



Scientific/Educational Workshop

Workshop information

Workshop responsible :

Casey Kandilakis

Workshop title :

Making Strides in Neurological Rehabilitation Using Exoskeleton Technology

Workshop goals :

1. Present a current evidence based and experiential symposium on robotic Exoskeleton use for persons with a variety of neurological diagnoses (SCI, GBS, MS, CVA, ABI).
2. Present and discuss results from clinical studies in the USA and Europe.
3. Present and discuss the future role and impact of exoskeleton technology on physical, health and wellness outcomes for persons with neurological insult.
4. Provide "hands on lab" for participants with an Exoskeleton.

Abstract :

Powered Exoskeletons are being implemented in rehabilitation hospitals across the world as both a clinical intervention tool and mobility device for persons with neurological insult. This symposium will present a variety of Exoskeletons, patient characteristics, mobility results, and concurrent changes to secondary conditions following their use. Exoskeletons have the potential to provide enhanced therapeutic options in the clinic as well as improved function, mobility and quality of life when used in the home and in the community.

A review of current exoskeleton technologies and evidenced based results for persons with extremity weakness due to a neurological diagnoses will be covered. The State-of-the-Art published and unpublished data that reflect changes in secondary outcomes that affect overall physical health and wellness will be reported. Safety concerns, fall prevention techniques and associated issues will also be addressed.

Outcome measures will include timed walking, gait kinetics and kinematics, muscle activation strategies/patterns while walking on varied indoor surfaces and outdoor terrains, bowel and bladder function, pain, spasticity, body mass, cardiorespiratory and metabolic responses to walking. Results on a wide range of neurological diagnoses (SCI,MS,GBS,CVA, ABI) will be reported. Advanced device strategies such as car transfers, floor transfers and community walking will also be presented.

A "hands on lab" will take place during this symposium to allow participants to manage the parts an Exoskeleton device, with potential for some participants to walk in the device. Finally an open and interactive discussion will take place regarding the future role and impact of Exoskeleton technology in the field of neuro-rehabilitation.

Speakers :

Casey Kandilakis

Sophie Gammie

Eva Sobonova