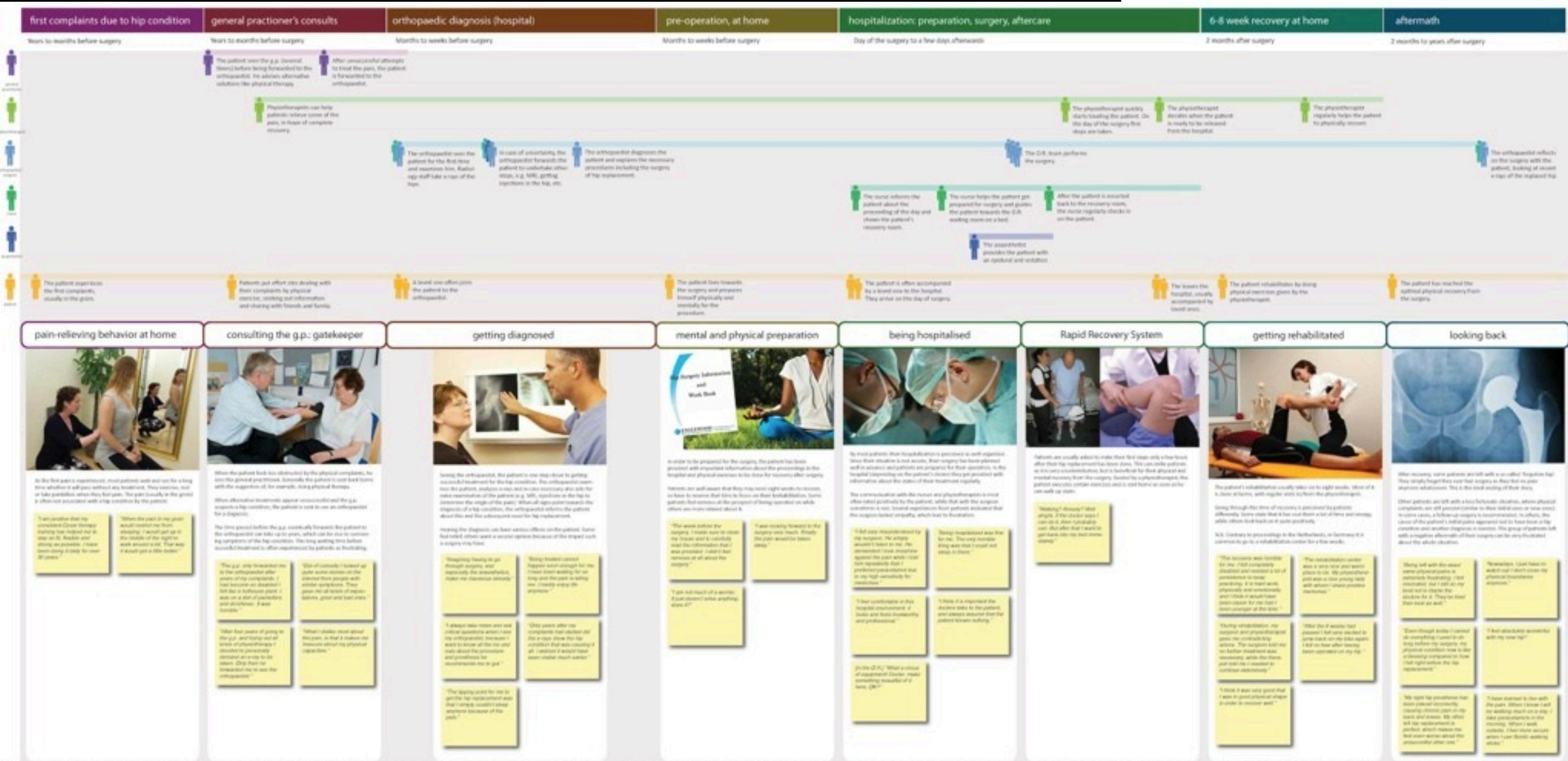


# Patient recovery: Self-management

Final presentation  
Tommie Varekamp



# Patient recovery



<sup>1</sup>Exploring interactions: explore perspectives of different stakeholders and design opportunities (20 MSc. students, 1 semester)

