

Progress Report

Title: Active Ankle/Foot Orthotic (AFO) to Enhance Walking and Balance

Names: Jessica Hause: Co-leader
Erin Main: Co-leader
Emily Andrews: BSAC
Josh White: Communicator
Tony Schuler: BWIG

Date: March 31, 2007 – April 12, 2007

Problem Statement:

Create a device that actively enhances forefoot step-off and increases proprioception to improve balance for people experiencing ankle weakness, foot-drop and the inability to walk and balance safely as a result of various neurological diseases such as Charcot-Marie-Tooth disease, multiple sclerosis and stroke. The device should be non-obtrusive, fit in a shoe, comfortably attach to the leg, and be economical.

Last Week's Goals:

- Meet with Dr. Thelen to discuss our final design
- Meet with our orthotics specialist and materials expert to discuss our final design and potential help with its fabrication
- Look in to possible methods of fabrication
- Finalize our research on gait in order to incorporate our knowledge of gait patterns during fabrication
- Order parts
- Begin fabrication

Summary of Accomplishments:

- Josh was able to meet with Dr. Thelen and discuss our final design with him. Thelen also proposed using ideas similar to those in the Niagara foot.
- Obtain the video from Scott Amyx of our patients gait with and without the AFO
- Erin met with Scott to go over our final design and arrange a time in the future for the molding of our orthotic
- Met with Scott to create a mold of one of our group members foot to be used in fabrication
- Filled our mold with plaster and sanded down the rough areas so that the mold can be used to create our orthotic
- Ordered part that will be used as the attachment between the two pieces

This Week's Goals:

- Mold the thermoplastic to our plaster mold
- Remove unnecessary areas of thermoplastic
- Attach the two pieces of our design together

- Add padding to the inside of the device
- Begin testing our orthotic

Project Schedule:

Task	Jan	February					March					April			May
	26	2	9	16	23	2	9	16	23	30	6	13	20	27	4
Project Research															
Research															
Contact Patient															
Contact Client															
Meet with PT															
Brainstorming															
Design															
Develop Prototype															
Website															
Deliverables															
Mid-semester Presentation															
Mid-semester Report															
Final Presentation															
Final Report															
Progress Reports															
Meetings															
Semester Wrap-up															

Difficulties:

Our team is having trouble figuring out how we are going to attach the two pieces of the device together. We are working to maintain a slender design, however, the attachment pieces will need to be sturdy enough to support the forces placed upon it. Also, we are trying to determine the best way to mold the thermoplastic. There are a variety of options that we can pursue and we are looking to determine the one that will provide the most spring back.

This Week's Activities:

3/29/2007	Josh: Met with Dr. Thelen	1 hour
4/06/2007	Erin: Met with Scott and obtained video	1 hour
4/09/2007	Erin: Met with Scott to create foot mold	2 hours
4/10/2007	Team: Fill mold with plaster and order parts	3 hours
4/11/2007	Erin: Progress report	1 hour
4/11/2007	Team: Sanded down plaster mold & final design decision	2 hours
4/11/2007	Tony: Update website	1 hour

Week Total 31 hours

Overall Total Hours:

Individual

Erin:	62 hours
Jess:	58 hours
Josh:	57 hours
Tony:	56 hours
Emily:	56 hours

Team Total 289 hours