

Title: UW Adapted Fitness: Grip strength improvement mechanism

Date: 10/16/2025

Client: Dr. Kecia Doyle

Advisor: Dr. Randy Bartels

Team: Cookie Monsters

David Diancin - Team Leader

Sydney Smith - Communicator

Gabriel Klenner - BSAC

Lucy Mcardle - BWIG

Lauren Hain - BPAG

Problem statement

Individuals in the UW Adapted Fitness program may face challenges with grip strength that limit their ability to perform daily tasks and participate in exercise. A longtime client with reduced grip strength in one hand has worked consistently to improve function but still struggles with both everyday items and workout equipment. Current tools in the Conway Adapted Fitness space are not tailored to his needs, creating a gap in training effectiveness. This project aims to design a safe, affordable, and user-friendly mechanism to support targeted grip training, improve independence, and enhance the client's overall fitness experience.

Brief status update

This week, we confirmed the materials for our prototype and began 3D printing the rings and glove backing. We also met our client at the UW Adapted Fitness Center to take accurate measurements of their hand.

Major team goals for the next week

1. Confirm order for materials that will be used to prototype.
2. Continue to look for materials or components needed to improve prototype fabrication

3. Submit budget form to BME department
4. Begin 3D printing

Next week's individual goals

- Sydney Smith: Begin 3D printing parts of the prototype
- David Diancin:
- Lucy McArdle: Learn basics of onshape for 3D printing of prototype, begin fabrication of prototype
- Lauren Hain: Work on completing our funding request for the BME department and finalizing all of the materials we would like to purchase.
- Gabe Klenner: Design a plastic plate with hooks to put over the hand. This plate should be able to hold the rubber bands and fit underneath the top fabric of the glove if possible.

Previous week's individual goals and accomplishments

- Sydney Smith: Continue research and communicate with the client about materials for the device
 - Communicated with client and solidified materials
- David Diancin: Continue to research different mechanisms to improve design strength
 - Worked on onshape designs to ensure the 3D print designs connected the way we originally intended.
- Lucy McArdle: Meet with the client to finalize budget and continue research on materials and other designs
 - Completed the machining training, continued research on materials for prototype
- Lauren Hain: work on updating the BPAG materials sheet and send it out to the BME department for approval.
 - Started working on a proposal for our funding request and finished the google sheets with all the materials we would like to purchase.
- Gabe Klenner: Update models and drawings with accurate measurements after meeting with the client.
 - Worked on OnShape design to update with new group decisions

Timeline

[illegible]

Testings																
Deliverables																
Progress Reports	x	x	x	x	x	x	x									
Prelim presentation				x	x											
Final Poster																
Meetings																
Client			x													
Advisor				x	x											
Website																
Update	x	x	x	x	x	x										

Filled boxes = projected timeline

X = task was worked on or completed