HING

## EVALUATION

**Patient journey: optimizing the sociotechnical system around the patient (hip replacement as case study)?**

Smart Hips: range of motion, custom made prostheses

Mood states, physical activity, sensors, smart home, PhD project Jaan Limney

Patient Lifestyle: mental and physical habits

Patient Lifestyle: mental and physical habits



# Patient recovery

The anaesthetist provides the patient with an epidural and ventilation.

being hospitalised

### Rapid Recovery System

getting rehabilitated

## looking back



# Hospital - Days



# Recovery at home

-

# Weeks to months



Recovery at h

Weeks to mo



**ome**

**nths**

The communication with the nurse and physiotherapist is most often rated positively by the patient, while that with the surgeon negatively is not. Inward expressions from patients indicated that the surgeon lacked empathy, which lead to frustration.

During this time of recovery is perceived by patients differently. Some state that it has not been a lot of time past surgery, while others look back on it quite positively.

Ask countries to provide visas to the Netherlands, or Germany, if a passport is going to a rehabilitation center for a few weeks.

Other patients go to bed with a low-back trauma, whose physical complaints are still present, leading to sleep-related or stress-related insomnia. A follow-up surgery is recommended. In others, the cause of the patient's initial pain appeared not to have been a hip condition and another diagnosis is needed. This group of patients left with a negative attitude of their surgery can be very frustrated about the whole situation.



# Current situation

## **Patient concerns:**

- When should I stop and rest?
- Should I exercise more?
- How far should I go?
- How did I perform this day?

**Unawareness or doubts about personal limits and progress**





# Design goal



**To support the self management of patients:**

“Create awareness about the personal progress and limits of patients while taking into account the role of the physiotherapist”

