

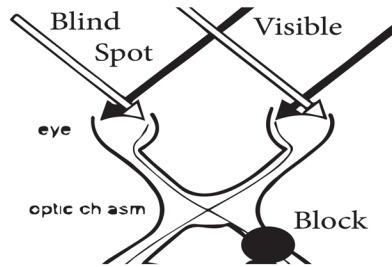
St. John's Rehabilitation

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



objective

Rehabilitation: help the patients become independent

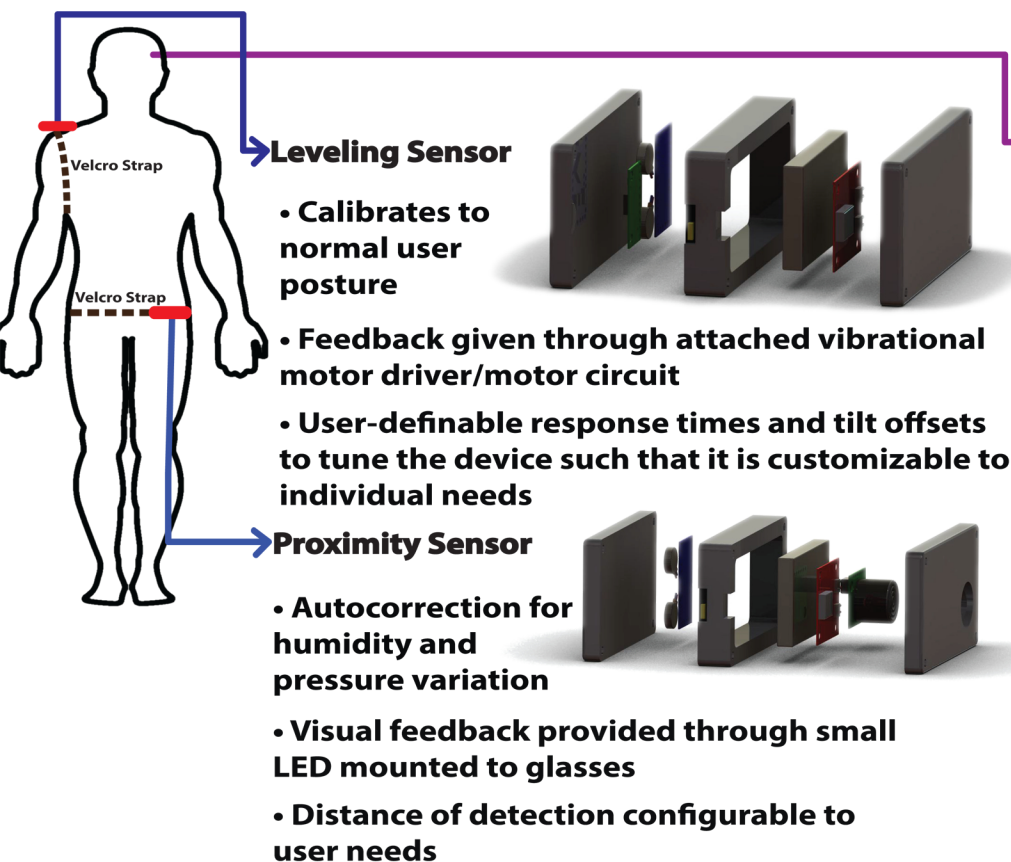
- Avoid incoming obstacles by improving awareness of environment
- Improve posture by detecting the user angle of tilt and notifying them of it

Unobstructive

Low Maintenance

User Independent

design



challenges

- Differentiating voluntary and involuntary actions

Solution: Filter accelerometer data to distinguish these actions

- Incorporating a way to measure the usefulness of the device

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

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 personnel of user distress

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