

16. November 2024 | Wankdorf, Bern  
**First Swiss PPIE Symposium**

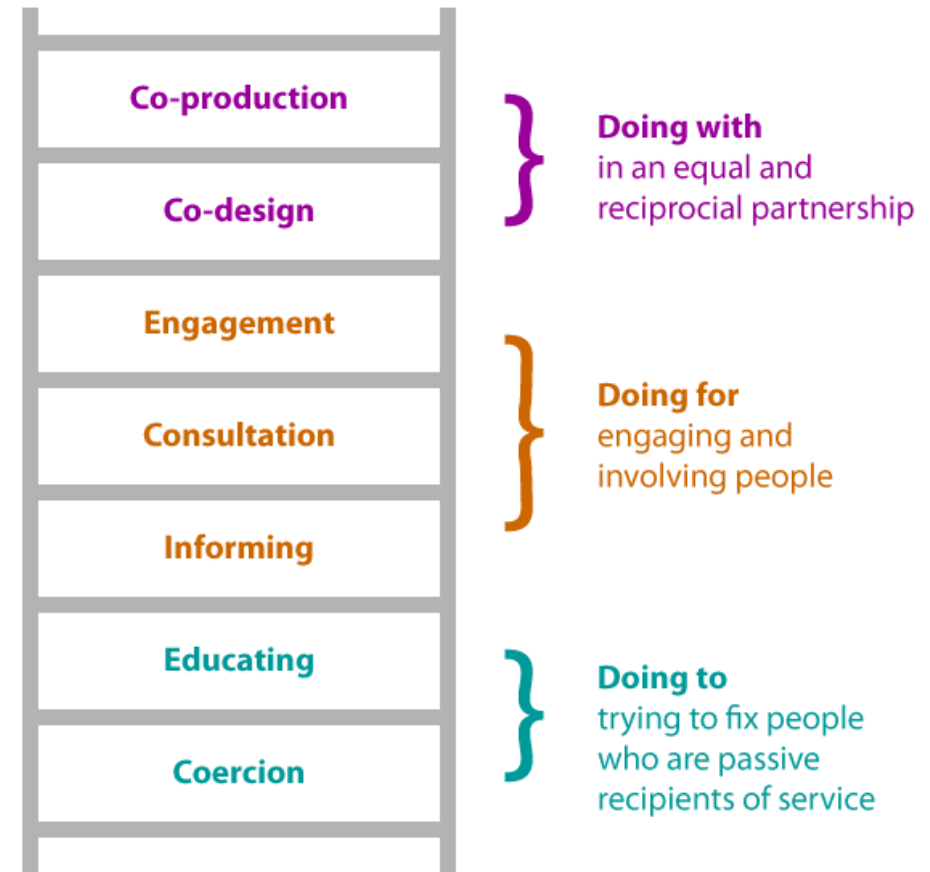
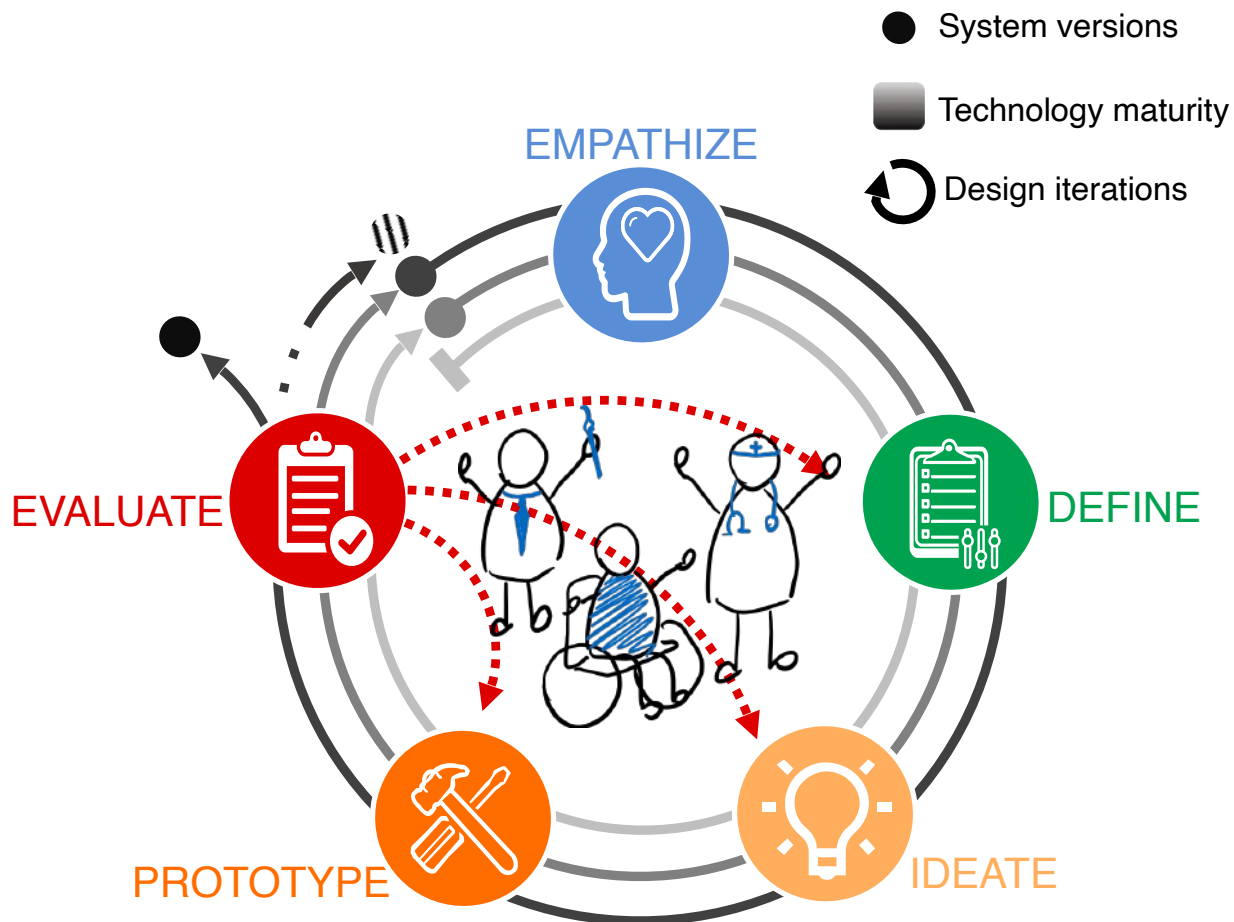


