

# Physical activity behaviour during inpatient rehabilitation treatment

What, how, who and where? A deeper understanding of patterns of physical activity behavior during inpatient rehabilitation treatment.

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## Background

Although enhancing physical activity behaviour (PA) is important to improve physical and cognitive recovery, patients are relatively sedentary during inpatient rehabilitation treatment.

## Objectives

To explore PA patterns and perform an in-depth contextual analysis of the PA of patients during inpatient rehabilitation treatment.

## Methods

Patients determined eligible to participate:

- admitted for inpatient rehabilitation treatment in Basalt
- sufficiently ambulant (Functional Ambulation Classification (FAC) > 4)
- not having severe aphasia, sensory or cognitive problems.

The assessment (accelerometry and behavioural mapping) of PA took place during one day between 7.00 - 22.00 hours.

### Accelerometry

PA was continuously assessed by means of tri-axial Activ8 with 60s epoch length attached to the frontside of the upper leg.



The Activ8 yields:

- walking, standing, cycling and running were quantified as % active PA
- lying down and sitting were quantified as % sedentary PA.



### Behavioural mapping

Patients were observed every 20 minutes by trained students while performing daily routines. Four categories were scored, the:

- 1) patient's position
- 2) the social context/ who was present
- 3) type of activity
- 4) the location.

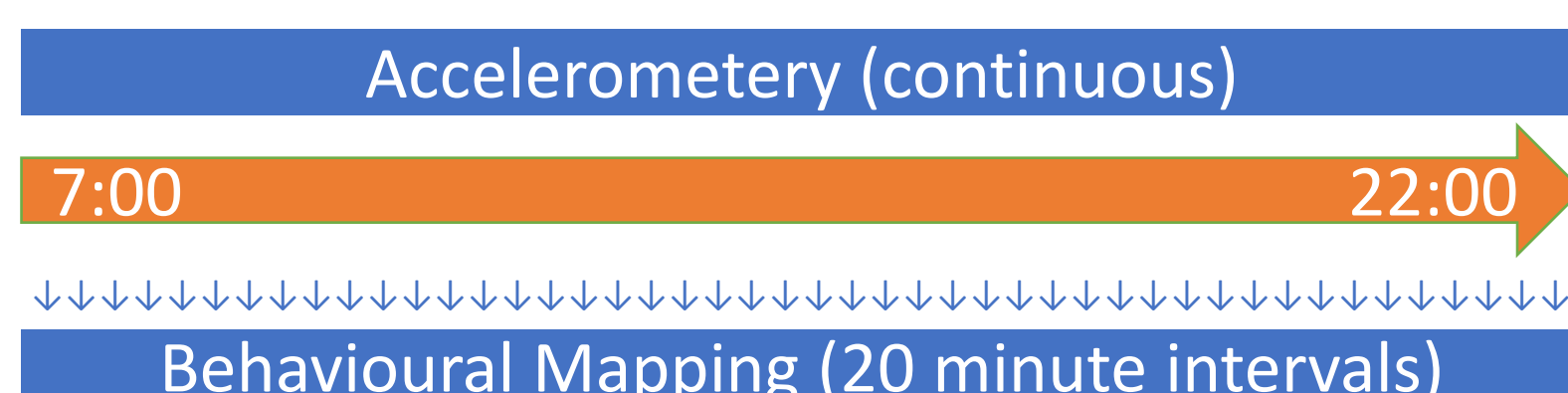
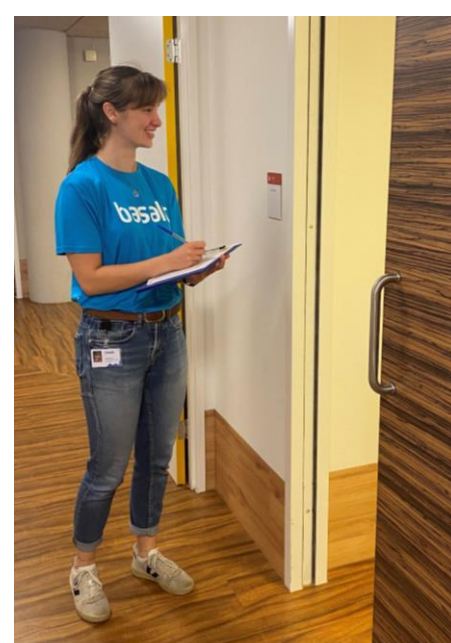


Figure 1. Methods accelerometry and behavioral mapping combined.

## Results

Fifteen participants were eligible and willing to participate. N=13 (87%) were male, median age was 65 years, n=7 (47%) used a walking aid, n=4 (27%) partly used a wheelchair. N=10 (67%) stroke patients, n=3 (20%) spinal cord injury and n=2 (14%) other diagnosis.

### Active versus sedentary time

Continuous accelerometry showed the median (IQR) time of patients being:

- active was 19% (15%-26%)
- sedentary was 81% (74%-85%).

