

Memorthotic

Individually fitted easily donned compression garments with resilient mechanical properties

Muhammad Farhan, Sarai Herrmann, and Victor Izraylit
Institute of Active Polymers at Helmholtz-Zentrum Hereon



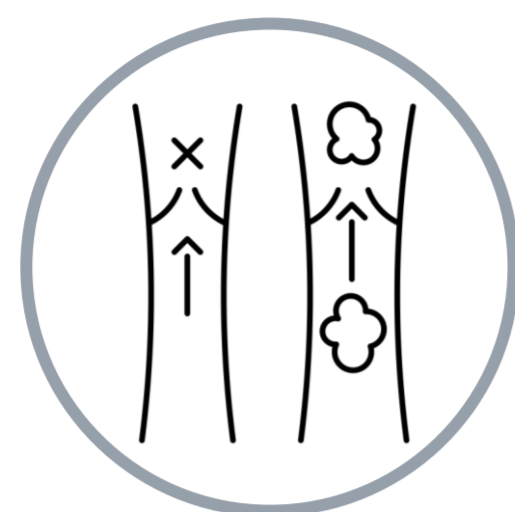
Helmholtz-Zentrum
hereon

Financed through: Helmholtz Impuls- und Vernetzungsfonds, Helmholtz Enterprise, POF

