# Article information:

Myoelectric Control of a Soft Hand Exoskeleton Using Kinematic Synergies | IEEE Journals & Magazine | IEEE Xplore  
<https://ieeexplore.ieee.org/abstract/document/8884741>

# Article summary:

1. Soft hand exoskeletons offer a lightweight, low-profile alternative to rigid rehabilitative robotic systems for those with hand paresis due to stroke or other conditions.

2. The HEXOES is a soft cable-driven hand exoskeleton capable of independently actuating and sensing 10 degrees of freedom (DoF) of the hand.

3. Five healthy subjects were able to control HEXOES using a neural network which decodes synergy weights from contralateral electromyography (EMG) activity, allowing them to grasp and lift 15 ADL objects of various sizes and weights.

# Article rating:

May be slightly imbalanced: The article presents the information in a generally reliable way, but there are minor points of consideration that could be explored further or claims that are not fully backed by appropriate evidence. Some perspectives may also be omitted, and you are encouraged to use the research topics section to explore the topic further.

# Article analysis:

The article is generally reliable in its reporting, as it provides detailed information about the study conducted and the results obtained from it. The authors provide evidence for their claims by citing relevant research papers, which adds credibility to their work. Furthermore, the authors have provided sufficient detail about the methodology used in the study, including details about the participants, materials used, and data analysis techniques employed.

However, there are some potential biases that should be noted in this article. Firstly, all five participants in this study were healthy individuals; thus, it is unclear whether these results can be generalized to individuals with stroke or other conditions that may affect hand function. Additionally, while the authors do mention possible design improvements and applications for individuals with stroke in their discussion section, they do not provide any further detail on how these improvements could be implemented or what kind of impact they would have on individuals with stroke. Finally, while the authors do discuss potential risks associated with using EMG signals for controlling an exoskeleton device such as HEXOES, they do not provide any specific recommendations on how these risks can be minimized or avoided altogether.

# Topics for further research:

* Exoskeleton device control using EMG signals
* Impact of EMG signals on hand function
* Exoskeleton device control for individuals with stroke
* Risks associated with using EMG signals for exoskeleton control
* Design improvements for exoskeleton devices
* Applications of EMG signals for exoskeleton control

# Report location:

<https://www.fullpicture.app/item/ccf2350734d5b26d326df6a45c455883>