Stroke Survivors' Perspectives For Assistive Exoskeleton Development E. Swinnen[1], R. Claeys[1], E. Embrechts[1,2], A. Bourazeri[3], S. De Raedt[4], C. Moeyersons[1], B. Filtjens[5,6], T. Verstraten[7], D. Beckwée[1,2]. *Gerontechnology* 25(s*)*

1.Rehabilitation Research Group (RERE), Vrije Universiteit Brussel, Brussels, Belgium; 2.MOVANT, University of Antwerp, Antwerp, Belgium; 3.School of Computer Science and Electronic Engineering, University of Essex, Colchester, UK; 4.Neurology Department, Universitair Ziekenhuis Brussel, Brussels, Belgium; 5.E-Media Research Lab, KU Leuven, Leuven, Belgium; 6.Department of Engineering Systems and Services, Delft University of Technology, Delft, The Netherlands; 7.Robotics and Multibody Research Group, Vrije Universiteit Brussels, Brussels, Belgium.

Purpose Recent data indicate that about 7.4% of adults aged 60 years and older are living with the long-term consequences of stroke, highlighting its significant impact on ageing populations worldwide [1]. Assistive lower-limb exoskeletons (LLEs) hold significant potential to support stroke survivors in improving physical performance and independence. To ensure these devices genuinely meet end-user needs, it is crucial to involve individuals with lived experience early in the development process. This study aimed to (1) explore the impact of fatigue on daily life, (2) identify activities and situations that could benefit from LLE support, (3) outline user-driven design and usability requirements for home-based applications, and (4) define relevant physical parameters that LLEs should monitor and evaluate. **Method** Using the PERCEPT co-design methodology [2], four individuals living with chronic stroke participated in three intensive focus group sessions, each lasting approximately two hours. The discussions were thematically analyzed to extract key insights and design priorities [3]. **Results and Discussion** Participants identified fatigue as a major limiting factor in daily functioning, emphasizing the importance of technologies that can reduce physical exhaustion. LLEs were perceived as promising tools to enhance muscle strength, coordination, balance, and general mobility, while also supporting fatigue management. Key design requirements highlighted by participants included modularity, battery efficiency, comfort, ease of donning and doffing, and practical integration into daily routines. The findings provide user-centered insights into the expectations and usability considerations of stroke survivors regarding assistive LLEs, forming a foundation for the continued development of effective and accessible exoskeleton technologies.

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Affiliation: Rehabilitation Research Group (RERE), Vrije Universiteit Brussel, Belgium
Email: eva.swinnen@vub.be
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