# Interaction vision



Feel the satisfaction of pushing your limits with small steps at the time



# Interaction vision



Feel the satisfaction of pushing your limits with small steps at the time



**Qualities:**  
Personal  
Subtle  
Supportive  
Evocative

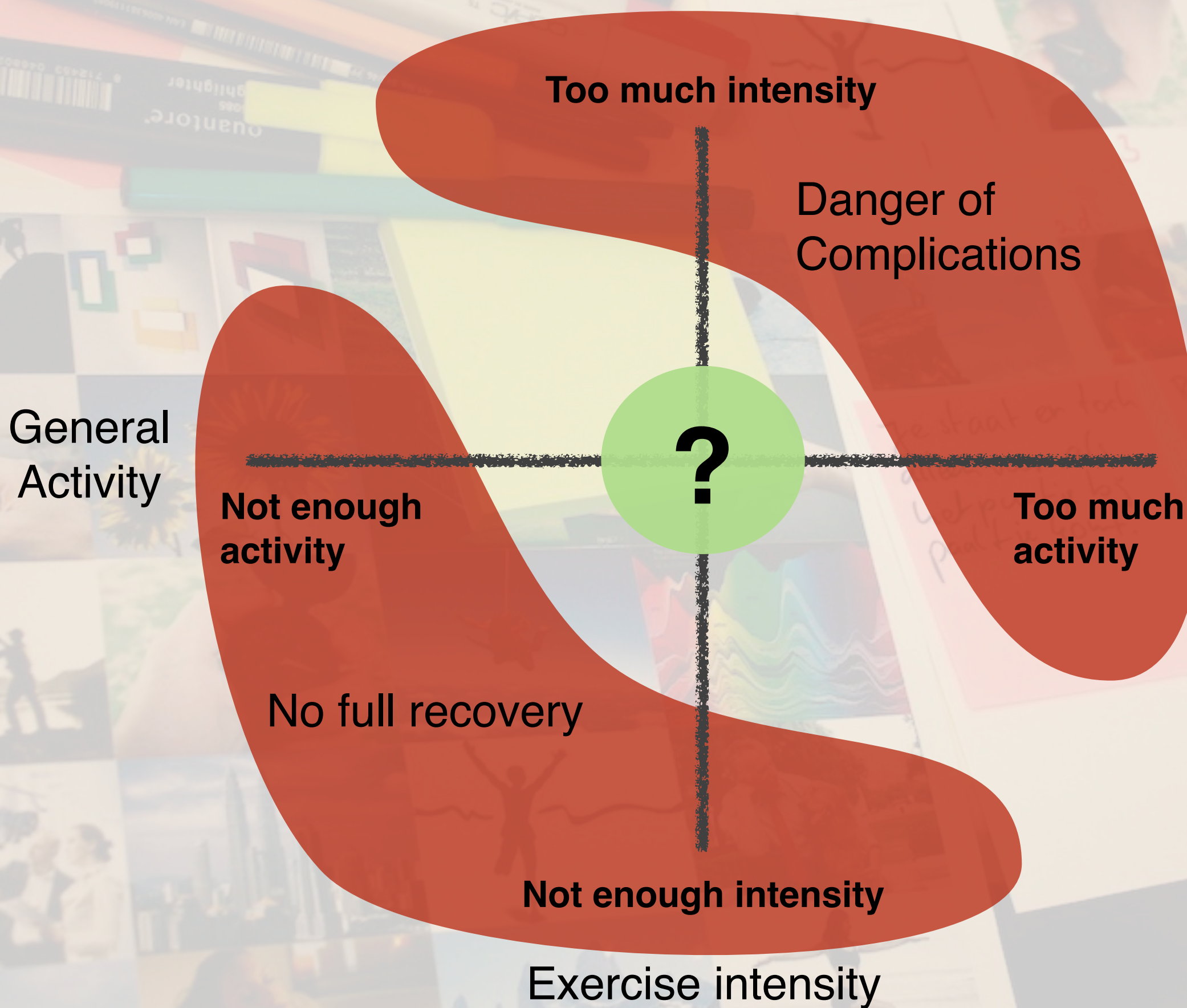


# Design & research findings





# Design & research findings





# Design & research findings





# Design & research findings

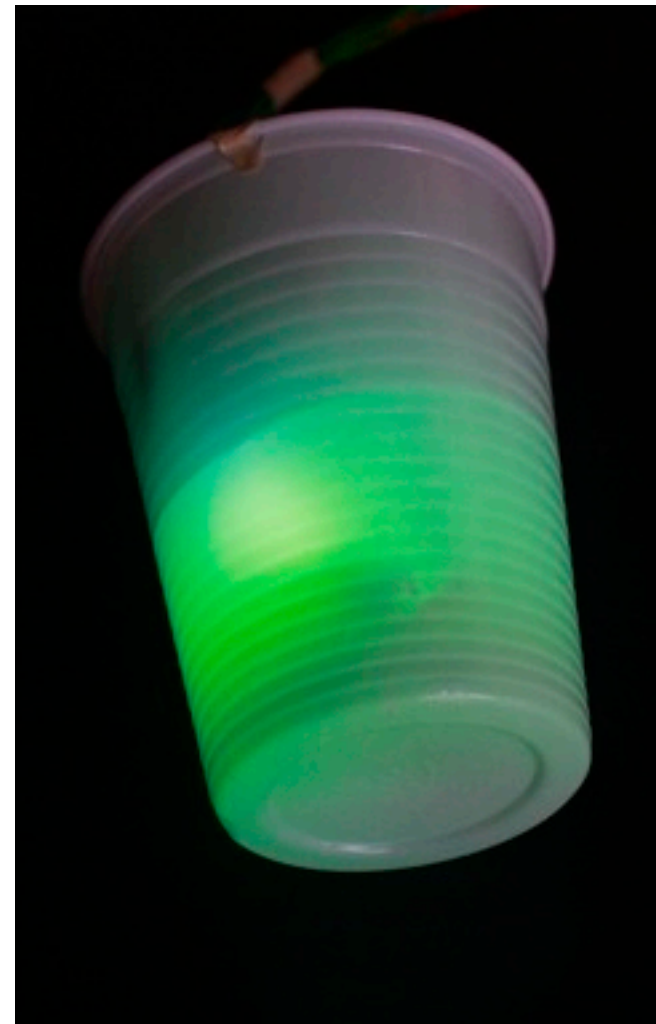
## Conclusions:

