Title: UW Adapted Fitness: Grip strength improvement mechanism

Date: 09/10/2025

Client: Dr. Kecia Doyle
Advisor: Dr. Randy Bartels
Team:
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

Our group has met to get acquainted and begun coordinating next steps. We have reached out to the client, Dr. Kecia Doyle, to schedule a meeting and are awaiting available dates. Additionally, a senior BME student, Simon Nam, who previously worked on this project individually, has reached out and will be collaborating with us and the client moving forward.

Major team goals for the next week

1. Confirm a meeting date and time with the client, Dr. Doyle.
2. Meet with the client to clarify project needs, expectations, and desired outcomes.
3. Connect with senior BME student Simon Nam to learn about his previous work on the project and gather insights.
4. Assign initial team roles and responsibilities based on skills and project needs.
5. Begin compiling background research on grip strength training mechanisms and adapted fitness equipment

Next week's individual goals

- Sydney Smith: Review biomechanics literature on hand and grip function to inform design considerations
- David Diancin: Research adaptive grip strength mechanisms for design considerations
- Lucy McArdle: Research effective grip strength devices and better understand client needs for project design
- Lauren Hain: Research background information on grip strength and grip strengthening devices and begin brainstorming design ideas
- Gabe Klenner: Research safety and usability standards for assistive fitness devices to guide early design ideas