

**Project title:** Biohybrid venous valve implant for minimally invasive therapy of chronic venous insufficiency - BioV<sup>2</sup>alve

**Partner:** Meotec GmbH, ITP Innovative Tomography Products GmbH, Universitätsklinikum Aachen

**Duration:** 02/2019 – 01/2022

**Funding Agency:** European Regional Development Fund North Rhine-Westphalia (EFRE.NRW)

**Univ.-Prof.**  
**Prof. h.c. (Moscow State Univ.)**  
**Dr.-Ing. Dipl.-Wirt. Ing.**  
**Thomas Gries**  
Director

**Caroline Emonts**  
Researcher

Ref.: CE  
**26.09.2019**

### Mission Statement

The aim of the BioV<sup>2</sup>alve project is the biological reconstruction of the vein valve function by a biohybrid, textile-reinforced, minimally invasive implantable device.

Chronic venous insufficiency (CVI) of the legs is one of the most common diseases in adults in the western population with considerable socio-economic significance. The insufficiency of the venous valves disrupts the return of blood to the heart and leads to local overpressure in the venous system of the legs. The current therapies are symptomatic and do not treat the complications but the cause.

### Approach

The use of a biodegradable magnesium-based stent structure, which dissolves into the surrounding tissue after the venous valve has healed, enables a gentle therapy with little permanent introduction of material into the body. The valve structure is reinforced by a knitted fabric. By using the body's own cells, the necessary physiological haemocompatibility and immunological integrity is achieved.

### Acknowledgement

The project "BioV<sup>2</sup>alve" (EFRE-0801315) is funded by the European Regional Development Fund North Rhine-Westphalia (EFRE.NRW).



EUROPÄISCHE UNION  
Investition in unsere Zukunft  
Europäischer Fonds  
für regionale Entwicklung



EFRE.NRW  
Investitionen in Wachstum  
und Beschäftigung

---

### Contact

Caroline Emonts  
Tel.: 0241/80 23470  
E-Mail: [Caroline.Emonts@ita.rwth-aachen.de](mailto:Caroline.Emonts@ita.rwth-aachen.de)