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AktiSup – Method for the application and integration of novel strain-stiffening structures in bandages

Problem / Motivation

- Frequent occurrence of ankle injuries caused by twisting an ankle in sport
- Athletes want to be able to utilise the full range of motion in the ankle joint and at the same time to be protected from twisting their ankle and the resulting injuries
- Significant restriction of freedom of movement in the ankle joint due to orthopaedic aids currently available on the market or their unsuitability for wearing in shoes
- Need for a new type of orthopaedic aid for the ankle joint

Solution

- Combination of the advantages of conventional braces and orthoses maintaining full mobility in the ankle joint while preventing twisting
- Integration of stretch-stiffening elements in a brace or compression stocking
- Negligible resistance of the structure to stretching up to a critical point, stiffening of the structure once the critical point is reached and subsequent blocking of further movement
- Adjustment of the critical point to the foot position from which further movement would become unphysiological

Project Launch

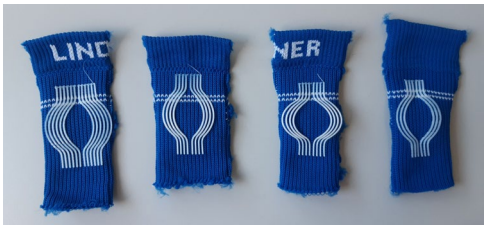
11/2022

Project Partner

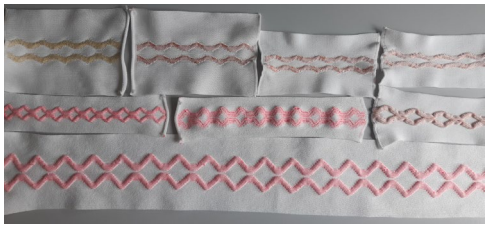
Orthopädietechnik Wolf GmbH

Ruprecht-Karls-Universität Heidelberg

Strumpfwerk Lindner GmbH



Strain-stiffening structures: 3D-printed at Heidelberg University



Strain-stiffening structures: flat knitted at STFI

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