- Different kind of pulses to attract attention
- Warmth and tactility of the material are important aspects





# Design & research findings

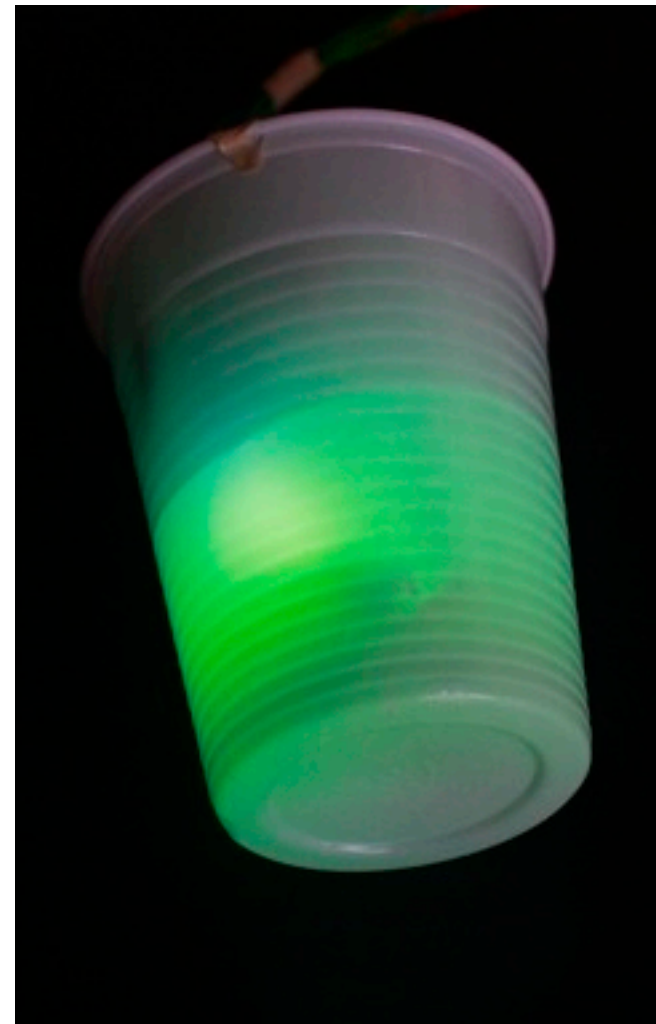




# Design & research findings

## Conclusions:

- One shape that can be hold in different ways
- Color feedback can be explained in different ways.





# Final design



## Components:

Measuring sensors are integrated in the support stockings

Wearable clip provides feedback to patients

Clip and sensors are wirelessly connected



# Interaction movie

# Final design

## Clip:

Feedback is provided by a combination of light and vibration.

Can be placed in different ways on the body.

Thin enough to be placed under clothing.