Problems with circulation



18.2 Mn
Oedema

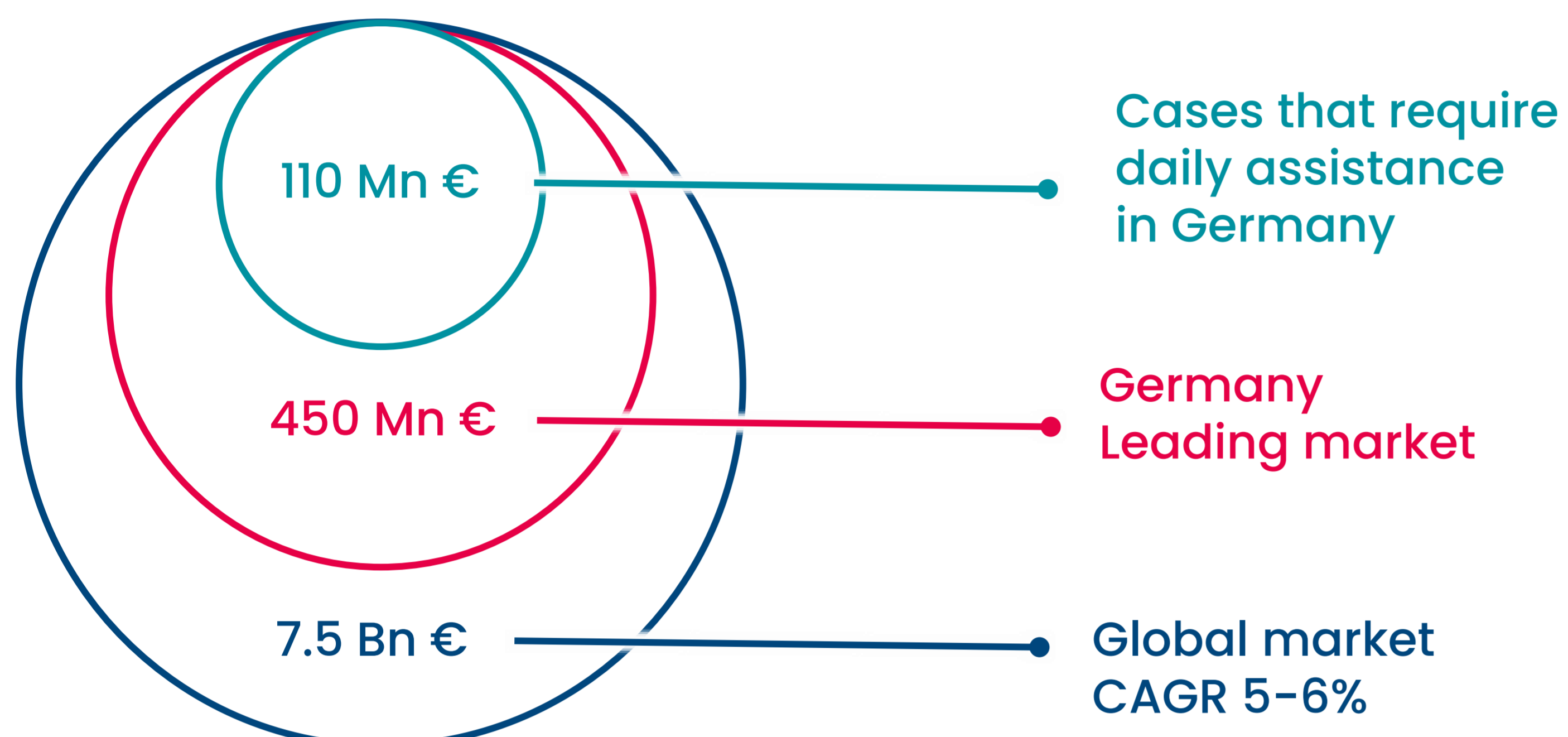


1.3 Mn
Deep vein thrombosis



0.75 Mn
Pregnancy

Compression stockings market



Patient non-compliance



6.2 Mn
Total patients receiving therapy



4 Mn
Give up on wearing



2.3 Mn
Disease progression

Reasons for non-compliance



Bad fit / discomfort



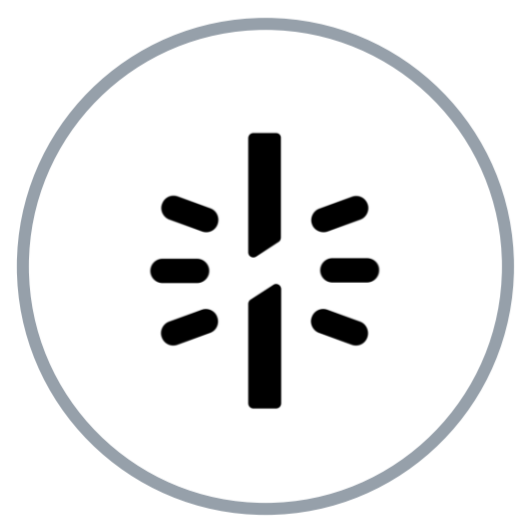
Difficult to pull on and off



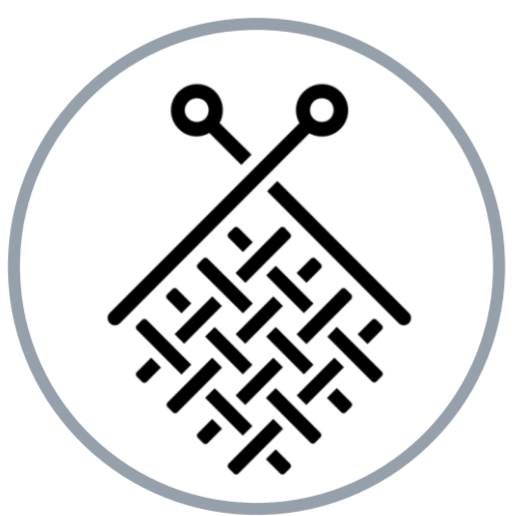
