Active Assist Elbow Orthosis

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Technology description

Invention
The invention is a motor-hinged elbow brace that stabilizes the elbow and aids in exercises that maintain the range of motion of the elbow. The orthotic brace will also assist the patient in moving the arm at a predetermined angle per the doctor's decision. In addition, the invention includes an iOS application to control exercises and the angle of the elbow brace.
Background
Elbow stiffness after surgery is a common problem caused by the accumulation of fibrous tissue in the joint. The rigid bracing also contributes to the issue and the current solution is to perform range of motion exercises daily without the brace, which can be painful sometimes. There is a need to solve this issue by simultaneously stabilizing the elbow while providing frequent motion.

Application area

Physical therapy
Orthopedic surgery
Medical centers
Medical devices

Advantages

Customizable as an exercise regimen due to the tracking capability of the iOS application
Tracks previous exercises and displays a schedule
Contains 1200mA-hour lithium ion battery
Locking mechanism prevents the patient from feeling pain and is accessible to the patient to prevent the device from continuing to rotate
Weighs 10 pounds with added torque to assist the patient in flexing and extending the arm
Wearable and user controlled, increasing the ease of access

Institution

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