### Where and with who?

During the behavioural mapping of the fifteen participants 569 observations were completed out of 665 (86%) expected observations.

Patients were mostly alone when observed (54% (IQR 50%-61%)) and in their own room (50% (IQR 46%-59%)).

The figure below provides insight in active versus sedentary behaviour in combination with the social and physical context.

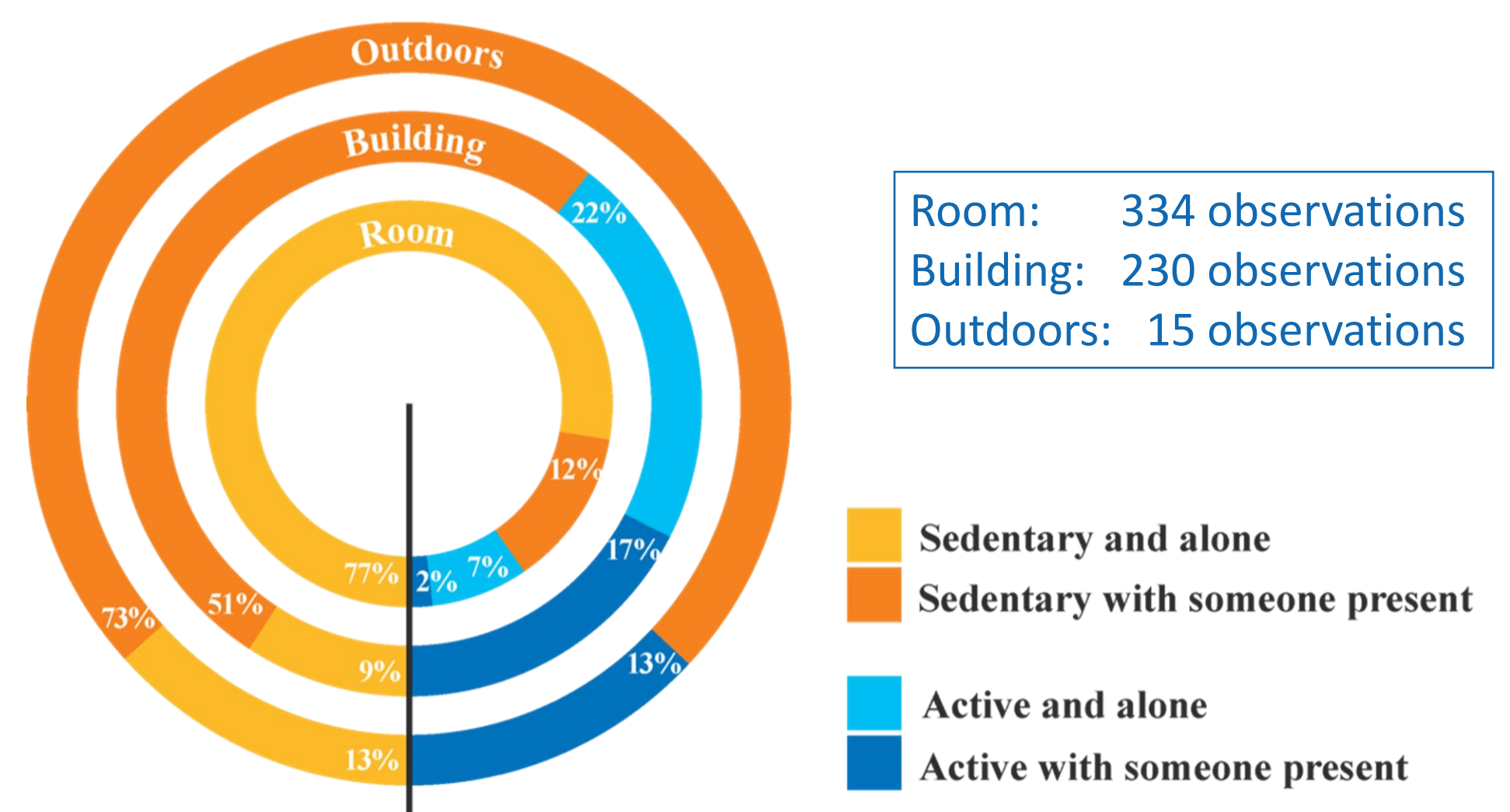


Figure 2. Stacked pie charts of patient room, building (patient room excluded) and outside the building showing physical activity behavior and being alone or with someone measured with behavioral mapping.

Sedentary behaviour outside the patient room is mostly observed in the presence of another person (51% inside building, 73% outside building), whereas sedentary behaviour inside the patient room is mostly observed alone (78%).

## Discussion and Conclusion

The combination of accelerometry and behavioural mapping shows a deeper understanding of the daily PA patterns during inpatient rehabilitation treatment.

### Clinical message

Deeper insight in the context of PA behaviour provides a basis to improve PA behaviour in an inpatient rehabilitation setting, for example by facilitating social support to enhance PA.

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