

## ADAPTIVE ANTI-DECUBITUS-SUPPORT-DEVICE I

**System:** An adaptive tissue with pressure-controlled stiffness and integrated sensors

### Functional principle:

The aim of the adaptive storage system is the prevention of bedsores (decubitus). Crucial for this function is the avoidance of constant long-time compression of the skin and a dedicated stimulation of susceptible skin areas. The used support system realizes an adequate stiffness (for supporting the patient) but also a specific compliance (for distributing and reducing the pressure to the skin). This can be achieved by adjustable stiffness using integrated sensor and actuator technologies, as shown in the figure below. By measuring the pressure distribution and a corresponding increase or decrease of the pneumatic pressure in the actuators, harmful pressure peaks can be reduced to prevent bedsores.

#### passive support

static soft bedding



alternating pressure support



basal stimulation



#### active support

pressure detection



dedicated soft bedding



dedicated stimulation



detection of pressure distribution



### Characteristics and advantages:

- support for decubitus risk assessment by measuring the pressure distribution
- efficient adaptation to the patient independent of his position and his weight through pressure-controlled stiffness
- measurement and reduction of forces acting on the patient
- modular design with different resolutions

### Application:

- main goal is a preventive human health protection through decubitus prophylaxis

Gefördert durch:



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des Deutschen Bundestages