's first superficially implanted micro-pump, designed to be placed without cardiopulmonary bypass or sternotomy
- World's smallest percutaneous lead
- Designed to supplement native cardiac output
- Designed to pump up to 3L/minute for partial circulatory support (PCS)
- Designed for long-term support
- Magnetically and hydrodynamically stabilized rotor design
- Lightweight, rechargeable dual battery pack system (average power 14 hours)

## POTENTIAL BENEFITS

- Increases total cardiac output and off-loads the heart, allowing it to rest and potentially enabling beneficial recovery of heart function
- Potential for physicians to treat a larger proportion of heart failure patients
- Improvements in quality of life
- Implantation is minimally invasive and involves an approximate 90 minute procedure, which can potentially lower risk and lead to rapid patient recovery
- Small percutaneous lead facilitates exit site healing to minimize the risk of infection
- Underlying intrinsic cardiac output provides fail-safe mechanism

## SYNERGY IMPLANTATION PROCEDURE

### MINI-THORACOTOMY



**Synergy is designed to be implanted via a minimally invasive mini-thoracotomy.**

- Implantation is currently achieved through a mini-thoracotomy to place the inflow cannula in the left atrium
  - Inflow cannula is placed into the left atrium and the outflow graft is anastomosed to the subclavian artery
  - Micro-pump is placed in the "pacemaker-like" pocket and connected to the inflow and outflow cannulae

## IDEAL PATIENT

### The type of patient ideally suited for Synergy:

- Class IIIb or early Class IV heart failure
- Suffers from compromised quality of life
- Symptomatic despite optimal medical therapy (including pharmaceuticals and cardiac resynchronization therapy)
- Ambulatory, though often house-bound
- Frequent hospitalizations for management of heart failure symptoms
- Disease is manageable without continuous inotropic support
- Retains some intrinsic cardiac output (typically >2.5L/minute)
- Retains reasonably normal end-organ function



*The first patient in the Synergy clinical trial experienced a quick recovery, significant improvements in quality of life, and sustained improvements in hemodynamics.*

“The Synergy device is very simple to implant with a minimally invasive surgical procedure that takes 1-1.5 hours. The real beauty of this device is that it has an immediate impact that patients can actually feel and they are typically ambulatory the next day.”

ANDRÉ SIMON, M.D.

Managing Doctor, Thoracic Transplant Program  
Hannover Medical School, Hannover, Germany

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