Title: UW Adapted Fitness: Grip strength improvement mechanism

Date: 11/6/2025

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 printed TPU rings in various sizes and attached S-hooks to the rubber bands using heat-shrink tubing. On Friday, we will test band fit and tension with the client to identify areas for further prototype improvement.

Major team goals for the next week

1. Finalize prototype

2. Continue testing with client
3. Start to fabricate final design pieces

Next week's individual goals

- Sydney Smith: Continue to look into bungee cords or different types of methods for hooking bands and hooks together for proper hand movement
- David Diancin: Continue to find the correct ring print for each finger for the client
- Lucy McArdle: Find fishing line and bungee cords for alternate bands
- Lauren Hain: Find other materials and upload them onto the spread sheet as BPAG to get materials ordered through the BME department
- Gabe Klenner: Look for extra storage and ask at BSAC, contact Human Exercise Research Core Facility to find out how we can reserve their dynamometer

Previous week's individual goals and accomplishments

- Sydney Smith: Continue to test and fabricate our device
    - Found possible bungee cords we could use as a plan B to our rubber bands
- David Diancin: Look into availability for a force gauge for testing applicable force.
- Lucy McArdle: Continue fabrication of our prototype and test with team members and client
    - Fabricated our glove and used heat shrink tubing to adjust the length of the bands
- Lauren Hain: Continue to fabricate our glove design and begin testing our design
    - Used the feedback received from the presentations to the other groups to brainstorm new ideas for our design
- Gabe Klenner: Try to find a locker to keep materials and prototype, continue to update prototype, look into how to get dynameter for testing.
    - Discovered The Human Exercise Research Core Facility located at Cooper hall has a dynamometer

Timeline

Task	Sep				Oct					Nov				Dec	
	5	12	19	26	3	10	17	24	31	7	14	21	28	5	12
Project R&D															
Empathize	x	x													
Background…	x	x	x	x											
Prototyping						x	x	x	x	X					
Testings								x		X					

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

Filled boxes = projected timeline
X = task was worked on or completed