

# **Armeo®Spring**

# **MANOVO®SPRING**

The ManovoSpring was specifically designed for training grasp and release movements in patients with impaired hand functions. The combination of the ManovoSpring with the ArmeoSpring is the only solution for repetitive, self-initiated reach and grasp training with arm weight support in a large 3D workspace. It simultaneously incorporates the entire arm and hand, from shoulder to fingers, and thereby assures the most efficient and functional rehabilitation training.



# PHYSIOLOGICAL HAND MOVEMENT SUPPORT

The adjustable spring mechanism of the ManovoSpring was specifically designed to counteract the high tone of the flexor muscles and to support the weaker extensor muscles. In each stage of hand opening it brings in a physiologic amount of force needed to open the hand while coupling finger and thumb movements. Thereby, also patients who show only limited active movement in their fingers can participate in intense, repetitive hand movement exercises.<sup>1</sup>

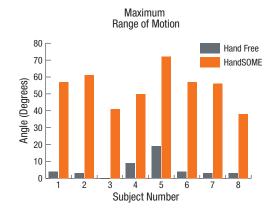
## **MOTIVATING EXERCISES**

An extensive library of motivating game-like Augmented Performance Feedback exercises has been designed to train core movement patterns that are commonly used in activities of daily living. The ManovoSpring (in combination with the ArmeoSpring) captures the patient's active hand movements and facilitates repeated training of reach and retrieval movements.



## **SCIENTIFIC RESULTS**

The ManovoSpring was developed in close collaboration with research partners. In pilot trials with the research prototype of the ManovoSpring (HandSOME device), stroke patients showed a large increase in opening and closing of the hand (see graph) as well as an increased ability for grasping of objects.<sup>1</sup>



# PART OF THE ARMEO® THERAPY CONCEPT

The ManovoSpring is part of the unique and modular Armeo Therapy Concept, the world's first upper extremity concept that covers the whole "Continuum of Rehabilitation" with one software platform throughout a range of devices, each developed for a specific stage of rehabilitation – from early rehabilitation to long-term recovery.

#### REFERENCE

1 Brokaw EB, Black I, Holley RJ, Lum PS. Hand Spring Operated Movement Enhancer (HandSOME): a portable, passive hand exoskeleton for stroke rehabilitation. IEEE Trans Neural Syst Rehabil Eng. 2011 Aug;19(4):391-9. Epub 2011 May 27.

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