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A Comprehensive Review of Hand Robotics in Spinal Cord Injury Rehabilitation

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Abstract

Introduction: Hand control is frequently compromised by a cervical spinal cord injury, making it difficult for the patient to grasp and handle objects. This can have a detrimental effect on the patient's independence and quality of life. For those who have suffered a spinal cord injury to be independent, hand function must be restored. It is believed that rehabilitation efforts should focus primarily on hand function loss following severe spinal cord injury (SCI). In order to improve diminished hand strength and dexterity, passive and active assistive devices are being utilized constantly often. The field of soft robotics is an evolving field that blends lightweight components with traditional robotics concepts to potentially create an entirely novel type of active assistive technology. Customizable and portable structures enable interaction between humans and robots through soft robotic devices that are assistive. This review is aimed at highlighting the role of hand robotics in spinal cord injury rehabilitation to enhance the activities of daily living for people who have spinal cord injury-related hand limitations.

Methodology: To construct this review article, extensive research was carried out on various databases like: Pubmed, Google Scholar, ResearchGate etc. Researches done in the last 10 years only were included in the study.

Result & Conclusion: With this review we want to conclude that hand robotics work as an efficient means to support hand function in people who have had paralysis of the upper limbs due to spinal cord injuries

Keywords: *Hand robotics, Spinal cord injury, Rehabilitation*