ABSTRACT

Improving walking after stroke will necessarily require detailed understanding of the processes underlying neural plasticity, better measurement of the neural pathways and substrates contributing to walking and better measurement and understanding of the motor control and biomechanics of walking. This knowledge and its translation into clinically effective interventions will be crucially facilitated by development of a theory-based measurement framework that includes quantitative measures.

Discussion will focus predominantly on quantitative measurement of coordination (e.g., appropriate independence of muscle timing) and biomechanics (e.g., propulsive ground reaction force generated by the paretic leg) of hemiparetic walking and how such measures may inform efforts to identify responders and non-responders to specific interventions.

ABOUT DR. KAUTZ

Dr. Kautz is the Chair for the Department of Health Sciences and Research at the Medical University of South Carolina. Over the past 12 years, he has been PI (or Co-PI) of 16 different awards in stroke rehabilitation totaling more than $7 million. He is well-published and widely recognized as an expert in applying biomechanical and neurophysiological principles to understand the coordination of movement in persons with post-stroke hemiparesis.