

PoDePro – Development of a sustainable innovative padding system for obese people with integrated decubitus prophylaxis

Problem / Motivation

- Overweight and obesity are becoming increasingly prevalent worldwide, especially with advancing age
- Consequences include pressure ulcers (decubitus) and poor sleep quality
- Current bedding systems are mostly made of non-sustainable foams and are not recyclable
- The aim is to develop sustainable, foam-free mattresses with a monitoring system to detect critical lack of movement



Solution

- Development of a modular system consisting of monofilament mats and spacer fabrics with varying degrees of hardness
- Integration of a sensor layer made of polymer optical fibre sensors (POF)
- Development of an application technology for the reclining system
- Validation and creation of recommendations for pressure ulcer prevention in obese patients

Project Launch

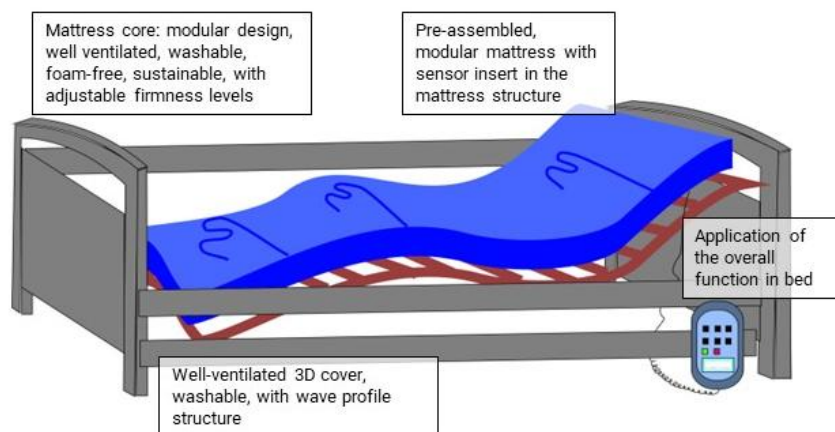
05/2025

Project Partner

Brändl Textil GmbH

Sanitätshaus Augustin GmbH

Charité Berlin – Klinik für Geriatrie und Altersmedizin



Schematic representation of the nursing bed demonstrator with foam-free mattress modules



Supported by:



on the basis of a decision by the German Bundestag

Acknowledgement

We would like to thank the Federal Ministry for Economic Affairs and Energy for funding the research project PoDePro (Reg. No. 16KN120329) within the funding programme "Zentrales Innovationsprogramm Mittelstand (ZIM)".