

Traditional physical therapy for upper-limb post-stroke hemiparetic patients often fails to reach the maximum potential for recovery, and is unable to provide a complete, quantitative assessment of a patient's progress. Through the use of robotics, the team aimed to create a device free of these faults, which would provide a holistic physical therapy solution. The sleeve achieves exomuscular actuation through a system of Bowden cables linked to DC motors housed remotely and is able to flex and extend the fingers and elbow and control pronation and supination of the wrist. Through a sensor array located throughout, a feedback system is able to collect quantitative data on joint angles, fingertip forces, and control all degrees of freedom utilizing this data and several on-board processors.