



Personal Details

Name	Tabea Aurich (-Schuler)
Position	Clinical Research Associate Pediatric Rehab Research Group, Therapist robotics for lower extremity
Academic Position	MSc ETH, Human Movement Scientist
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Graduate

- 2008-09 MSc ETH in Human Movement Sciences, Major in Motor Learning & Motor Control
- 2003-08 BSc ETH in Human Movement Sciences, ETH Zurich, Switzerland

Scientific & Clinical Interests

- Physiology underlying locomotion and „Gehen verstehen“ (nach Kirsten Götz-Neumann)
- Clinical gait and movement analysis
- Effectiveness of therapeutic interventions in children
- Development of clinical guidelines and concepts
- Implementation and clinical application of robot devices

Memberships

- ALUMNI Human Movement Scientists, ETH Zurich
- GAMMA (Gesellschaft für die Analyse Menschlicher Motorik und ihre klinische Anwendung)

Scientific Reviewer for

- Journal: Clinical Biomechanics
- Journal: Gait and Posture

Awards

- 2014: Second Place, Anna Müller Grocholski Prize, Swiss Association of Pediatric Rehabilitation for the work: “Practical recommendations for robot-assisted treadmill therapy (Lokomat) in children with cerebral palsy: indications, goal setting, and clinical implementation within the WHO-ICF framework” authored by Tabea Aurich (-Schuler), Birgit Warken, Judith Graser, Thilo Ulrich, Ingo Borggraefe, Florian



Heinen, Andreas Meyer-Heim, Hubertus van Hedel and Sebastian Schröder

- 2009: Poster Award, Clinical Research Day, Children's University Hospital Zurich, Switzerland: Virtual Realities as motivational tools for the gait training in the pediatric Lokomat

Publications

Peer-reviewed articles:

- Tabea Aurich (-Schuler), Rob Labruyère. Is there a relationship between an increase in kinematic freedom in the Lokomat and the ability to elicit a physiological muscle activity pattern? An explorative study to detect differences between Guidance Force, Path Control and FreeD. Journal NeuroRehabilitation, submitted March 2019.
- Tabea Aurich (-Schuler), Anja Gut, Rob Labruyère. The FreeD module for the Lokomat facilitates a physiological movement pattern in healthy people – a proof of concept study? Journal of NeuroEngineering and Rehabilitation 2019;16:26.
- Tabea Aurich (-Schuler), Fabienne Grob, Hubertus J.A. van Hedel, Rob Labruyère. Can pediatric Lokomat therapy be improved? An adaptive clinical trial comparing Guidance Force, Path Control and FreeD. Journal of NeuroEngineering and Rehabilitation 2017;14:76.
- Tabea Aurich (-Schuler), Birgit Warken, Judith Graser, Thilo Ulrich, Andreas Meyer-Heim, Ingo Borggraefe, Florian Heinen, Hubertus van Hedel, Sebastian Schroeder. Practical recommendations, including (neuro-) orthopedic aspects, for robot-assisted treadmill therapy (Lokomat®) in children with cerebral palsy – indications, goal setting, and clinical implementation within the WHO-ICF framework. Journal Neuropediatrics 2015; 46(4):248-60.
- Tabea Aurich(-Schuler), Roland Müller, Hubertus van Hedel. Leg surface electromyography patterns in children with neuro-orthopedic disorders walking on a treadmill unassisted and assisted by a robot with and without encouragement. Journal of NeuroEngineering and Rehabilitation 2013 10:78.
- Tabea Schuler, Karin Brüttsch, Roland Müller, Andreas Meyer-Heim, Hubertus van Hedel. Virtual Realities as Motivational Tools for Robotic Assisted Gait Training in Children: A Surface Electromyography Study. NeuroRehabilitation 2011; 28: 401-411.
- Brüttsch Karin, Schuler Tabea, König Alexander, Zimmerli Lukas, Mérillat (-Koencke) Susan, Lünenburger Lars, Riener Robert, Jäncke Lutz, Meyer-Heim Andreas. Influence of Virtual Reality Soccer Game on Walking Performance in Robotic-Assisted Gait Training for Children. Journal of NeuroEngineering and Rehabilitation 2010 Apr 22;7:15.
- Borggraefe Ingo, Klaiber Mirjam, Schuler Tabea, Warken Birgit, Schroeder Sebastian Alexander, Heinen Florian, Meyer-Heim Andreas. Savety of robotic-assisted treadmill therapy in children and adolescents with gait impairment: a bi-center survey. Developmental Neurorehabilitation 2010;13(2):114-9.

Book chapters:

- Hubertus J.A. van Hedel and Tabea Aurich (-Schuler). Clinical application of rehabilitation technologies in children and youths undergoing neurorehabilitation. Neurorehabilitation Technology, 2. Edition, Springer 2016. Editors: Reinkensmeyer, David J., Dietz, Volker.



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Affoltern am Albis*

- Alberto Esquenazi, Irin C. Maier, Tabea Aurich Schuler, Serafin M. Beer, Ingo Borggraefe, Katrin Campen, Andreas R. Luft, Dimitrios Manoglou, Andreas Meyer-Heim, Martina R. Spiess, and Markus Wirz. Clinical Application of Robotics and Technology in the Restoration of Walking. Neurorehabilitation Technology, 2. Edition, Springer 2016. Editors: Reinkensmeyer, David J., Dietz, Volker.
- Irin C. Maier, E.B. de Haller, Serafin M. Beer, Ingo Borggraefe, Katrin Campen, Andreas R. Luft, Dimitrios Manoglou, Andreas Meyer-Heim, Tabea Schuler, and Markus Wirz. Transfer of Technology into Clinical Application. Neurorehabilitation Technology. Springer 2012 Editors: Volker Dietz, Tobias Nef and William Zev Rymer.

Supervised Master Thesis ETH, Human Movement Sciences, Health Sciences and Technology:

- Short-term effects of the Lokomat FreeD module on gait-related balance in young patients. Submitted 2018 by Mirjam Grylka.
- The FreeD module for the Lokomat: Does it enable hip and trunk muscle activation patterns similar to treadmill walking. Submitted 2017 by Anja Gut.
- How can robot-assisted gait training in pediatric rehabilitation become more active? Submitted in January 2016 by Fabienne Grob.
- Changes in leg muscle activity of children with neurological gait impairments when reducing the guidance force while walking in a driven gait orthosis. Submitted in June 2013 by Nina Stebler
- Effects of two different locomotion trainings on balance in children with central gait disorders. Submitted in March 2012 by Corinna Gerber.
- Durchführbarkeit und funktionelle Verbesserung durch funktionelle Elektrostimulation während des Gehens auf dem Lokomat bei Kinder mit zentralen neurologischen Bewegungsstörungen. Vorgelegt von Daniela Rutz im August 2010.
- Immediate Effects of a Robotic assisted Gait training on Balance skills in Children with Cerebral Palsy. Submitted in May 2010 by Esther Keller.