# PPIE in Rehabilitation Engineering Research *Examples and Challenges*

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# Our Approach: User-Centered Design (UCD) to ensure we develop with and not only for our end-users



Ladder of Co-production, TLAP

[Norman 1988, ISO 9241-210:2019, Shah & Robinson 2007, Blanco et al. 2016, Bird 2021]

# Active promotion of stakeholder participation through workshops, focus groups, interviews, and user tests



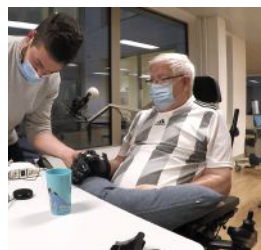
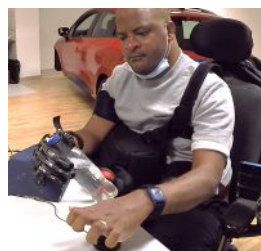
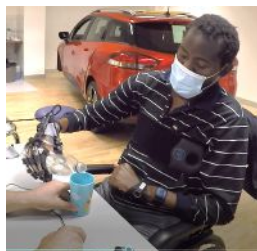
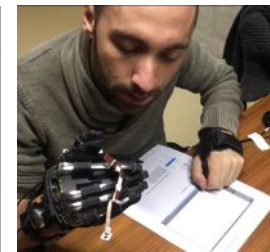
# User Involvement and Evaluation

## *Usability and functional increase in a person with tetraplegia (sub C5)*



**RELab tenoexo**

# With each user test, we learn more about the diversity of user needs, and the resources required for UCD



Credits to T. Bützer, J. Dittli, J. Gantenbein, S. Stulz, S. Hofer, P. Bühler, M. Kuhn & many more

# Co-Development with a Person with Spinal Muscular Atrophy

## *MiAssiSt system in daily use for over three years*

[www.patient-innovation.com](http://www.patient-innovation.com)



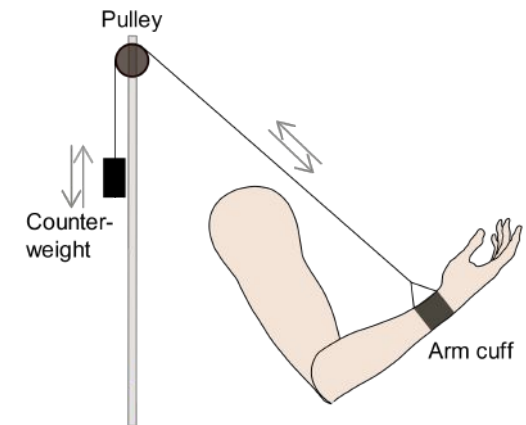
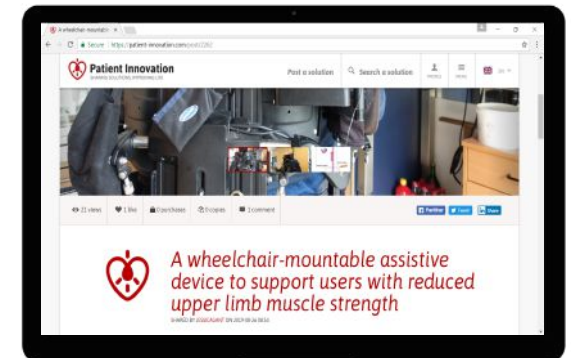
Without support



Passive support



Active support



Co-Creation and dissemination

# SWISS+NEUROREHAB – an Innosuisse Flagship program

## Partner overview & challenges



- PPIE has become increasingly important throughout the first half of the project, but no resources allocated, many aspects already fixed and delays with ethics and contracts
- Patient input during consortium meetings requires empowered and “super” patients

# PPIE in Rehabilitation Engineering Research

## *The Challenges*

- Many stakeholders (patients, family, caregivers, therapists, doctors, public)
- Many constraints imposed by funding instruments
  - Duration of research projects/funding is limited (typically 3–5y)
  - Often combine device development (long iteration cycles) and clinical evaluation
  - Most agencies don't demand PPIE (one exception: SNSF IICT)
- As the number of research partners increases, implementing PPIE becomes increasingly difficult
  - many parts of project are fixed at beginning, various delays (e.g. ethics, contracts)
  - PPIE is resource-intensive, and often no dedicated resources are allocated
- A large part of PPIE in research happens at the “doing for” rather than the “doing with” level (requires PPIE-educated and “super patients” [bias?])





**Thank you for your attention!  
I look forward to the discussion.**

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