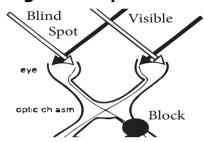
St. John's Rehabilitation

Sunnybrook Hospital

LEFT NEGLECT

Helping Hemiagnosia Patients Regain Independence

Hemiagnosia is developed in elderly patients after suffering stroke. Once developed, it stops the brain from comprehending information received from the right half of the patient's eyes (the left half of their visual field).



effects

Physical Injury
Collision with objects
Stressed Muscles

Incorrect posture





Neglect and Anosogn

objective

Rehabilitation: help the patients become independent

- Avoid incoming obstacles by improving awareness of environment
- Improve posture by detective the user angle of tilt and notifying them of it

Unobstructive

Low Maintenance

User Independent

to distinguish these actions

challenges

involuntary actions

 Incorporating a way to measure the usefulness of the device

Solution: Filter accelerometer data

Differentiating voluntary and

University

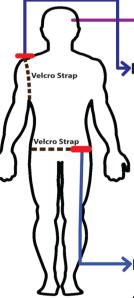
Toronto

Solution: Connectable base station display that counts the number of feedback frequency

Integrating technology to provide wireless feedback

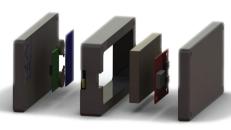
Solution: Usage is not viable due to weight and cost impact of implementing a wireless protocol

design



Leveling Sensor

 Calibrates to normal user posture



- Feedback given through attached vibrational motor driver/motor circuit
- User-definable response times and tilt offsets to tune the device such that it is customizable to individual needs

Proximity Sensor

- Autocorrection for humidity and pressure variation
- Visual feedback provided through small LED mounted to glasses
- Distance of detection configurable to user needs

collaboration

- Visual field modification device proposed to Pennsylvania State University
- Camera system developed to solve this issue
 - Reduced rehabilitation time with complementary devices

future recommendations

- Integrate visual feedback from proximity sensor to visual field modification device
- Minimize size of all prototype devices through custom printed circuit boards
- Include method of alerting staff/emergency personelle of user distress

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