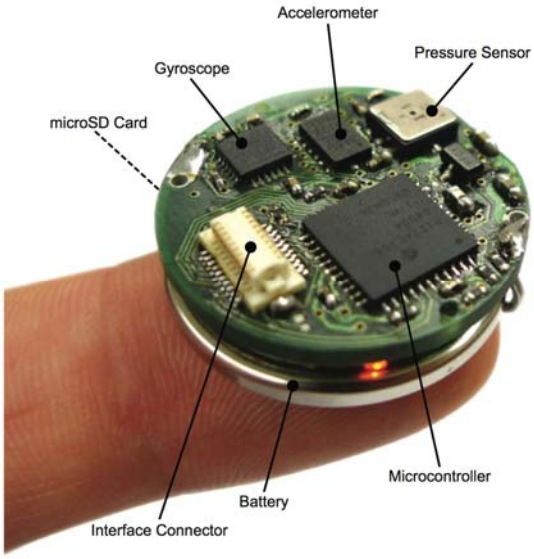
UNIVERSITY
CHILDREN'S HOSPITAL
ZURICH

Rehabilitation Centre
Affoltern am Albis

Monitoring Everyday Life Motor Activity in Children (MELMAC)



Background: It is known that motor activity closely correlates with cardiovascular health. Moreover it is suggested by animal research that an increased activity also leads to an improved motor rehabilitation. So far, activity is usually registered with the help of questionnaires or diaries and in the case of children, these are often filled in by parents. This leads to biased and inaccurate data. With the help of small wearable sensors (accelerometers, gyroscopes, pressure sensors, magnetometers) we hope to improve accuracy and validity of unobtrusive activity monitoring.

Goal

- To validate sensor data with collected video recordings and to develop specific algorithms to automatically extract specific movements and to analyze long-term sensor recordings.
- To perform a cross-sectional study to assess intensity, task-specificity and duration of upper and lower limb activity during rehabilitation. There, we aim to gain objective information about levels and types of activity during rehabilitation in relation to age, gender and disorder.
- To conduct a responsiveness study to assess whether or not the sensor output is able to highlight changes over time during rehabilitation.
- To conduct a second cross-sectional study to assess differences in activity patterns during stationary stay at the rehabilitation facility and activity patterns at home in a familiar environment.

Project onset

June 2013

Project members

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Cooperating partner

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Sponsor

- Children's Research Center Zurich