

6th International Conference and Expo on

Novel Physiotherapies, Physical Rehabilitation and Sports Medicine

August 19-20, 2019 London, UK

Powered exoskeleton and spinal cord injury

Shih-Fong Huang

Taipei Veterans General Hospital, Taiwan

For spinal cord injury individuals, lack of upright mobility not only cause physical problems but also affect the psychological well-being and quality of life.

The feasibility and safety of powered exoskeleton in spinal cord injury individuals had been proved by many studies. In spinal cord injury individuals, the highest injury level for rehabilitation facility use is C7, and the highest level for community use is T3. Since exoskeletons provide external support and are equipped with motors, energy cost of upper limbs is reduced. However, assistive-devices and active control of center of mass are still needed to maintain balance and initiate steps.

The trunk control ability of user is one of the notable factors contribute to the success of walking with powered exoskeleton. According to the design, the motor level of SCI individuals is important to balance control of exoskeleton-assisted walking. Spinal cord injury individuals with lower injury level was likely to achieve significantly greater speed and to have shorter learning curve.

Consider the potential and the development of gait training with exoskeleton in clinical rehabilitation and personal use, investigation focus on SCI users with different balance control ability is important. Powered exoskeleton is safe and can assist spinal cord injury individuals who have lower limb paralysis/paresis to perform functional activities including stand-up, walk, and sit-down. Gait pattern improvement in individuals with functional motor preservation below the level of injury was demonstrated after exoskeleton gait training.

shihfongh@yahoo.com

Notes: