Use this form to answer evaluation criteria 1-9 of the Protocol Guidelines

Evaluation Criteria	Answer Questions Here
Subjects	**Population Description:** The study will involve 20 adults between the ages of 18–35 years. **Inclusion Criteria:** Participants must have at least two years of resistance **training experience** and be familiar with the hip thrust exercise. **Exclusion Criteria:** Individuals with musculoskeletal injuries, cardiovascular issues, or any conditions that may prevent safe participation in resistance training will be excluded. **Recruitment Plan:** Participants will be recruited via social media platforms targeting strength-training communities and enthusiasts.
Purpose Statement	This study aims to investigate the impact of exercise order within a Daily Undulating Periodization (DUP) training protocol on gluteal muscle strength and hypertrophy. Specifically, the research will compare the effects of prioritizing a limited range of motion (ROM) exercise, the hip thrust, versus an extended ROM exercise, the MC Reverse Lunge, in strength-focused training sessions. This study aims to determine whether the sequence in which these exercises are performed influences gluteal muscle activation, strength development, and hypertrophy. By exploring the relationship between exercise order and training outcomes, this research seeks to provide evidence-based recommendations for fitness professionals, trainers, and athletes to optimize gluteal strength and development.
Methods, Procedures, and Analysis	**Methods** This study employs a randomized controlled trial design to evaluate the effects of exercise order within a Daily Undulating Periodization (DUP) training program on gluteal muscle strength and hypertrophy. Participants will be randomly divided into two groups: one group will perform the hip thrust first, followed by the MC Reverse Lunge, while the other group will reverse this order. Both groups will follow the same 12-week DUP program, ensuring consistency in training intensity and volume across participants. **Procedures** Participants will undergo pre-test and post-test assessments to measure changes in strength and hypertrophy. In the pre-test, gluteal strength will be evaluated through a five-repetition maximum (5RM) test, and hypertrophy will be assessed using circumferential measurements of the gluteal region. Additionally, demographic and health data, such as age, weight, height, and exercise history, will be collected to ensure group eligibility and comparability. The training program will consist of four weekly sessions for 12 weeks. Participants will document their workouts in a digital log monitored weekly by the researchers, who will provide feedback and address concerns to maintain adherence. Post-test assessments will mirror the pre-test procedures, allowing for a direct comparison

	of pre-and post-training results. **Analysis** The primary outcome of this study is the change in 5RM scores, representing gluteal strength. Secondary outcomes include changes in circumferential measurements of the gluteal region to assess hypertrophy. Data analysis will involve paired t-tests or ANOVA to compare differences between the two groups, with a significance level set at 0.05. Statistical analysis software will be used to process the data and ensure accuracy. This rigorous analytical approach aims to determine the influence of exercise order on gluteal strength and hypertrophy outcomes.
Risks	The risks associated with this study are minimal and primarily involve physical discomfort or fatigue resulting from resistance training exercises. Participants may experience muscle soreness, particularly if they are unaccustomed to the intensity or volume of the training sessions. There is also a slight risk of minor injuries, such as strains, due to the physical nature of the exercises. To mitigate these risks, all participants will be screened during the recruitment process to ensure they meet the inclusion criteria and are physically capable of participating in resistance training. Detailed instructions on proper form and technique will be provided during the initial session to minimize the risk of injury. Additionally, researchers will be available to answer questions and address concerns throughout the study to reduce potential risks further. Participants will be advised to report any discomfort or adverse effects immediately, and adjustments to their program will be made as needed to prioritize their safety.
Benefits	Participation in this study offers potential benefits for individual participants and the broader scientific community. Participants may gain valuable insights into their strength training performance and the effectiveness of different exercise sequences. The structured 12-week program may improve gluteal strength and hypertrophy, enhancing overall physical fitness and performance. Additionally, participants may better understand resistance training techniques and how exercise order can influence outcomes. For the broader community, the study aims to contribute to the body of knowledge on exercise sequencing within a Daily Undulating Periodization (DUP) framework. The findings can inform evidence-based recommendations for strength and conditioning professionals, trainers, and athletes seeking to optimize gluteal development and performance through tailored training strategies. By addressing a gap in the current literature, this research may help improve training methodologies and outcomes for individuals pursuing fitness and athletic goals.
Costs to the subjects	There are no direct financial costs to participants for their involvement in this study. The participants will provide all equipment required for the training sessions, such as joining a gym. The researcher will provide the exercise logs via an online coaching platform. Participants will, however, need to allocate their

	own time to complete the training sessions and attend the pre-test and post-test assessments. The estimated time commitment is approximately five to seven hours per week throughout the 12-week program and the time required for the two testing sessions.
Informed Consent	Participants will be required to provide informed consent before taking part in this study. A detailed consent form will outline the research's purpose, procedures, risks, and benefits. The form will also describe the voluntary nature of participation, ensuring that individuals understand they may withdraw from the study at any time without penalty or loss of benefits to which they are otherwise entitled. The consent form will clearly explain how data will be collected, stored, and used, emphasizing that all information will be kept confidential and used solely for research purposes. Participants will be informed of any potential risks, including muscle soreness or fatigue, and the steps to mitigate them. The form will also outline the expected time commitment and any requirements for participation, such as logging workouts and attending testing sessions. Participants will be encouraged to ask questions and seek clarification before signing the consent form to ensure comprehension. Only those with signed consent will be allowed to participate in the study. A copy of the signed consent form will be provided to each participant for their records.
Deception	This study does not involve any form of deception. Before consent, all participants will be informed about the research's purpose, procedures, risks, and benefits. The research team is committed to maintaining transparency throughout the study to ensure participants fully understand their involvement and the study's objectives.
Privacy	Participant privacy will be protected throughout the study by maintaining strict confidentiality and adhering to ethical data management practices. All collected data, including strength assessments, circumferential measurements, and demographic information, will be anonymized and stored securely. Participants will be assigned unique identification codes to ensure their data cannot be linked to their identities. Digital records will be stored in a password-protected database accessible only to authorized research team members. Any physical documents, such as consent forms, will be kept in a locked file cabinet in a secure location. Data will be used exclusively for research purposes and reported in aggregate form to prevent individual identification. Participants will also be informed that their personal information will not be shared with any third parties. Privacy measures will be clearly communicated during the informed consent process, and participants will have the right to withdraw from the study at any time without their data being used further.

Concordia University, Saint Paul
Protocol Form
Research Involving Human Subjects

Reviewed Classification Requested: _____ Exempt ____ Expedited
_____ Full Review

Type of Submission: _____ New _____ Renewal*

*Renewal refers to projects which are ongoing (i.e. class related project which are conducted each semester or annually). The principal investigator must inform the Human Subjects Review Committee regarding the projects being implemented on an annual basis.

1. Project Title: The Effect of Exercise Order and Range of Motion on Gluteal Muscular Strength in a Daily Undulating Periodization (DUP) Training Protocol

2. Principal Investigator:

Name ___**Jaime**_____**M**_____**Alnassim**_____
first *middle* *last*

Phone # ___509-720-7580_____

College/Department ____ Kinesiology_____

Investigator's Address

_____3303 E 27th Spokane WA, 99223_____

CITI Training #: ____ 66434136 _____ *(please attach a copy of your CITI completion report)*

3. Check one:

____ Faculty/staff research
____ Fellow/post-doctoral research
____ Undergraduate student research *(Please indicate program:_____)*
_X__ Graduate student research *(Please indicate program:_____X_____)*

If the principal investigator is a student, please complete the following:

Advisor's Name _____ Stephanie Hamilton_____
please print

Address _34100 Sterling Hwy_____

_Anchor Point, AK 99556_____

Telephone _651-603-6164_____

4. Please list co-investigators:

_____

_____

5. Approximate length of project: _____ ***years*** ___4___ ***months***

[Protocol must be renewed annually]

6. Will this research be conducted at a location other than CSP?

____ No __X__ Yes: *If yes, attach approval documentation when needed*.

Identify location of the study: __ The study will be conducted online, allowing participants to join from any location and complete assessments and training remotely.

7. Subjects (*please estimate numbers*):

__X__ patients as experimental subjects
____ patients as controls
____ minors (under 18) not English
____ CSP students/faculty
____ pregnant women, unborn children
____ mentally disabled respondents
____ prisoners
____ normal adult volunteers
____ persons whose 1st language is
____ physically challenged
____ other _____

8. Procedures: *[Attach relevant materials such as questionnaires, interview schedules, consent forms, etc.]*

__X__ survey questionnaire
__X__ interview, phone - in person
__X__ medical or other personal records
____ filming, taping, recording
____ participant observation
____ psychological intervention
____ blood, tissue, secretia samples
____ other _____
____ investigational device
____ placebo
____ payment of subjects
____ observation
____ anthropological fieldwork
____ incomplete disclosure of purpose
__X__ consent and/or assent forms

9. Do you have any apparent conflicts of interest in this research?

_X___ No ____ Yes: *If yes, attach completed Conflict of Interest (COI) Disclosure Form*

10. I have read and understand the Belmont Report on Ethical Principles and Guidelines for the protection of human subjects. This is available at http://www.hhs.gov/ohrp/regulations-and-policy/belmont-report/

Principal Investigator's Signature — Date: 12/1/2024

11. While students may be listed as a principal investigator, advisors shoulder the responsibility for students engaged in independent research. The IRB expects that advisors have reviewed the proposal, and accept the roles and responsibilities required to oversee the conduct of this research, prevent harms to subjects, and foster benefits to the subjects.

Advisor's Signature — Date: 12/2/2024