

Dermoskeletons to preserve mobility and function in inclusion body myositis

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Video

A 45-year-old man developed gradual onset of finger flexors and quadriceps weakness. Anti-NTSC1A antibody was positive, and muscle biopsy was consistent with inclusion body myositis. Options to preserve his mobility were explored. The Dermoskeleton uses high-end sensors and advanced artificial intelligence to detect the user's mobility intentions and generate synchronized assistance at the motorized knees. The device considerably improved the patient's 6-minute walk test (720–790 m) and stair climbing capacity (69–140 steps per minute) (videos 1 and 2), as a result of both assistance (primary) and bracing (secondary) factors. Advancing biomechanical technology provides novel options to preserve mobility and function for patients with neuromuscular diseases.

Author contributions

O. Landon-Cardinal, F. Prince, S. Bédard, and M. Hudson: conceptualization and design. O. Landon-Cardinal, F. Prince, and M. Hudson: acquisition of data. O. Landon-Cardinal, F. Prince, O. Benveniste, and M. Hudson: analysis and interpretation of data. O. Landon-Cardinal, F. Prince, S. Bédard, O. Benveniste, and M. Hudson: critical revision of the manuscript for important intellectual content.

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Disclosure

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