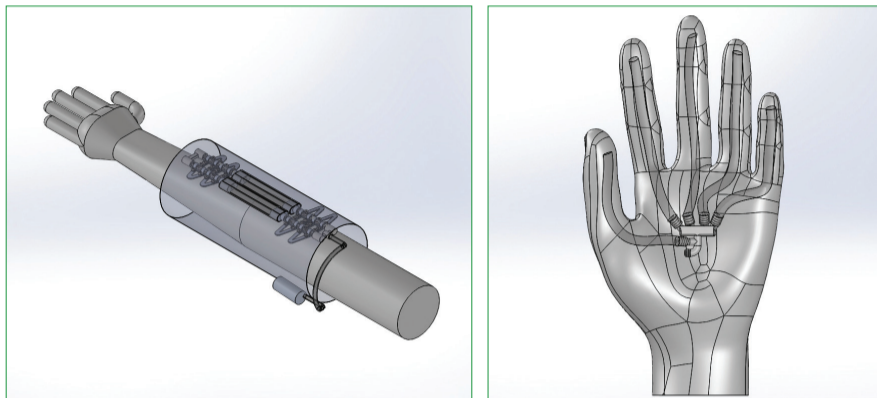


移動式外神經肌骨系統 Mobile Exo-neuro-musculo-skeleton

適用於中風患者上肢復康訓練的復康系統
A rehabilitation device for upper limb rehabilitation after stroke

移動式外神經肌骨系統是為中風患者進行上肢復康訓練而設計的。它集合了神經肌肉電刺激、氣動肌肉和外骨骼系統的優勢，能夠檢測癱瘓肌肉的肌電訊號，並提供自主運動控制。外神經肌骨系統能為癱瘓的關節提供機械輔助及神經肌肉電刺激，協助肘部，腕部和手指進行協調的多關節訓練，以改善上肢的運動功能。



移動式外神經肌骨系統的機械組件包括外骨骼和氣動肌肉兩部份，適用於手肘關節及手指關節
Exoskeleton and pneumatic muscle are integrated into the mechanical part in the Mobile Exo-neuro-musculo-skeleton, which can be applied to the joints of the elbow and fingers



移動式外神經肌骨系統具高度彈性布料，患者可舒適地穿戴著進行訓練
Mobile Exo-neuro-musculo-skeleton has a highly flexible fabric interface and can be worn comfortably



手機程式界面：患者可實時控制訓練過程，與其他使用者溝通，以及跟進康復進程
The smart phone app interface for real-time control of the training, communication with other users, and long-term follow-up of the rehabilitation progress

Mobile exo-neuro-musculo-skeleton robot was designed for multi-joint upper limb rehabilitation after stroke. Combining neuromuscular electrical stimulation (NMES), soft pneumatic muscle and exoskeleton, it is able to sense the electromyogram (EMG) signals of paretic muscles and provides voluntary motor intention control. The exo-neuro-musculo-skeleton can provide multi-joint mechanical assistance and NMES to paralysed joints in elbow, wrist and fingers, and improve motor functions in the whole upper limb.

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特色與優點

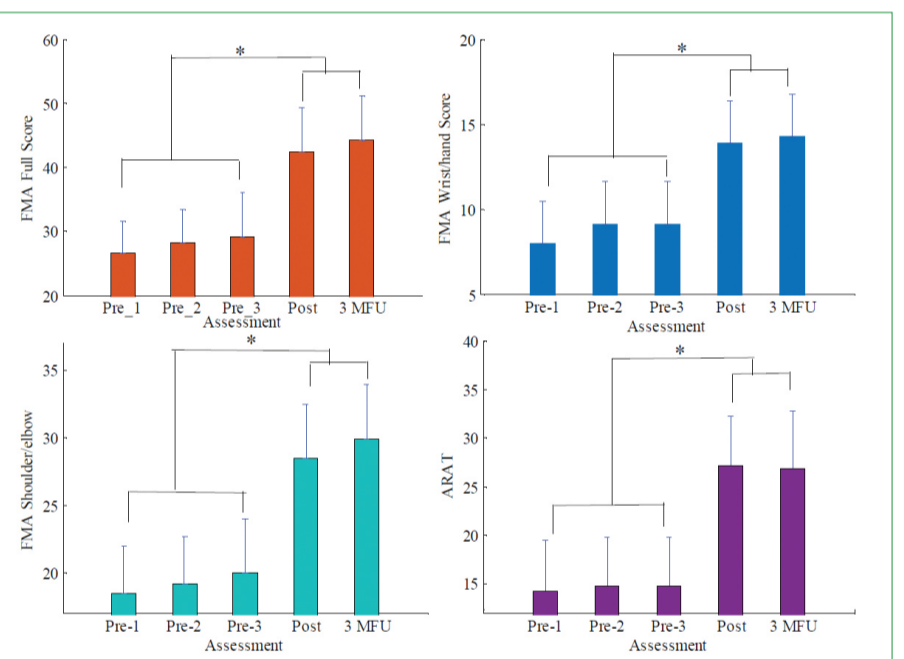
- 能與智能手機應用程式連接，讓患者能與其他使用者通信及跟進康復進程
- 以戶外運動布料製作，具高度彈性、親膚、防水、防紫外線且可清洗
- 設計輕巧，攜帶方便，可於室內及室外環境使用

應用

改善癱瘓患者的上肢功能

獎項

- 波蘭專利局特別大獎 (2019年4月)
- 第47屆瑞士日內瓦國際發明展 - 金獎 (2019年4月)
- 泰國教育部優異獎 (2019年4月)



進行20次復康訓練後，中風患者的上肢運動能力獲得大幅改善(>40%)
Motor improvements (>40%) in the upper limb were achieved in persons with chronic stroke after 20 sessions of device-assisted mobile rehabilitation training

Patent Application No.: 201810001529.3(China), ZL200910158210.2(China), ZL20141097679.0(China)

Special Features and Advantages

- Connected with a smartphone application, allowing patients to communicate with other users, and check the records of rehabilitation progress
- Made of outdoor sportswear fabric that is highly flexible, skin-friendly, waterproof, UV blocking and washable
- Lightweight and portable, suitable for both indoor or outdoor use

Application

Improve upper limb functions of paralyzed persons

Awards

- Prize of the Polish Patents Office, Poland (Apr 2019)
- Gold Medal – 47th International Exhibition of Inventions of Geneva, Switzerland (Apr 2019)
- Special Merit Award from the Ministry of Education, Thailand (Apr 2019)