Ineffective therapy

Secondary costs 5 Bn €

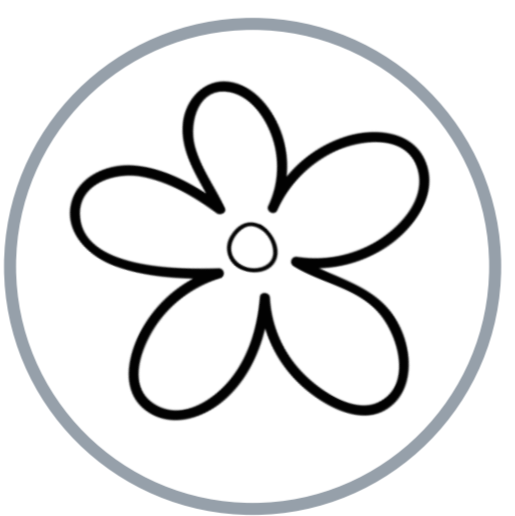
State of the art



Rubber fibers rupture on overextension

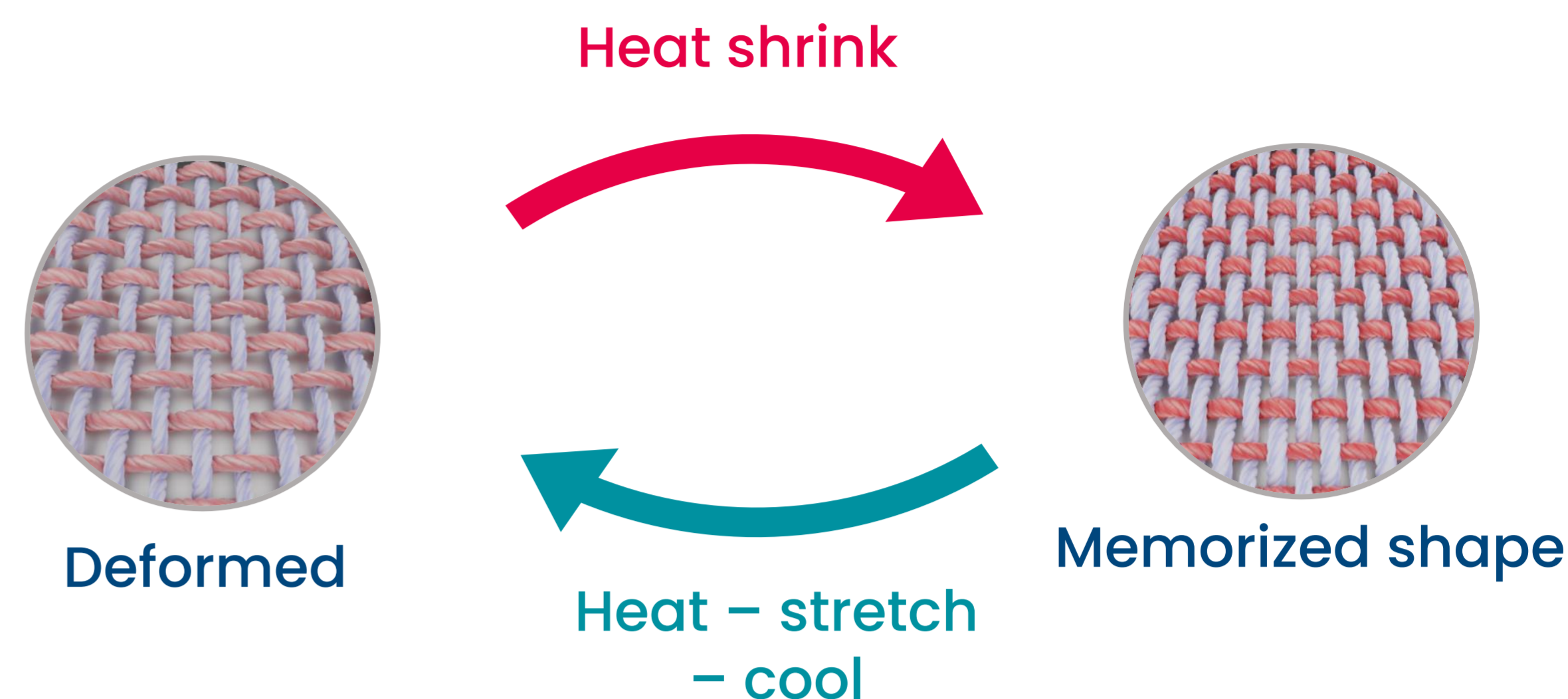


Innovations in knit, not constituent materials

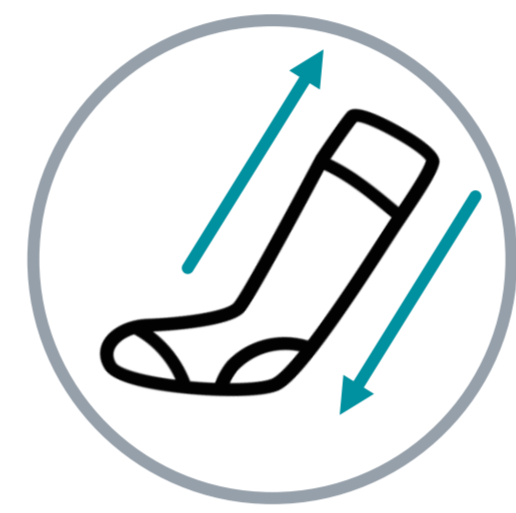


Latest innovation - lovely pattern

Technology - shape-memory polymers



Value proposition



Easier to pull on and off



Each model individually fitted



Resilient compression

Simplified pulling on



Pull on at room T



Heat shrink



Apply heating device

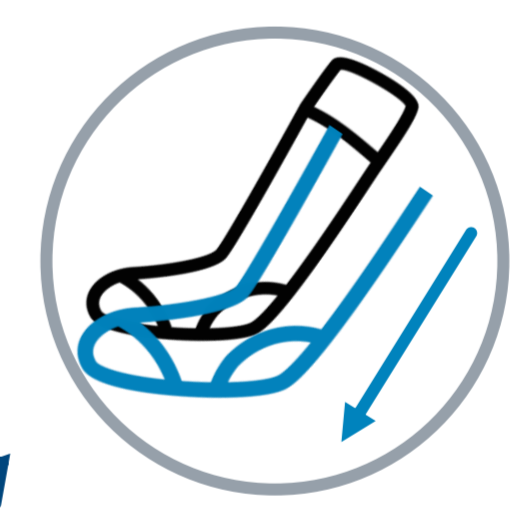


Remove heating device

Simplified pulling off



Apply facilitating device



Remove stocking with device

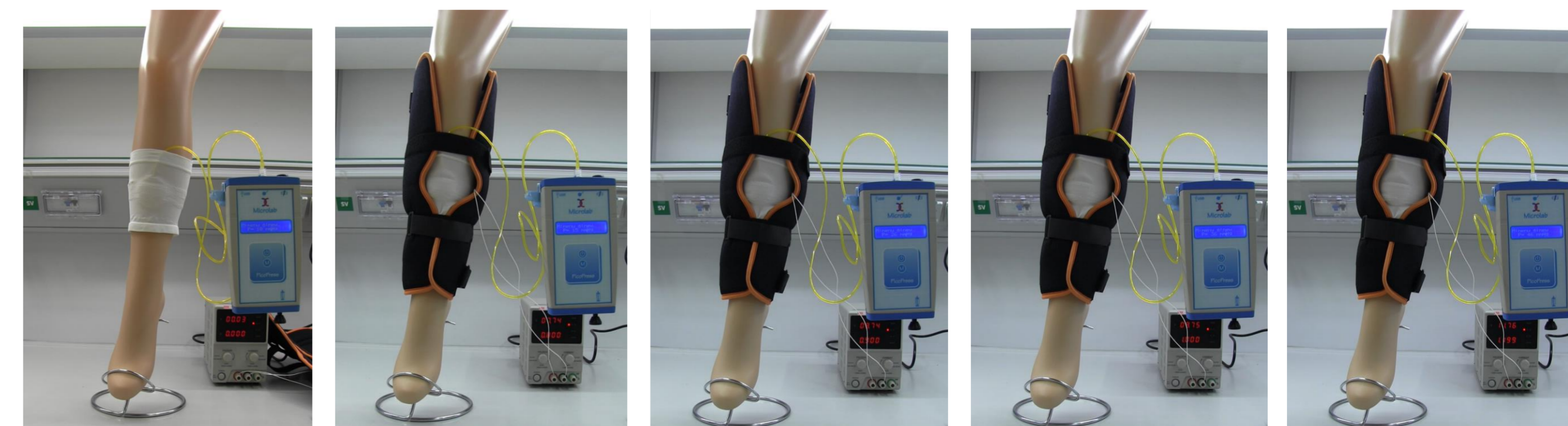


Loosen stocking



Store stretched

Prototype



22 °C 10 mmHg 40 °C 15 mmHg 50 °C 26 mmHg 60 °C 36 mmHg 70 °C 46 mmHg



HELMHOLTZ Information

Vivantes

Helios