Erigo

Background
In rehabilitation of patients with spinal cord injury, stroke or other neurological conditions, early mobilisation is important. A specific and target-orientated rehabilitation strategy improves the process of recovery significantly while reducing the negative effects of immobility.

Aims
The aim of the project was to modify an existing robotics-assisted tilt-table therapy device (Erigo) by implementation of force sensors and a cognitive feedback system. This should allow physiological loading of patients, as well as guided training and objective testing, thus improving target-orientated rehabilitation.

Methods
Technical development and validation was carried out to implement the new functionality. The implementation of the exercise-intensity control system and the newly designed protocols for cardiopulmonary rehabilitation was tested successfully.

A further study is investigating the influence of different tilt-table settings on the physiological reaction of subjects undergoing constant work load exercise. It is also testing the quality of automatic work load control with preset physiological loading. Clinical applicability will be evaluated in a pilot study with patients shortly after stroke, in collaboration with Reha Rheinfelden.

Publications