Size and shape fits the hand palm in different positions

Exercise cards are used to keep track of progress and for information





# Evaluation study





# Evaluation study

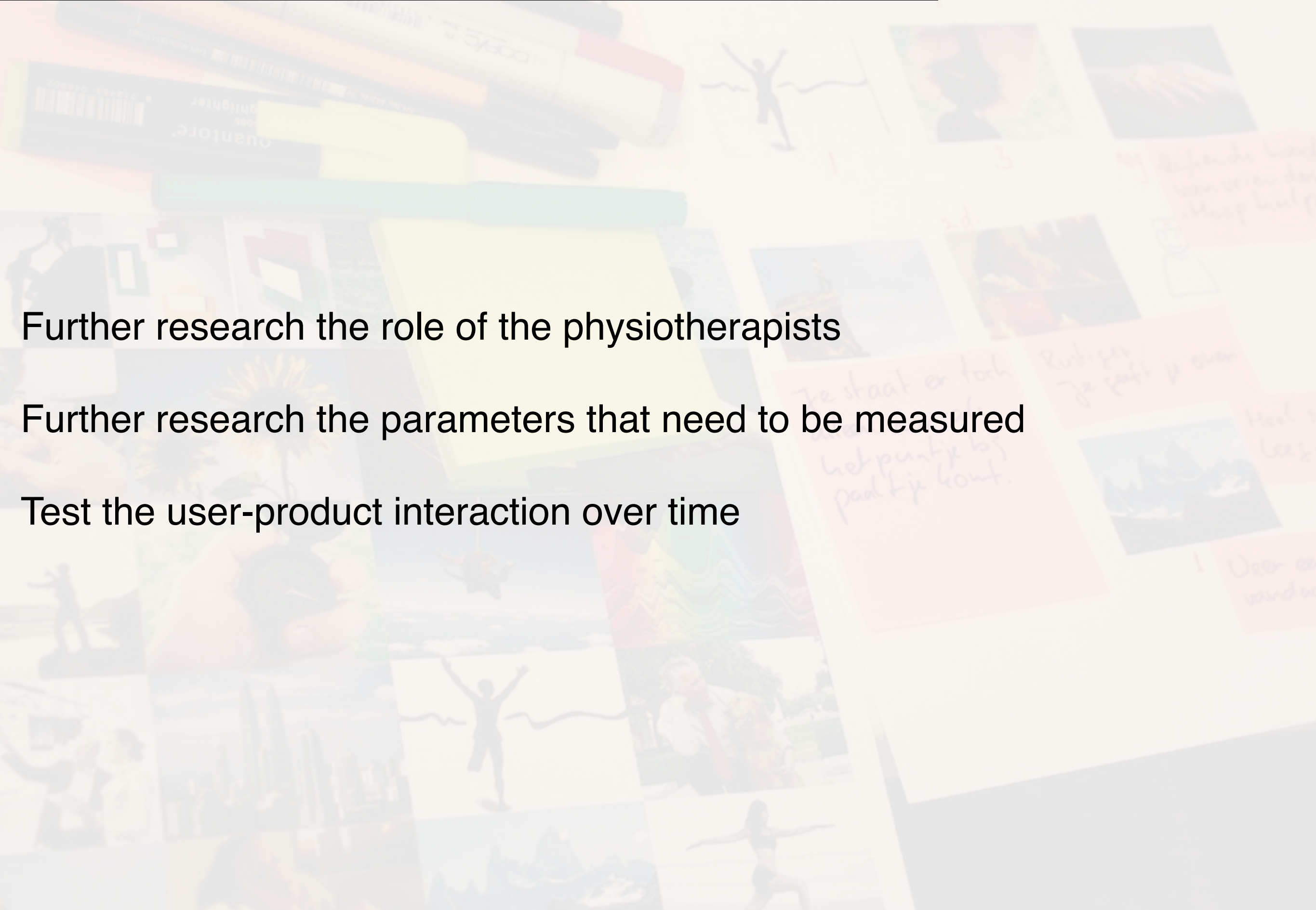
## Conclusions:

- All participants related the product behavior to the correct meaning.
- Clear was valued over subtle.
- All feedback was considered positive.
- Own responsibility was considered important and a must.





# Further recommendations



Further research the role of the physiotherapists

Further research the parameters that need to be measured

Test the user-product interaction over time