

Title: Device for acute rehabilitation of the paretic hand after stroke

Team: Sasha Cai Leshner-Pérez (Leader)
Carly Brown (Communicator)
Lee Linstroth (BSAC)
Nathan Kleinhans (BWIG)

Date: September 21 – September 28, 2007

Project Design Statement:

Design a portable automated device that will facilitate hand rehabilitation in the acute phase (first three months) after stroke within a clinical setting; focus of rehabilitation will be supination/pronation movements of the wrist and gross flexion/extension of the fingers. Both active and passive movements will be focused on for rehabilitation, and the device should be able to simultaneously or independently assist rehabilitation of the two degrees of motion.

Restatement of Team Goals:

- Work on IRB protocol (Carly)
- Receive citi human training
- Continue learning C++ programming software (Sasha Cai)
- Think of design options for simultaneous movement (flex/ext and sup/pro) (Nathan, Lee, Sasha Cai)
- Research linear actuators (Nathan)
- Find rods for hand flex/extension device
- Run tests on motor (Lee, Nathan, Sasha Cai)
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Individual Goals:

- **Carly:** Finalize IRB protocol, finish citi human training, communicate what needs to be worked on for completion of IRB
- **Lee:** Finalize IRB protocol, purchase aluminum rods for Hand flex/extension device, locate where sold, finish citi human training, create modeling designs of Hand flexion/extension device
- **Nathan:** Finalize IRB protocol, finish citi human training, run current tests on motor, create modeling designs of hand flexion extension device
- **Sasha Cai:** Finalize IRB protocol, finish citi human training, Work on C++ programming, attempt interface between h-bridge, microprocessor and motor, create technical drawings of circuits and wrist rotator.

Summary of Accomplishments:

- 1) Met with Advisor
- 2) Finalized a design option for Hand flexion/extension device
- 3) Continued writing IRB

- 4) Purchased/recieved stepper motor for hand flex/extension design
- 5) Worked on understanding C++ programming
- 6) Began citi human on-line training

Difficulties:

None

Activities:

Team Meeting: 09/24/07 **1 hour**

Advisor Meeting: 09/27/07 **1 hour**