ArmAware: A Device to Treat Hemiplegia (formerly CHRONOS)

Published date: Oct. 7, 2014

Technology description

Value Proposition:
JHU inventors have devised a simple and non-invasive treatment for hemiplegia, which targets hemispatial neglect. This is a programmable vibrating wristband that provides consistent cues to patients to attend to the affected arm and area of space, while it sends sensory information to the brain. This information counteracts potential effects of neglect and non-use on recovery of functional motor skills. An accelerometer can be integrated into the device to collect data and measure arm usage to determine efficacy of the therapy.
Technical Details:
Hemiplegia is a condition in which half the body has compromised motoric functions, which is often associated with hemispatial neglect, a neuropsychological condition with deficit in awareness of one side of the body after brain damage. There are no existing treatments for these conditions, except for rehabilitation therapy and physical activities related to the injured side of the body. There is a need for a simple and effective treatment to help long-term functional recovery following this neurological damage.

Application area

- a therapy to assist recovery from affected body parts following hemiplagia.
- used in combination with rehabilitation and occupational therapy to accelerate recovery.
- used to collect data on efficacy of the therapy and thereby modify the treatment per individual patient needs.

Advantages

- is a simple, reusable, non-invasive apparatus.
- is applicable across all age groups.
- does not require constant parent, caregiver or therapist monitoring.
- is miniaturized, programmable and rechargeable.

- enables data collection to monitor the patient’ s response to therapy.
- can be used to treat hemiplegia and hemispatial neglect in children and adults suffering from a variety of neurological conditions including acquired brain injury (e.g. TBI, stroke, brain tumors, brain surgery, encephalitis), and neurodevelopmental disorders such as Cerebral Palsy.

Institution

Johns Hopkins University

Inventors

Cynthia Salorio
Neuropsychologist
Kennedy Krieger Institute